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1978-1981
BIBLIOGRAPHY OF ATOMIC AND MOLECULAR PROCESSES

Volume One

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ABSTRACT

This annotated bibliography lists 10,676 works on atomic and molecular processes reported in publications dated 1978-1981. Sources include scientific journals, conference proceedings, and books. Each entry is designated by one or more of the 114 categories of atomic and molecular processes used by the Controlled Fusion Atomic Data Center, Oak Ridge National Laboratory to classify data. Also indicated is whether the work was experimental or theoretical, what energy range was covered, what reactants were investigated, and the country of origin of the first author. Following the bibliographical listing, the entries are indexed according to the categories and according to reactants within each subcategory.

INTRODUCTION

This annotated bibliography on atomic and molecular processes reported in publications dated 1978-1981 has been compiled as a part of the activities of the Controlled Fusion Atomic Data Center. Each entry is labeled by one or more of the 10 major categories and 114 subcategories of atomic and molecular processes given on page 3. Grouping according to specific categories is found in the reactants index. Each entry indicated whether the work was experimental (E) or theoretical (T), what energy range was covered, and what reactants were investigated. The classification scheme relates principally to atomic collisions and in particular does not specifically contain atomic structure information (energy levels or wavelength). Structure data are compiled by the National Bureau of Standards and information on atomic structure may be solicited from W. L. Wiese, NBS, Rm. A267, Bldg. 221, Washington, DC 20234.

The following remarks are offered to facilitate the use of the bibliography:

1. Entries were edited for incorrect categorization. Misplaced reactants were removed from their original reactants index category and added to the correct index. The addition of a reactant to the reactants index is indicated by an asterisk (*) beside the entry's alphabetically correct position; the reactant is given at the end of the appropriate column. When necessary, double asterisks, triple asterisks, and daggers are used to show second, third, or fourth additions to a column.
2. Due to the computer manipulation, any differences in symbolic representation or formatting resulted in different entries in the index. For example, a superscript ++ is handled differently from a superscript 2+. All attempts have been made to minimize these discrepancies. However, the user should keep these possible differences in mind when performing searches.
3. Sequencing of reactants in the index follows the order N, N* (excited state), N⁺, N₂, N⁻, NO, Na, Ne, etc.
4. Many papers do not refer to a particular collision system. Reactants in these cases are listed as undefined, denoted as Undef. Review papers are labeled Review rather than listing all reactants discussed in the paper. The abbreviation Seq. preceded by an atom, indicates all members of the isoelectronic sequence for that particular atom. PERT symbolizes "periodic table"; this notation is used when reactions involving a large number of the elements are covered by a publication.

All of these codes are used in a general sense to avoid handling thousands of additional reactants at every stage in the production of these bibliographies.

5. The country listed at the end of each bibliographic entry is derived from the address of the first author given in the original publication.

The bibliography for 1978, 1979, and 1980 individual years has been distributed by the Department of Energy as reports DOE/ER-0044, DOE/ER-0074, and DOE/ER-0118. Those bibliographies are included here along with new papers from 1981. The papers are all indexed in a master file so that a search for papers in a given category for specific reactants lists all papers for all four years. To reduce printing, the author index has been omitted.

Beginning in 1982 the Data Center has adopted a revised categorization scheme in which some categories have been dropped and molecular reactants have been severely limited. This reduced categorization scheme reflects magnetic fusion interests but is still quite broad. However, the full detail represented in the present bibliography will not be maintained in the future.

1. General
2. Elastic Scattering Collisions
3. Collision
4. Dissociation
5. Chemical Reactions, Excitation, and Luminescence
6. Reaction Mechanisms (specified, 6-15)
7. Ionization
8. Ionization Mechanism
9. Ionization
10. Recombination or "Back" Neutralization Leading to Neutral Products (ionic, non-ionic, vibrational, and rotational energy transfer processes, 10-15)
11. Collisions with Solids (10-15)
12. Collisional Time (10-15)
13. Heavy Particle Interactions, Ionization, and Attachment (non-quantum mechanical)
14. Ionization of Solids, Molecules, and Association (only neutral reactants)
15. Ion Exchange
16. Spin Exchange
17. Energy Transfer from Negative Ions into Continuum
18. Interaction Potentials
19. Angular Scattering (specified process or otherwise)
20. Angular Scattering (unspecified process) (must only not carried under other specific categories)
21. Attenuation (unspecified process)

1. General
2. Dissociation
3. Ionization
4. Detachment
5. Quenching
6. Excitation
7. Collisions in Presence of Intense Electromagnetic Fields

1. General
2. Energy loss
3. Energy to Create an Ion Pair
4. Particle Range
5. Multiple Scattering
6. Charge State Population
7. Excited State Population
8. Channeling

1. General:
2. Scattering by Electromagnetic Neutrons, and Heavy Particles
3. Total removal coefficients
4. Scattered Particle Charge and Quantum (Lactid) State Distribution
5. Secondary Electron Ejection by Heavy Particles and Electrons
6. Photoelectrons - Ejection of Electrons (Coefficients)
7. Reflection of Heavy Particles (Coefficients)
8. Reflection of Heavy Particles from Surfaces
9. Total reflection coefficients
10. Charge and Quantum State Distributions of Reflected Heavy Particles at Macroscopic Distances from Surfaces
11. De-Ionization, Neutralization, Ionization, or Dissociation of Particles Interacting with Surfaces, and Free Particles
12. Ionization of Surfaces by Electrons and Heavy Particles
13. Localized External to the Surface (Electrons and Heavy particles)
14. Sticking Coefficients (Thermal energies)
15. Electromagnetic Radiation Induced by Electron or Heavy Particle Impact on Surfaces
16. Desorption of Gases from Surfaces
17. Blistering, Pitting, and Surface Strain in Metals
18. Surface Erosion in Metals
19. Particle Impaction in Metals
20. Electrostatic and Ionization-Induced Chemical Changes to Surfaces

1. General
2. Elastic Collisions
3. Excitation
4. Ionization
5. Recombination (Electron-Ion)
6. Collisional De-excitation
7. Radiative De-excitation
8. Negative Ion Formation
9. Charge Transfer
10. Free-Free Transitions (Bremsstrahlung)
11. Positron Collisions
12. Electron Detachment from Negative Ions
13. Inner-Shell Electron Collisions
14. Inner-Shell Interactions
15. Ionization of Atoms
16. Photo-ionizing (Spontaneous Process)
17. Photo-ionizing (Excited Process)
18. Augmentation (Spontaneous Process)

ION STRUCTURE - CIR PLASMAS
(M. H. Mc, G. W. H. C. S. H. M. T. Fe,
Ar, Ne, Ar, Cu, Ni, N, H⁺, He⁺)

1. Transition Probabilities, Oscillator Strengths
2. Energy Levels, Ionization Potentials
3. Shifts and Line Broadening by Fields
4. Ionization Affinity

1. Transition Probabilities, Oscillator Strengths, Energy Levels, Lifetimes
2. Shifts and Line Broadening by Fields
3. Electron Affinity

1. General
2. Diffusion of Neutral
3. Diffusion of Electrons
4. Diffusion of Ions
5. Drift Velocity of Electrons
6. Drift Velocity of Ions
7. Scattering and energy loss Parameters of Electrons, Neutrons, and Ions in Gases
8. Energy distribution (energy distribution of ions and energy distribution of electrons and magnetic fields)
9. Mechanisms of applied electric and magnetic fields
10. First and Second Townsend Coefficients
11. Electron Attachment Coefficients

1. General
2. Total Absorption
3. Elastic Scattering
4. Excitation
5. Discoloration
6. Photochemical
7. Photocatalytic
8. Fluorescence and Luminescence Yields
9. Photochemistry
10. Free-Radical Absorption or Inverse Bremsstrahlung
11. Photon-Electron Scattering
12. Photochemical Initiation
13. Photochemical Quenching, and Stimulated Emission (Erosis section)

1. Heavy Particle
2. Electrons
3. Photons
4. Particles on Surfaces and Solids
5. Transport
6. Structure

1. Heavy Particle
2. Electrons
3. Photons
4. Particles on Surfaces and Solids
5. Transport
6. Structure
7. General

1. Near Particle
2. Electrons
3. Heating
4. Particles on Surface and Fields
5. Transport
6. Structure

•

1980 - 1981 (1981)

Signature - [redacted]

BIBLIOGRAPHY

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1	AB4 $H_2^+ + H_2$ AB6 $H_2^+ + H_2$	E	5 keV	Meier-John, B.; Vogler, H. Vibrationally resolved predissociation of the $\epsilon^+ \sigma_u$ and $\epsilon^+ \Sigma_u^+$ states of H_2 by flight-time-difference spectroscopy. Phys. Rev. A 17, 47 (1978) West Germany
2	MU1 Undef	T	Under	Le Gouet, J.-L.; Berman, P. R. Effect of velocity-changing collisions upon optical coherences in a three-level system. Phys. Rev. A 17, 52 (1978) France
3	AB6 $H^+ + Kr$; $H^+ + Xe$ AC3 $H^+ + Kr$; $H^+ + Xe$	E	12-150 keV	Dougherty, D. H.; Brandon, F. L.; Bray, C. B.; Carmichael, R. B.; Good, M. L. Electron capture into the $3s$ state of atomic hydrogen by H^+ on Kr and Xe. Phys. Rev. A 17, 59 (1978) United States
4	AB6 $He^{2+} + H$	E	0.1-20 keV	Winter, T. G.; Lane, M. F. Electron transfer in collisions of He^{2+} ions with H atoms at $^{10}He^{2+}$ impact energies of 0.1-20.0 keV. Phys. Rev. A 17, 66 (1978) United States
5	AB3 $N + H_2$; $N + CO$; $N + O_2$; $He + H_2$; $He + CO$; $He + C_2$	E	0-15-2.4 keV	Bearman, G. H.; Leventhal, J. J. Excited-state production in collisions of N and He with H_2 , CO, and O_2 over the energy range 150-2400 eV. Phys. Rev. A 17, 80 (1978) United States
6	A19 $H^+ + Al$; $H^+ + Si$; $H^+ + B$; $H^+ + Co$; $H_2^+ + Al$; $H_2^+ + Si$; $H_2^+ + B$; $H_2^+ + Co$	E	337-2400 keV	Lurio, A.; Anderson, M. N.; Feldman, L. C. Search for cluster effects in x-ray production by fast hydrogen molecules. Phys. Rev. A 17, 50 (1978) United States
7	ED3 $e + He$	E	60 eV	Satcliffe, V. C.; Madded, G. H.; Steph, R. C.; Golden, D. E. Electron-phonon angular correlation measurements for the 2^1P_1 state of helium. Phys. Rev. A 17, 100 (1978) United States
8	A19 $Br^+ + PERT$; $I^+ + PERT$; $Ni^+ + PERT$	E T	45-110 MeV	Meyerhof, W. E.; Anhalt, R.; Elchler, J.; Selop, A. K-vacancy production in heavy-ion collisions. IV. K-L level matching. Phys. Rev. A 17, 188 (1978) United States
9	A11 $He^+ + H_2$	E	335 K	Gallagher, T. F.; Cooke, W. E.; Edelstein, S. A. Collisional deactivation of the $2s$ and $4p$ states of He by H_2 . Phys. Rev. A 17, 12b (1978) United States

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
30	AGG $H^+ + H; H^+ + H_2; H^+ + He; H^+ + Ar;$ $H^+ + Kr; H^+ + Xe; H^+ + Rn;$ $H^+ + H_2; H^+ + He; H^+ + Ar; H^+ + Kr$	T	1-7.2 x 10 ⁴ MeV	Lee, C. H. Radiative charge-exchange process in high-energy ion-atom collisions. <i>Phys. Rev. A</i> 17, 666 (1978) United States
31	E83 $e + H_2$	E	1-4 eV	Hong, S. F.; Dube, L. Rotational excitation of H_2 by electron impact: 1-4 eV. <i>Phys. Rev. A</i> 17, 570 (1978) United States
32	AGG $H^+ + H$	T	1-98 keV	Tripathy, D. N.; Rao, S. K. Charge transfer in proton-hydrogen collisions. <i>Phys. Rev. A</i> 17, 567 (1978) India
33	E86 $e + He; e + Ne$	E T	0.4-2.5 keV	Dixon, A. J.; McCarthy, I. E.; Noble, C. J.; Weigold, E. Factorized distorted-wave approximation for the $(e,2e)$ reaction on atoms: Noncoplanar symmetric. <i>Phys. Rev. A</i> 17, 587 (1978) Australia
34	E86 $e + He; e + Ar; e + Ne$	E T	0.2-1.2 keV	Foss, I.; McCarthy, I. E.; Noble, C. J.; Weigold, E. Factorized distorted-wave approximation for the $(e,2e)$ reaction on atoms: Coplanar symmetric. <i>Phys. Rev. A</i> 17, 684 (1978) Australia
35	A12 $He + He^+; He + He^+$	E	330 K	Salour, H. K. Isotopic shift, pressure shift, and pressure broadening of the $7d^4$ states of neon using Doppler-free two-photon absorption spectroscopy. <i>Phys. Rev. A</i> 17, 614 (1978) United States
36	M87 $He + F^-$	T	3.5-10 eV	Rensinger, T. H.; Bender, C. F.; McKay, B. V. Study of the photodetachment cross section of F^- . <i>Phys. Rev. A</i> 17, 645 (1978) United States
37	M83 $He + H_2; He + He$	E	8-12 keV	Ico, G. E.; Chen, H. H.; Grossmann, S. Photon-scattering cross sections of H_2 and He measured with synchrotron radiation. <i>Phys. Rev. A</i> 17, 650 (1978) United States
38	M86 $He + H$	T	19.1-10.5 eV	Ritchie, B. Calculation of resonant cross sections for multiphoton ionization using very-narrow-bandwidth sources. <i>Phys. Rev. A</i> 17, 655 (1978) United States
39	E83 $e + Be^+$	T	25-600 eV	Henry, R. J. V.; van Wyngaerden, W.-L.; Matsuo, J. J. Excitation of Be^+ by electron impact. <i>Phys. Rev. A</i> 17, 750 (1978) United States
40	E86 $e + He$	E	Under	Oda, R.; Tahira, S.; Nishimura, F.; Koike, F. Erratum: Energy and angular distribution of electrons ejected from autoionization states in helium by electron impact [<i>Phys. Rev. A</i> 16, 574 (1977)]. <i>Phys. Rev. A</i> 17, 681 (1978) Japan
41	A19 $He^+ + Bi$	E T	450 MeV	Anholt, R. Analysis of Doppler-broadened Bi K- α x-ray lines observed in 450-MeV $He^+ + Bi$ collisions. <i>Phys. Rev. A</i> 17, 834 (1978) United States
42	M84 $O^+ + [Cu + He + O]$	E	0.05-3 eV	Borst, W. L.; Rauch, G.; Fricks, J. Kinetic-energy dependence of the secondary-electron yield for low-energy O^+ metastables on a Cu-Be-O surface. <i>Phys. Rev. A</i> 17, 838 (1978) West Germany
43	E86 $e + He; e + Ar; e + H_2; e + N_2$	E	100-600 eV	Dubois, R. B.; Rudd, W. E. Absolute doubly differential cross sections for ejection of secondary electrons from gases by electron impact. II. 100-600-eV electrons on neon, argon, molecular hydrogen, and molecular nitrogen. <i>Phys. Rev. A</i> 17, 843 (1978) United States
44	M87 $He^+ + Y_2O_3; He^+ + Ag; He^+ + Y_2O_3;$ $He^+ + Te; He^+ + VO_2; He^+ + Nb_2O_5;$ $He^+ + TiO_2; He^+ + ZrO_2; He^+ + WO_3;$ $He^+ + Nb_2O_5; He^+ + TiO_2; He^+ + ZrO_2$	E	0.25-2.5 keV	Dean, V. L. Ion scattering spectral features in oxides caused by inelastic energy losses. <i>Phys. Rev. A</i> 17, 849 (1978) United States

REV. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
45	A86 $\text{Si}^{2+} + \text{N}; \text{Si}^{2+} + \text{N}_2; \text{Si}^{2+} + \text{N}; \text{Si}^{2+}$ $+ \text{N}_2; \text{Si}^{2+} + \text{N}; \text{Si}^{2+} + \text{N}_2; \text{Si}^{2+} +$ $\text{N}; \text{Si}^{2+} + \text{N}_2; \text{Si}^{2+} + \text{N}; \text{Si}^{2+} + \text{N}_2;$ $\text{Si}^{2+} + \text{N}; \text{Si}^{2+} + \text{N}_2; \text{Si}^{2+} + \text{N}; \text{Si}^{2+}$ $+ \text{N}_2; \text{Si}^{2+} + \text{N}; \text{Si}^{2+} + \text{N}_2$	E	1.4-5.7 MeV	KI-, M. J.; Phoenix, R. A.; Meyer, F. W.; Stolom, F. N. Single electron capture by multiply charged Si^{2+} ions in atomic and molecular hydrogen. Phys. Rev. A 17, 854 (1978) United States
46	C82 $\text{O}^+ + \text{Al}$ C85 $\text{O}^+ + \text{Al}$ A86 $\text{O}^+ + \text{Al}$ A87 $\text{O}^+ + \text{Al}$	E	5-50 MeV	Sofield, C. J.; Cowan, B. E. B.; Petty, R. I.; Freeman, J. N.; Mason, J. P. Charge-exchange effects in the energy-loss straggling of ^{16}O ions in Al. Phys. Rev. A 17, 859 (1978) United Kingdom
47	E86 $e + \text{Ar}_2^+$ E84 $e + \text{Ar}_2^+$	E	337-8500 K	Shiu, Y.-J.; Biendi, N. A. Dissociative recombination in argon: Dependence of the total rate coefficient and excited-state production on electron temperature. Phys. Rev. A 17, 868 (1978) United States
48	E83 $e + \text{Ne}^+$	T	23-1000 eV	Oh, S. D.; Macch, J.; Kelsey, L. Electron excitation of hydrogenlike ions in the Coulomb Born approximation. Phys. Rev. A 17, 873 (1978) United States
49	A86 $\text{H}^+ \text{Seq} + \text{N}; \text{H}^+ \text{Seq} + \text{Cu}; \text{H}^+ \text{Seq} +$ $\text{Nb}; \text{H}^+ \text{Seq} + \text{K}; \text{H}^+ \text{Seq} + \text{Na}; \text{H}^+ \text{Seq}$ $+ \text{Li}; \text{H}^+ \text{Seq} + \text{He}; \text{H}^+ \text{Seq} + \text{Ne}; \text{H}^+$ $\text{Seq} + \text{Ar}; \text{H}^+ \text{Seq} + \text{Kr}; \text{Kr}^{2+} + \text{Ar};$ $\text{Xe}^{2+} + \text{Ar}; \text{H}^+ \text{Seq} + \text{Xe}; \text{Ar}^{2+} + \text{Ar}$	T	3.704-50000 eV	Grazdov, T. P.; Janov, R. K. Charge-exchange collisions of multiply charged ions with atoms. Phys. Rev. A 17, 880 (1978) Yugoslavia
50	A17 $\text{H} + \text{Li}^+; \text{H} + \text{Na}^+; \text{H} + \text{K}^+; \text{H} + \text{Rb}^+;$ $\text{H} + \text{Cs}^+$ A86 $\text{H}^- + \text{Na}^+; \text{H}^- + \text{Cs}^+; \text{H}^- + \text{Li}^+; \text{H}^- +$ $\text{K}^+; \text{H}^- + \text{Rb}^+$ A89 $\text{H}^- + \text{Na}^+; \text{H}^- + \text{Cs}^+; \text{H}^- + \text{Li}^+; \text{H}^- +$ $\text{K}^+; \text{H}^- + \text{Rb}^+$ A87 $\text{D} + \text{Li}; \text{D} + \text{Na}; \text{D} + \text{K}; \text{D} + \text{Rb}; \text{D} +$ Cs	T	0.71-10 keV	Janov, R. K.; Radulevic, Z. W. Ion-ion recombination and ion-pair formation processes in alkali-hydrogen diatomic systems. Phys. Rev. A 17, 889 (1978) Yugoslavia
51	A19 $\text{Kr}^{2+} + \text{Ge}$	E	33.6 MeV	Liesen, D.; MacDonald, J. R.; Pohler, P.; Wenzel, A. Mechanisms of K-vacancy production determined from the impact-parameter dependence of K x-ray production in 1.4-MeV/u Kr + Ge collisions. Phys. Rev. A 17, 857 (1978) West Germany
52	A83 $\text{Na}^+ + \text{Ne}; \text{Na}^+ + \text{Ne}; \text{Na}^+ + \text{Ar}$ A10 $\text{Na}^+ + \text{Ne}; \text{Na}^+ + \text{Ne}; \text{Na}^+ + \text{Ar}$	E	360 K	Collagher, T. F.; Cooke, W. L.; Edelstein, S. A. Collisional angular momentum mixing of f states of Na. Phys. Rev. A 17, 904 (1978) United States
53	E82 $e + \text{N}_2; e + \text{N}_2$ G89 $e + \text{N}_2$	T	0.71-14.0 keV	Murphy, M. A.; Collins, L. A. Exchange in low-energy electron-molecule scattering: Free-electron-gas model exchange potentials and applications to s-N ₂ and o-H ₂ collisions. Phys. Rev. A 17, 916 (1978) United States
54	E82 $e + \text{CoF}; e + \text{KI}; \text{Review}$ E83 $e + \text{CoF}; e + \text{KI}; \text{Review}$	T	Unsel	Mukherjee, D.; Smith, F. T. Semiclassical perturbation theory of electron-polar-molecule collisions: Total excitation and scattering cross sections. Phys. Rev. A 17, 904 (1978) United States
55	G89 $e + \text{CoF}; e + \text{LiF}; \text{Review}$ E83 $e + \text{CoF}; e + \text{LiF}; \text{Review}$	T	0.71-10900 eV	Nichson, A. P.; Smith, F. T. Momentum transfer in electron-polar-molecule collisions: Results of semiclassical perturbation scattering theory. Phys. Rev. A 17, 905 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
56	A15 $K^+ + Ca; H^+ + Zn; H^+ + Zr; H^+ + Sn;$ $H^+ + Nd; H^+ + Yb; H^+ + Au; H^+ + U;$ $He^{2+} + Ca; He^{2+} + Zn; He^{2+} + Zr;$ $He^{2+} + Sn; He^{2+} + Nd; He^{2+} + Yb;$ $He^{2+} + Au; He^{2+} + U$ A03 $H^+ + Ca; H^+ + Zn; H^+ + Zr; H^+ + Sn;$ $H^+ + Nd; H^+ + Yb; H^+ + Au; H^+ + U;$ $He^{2+} + Ca; He^{2+} + Zn; He^{2+} + Zr;$ $He^{2+} + Sn; He^{2+} + Nd; He^{2+} + Yb;$ $He^{2+} + Au; He^{2+} + U$	T	Undef	Anholt, R. Theoretical investigation of electronic relativistic effects on K-vacancy production by charged particles. Phys. Rev. A 17, 576 (1978) United States
57	A19 $H^+ + Y; H^+ + Mo; H^+ + Ag; H^+ + Sn;$ $H^+ + Pr; H^+ + Sm; H^+ + Nd; H^+ + Hf;$ $H^+ + Ta; H^+ + Re; H^+ + Pt; H^+ + Au;$ $H^+ + Pb; H^+ + Bi; H^+ + U; H^+ + Th;$ $He^{2+} + Y; He^{2+} + Mo; He^{2+} + Ag;$ $He^{2+} + Sm; He^{2+} + Pr; He^{2+} + Sn;$ $He^{2+} + Re; He^{2+} + Hf; He^{2+} + Ta;$ $He^{2+} + Re; He^{2+} + Pt; He^{2+} + Au;$ $He^{2+} + Pb; He^{2+} + Bi; He^{2+} + U;$ $He^{2+} + Th; O^+ + Y; O^+ + Mo; C^+ +$ $Ag; O^+ + Sm; O^+ + Pr; O^+ + Sn; C^+ +$ $Re; O^+ + Hf; O^+ + Ta; O^+ + Re; O^+ +$ $Pt; O^+ + Au; C^+ + Pb; O^+ + Bi; C^+ +$ $U; O^+ + Th; F^+ + Y; F^+ + Re; F^+ +$ $Ag; F^+ + Sm; F^+ + Pr; F^+ + Sn; F^+ +$ $Re; F^+ + Hf; F^+ + Ta; F^+ + Re; F^+ +$ $Pt; F^+ + Au; F^+ + Pb; F^+ + Bi; F^+ +$ $U; F^+ + Th; Cl^+ + Y; Cl^+ + Mo; Cl^+ +$ $Ag; Cl^+ + Sm; Cl^+ + Pr; Cl^+ + Sn;$ $Cl^+ + Re; Cl^+ + Hf; Cl^+ + Ta; Cl^+ +$ $Re; Cl^+ + Pt; Cl^+ + Au; Cl^+ + Pb;$ $Cl^+ + Bi; Cl^+ + U; Cl^+ + Th$	E T	0.5-70 keV	Anholt, R. Electronic relativistic and Coulomb deflection effects on L α vacancy production. Phys. Rev. A 17, 983 (1978) United States
58	E06 $e + Ar^{16+}; e + Ar^{15+}; e + Ar^{14+}; e +$ $Ar^{13+}; e + Ar^{12+}; e + Ar^{11+}; e +$ $Ar^{10+}; e + Ar^{9+}; e + Fe^{16+}; e +$ $Fe^{15+}; e + Fe^{14+}; e + Fe^{13+}; e +$ $Fe^{12+}; e + Fe^{11+}; e + Fe^{10+}; e +$ $Fe^{9+}; e + Fe^{8+}; e + Mo^{16+}; e +$ $Mo^{15+}; e + Mo^{14+}; e + Mo^{13+}; e +$ $Mo^{12+}; e + Mo^{11+}; e + Mo^{10+}; e +$ $U^{72+}; e + U^{71+}; e + U^{70+}; e + U^{69+};$ $e + U^{68+}; e + U^{67+}; e + U^{66+}; e +$ U^{65+}	T	Undef	Reiter, J. A.; Gau, J. R.; Mahn, Y. Scaling properties of the dielectronic recombination splittings. Phys. Rev. A 17, 998 (1978) United States
59	E02 $e + H$	T	1-10 eV	Kier, H.; Kier, M. Elastic phase shift of $e-H(1s)$ and ground-state energy of H^- calculated in the post-adiabatic approximation. Phys. Rev. A 17, 1607 (1978) West Germany
60	A06 $H^+ Sq + H Sq$	T	Undef	Shakenhaft, R. Asymptotic form of the third Born amplitude for forward electron capture by a bare ion incident on a hydrogenlike ion. Phys. Rev. A 17, 1011 (1978) United States
61	E18 $e + Sn; e + Te; e + I$	E	15 keV	LeVillio, R. E. Unusually broad x-ray emission lines: L $\gamma_{2,3}(L_{2,3})$ spectra of $ssSn$, $ssTe$, and ssI . Phys. Rev. A 17, 1018 (1978) United States
62	H04 $h\nu + O$	T	5.5 eV	Pindzole, M. S. Two-photon excitation of atomic oxygen. Phys. Rev. A 17, 1021 (1978) United States
63	H03 $h\nu + Y; h\nu + Zr; h\nu + Mo; h\nu + Ag;$ $h\nu + Cd; h\nu + Sn$	E	662 keV	Aliauwadhi, K. L.; Verma, S. L.; Ghoshan, S. S.; Seod, B. S. Determination of integral Compton-scattering cross sections of 662-keV γ -rays from K-shell electrons in intermediate Z elements. Phys. Rev. A 17, 1058 (1978) India
64	H06 $h\nu + C; h\nu + Sn; h\nu + U; h\nu + Hg;$ $h\nu + Al; h\nu + Mo; h\nu + Au; h\nu + Pb;$ $h\nu + Nd; h\nu + Bi; h\nu + Ag; h\nu + Kr;$ $h\nu + Ge; h\nu + Ar; h\nu + Xe$	T	3.5-1400 keV	Tsang, H. K.; Pratt, R. N.; Yu, S.; Ren, A. Photoelectron angular distributions. Phys. Rev. A 17, 1061 (1978) China

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77	E92 $e + N$	T	Undef	Byron, F. W., Jr. Comment on dispersion relations for the static-exchange amplitude. Phys. Rev. A 17, 1545 (1978) United States
78	N98 Undef	T	Undef	Knight, P. L.; Holander, W. A.; Stroud, C. R., Jr. Asymmetric resonance fluorescence spectra in partially coherent fields. Phys. Rev. A 17, 1547 (1978) United Kingdom
79	B01 Undef	T		Melendy, J. V.; Meath, W. J. Induced transition probabilities and energies for the strongly coupled two-level system. Phys. Rev. A 17, 1550 (1978) Canada
80	H96 $h\nu + Ti$; $h\nu + V$; $h\nu + Mo$; $h\nu + Fe$; $h\nu + Ni$	T	Undef	Yin, L. I.; Adler, I.; Tsang, T.; Chen, M. M.; Biegans, D. A.; Grossmann, B. *Erratum: Widths of atomic N-shell vacancy states and qualitative aspects of radiationless transitions in solids [Phys. Rev. A9, 1070 (1974)]. Phys. Rev. A 17, 1556 (1978) United States
81	A02 $Ar^+ + Ar$ A06 $Ar^+ + Ar$ A18 $Ar^+ + Ar$	E	2.7-20 eV	Vestal, M. L.; Bishley, C. B.; Fittell, J. M. Crossed-beam measurements of differential cross sections for elastic scattering and charge exchange in low-energy Ar^+-Ar collisions. Phys. Rev. A 17, 1537 (1978) United States
82	A03 $He^+ + He$; $He + He$	T	0.01-10 eV	Cohen, J. S.; Collins, L. A.; Lane, N. F. Theory in inelastic collisions between low-lying excited- and ground-state He atoms. Phys. Rev. A 17, 1543 (1978) United States
83	E03 $e + CO$ E04 $e + CO$	E	0-300 eV	Wells, W. C.; Borst, W. L.; Ziegler, E. C. Translational spectroscopy of metastable fragments produced by dissociative excitation of atmospheric gases by electron impact: II. Carbon monoxide. Phys. Rev. A 17, 1557 (1978) United States
84	B05 D	E		van Wijngaarden, A.; Drake, W. W. F. Deuterium Lamb shift via quenching-radiation anisotropy measurements. Phys. Rev. A 17, 1566 (1978) Canada
85	A10 $CH_3I^+ + CH_3I$	E	300 K	Arimondo, E.; Glorieux, P.; Oha, T. Radio-frequency spectroscopy inside a laser cavity: pure nuclear quadrupole resonance of gaseous CH_3I . Phys. Rev. A 17, 1576 (1978) Canada
86	H02 $h\nu + H^-$ H07 $h\nu + H^-$	E	11 eV	Behringer, K.; Thoma, P. Observation of the H^- shape resonance in the hydrogen-arc emission spectrum. Phys. Rev. A 17, 1408 (1978) West Germany
87	H06 Undef	T	Undef	de Meljore, J. L. F.; Eberly, J. H. Rate of resonant two-photon ionization in the presence of a partially coherent radiation field. Phys. Rev. A 17, 1616 (1978) United States
88	A17 $N + He$; $N + Ar$; $N + Cl$ A16 $H^- + He$; $H^- + Ar$; $Cl^- + Ar$	T	3-40 eV	Olson, R. E.; Liu, B. Self-consistent-field potential energies for the ground negative-ions and neutral states of MeH , ArH , and $ArCl$. Phys. Rev. A 17, 1568 (1978) United States
89	F01 NeH ; ArH ; $ArCl$ E05 $e + He$ E17 $e + He$	E	10^4 eV	Beatty, E. C.; Kesselbacher, K. M.; Hong, S. P.; Moore, J. H. Measurements of the triple-differential cross section for low-energy electron-impact ionization of helium. Phys. Rev. A 17, 1092 (1978) United States
90	E02 $e + He$; $e + Ne$ E12 $e^+ + He$; $e^+ + Ne$	E	0-30 eV	Stein, T. S.; Kauppila, W. E.; Pal, V.; Smart, J. H.; Jepson, G. Measurements of total scattering cross sections for low-energy positrons and electrons colliding with helium and neon atoms. Phys. Rev. A 17, 1600 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
91	HP2 hv + Kr* + Ne; hv + Kr* + Ar A12 Kr* + Ne; Kr* + Ar	E	303 K	Brochignac, C.; Vetter, R.; Barmon, P. H. Study of velocity-changing collisions in excited Kr using saturation spectroscopy. <i>Phys. Rev. A</i> 17, 1608 (1978) France
92	AC6 Undef	T	Undef	Arora, B.; Turner, J. E. Theoretical method for solving a two-level collision system. <i>Phys. Rev. A</i> 17, 1614 (1978) India
93	ED3 e + He Seq ED5 e + He Seq	T	43-400 eV	Sampson, D. M.; Parks, A. B.; Clark, R. E. M. Intermediate-coupling collision strengths for fine-structure transitions between S and P levels and S and D levels in highly charged He-like ions. <i>Phys. Rev. A</i> 17, 1619 (1978) United States
94	ED5 e + He	E	420-800 eV	Caniliemi, R.; Guidoni, A. G.; McCarthy, I. E.; Stefani, G. Mechanism of the (s,2s) reaction with atoms. <i>Phys. Rev. A</i> 17, 1634 (1978) Italy
95	A19 He* + Al; Li* + Al; C* + Al	E	4-26 MeV	Janssen, R. A.; Richard, P.; McPherson, F.; Matthews, B. L. Nonstatistical population of magnetic substates of the (1s-2p ²) ³ P ₁ state in Al. <i>Phys. Rev. A</i> 17, 1642 (1978) United States
96	AC6 H* + C; H* + N; H* + O; H* + Ne; H* + Ar; H* + H A15 H* + C; H* + N; H* + O; H* + Ne; H* + Ar; H* + H	T	0.4-12 MeV	Lin, C. B.; Soong, S. C.; Yennell, L. N. Two-state atomic expansion methods for electron capture from multielectron atoms by fast protons. <i>Phys. Rev. A</i> 17, 1646 (1978) United States
97	AC7 H* + Al; H* + Ni; D* + Al; D* + Ni; He* + Al; He* + Ni; Li* + Al; Li* + Ni; C* + Ni; O* + Ni; F* + Ni AC6 H* + Al; H* + Ni; D* + Al; D* + Ni; He* + Al; He* + Ni; Li* + Al; Li* + Ni; C* + Ni; O* + Ni; F* + Ni	E T	2-50 MeV	Debus, G.; Brandt, W.; Lohbert, R. Universal cross sections for K-shell ionization by heavy charged particles. II. Intermediate particle velocities. <i>Phys. Rev. A</i> 17, 1655 (1978) United States
98	E11 e + C	E	325 keV	Behrke, H.-W.; Mahai, V. Angular dependence of the photon linear polarization in the elementary process of atomic-field bremsstrahlung. <i>Phys. Rev. A</i> 17, 1679 (1978) West Germany
99	B01 H	E		Ehrich, H.; Kellöher, D. E. Hydrogen fine-structure effects at low electron densities. <i>Phys. Rev. A</i> 17, 1686 (1978) United States
100	B07 Undef HC6 Undef	T	Undef	Heyfeh, M. M.; Payne, M. G. Radiative collision-induced photoionization. <i>Phys. Rev. A</i> 17, 1695 (1978) United States
101	B07 Undef H11 Undef	T	Undef	Kruger, H.; Jung, C. Low-frequency approach to multiphoton free-free transitions induced by realistic laser pulses. <i>Phys. Rev. A</i> 17, 1706 (1978) West Germany
102	A12 CF ₀ + CF ₀ H04 hv + CF ₀ + CF ₀	E	323 K	Le Duff, T.; Ghorbi, A. Collision-induced scattering at a vibrational Raman frequency. <i>Phys. Rev. A</i> 17, 1729 (1978) United States
103	D11 He + Pd; CO + Pd; O ₂ + Pd D07 He + Pd; CO + Pd; O ₂ + Pd	E	320-1025 K	Engel, T. A molecular beam investigation of He, CO, and O ₂ scattering from Pd(111). <i>J. Chem. Phys.</i> 69, 373 (1978) West Germany
104	F01 LiH	T		Zenko, V. T.; May, K. R.; Stuelley, V. C. Radiative transition probabilities for the B ¹ Σ ⁺ and B ¹ Σ ⁺ bands of LiH. <i>J. Chem. Phys.</i> 69, 402 (1978) United States
105	F01 LiH	T		Zenko, V. T.; Stuelley, V. C. Radiative lifetimes for vibrational levels of the B ¹ Σ ⁺ state of LiH. <i>J. Chem. Phys.</i> 69, 409 (1978) United States

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106	A81 Undef	T	Undef	Choi, B. H.; Poe, R. Y.; Yang, K. Y. Theory of collisions between an atom and a diatomic molecule in the body-fixed coordinate system. I. Coupled differential equation and asymptotic boundary conditions. <i>J. Chem. Phys.</i> 65, 411 (1976) United States
107	A83 $H + H_2$	T	3.4 eV	Choi, B. H.; Poe, R. Y.; Yang, K. Y. Theory of collisions between an atom and a diatomic molecule in the body-fixed coordinate system. II. Close-coupling calculation for rotational transitions. <i>J. Chem. Phys.</i> 69, 422 (1978) United States
108	A85 $H + Li$; $H + Li_2$ A87 $H + Li$; $H + Li_2$	E	1-10 eV	Crooks, J. R.; May, K. R.; Yang, S.-C.; Wu, C.-Y. R.; Stuelley, V. C. Photon and positive ion production from collisions of superthermal hydrogen atoms with lithium atoms and molecules. <i>J. Chem. Phys.</i> 65, 458 (1976) United States
109	E86 $e + NO^+$	E	1520-2650 K	Burdett, N. A.; Mayhew, A. W. Kinetics of gas phase electron-ion recombination by $NO^+ + e^- \rightarrow NO$ from measurements in flames. <i>J. Chem. Soc., Faraday Trans., I</i> 74, 53 (1978) United Kingdom
110	A89 $NO^+ + Cl^-$; $NO^+ + Br^-$; $NO^+ + I^-$	E	2290-2650 K	Burdett, N. A.; Mayhew, A. W. Kinetics of gas phase ion-ion recombination in $NO^+X^- \rightarrow NO + X$ for X being chlorine, bromine and iodine. <i>J. Chem. Soc., Faraday Trans., I</i> 74, 63 (1978) United Kingdom
111	A14 Review	E	315-490 K	Campbell, I. N.; Handy, B. J. Studies of reactions of atoms in a discharge flow stirred reactor. Part 2. $-O_2 + CO$ system. <i>J. Chem. Soc., Faraday Trans., I</i> 74, 316 (1978) United States
112	D15 $e + Nb$	E	3 MeV	Bausinger, F.; Foss, J.; Schwaiblmair, J.; Schultz, H. Free migration of self-interstitials in FCC refractory metals. <i>J. Nucl. Mater.</i> 69-70, 689 (1978) West Germany
113	D15 $n + Bi$; $n + [Bi + Te]$	E	Undef	Quelard, G.; Lecomte, D. Neutron radiation defects in bismuth and tellurium-doped bismuth. <i>J. Nucl. Mater.</i> 69-70, 711 (1978) France
114	D15 $e + Ag$; $e + [Ag + Zn]$; $e + [Ag + Cd]$	E	2.2 MeV	Ivanov, L. I.; Plotov, Y. N.; Plotov, N. N.; Sadykhov, S. I. G. Production and annealing of radiation defects in dilute alloys of silver at stage II of recovery. <i>J. Nucl. Mater.</i> 69-70, 754 (1978) Soviet Union
115	D15 $Al^{2+} + Al$	E	5 MeV	Hoggie, T. S.; Appleton, B. R.; Williams, J. N.; Cox, G. S.; Biggarstaff, J. A.; Iwata, T. Damage production rates of 5 MeV Al ions in Al. <i>J. Nucl. Mater.</i> 69-70, 797 (1978) United States
116	D15 $e + [Cu + Al]$	E	307-575 keV	Broad, R.; Kossel, T.; Vashburn, J. Subthreshold displacement damage in copper-aluminum alloys during electron irradiation. <i>J. Nucl. Mater.</i> 69-70, 801 (1978) United States
117	D15 $e + Cu$	E	275-650 keV	Broad, R.; Kossel, T.; Vashburn, J. Temperature dependence of threshold energy for Frenkel pair production in copper. <i>J. Nucl. Mater.</i> 69-70, 804 (1978) United States
118	D15 $C^{2+} + SS$; $e + SS$	T	1-22 MeV	Chenow, N.; Kulcinshi, G. L. Swelling of metals during pulsed irradiation. <i>J. Nucl. Mater.</i> 69-70, 816 (1978) United States
119	D15 $e + Cu$	E	Undef	Ohr, S. M. Electron microscopy studies of nature of defect clusters in copper. <i>J. Nucl. Mater.</i> 69-70, 830 (1978) United States

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120	A02 NO + Ar; N ₂ + Ar; N ₂ + Kr; N ₂ + Xe		250-3000 eV/sec	Kleinman, B.; Thiele, H.; Stettin, S.; Bueck, J. Calculation of the glory scattering with anisotropic molecule-atom interactions in sudden approximation. <i>Chem. Phys.</i> 27, 187 (1978) The Netherlands
121	A02 Ar + N ₂	T	300 K	Alexander, W. K. Polarization in elastic scattering: close-coupling studies on Ar-N ₂ . <i>Chem. Phys.</i> 27, 229 (1978) United States
122	A03 Li ⁺ + CO A17 Li ⁺ + CO	T	1 eV	Thomas, L. D.; Krammer, V. P.; Bierbaum, G. M. F.; McGuire, P. Comparison of classical mechanics and the coupled states approximation for Li ⁺ -CO scattering on an ab initio calculated CI potential energy surface. <i>Chem. Phys.</i> 27, 237 (1978) West Germany
123	A03 Ne + ND	T	0.26-1.8 kcal/mole	Gelb, A. Classical trajectory study of rotational excitation of ND by collisions with Ne. <i>Chem. Phys.</i> 27, 245 (1978) Mexico
124	A14 Review	T	330 K	Fischer, S.; Venzl, G.; Robin, J.; Batsner, R. A. Product energy distribution for exothermic reactive collisions. <i>Chem. Phys.</i> 27, 251 (1978) West Germany
125	A11 N ₂ + Ne; N ₂ + Ar G09 N ₂ + Ne; N ₂ + Ar	T	25-700 K	Liu, W.-K.; McCourt, F. B. BSH calculations of relaxation and kinetic cross sections. II. Application to ortho-N ₂ -Ne and ortho-N ₂ -Ar. <i>Chem. Phys.</i> 27, 281 (1978) The Netherlands
126	A01 Under	T	Under	Eu, B. C. A stochastic theory of collision phenomena, distribution of observables and information entropy. <i>Chem. Phys.</i> 27, 301 (1978) Canada
127	A17 CO + N ₂	T	Under	Prissett, J.; Kochanski, E.; Flower, D. R. Theoretical study of the anisotropy of the CC + N ₂ potential energy surface in the non-reactive region. <i>Chem. Phys.</i> 27, 373 (1978) France
128	A05 NO + O ₂	E	0-1 eV	Rodpath, A. E.; Renzinger, R.; Corrington, T. Molecular beam chemiluminescence XI: kinetic and internal energy dependence of the NO + O ₂ → NO ₂ + O reaction. <i>Chem. Phys.</i> 27, 465 (1978) Canada
129	A03 HCl + Ne; HCl + Ar A11 HCl + Ne; HCl + Ar	T	5-30 kcal/mole	Polanyi, J. C.; Sathyamoorthy, R. Rotational energy transfer (theory). II. HCl + Ne, Ar. <i>Chem. Phys.</i> 29, 9 (1978) Canada
130	H05 hv + N ₂ ⁺	T	12-20 eV	Kulander, K. C.; Bettscher, C. Photofragmentation of N ₂ ⁺ . <i>Chem. Phys.</i> 29, 141 (1978) United Kingdom
131	A02 Li ⁺ + Na; Na ⁺ + Li A06 Li ⁺ + Na; Na ⁺ + Li	E	250-1200 eV	Wijngaerts van Rosend, R. V.; de Vreugd, C.; Champion, R. L.; Lee, J. Differential scattering cross sections for collisions of alkali ions and atoms. III. Li ⁺ + Na and Na ⁺ + Li. <i>Chem. Phys.</i> 29, 151 (1978) The Netherlands
132	A17 Ne + He ₂ ⁺	T	Under	Schmidt, H. H.; von Hirschhausen, K.; Haisrich, K. Ab initio potential surfaces for HeHe ₂ ⁺ in the frozen orbital approximation. <i>Chem. Phys.</i> 29, 219 (1978) West Germany
133	A11 N ₂ ⁺ + H ₂ ; NO ⁺ + NO; N ₂ ⁺ + N ₂	T	300 K	Uring, G. The role of van der Waals molecules in vibrational relaxation processes. <i>Chem. Phys.</i> 29, 263 (1978) France
134	H02 hv + H ₂ C H05 hv + H ₂ C H06 hv + H ₂ C	E	10-60 eV	Tan, K. H.; Bryson, C. E.; van der Leeuw, Ph. E.; van der Wiel, M. J. Absolute oscillator strengths (10-60 eV) for the photoabsorption, photoionization and fragmentation of H ₂ O. <i>Chem. Phys.</i> 29, 299 (1978) Canada
135	F01 A10	T		Marty, P. S. Electronic transitions of silicon monoxide. <i>Chem. Phys.</i> 29, 391 (1978) India

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136	A16 $K + Br_2$	E	0-10 eV	Evans, C. W. A.; de Vrie, A. E.; Lee, J. Inelastic scattering of K by Br_2 in the energy range of 0-10 eV. <i>Chem. Phys.</i> 29, 399 (1978) The Netherlands
137	A03 $Hu + H_2$	T	0.5-1.0 eV	Ego, L.; Schlat-Kurti, G. G.; Schreger, R. Analytic approximations to distorted wave integrals, for inelastic & molecular collision cross sections. <i>Chem. Phys.</i> 25, 53 (1978) United Kingdom
138	A14 $K + Br_2$ A03 $K + Br_2$ A04 $K + Br_2$ A06 $K + Br_2$	T	0-2000 eV	Evans, C. W. A. Total cross sections for $K + Br_2$ at relative energies between 0 and 2000 eV. <i>Chem. Phys.</i> 30, 27 (1978) The Netherlands
139	A17 $Li^+ + CH$ A02 $Li^+ + CC$	T	4 eV	Thomas, L. D.; Kraemer, W. P.; Dierksen, G. P. F. Classical trajectory study on an ab initio CI vibrational potential energy surface for $Li^+ - CH$ differential cross sections. <i>Chem. Phys.</i> 30, 33 (1978) West Germany
140	H06 $Hu + H_2$	T	730-544 Å	Itikawa, Y. Vibrational-rotational structure in the angular distribution and intensity of photoelectrons from diatomic molecules. <i>Chem. Phys.</i> 30, 105 (1978) Japan
141	H05 $Hu + NH$, H10 $Hu + NH$	E	254 nm	Baranowski, A. P.; Miller, R. G.; McDonald, J. R. Laser induced photodissociation of NH at 254 nm. I. Primary products, photofragment energy distributions and reactions of intermediates. <i>Chem. Phys.</i> 30, 115 (1978) United States
142	H05 $Hu + NH$, H10 $Hu + NH$	E	254 nm	McDonald, J. R.; Miller, R. G.; Baranowski, A. P. Laser induced photodissociation of NH at 254 nm. II. Reactions of $NH(4s)$ with NH , HCl and hydrocarbon species. <i>Chem. Phys.</i> 30, 133 (1978) United States
143	A17 CH_2^+	T	Under	Jelley, C.; Lorquet, J. C. Excited states of gaseous ions. VI. Potential energy surfaces of CH_2^+ . <i>Chem. Phys.</i> 30, 169 (1978) Belgium
144	A02 $Li^+ + Na$ A06 $Li^+ + Na$	T	384-767 eV	Grosser, J. Monoelement charge transfer: semiclassical calculation of differential cross sections. <i>Chem. Phys.</i> 30, 187 (1978) The Netherlands
145	A10 Under	T	Under	Bhattacharjee, R. C.; Forst, M. A modified statistical theory of collisional energy transfer in thermal reactions. <i>Chem. Phys.</i> 30, 217 (1978) Canada
146	A14 $D + HI$	T	1.0-1.5 eV	Fung, K. H.; Freed, R. F. Franck-Condon theory of reactive scattering. <i>Chem. Phys.</i> 30, 245 (1978) United States
147	A14 $HF + Na$; $HCl + Na$	E	350 K	Blackwell, D. A.; Polanyi, J. C.; Slone, J. J. Effect of changing reagent energy. IX. Dependence of reaction rate on rotation excitation in $NH(j,v) + Na + NaH(X,v,Cl)$. <i>Chem. Phys.</i> 30, 259 (1978) Canada
148	E03 $O + NO$	E	25-50 eV	Frucholz, R. P.; Blonder, R.; Kuppermann, A. Doublet-quartet transitions in nitric oxide by low-energy variable-angle electron scattering. <i>Chem. Phys.</i> 30, 315 (1978) United States
149	A14 Review	T	Under	Koroch, N. J.; Levine, R. D. Joint products' state distributions in molecular collisions. <i>Chem. Phys.</i> 30, 333 (1978) Israel
150	A03 $Li^+ + H_2$	T	1-7 eV	Poppo, D.; Böttner, R. Inelastic collisions of Li^+ with H_2 molecules: a comparison of experimental results with trajectory studies. <i>Chem. Phys.</i> 30, 375 (1978) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
151	A93 $H_2^+ + He; D_2^+ + He$ All $H_2^+ + He; D_2^+ + He$	T	0.3-1.5 eV	Billing, G. D. Cross sections and rate constants for rotational and vibrational excitation of H_2 and D_2 colliding with He . <i>Chem. Phys.</i> 30, 367 (1978) Denmark
152	All $H_2^+ + H_2; Cl_2^+ + Cl_2$	T	120-600 K	Byeland, C.; Billing, G. D. Rotational relaxation of homonuclear diatomic molecules by classical trajectory computation. <i>Chem. Phys.</i> 30, 401 (1978) Denmark
153	NE5 $hv + Br_2; hv + IBr$	E	560-444 nm	Peterman, A. D.; Smith, I. W. M. Yield of $Br(^2P_{1/2})$ as a function of wavelength in the photodissociation of Br_2 and IBr . <i>Chem. Phys.</i> 30, 407 (1978) United Kingdom
15	A17 Review	T	Under	Benguria, R.; Lieb, E. R. Many-body atomic potentials in Thomas-Fermi theory. <i>Ann. Phys. (NY)</i> 110, 34 (1978) United States
155	C74 Review GDC Review	T	0-20 eV	Viehland, L. V.; Hanson, E. A. Gaseous ion mobility and diffusion in electric fields of arbitrary strengths. <i>Ann. Phys. (NY)</i> 110, 207 (1978) United States
156	A17 $H + F$	T	Under	Wilson, S. Diagrammatic perturbation theory. Potential curves for the hydrogen fluoride molecule. <i>Mol. Phys.</i> 35, 1 (1978) United States
157	A86 Under	T	Under	Shipsey, E. J. Approximation methods for certain charge-transfer collisions. <i>Mol. Phys.</i> 35, 81 (1978) United States
158	E85 $e + N_2; e + N_2^+$ NE6 $hv + N_2; hv + N_2^+$	T	Under	Liu, J. V.; Smith, V. M., Jr. Theoretical Compton profiles and momentum distributions for $N_2(^1\Sigma_g^-)$ and $N_2(^2\Sigma_g^-)$. <i>Mol. Phys.</i> 35, 145 (1978) West Germany
159	NP2 Under	T	Under	Brickmann, J. Vibronic coupling in molecular excited states. Model approach to emission and absorption spectra. <i>Mol. Phys.</i> 35, 155 (1978) West Germany
159	AC3 $He + N_2; He + CO_2$	T	0.4-1.2 eV	Schatz, G. C. A direct method for determining moments of final state distributions in molecular collisions. <i>Mol. Phys.</i> 35, 477 (1978) United States
161	AC3 Under A14 Under	T	Under	Cox, P. A.; McClelland, G. M.; Gerschbach, D. R. Angular momentum polarization in molecular collisions: Classical and quantum theory for measurements using resonance fluorescence. <i>Mol. Phys.</i> 35, 841 (1978) United States
162	A93 $He + N_2$	T	0.9-7.6 eV	Eno, L.; Seltzer, R. The stationary-point structure and calculation of distorted wave integrals in atom-ion scattering. <i>Mol. Phys.</i> 35, 601 (1978) United Kingdom
163	NP8 $hv + I_2$	E	5145 Å	Clark, R.; McCaffery, A. J. Laser fluorescence studies of molecular iodine. I. Spectral assignments of the 5145 Å fluorescence. <i>Mol. Phys.</i> 35, 609 (1978) United Kingdom
164	NP8 $hv + I_2$	E	5145 Å	Clark, R.; McCaffery, A. J. Laser fluorescence studies of molecular iodine. II. Relaxation of oriented ground and excited molecules. <i>Mol. Phys.</i> 35, 617 (1978) United Kingdom
166	NP6 $hv + SiC$	E	12-18 eV	Colbourn, E. A.; Dyke, J. R.; Lee, E. P. F.; Morris, A.; Trichler, I. R. The vacuum ultraviolet photoelectron spectrum of the $SiC(^3\Sigma^-)$ molecule. <i>Mol. Phys.</i> 35, 873 (1978) United Kingdom
166	A82 $Ar^+ + CH_4$ All $Ar^+ + C_2H_2$	E	50-126 meV	Froster, J. L.; Winkler, D. M. Differential elastic and quenching cross sections for $Ar^+(^2P)$ and $CO_2(^1\Sigma_g^-)$. <i>Mol. Phys.</i> 35, 927 (1978) United States
167	A82 $H^+ + Ar; CH_4 + Ar; He + He$	T	30° K	Connor, J. N. L.; Jakobetz, W. Rainbow scattering in atomic collisions: A Regge pole analysis. <i>Mol. Phys.</i> 35, 949 (1978) United Kingdom

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
168	E83 $e + \text{Na}^+$ E87 $e + \text{Na}^+$	T	30-300 eV	Marshall, D. R. 1-changing electron impact cross sections for high Rydberg atoms with application to helium experiments. <i>Helv. Phys.</i> 35, 1211 (1978) United States
169	A11 $\text{He} + \text{H}_2$; $\text{He} + \text{D}_2$; $\text{He} + \text{T}_2$	T	0-100 eV	Gerber, R. B.; Zaritsky, M. C.; Nimglavin, C. Optical potential approach to the calculation of vib-rotational relaxation rates. <i>Helv. Phys.</i> 35, 1247 (1978) Israel
170	A11 $\text{Li} + \text{H}_2$	T	0-10 eV	Zaritsky, M. C.; Nimglavin, U.; Gerber, R. B. Vib-rotational relaxation in $\text{Li} + \text{H}_2$ collisions. Calculations with the optical-potential method. <i>Helv. Phys.</i> 35, 1269 (1978) Israel
171	A14 $\text{F} + \text{H}_2$	T	30° K	Connor, J. M. L.; Jacobetz, W.; Marx, J. The $\text{F} + \text{H}_2$ ($v=0$) + FH ($v^+ < 3$) + H reaction: (quantum collisional reaction probabilities on three different potential energy surfaces. <i>Helv. Phys.</i> 35, 1301 (1978) United Kingdom
172	A13 Review	E	53-75 °C	Pelley, C. W.; Hanson, B. The proton affinities of the halogen acids. <i>Int. J. Mass Spectrom. Ion Phys.</i> 26, 49 (1978) United States
173	C88 $\text{H}_2^+ + \text{Na}$; $\text{O}_2^+ + \text{Na}$	E	0-50 eV	Reverd-Ullrich, K.; Rathur, D.; Rasted, J. E. Energy distributions of diatomic molecular positive ions in a drift tube. <i>Int. J. Mass Spectrom. Ion Phys.</i> 26, 51 (1978) United Kingdom
174	A84 $\text{SF}_6^+ + \text{He}$	E	3-2 eV	Refauy, K. M. A.; Franklin, J. L. Collisional decomposition of SF_6^+ . <i>Int. J. Mass Spectrom. Ion Phys.</i> 26, 125 (1978) United States
175	H66 $\text{He} + \text{CS}_2$; $\text{He} + \text{COS}$	E	1230-670 Å	Frey, R.; Gatchev, B.; Pech, M., G. E.; Pollak, H.; Schlegel, E. W. Photoionization resonance study of the X tilde ($^2\Sigma^+$), A tilde ($^2\Sigma^+$), B tilde ($^2\Pi^+$) and C tilde ($^2\Pi^+$) states of CS_2^+ and COS^+ . <i>Int. J. Mass Spectrom. Ion Phys.</i> 26, 137 (1978) West Germany
176	A13 $\text{H}_2\text{O}^+ + \text{H}_2$	E	3.1-2.6 eV	Yencho, A. J.; Pacak, V.; Norman, Z. Kinetics of the reaction $\text{H}_2\text{O}^+(\text{H}_2, \text{H})\text{H}_2\text{O}^+$. <i>Int. J. Mass Spectrom. Ion Phys.</i> 26, 205 (1978) Czechoslovakia
177	D82 Review	E	Under	Pivin, J. C.; Reques-Carnes, C.; Stedon, G. Variation des rendements d'ionisation ionique secondaire des alliages Bi-Cr, Fe-Cr, Fe-Ni en fonction de la teneur en solute. <i>Int. J. Mass Spectrom. Ion Phys.</i> 26, 219 (1978) France
178	E85 $e + \text{H}_2$; $e + \text{H}_2$; $e + \text{D}_2$; $e + \text{CO}$; $e + \text{NO}$	E	0.94-1.0 keV	Braha, B.; de Frances, G. Investigation of ion pairs from fast decay processes of doubly-charged molecular ions. <i>Int. J. Mass Spectrom. Ion Phys.</i> 26, 231 (1978) West Germany
179	A86 $\text{He}^+ + \text{CH}_2$; $\text{He}^+ + \text{H}_2\text{O}$; $\text{He}^+ + \text{H}_2\text{O}_2$; $\text{Ar}^+ + \text{H}_2$	E	30° K	Mauclair, G.; Boral, R.; Marx, F. ICR determination of kinetically excited ions produced in water and methane by charge transfer from thermal rare gas ions. <i>Int. J. Mass Spectrom. Ion Phys.</i> 26, 209 (1978) France
180	A16 $\text{O}^+ + \text{H}_2$	E	0.13-0.5 eV	Rayner, S. W.; Moruzzi, J. L. Electron detachment studies between O^+ ions and nitrogen. <i>Int. J. Mass Spectrom. Ion Phys.</i> 26, 321 (1978) United Kingdom
181	A13 Review	E	30° K	Adams, N. G.; Smith, D.; Grief, D. Reactions of $\text{N}(\text{HCO})^+$ ions with molecules at 300 K. <i>Int. J. Mass Spectrom. Ion Phys.</i> 26, 405 (1978) United Kingdom
182	D83 N Seq	T		Bento, D.; Leopold, J. G. Classical Stark ionization threshold electric field and energy for hydrogenic ions. <i>J. Phys. B</i> 11, L6 (1978) United Kingdom

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
163	E92 $e + \text{Ne}$ E93 $e + \text{Ne}$	T	22-23 eV	Hesbet, R. K. Resonances, coop effects and a virtual state in $e\text{-Ne}$ scattering near the $n=3$ thresholds. <i>J. Phys. B</i> 11, L21 (1978) United States
164	E93 $e + \text{K}; e + \text{Rb}; e + \text{Cs}$ E95 $e + \text{K}; e + \text{Rb}; e + \text{Cs}$	T	33-600 eV	Peterkop, R.; Lipinich, A. Electron impact excitation of autoionising levels in heavy alkali atoms. <i>J. Phys. B</i> 11, L27 (1978) Soviet Union
165	A17 $\text{Be} + \text{Xe}$	E	Under	Kielkopf, J. The interaction of excited states of beryllium with xenon atoms determined by spectral-line contour measurements. <i>J. Phys. B</i> 11, 23 (1978) United States
166	B03 H Seq	T		Banks, D.; Leopold, J. G. Ionisation of highly-excited atoms by electric fields I. Classical theory of the critical electric field for hydrogenic ions. <i>J. Phys. B</i> 11, 37 (1978) United Kingdom
167	B05 $\text{hv} + \text{N}_2\text{C}$ B08 $\text{hv} + \text{N}_2\text{C}$	E	2800-3300 Å	Lee, L. C.; Oren, L.; Phillips, L.; Judge, B. L. Cross sections for production of the $\text{OH}(^2\Pi^+ + \text{X}^+)$ fluorescence by photodissociation of N_2O vapour. <i>J. Phys. B</i> 11, 47 (1978) United States
168	A10 $\text{Li} + \text{Ne}$	T	0.005-0.01 eV	Bald, R. N. G.; Rankin, R. F. The eigenphase formulation of fine-structure transition cross sections. <i>J. Phys. B</i> 11, 55 (1978) United Kingdom
169	A10 $\text{C}^+ + \text{N}$	T	50-1000 K	Mural, C.; Lopez, V.; McCarrroll, R.; Rierra, A.; Mahaux, P. Collision models of intramultiplet transitions at thermal energies. <i>J. Phys. B</i> 11, 71 (1978) France
190	A03 $\text{Ne} + \text{Ne}$	T	535-2000 eV	Geayacq, J. P. Theoretical study of Ne-Ne collisions. <i>J. Phys. B</i> 11, 85 (1978) France
191	A03 $\text{Ne}^{2+} + \text{N}; \text{Ne}^+ + \text{N}$ A06 $\text{Ne}^{2+} + \text{N}; \text{Ne}^+ + \text{N}$	E	4-343 keV	Shah, N. B.; Gilbody, H. B. Electron capture and $\text{Ne}(2s)$ formation in fast $\text{Ne}^{2+}\text{-N}$ and $\text{Ne}^+\text{-N}$ collisions. <i>J. Phys. B</i> 11, L21 (1978) United Kingdom
192	A06 $\text{Ne}^+ + \text{Ne}; \text{Ar}^+ + \text{Ar}$	E T	1-10 keV	Hagerberg, R.; Stefansson, Y.; Elford, N. Y. Measurement of the symmetric charge-exchange cross section in helium and argon in the impact energy range 1-10 keV. <i>J. Phys. B</i> 11, 133 (1978) Norway
193	E03 $e + \text{N}$	T	156-300 eV	Winters, K. M. On distorted-wave approximations for excitation. <i>J. Phys. B</i> 11, L49 (1978) Belgium
194	E05 $e + \text{Hg}$	E	33-200 eV	Kerstensen, F.; Schneider, H. Absolute cross sections for single and double ionisation of Hg atoms by electron impact. <i>J. Phys. B</i> 11, 167 (1978) West German
195	E02 $e + \text{N}_2; e + \text{CO}$ E03 $e + \text{N}_2; e + \text{CO}$ E04 $e + \text{N}_2; e + \text{CO}$ E05 $e + \text{N}_2; e + \text{CO}$	E	6-16 eV	Brunt, J. R. M.; King, G. C.; Reed, F. W. Excitation of carbon monoxide and nitrogen molecules by electron impact at energies below 16 eV; studies of resonances in the excitation functions of metastable and ultraviolet-emitting levels. <i>J. Phys. B</i> 11, 173 (1978) United Kingdom
196	A03 $\text{N}^+ + \text{N}$	T	10-700 keV	Davangan, D. P. A model for ion-atom collisions at intermediate energies. <i>J. Phys. B</i> 11, L37 (1978) India
197	A03 $\text{Ne}^+ + \text{Ne}$	T	0-1 a.u.	Fritsch, U.; Wille, U. Approximate closed-form solution of a two-state model for rotationally induced excitation in atomic collisions. <i>J. Phys. B</i> 11, L43 (1978) West Germany
198	A06 $\text{N}^+ + \text{Ne}^+$ A07 $\text{N}^+ + \text{Ne}^+$	E	40-366 keV	Angel, G. C.; Dunn, R. F.; Sewell, R. C.; Gilbody, H. B. Ionisation and charge transfer in fast $\text{N}^+\text{-Ne}^+$ collisions; further measurements of improved accuracy. <i>J. Phys. B</i> 11, L49 (1978) United Kingdom

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199	B01 Undef	T		Propin, R. Stark effect for the rotational levels of a diatomic polar molecule in a strong field. <i>J. Phys. B</i> 11, 237 (1978) Soviet Union
200	E02 $e + H_2; e + He$	T	136-400 eV	Vanderpoorten, R.; Winters, K. M. A comparison of local optical potentials for elastic electron-atom scattering. <i>J. Phys. B</i> 11, 281 (1978) Belgium
201	E02 $e + H$	T	0.1-10.0 eV	Seaton, N. J.; Stoenen-Clark, L. Effective potentials for electron-atom scattering below inelastic thresholds II. The finite-range problem. <i>J. Phys. B</i> 11, 293 (1978) United Kingdom
202	E03 $e + H_2; e + He$	T	20-1000 eV	Srivastava, N.; Rai, B. K. Electron-impact excitation of H and He. <i>J. Phys. B</i> 11, 305 (1978) India
203	E03 $e + He$	T	23-22 eV	Fon, B. C.; Derrington, K. A.; Burke, P. G.; Kingston, A. E. Electron excitation functions for the 2^3S , 2^3P , 2^3P and 2^1P states of helium between the $n=2$ and $n=3$ excitation thresholds. <i>J. Phys. B</i> 11, 325 (1978) United Kingdom
204	E05 $e + C^+; e + C^{2+}; e + O^+; e + O^{2+}$	E	45-500 eV	Headon, R.; Birkhauser, K.; Nasted, J. B. Ionisation of positive ions by electrons in the hollow-beam trap. <i>J. Phys. B</i> 11, 331 (1978) United Kingdom
205	E04 $e + H_2$ E05 $e + H_2$	E	23-40 eV	Kollmann, K. Energetic protons from outcatalysing states of H_2 . <i>J. Phys. B</i> 11, 335 (1978) West Germany
206	E03 $e + H_2; e + D_2$ E04 $e + H_2; e + D_2$	E	15-100 eV	Karalis, C.; Harting, E. Electron impact dissociation cross sections in hydrogen and deuterium, leading to Balmer alpha and beta emission. <i>J. Phys. B</i> 11, 357 (1978) Australia
207	R06 $h\nu + H_2$	T	Undef	Chang, E. S. Angular distributions of photoelectrons with analysis on the rotational states of H_2 . <i>J. Phys. B</i> 11, 409 (1978) United Kingdom
208	E03 $e + H$ Seq	T	Undef	Hayes, W. A.; Seaton, N. J. Resonances in $1s-2s$ and $1s-2p$ collision strengths for electron impact excitation of hydrogenic ions. <i>J. Phys. B</i> 11, 475 (1978) United Kingdom
209	E03 $e + H_2$ E16 $e + H_2$	E	12-17 eV	Bose, N. Excitation function of a $^2I(u)^+ \rightarrow b^2I(u)^+$ light emission in H_2 measured by monoenergetic electrons. <i>J. Phys. B</i> 11, 483 (1978) West Germany
210	E03 $e + H_2; e + D_2$ E04 $e + H_2; e + D_2$	E	20-40 eV	Glass-Maujean, N. Electron impact dissociation of H_2 and D_2 studied from the outcoming signals and by the Doppler-profile technique. <i>J. Phys. B</i> 11, 491 (1978) France
211	R06 $h\nu + H$	T	Undef	Karalis, E. Two-photon ionisation of atomic hydrogen simultaneously with one-photon ionisation. <i>J. Phys. B</i> 11, 441 (1978) Soviet Union
212	A02 $Cl^{2+} + Au; Cl^{2+} + Au; Br^{2+} + Au;$ $Br^{2+} + Au; Au^{2+} + Au; Au^{2+} + Au$ A10 $Cl^{2+} + Au; Cl^{2+} + Au; Br^{2+} + Au;$ $Br^{2+} + Au; Au^{2+} + Au; Au^{2+} + Au$	E	2-16 MeV	Krauss, M.; Petersen, P. M. Measurements of differential single-scattering cross sections of heavy ions at MeV energies on solid targets. <i>J. Phys. B</i> 11, 465 (1978) Denmark
213	A03 $H^+ + H; He^{2+} + H$ A06 $H^+ + H; He^{2+} + H$	T	25-60 keV	Morrison, M. G.; Oph, U. An impact-parameter method for heavy-particle collisions involving one electron I. Theory and sample results on H^+-H and $He^{2+}-H$ collisions. <i>J. Phys. B</i> 11, 473 (1978) United Kingdom
214	A03 $H^+ + H_2$ A10 $H^+ + H_2$	E	19 eV	Herman, V.; Scheidt, M.; Linder, F. Rotational and vibrational excitation in low-energy H^+-H_2 scattering experiments. <i>J. Phys. B</i> 11, 493 (1978) West Germany

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
215	A86 Li ⁺ + He; Li ⁺ + K; Li ⁺ + Pb; Li ⁺ + Ca; Li ⁺ + H; Li ⁺ + Mg; Na ⁺ + K; Na ⁺ + Pb; Na ⁺ + Ca; Na ⁺ + H; Na ⁺ + Mg; K ⁺ + Pb; K ⁺ + Ca; K ⁺ + H; K ⁺ + Mg; Pb ⁺ + Ca; Pb ⁺ + H; Pb ⁺ + Mg; Ca ⁺ + H; Ca ⁺ + Mg	T	Under	Bottcher, C. A simple theory of nearly symmetric charge transfer. J. Phys. B 11, 287 (1978) United Kingdom
216	E82 e + H	T	1-200 eV	Fon, B. C.; Morie, P. G.; Kingston, A. E. Elastic scattering on electrons by atomic hydrogen. J. Phys. B 11, 521 (1978) United Kingdom
217	E85 e + Ca	E	30-500 eV	Pajcsev, V.; Ciftly, T. U.; Boud, L.; Rose, K. J. High-resolution ejected-electron spectrum of calcium vapour autoionizing levels excited by low-energy electron impact. J. Phys. B 11, 231 (1978) United Kingdom
218	E85 e + B ²⁺ ; e + C ²⁺ ; e + C ³⁺ ; e + N ²⁺ ; e + O ²⁺ ; e + Na ²⁺ ; e + O ³⁺ ; e + Na ³⁺	T	Under	Snopce, D. H.; Golden, L. E. Electron impact ionization results by the Z = infinity method. J. Phys. B 11, 541 (1978) United States
219	E85 e + He E17 e + He	E	2-5 keV	Yagishita, A.; Omoto, K.; Uchiyo, K.; Suzuki, N.; Kishi, F. Ejected-electron spectroscopy of helium by low-energy lithium-ion impact. J. Phys. B 11, L111 (1978) Japan
220	A87 H ⁺ + He; H ⁺ + Ar; H ₂ ⁺ + He; H ₂ ⁺ + Ar	E	0.2-0.5 MeV	Chiu, K. C. R.; McCowan, J. W.; Mitchell, J. B. A. Support for the charge transfer to the continuum theory for H ⁺ and H ₂ ⁺ -He collisions. J. Phys. B 11, L117 (1978) Canada
221	A83 He ⁺ + He A26 He ⁺ + He	T	2-3 keV	Stern, B.; Gaspard, J. P.; Silin, L. Quantal treatment of one-electron (n = 2 levels) and two-electron excitations of He in He ⁺ on He collisions at a few keV. J. Phys. B 11, 653 (1978) France
222	A87 He ²⁺ + Ni; He ²⁺ + Cu; H ⁺ + Cu	T	3.5-2.0 MeV	Pauli, H.; Trautmann, D. On the Coulomb ionization of K-shell electrons. J. Phys. B 11, 667 (1978) Switzerland
223	A81 Under	T	Under	Compos, D.; Kruger, H. On the impact-parameter treatment of atomic collisions. J. Phys. B 11, 687 (1978) West Germany
224	A86 B ²⁺ + H; C ²⁺ + H	T	1.1-6.0 keV	Olson, R. E.; Shipsey, E. J.; Braune, J. C. Charge-transfer cross sections for B ²⁺ , C ²⁺ + H collisions. J. Phys. B 11, 699 (1978) United States
225	E83 e + H; e + He ⁺	T	50-300 eV	Belujs, K. L.; McDowell, W. R. C.; Fergan, L. A.; Myerscough, V. P. Electron impact excitation of hydrogenic systems in a distorted-wave model. J. Phys. B 11, 715 (1978) United Kingdom
226	H86 He + He	E	20-200 eV	Harr, G. V. The absolute photoionization cross section curve for atomic helium. J. Phys. B 11, L121 (1978) United Kingdom
227	H86 He + Xe	E T	37-80 eV	van der Vlist, W. J.; Cheng, T. W. Intershell correlation in double-electron ejection from the outermost shell of Xe. J. Phys. B 11, L125 (1978) The Netherlands
228	H86 He + Ca	T	Under	Gentier, Y.; Trahin, P. Four-photon resonant ionization of calcium. J. Phys. B 11, L131 (1978) France
229	H86 He + O ₂ H84 He + O ₂	E	13-48 eV	Guyon, P. H.; Boer, T.; Ferreira, L. F. A.; Henner, I.; Tache-Fouhalid, A.; Better, R.; Gervais, T. R. Observation of dissociative states of O ₂ ⁺ by threshold photoelectron-photoion coincidence. J. Phys. B 11, L141 (1978) France
230	E85 e + H; e + He ⁺	T	20-60 eV	Rudge, M. R. M. Spin effects in e-H ionization. J. Phys. B 11, L149 (1978) United Kingdom

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231	AlO $\text{K}^+ + \text{H}_2$ AlO $\text{K}^+ + \text{H}_2$	T	0.1-1.0 keV	Sigmund, P. Scaling law for electronically elastic ion-molecule collisions in the sudden approximation. <i>J. Phys. B</i> 11, L145 (1978) Denmark
232	NaO $\text{He} + \text{Na}$	E	24000-25000 cm^{-1}	Doong, H. T.; Plazard, J.-; Vialle, J.-L. Experimental separation and study of the two partial photoionization cross sections $\text{Sig}_{\text{Na}}(\text{p},\text{s})$ and $\text{Sig}_{\text{Na}}(\text{p},\text{d})$ from the 3p state of sodium. <i>J. Phys. B</i> 11, 797 (1978) France
233	AlO $\text{H}^+ + \text{Al}; \text{H}^+ + \text{PERT}$	T	0.16-4.0 GeV	Davidovic, D. W.; Micolulitch, S. L.; Harrington, P. M. The K-shell ionization of atoms by relativistic protons. <i>J. Phys. B</i> 11, 847 (1978) United Kingdom
234	AlO $\text{H}^+ + \text{H}_2$	E	35-200 keV	Neugbauer, T. P.; Uerline, P. M.; Saris, F. W.; Myrhauf, W. E. The production mechanism and spectral distribution of K NO X-rays in collisions of 35-200 keV $\text{H}^+\text{-H}$. <i>J. Phys. B</i> 11, 865 (1978) The Netherlands
235	AlO $\text{Fe}^{10+} + \text{H}; \text{Fe}^{10+} + \text{H}; \text{Fe}^{11+} + \text{H};$ $\text{Fe}^{12+} + \text{H}; \text{Fe}^{13+} + \text{H}; \text{Fe}^{14+} + \text{H};$ $\text{Fe}^{15+} + \text{H}; \text{Fe}^{16+} + \text{H}; \text{Fe}^{17+} + \text{H};$ $\text{Fe}^{18+} + \text{H}; \text{Fe}^{19+} + \text{H}; \text{Fe}^{20+} + \text{H};$ $\text{Fe}^{21+} + \text{H}; \text{Fe}^{22+} + \text{H}; \text{Fe}^{23+} + \text{H};$ $\text{Fe}^{24+} + \text{H}; \text{Fe}^{25+} + \text{H}; \text{Fe}^{26+} + \text{H};$ $\text{Fe}^{27+} + \text{H}; \text{Fe}^{28+} + \text{H}; \text{Fe}^{29+} + \text{H};$ $\text{Fe}^{30+} + \text{H}; \text{Fe}^{31+} + \text{H}; \text{Fe}^{32+} + \text{H};$ $\text{Fe}^{33+} + \text{H}; \text{Fe}^{34+} + \text{H}; \text{Fe}^{35+} + \text{H};$ $\text{Fe}^{36+} + \text{H}; \text{Fe}^{37+} + \text{H}; \text{Fe}^{38+} + \text{H};$ $\text{Fe}^{39+} + \text{H}; \text{Fe}^{40+} + \text{H}; \text{Fe}^{41+} + \text{H};$ $\text{Fe}^{42+} + \text{H}; \text{Fe}^{43+} + \text{H}; \text{Fe}^{44+} + \text{H};$ $\text{Fe}^{45+} + \text{H}; \text{Fe}^{46+} + \text{H}; \text{Fe}^{47+} + \text{H};$ $\text{Fe}^{48+} + \text{H}; \text{Fe}^{49+} + \text{H}; \text{Fe}^{50+} + \text{H};$ $\text{Fe}^{51+} + \text{H}; \text{Fe}^{52+} + \text{H}; \text{Fe}^{53+} + \text{H};$ $\text{Fe}^{54+} + \text{H}; \text{Fe}^{55+} + \text{H}; \text{Fe}^{56+} + \text{H};$ $\text{Fe}^{57+} + \text{H}; \text{Fe}^{58+} + \text{H}; \text{Fe}^{59+} + \text{H};$ $\text{Fe}^{60+} + \text{H}; \text{Fe}^{61+} + \text{H}; \text{Fe}^{62+} + \text{H};$ $\text{Fe}^{63+} + \text{H}; \text{Fe}^{64+} + \text{H}; \text{Fe}^{65+} + \text{H};$ $\text{Fe}^{66+} + \text{H}; \text{Fe}^{67+} + \text{H}; \text{Fe}^{68+} + \text{H};$ $\text{Fe}^{69+} + \text{H}; \text{Fe}^{70+} + \text{H}; \text{Fe}^{71+} + \text{H};$ $\text{Fe}^{72+} + \text{H}; \text{Fe}^{73+} + \text{H}; \text{Fe}^{74+} + \text{H};$ $\text{Fe}^{75+} + \text{H}; \text{Fe}^{76+} + \text{H}; \text{Fe}^{77+} + \text{H};$ $\text{Fe}^{78+} + \text{H}; \text{Fe}^{79+} + \text{H}; \text{Fe}^{80+} + \text{H};$ $\text{Fe}^{81+} + \text{H}; \text{Fe}^{82+} + \text{H}; \text{Fe}^{83+} + \text{H};$ $\text{Fe}^{84+} + \text{H}; \text{Fe}^{85+} + \text{H}; \text{Fe}^{86+} + \text{H};$ $\text{Fe}^{87+} + \text{H}; \text{Fe}^{88+} + \text{H}; \text{Fe}^{89+} + \text{H};$ $\text{Fe}^{90+} + \text{H}; \text{Fe}^{91+} + \text{H}; \text{Fe}^{92+} + \text{H};$ $\text{Fe}^{93+} + \text{H}; \text{Fe}^{94+} + \text{H}; \text{Fe}^{95+} + \text{H};$ $\text{Fe}^{96+} + \text{H}; \text{Fe}^{97+} + \text{H}; \text{Fe}^{98+} + \text{H};$ $\text{Fe}^{99+} + \text{H}; \text{Fe}^{100+} + \text{H};$ AlO $\text{Fe}^{10+} + \text{H}; \text{Fe}^{10+} + \text{H}; \text{Fe}^{11+} + \text{H};$ $\text{Fe}^{12+} + \text{H}; \text{Fe}^{12+} + \text{H}; \text{Fe}^{13+} + \text{H};$ $\text{Fe}^{14+} + \text{H}; \text{Fe}^{14+} + \text{H}; \text{Fe}^{15+} + \text{H};$ $\text{Fe}^{16+} + \text{H}; \text{Fe}^{16+} + \text{H}; \text{Fe}^{17+} + \text{H};$ $\text{Fe}^{18+} + \text{H}; 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M.; Graham, W. C.; Pyle, R. V.; Schlechter, A. S.; Stearns, J. W.; Olson, K. E. Electron-capture and impact-ionization cross sections for partially stripped iron ions colliding with atomic and molecular hydrogen. <i>J. Phys. B</i> 11, 875 (1978) United States
236	AlO $\text{e} + \text{He}$	T	100-1000 eV	Jhaumar, S. L.; Khara, S. P.; Kaur, A., Jr. Elastic scattering of electrons on He atoms at intermediate energies. <i>J. Phys. B</i> 11, 887 (1978) India
237	AlO $\text{e} + \text{He}$ AlO $\text{e} + \text{He}$ AlO $\text{e} + \text{He}$	E	57-61 eV	Roy, S.; Bering, A.; Carotte, J.-D. Further data on the post-collision interaction in electron scattering by helium. <i>J. Phys. B</i> 11, 895 (1978) Canada
238	AlO $\text{C}^{1+} + \text{H}; \text{Ti}^{1+} + \text{H}; \text{C}^{2+} + \text{H}; \text{Ti}^{2+} + \text{H};$ H_2	E	0.5-14.0 keV	Mutt, W. L.; McCullough, R. W.; Gilbody, H. B. Electron capture by C^{1+} and Ti^{2+} ions in H and H_2 . <i>J. Phys. B</i> 11, L181 (1978) United Kingdom
239	AlO $\text{H}^{1+} + \text{H}; \text{O}^{2+} + \text{H}; \text{F}^{9+} + \text{H}; \text{C}^{6+} + \text{H};$ $\text{Ar}; \text{H}^{1+} + \text{Ar}; \text{F}^{9+} + \text{Ar}; \text{F}^{9+} + \text{Ar};$ $\text{Cl}^{17+} + \text{Ar}$	T	14-100 MeV	Lin, C. D. Electron capture for ion-atom collisions at intermediate energies. <i>J. Phys. B</i> 11, L185 (1978) United States
240	AlO $\text{C}^{1+} + \text{H}$	T	0.1-1.0 e.u.	Greenland, P. T. Low-velocity $\text{C}^{1+} + \text{H}(1s)$ charge transfer: the two-state approximation. <i>J. Phys. B</i> 11, L191 (1978) United Kingdom
241	AlO $\text{He} + \text{H}_2; \text{He} + \text{O}_2; \text{He} + \text{NO}; \text{He} + \text{H}_2\text{O}$ AlO $\text{He} + \text{H}_2; \text{He} + \text{O}_2; \text{He} + \text{NO}; \text{He} + \text{H}_2\text{O}$	E	50-340 Å°	Cole, B. E.; Dexter, R. W. Photoabsorption and photoionization measurements on some atmospheric gases in the wavelength region 50-340 Å°. <i>J. Phys. B</i> 11, 1011 (1978) United States
242	AlO Under AlO Under	T	Under	Crothers, D. S. P. Stoeckelberg phases: the three-parameter exponential model. <i>J. Phys. B</i> 11, 1025 (1978) United Kingdom

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254	M06 $2h\nu + Li; 2h\nu + Na; 2h\nu + K; 2h\nu + Ca; 2h\nu + Rb$	T	Under	Nichols, G.; Grossmann, E. M. A.; van der Ziel, R. J. Formulas for two-photon ionisation of alkali atoms via a resonant intermediate state. <i>J. Phys. B</i> 11, 1202 (1978) The Netherlands
255	A19 $Na + H_2$	T	0.004-0.05 eV	Amos, D.; Bottcher, C. Collisions between sodium atoms and nitrogen molecules: rotational excitation and fine-structure-changing collisions. <i>J. Phys. B</i> 11, 1249 (1978) United Kingdom
256	A03 $He^+ + H$ A08 $He^+ + H$	T	4-4000 keV	Bell, K. L.; Kingston, A. E. Excitation and ionisation processes in $He^+(1s) + H(1s)$ collisions. <i>J. Phys. B</i> 11, 1259 (1978) United Kingdom
257	A16 $Cl^- + Ne; Cl^- + Ar; Cl^- + Kr; Cl^- + Xe$	T	80-2000 eV	Fayeton, J.; Dhucq, B.; Berat, N. Study of electron-detachment and inelastic processes in Cl^- -rare-gas collisions. <i>J. Phys. B</i> 11, 1267 (1978) France
258	C06 $B + C; H + C; O + C; F + C; Ne + C; Na + C; Mg + C; Al + C; Ar + C; Fe + C$	T	17-300 keV/mm	Baudinot-Robinet, Y.; Dumont, P. D.; Garnit, M. P. Analysis of charge-state distributions of heavy ions in carbon foils and gases. <i>J. Phys. B</i> 11, 1291 (1978) Belgium
259	E03 $e + Be^+; e + Mg^+; e + Ca^+$	T	3-100 eV	Kennedy, J. V.; Hymanough, V. P.; McDevell, R. R. C. Electron impact excitation of the resonance lines of Be^+, Mg^+ and Ca^+ . <i>J. Phys. B</i> 11, 1303 (1978) United Kingdom
260	E02 $e + H^0$ E17 $e + H^0$	T	3.1-30.0 eV	Gallitis, N. The angular dependence of electron scattering by excited hydrogen atoms. <i>J. Phys. B</i> 11, 1279 (1978) Soviet Union
261	E05 $e + K$	E	6-80 eV	Hils, D.; Kleinpoppen, H. The ionisation of polarised potassium atoms by polarised electrons. <i>J. Phys. B</i> 11, 1283 (1978) United Kingdom
262	M06 $h\nu + Na^0; 2h\nu + Na^0$	T	2400-1100 Å	Loughlin, C. One- and two-photon ionisation of the 3s and 3p states of Na I. <i>J. Phys. B</i> 11, 1399 (1978) United States
263	M06 $h\nu + Na$	T	3-7.5 Ry	Aymar, M. Influence of core-polarisation effects on the photoionisation cross sections of the ground level and excited ns levels of neutral sodium. <i>J. Phys. B</i> 11, 1413 (1978) France
264	A07 Under	T	Under	Langenberg, A.; van Eck, J. A binary-encounter calculation with realistic velocity distribution of the target electron. <i>J. Phys. B</i> 11, 1425 (1978) The Netherlands
265	A07 $H^+ + C; H^+ + O; H^+ + Mg; H^+ + Al; H^+ + Fe; H^+ + Co; H^+ + Cu; H^+ + Zn; H^+ + Ge; H^+ + Se; H^+ + As$	T	13-16 ⁺ keV	Rumar, A.; Roy, S. N. Modified binary encounter model for proton impact K-shell ionisation of atoms. <i>J. Phys. B</i> 11, 1436 (1978) India
266	A03 $Na + Na; Na^+ + Na; Na^{2+} + Na$	E	0.3-400 keV	Anderson, T.; Boving, E.; Hedegard, P.; Olsen, J. L. Production of 2s vacancies in collisions of 0.3-400 keV Na^0 , Na^+ and Na^{2+} with Na. <i>J. Phys. B</i> 11, 1449 (1978) Denmark
267	A06 $Na^{2+} + H_2; Na^{2+} + H$	E	0.4-10.0 keV	Mutt, V. L.; McCullough, R. W.; Brady, K.; Shah, M. B.; Gilbody, H. B. Electron capture by Na^{2+} ions in collisions with H and H_2 at impact energies below 10 keV. <i>J. Phys. B</i> 11, 1457 (1978) United Kingdom
268	A06 $Na^{2+} + He; Na^{2+} + Ne; Na^{2+} + Ar; Na^{2+} + Kr; Na^{2+} + Xe$	E	63-200 keV	Suk, M. C.; Guilbault, A.; Mird, S. Cross sections for electron capture by Na^{2+} in He, Ne, Ar, Kr and Xe between 60 and 200 keV. <i>J. Phys. B</i> 11, 1463 (1978) Canada
269	A06 $H^0 + He^0$ A07 $H^0 + He^0$	E	63-100 keV	Angel, G. C.; Sawell, E. C.; Dunn, K. F.; Gilbody, H. B. Charge transfer and ionisation in fast H^0 - He^0 collisions: further measurements using a coincidence technique. <i>J. Phys. B</i> 11, 1257 (1978) United Kingdom

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270	E05 $e + Ar^+$	E	12-1000 eV	Woodruff, P. R.; Moblet, N. C.; Harrison, M. F. A. A measurement of the cross section for electron impact ionization of Ar^+ . <i>J. Phys. B</i> 11, L305 (1978) United Kingdom
271	E03 $e + D_2$ E04 $e + D_2$	E	237 eV	Boss, W. Direct coincident detection of two $M(2p)$ dissociation products from a doubly excited state of D_2^+ . <i>J. Phys. B</i> 11, L309 (1978) West Germany
272	A09 $H^+ + H^-$	T	5-2000 keV	Moore, J. C.; Banyard, K. E. Continuum-distorted-wave calculations for electron capture from hydrogen negative ions by fast protons. <i>J. Phys. B</i> 11, 1613 (1978) United Kingdom
273	E02 $e + H_2$ E03 $e + H_2$	T	3.6-10.0 eV	Klonover, A.; Kelder, U. At inelastic electron-molecule scattering theory including polarization: elastic scattering and rotational excitation of H_2 . <i>J. Phys. B</i> 11, 1623 (1978) Israel
274	A14 $H + O_2$	E	30° K	Ushida, M.; Ahimote, N.; Uchida, M. Formation of singlet state molecular oxygen in the reaction of $h + O_2$. <i>J. Phys. Chem.</i> 82, 10 (1978) Japan
275	A17 $H + Na$; $H + K$ H02 $h\nu + NO_2$; $h\nu + NO_2$; $h\nu + HNO_2$; $h\nu + H_2O_2$ A14 Review	T	H22 1-15 eV A14 190-1000 K	Munich, R. W.; Truhlar, J. G. Detailed study of the interaction of covalent and ionic states in collisions of Na and K with H . <i>J. Phys. Chem.</i> 82, 160 (1978) United States
276	A06 $Mg + H_2C^+$; $Mg + NH_2^+$; $Mg + h_3^+$ A13 $Mg + H_2O^+$; $Mg + H_3S^+$	E	1-20 eV	Radus, T. P.; Porter, R. F. An energy dependent kinetic study of the reactions of $Pd(g)$ atoms with a series of protonated ions. <i>J. Phys. Chem.</i> 82, 513 (1978) United States
277	A13 $Zn + H_2^+$; $Zn + D_2^+$; $Zn + CH_5D^+$ A06 $Zn + H_2^+$; $Zn + D_2^+$	E	3.04-20 eV	Po, P. L.; Radus, T. P.; Porter, R. F. An energy dependent kinetic study of the reactions of $Zn(g)$ atoms with $H_2^+(D_2^+)$ and CH_5D^+ . <i>J. Phys. Chem.</i> 82, 520 (1978) United States
278	A14 Under	T	Under	Thakur, A. K.; Rescigno, A.; Delisi, C. Stochastic theory of second-order chemical reactions. <i>J. Phys. Chem.</i> 82, 552 (1978) United States
279	A14 $Cl + H_2$; $Cl + D_2$	E	3.16-10.0 eV	Stevens, D. J.; Spicer, L. D. Characterization of hot chlorine atom reactions with hydrogen. <i>J. Phys. Chem.</i> 82, 627 (1978) United States
280	A14 Review E04 Review E05 Review	E	A14 785-825 °C E04; E05 10-60 eV	Grinley, R. T.; Foran, J. A.; Grindstaff, G. G. A mass spectroscopic study of the fragmentation of the lithium fluoride vapor system. <i>J. Phys. Chem.</i> 82, 632 (1978) United States
281	A13 Review	E	33° K	Hasegawa, K.; Neta, P. Rate constants and mechanisms of reaction of Cl_2^- radicals. <i>J. Phys. Chem.</i> 82, 684 (1978) United States
282	A11 Review	E	231 °C	Breckenridge, W. M.; Ramlund, A. M. Quenching of excited cadmium(1P_1) atoms by several molecules. Cross sections and chemical and physical exit channels. <i>J. Phys. Chem.</i> 82, 1474 (1978) United States
283	A11 $Cd^0 + H_2$; $Cd^0 + HD$; $Cd^0 + D_2$ A14 $Cd^0 + H_2$; $Cd^0 + HD$; $Cd^0 + D_2$	E	197-200 °C	Breckenridge, W. M.; Ramlund, A. M. Reaction of excited cadmium(1P_1) and cadmium(3P_1) atoms with H_2 , HD , and D_2 . Quenching cross sections and $CdH(Cd)$ fields. <i>J. Phys. Chem.</i> 82, 1484 (1978) United States
284	E02 Under	T	Under	Bonhoe, R. A.; Konaka, S. The second Born approximation for electron scattering. I. The high energy limit for small angle elastic scattering from atoms. <i>J. Chem. Phys.</i> 69, 826 (1978) West Germany

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285	A02 $\text{Ne} + \text{NCI}; \text{Ne} + \text{CO}$	T	50-400 1/cm	Goldflam, R.; Green, S.; Kouri, E. J.; Neuschick, L. Effect of molecular anisotropy on beam scattering measurements. <i>J. Chem. Phys.</i> 69, 550 (1978) United States
286	A11 $\text{I}^0 + \text{I}_2; \text{I}^0 + \text{Br}_2; \text{I}^0 + \text{Cl}_2; \text{I}^0 + \text{IBr}; \text{I}^0 + \text{ICl}; \text{I}^0 + \text{BrCl}$ A14 $\text{I}^0 + \text{I}_2; \text{I}^0 + \text{Br}_2; \text{I}^0 + \text{Cl}_2; \text{I}^0 + \text{IBr}; \text{I}^0 + \text{ICl}; \text{I}^0 + \text{BrCl}$	E	300 K	Hofmann, H.; Leone, S. R. Quenching and reactions of laser-excited $\text{I}(5^2\text{P}_{1/2})$ atoms with halogen and interhalogen molecules. <i>J. Chem. Phys.</i> 68, 641 (1978) United States
287	M04 $\text{Ne} + \text{CO}$	E	124 nm	Vikis, A. C. Resonance excitation of the $\text{A}^1\pi\text{E}^0(13,0)$ band of $^{13}\text{C}^{18}\text{O}$ and $^{13}\text{C}^{16}\text{O}$. <i>J. Chem. Phys.</i> 69, 697 (1978) Canada
288	A11 $\text{CO}^+ + \text{CCl}_2; \text{CO}^+ + \text{CO}_2; \text{CO}^+ + \text{O}_2; \text{CO}^+ + \text{N}_2; \text{CO}^+ + \text{H}_2; \text{CO}^+ + \text{D}_2; \text{CO}^+ + \text{He}; \text{CO}^+ + \text{Ar}; \text{CO}^+ + \text{Xe}$	E	330 K	Vikis, A. C. Energy transfer in monochromatically excited $^{13}\text{C}^{18}\text{O}$ and $^{13}\text{C}^{16}\text{O}(\text{A}^1\pi\text{E}^0(13,0))$ molecules. <i>J. Chem. Phys.</i> 69, 703 (1978) Canada
289	F01 O_2^+ M05 $\text{Ne} + \text{O}_2^+$	E	5570-5750 Å	Tadjeddine, H.; Abouaf, H.; Conby, P. C.; Huber, R. A.; Moseley, J. T. Predissociation photofragment spectroscopy of O_2^+ quartet states. <i>J. Chem. Phys.</i> 69, 710 (1978) United States
290	A14 $\text{T} + \text{HT}$	T	0-2 eV	Wright, J. S. Reactivity bands in atom-molecule collisions. IV. Coplanar and 3D studies of $\text{T} + \text{HT}$. <i>J. Chem. Phys.</i> 69, 720 (1978) Canada
291	F01 H_2	T		Vance, R. L.; Gellman, G. A. Representation of ab initio energy surfaces by analytic functions. <i>J. Chem. Phys.</i> 69, 736 (1978) United States
292	A14 $\text{Cl} + \text{HO}_2; \text{Cl} + \text{HNO}_2; \text{Cl} + \text{H}_2\text{O}_2$	E	298-633 K	Poulet, G.; LeBras, G.; Combournieu, J. Kinetic study of the reactions of Cl atoms with HO_2 , H_2O_2 , and HCl . <i>J. Chem. Phys.</i> 69, 767 (1978) France
293	A03 $\text{S}^0 + \text{Na}; \text{S}^0 + \text{Ar}; \text{S}^0 + \text{N}_2; \text{S}^0 + \text{Kr}; \text{S}^0 + \text{Xe}; \text{S}^0 + \text{H}_2$	E	331 K	Block, G.; Sharpless, R. L.; Slinger, T. G. Spectra of the collision-induced emission from $\text{S}(^3\text{S})$. <i>J. Chem. Phys.</i> 69, 794 (1978) United States
294	A14 $\text{Cl} + \text{H}_2\text{S}$	E	235 K	Braithwaite, R.; Leone, S. R. Laser-initiated chemical reactions: $\text{Cl} + \text{H}_2\text{S} \rightarrow \text{HCl} + \text{HS}$; rate constant, product energy distribution, and direct detection of a chain mechanism. <i>J. Chem. Phys.</i> 69, 835 (1978) United States
295	A03 $\text{H}_2 + \text{Ar}$	T	1620-4500 K	Blais, W. C.; Trahler, D. G. Ab initio calculation of the vibrational energy transfer rate of H_2 in Ar using Monte Carlo classical trajectories and the forced quantum oscillator model. <i>J. Chem. Phys.</i> 69, 846 (1978) United States
296	A14 $\text{HF} + \text{D}$	E	10-70 kcal/mole	Bartoszek, F. E.; Menos, D. A.; Solanyi, J. C. Effect of changing reagent energy. I. Vibrational threshold energies for alternative reaction paths $\text{HF}(v) + \text{D} \rightarrow \text{F} + \text{HD}$ and $\text{H} + \text{DF}$. <i>J. Chem. Phys.</i> 69, 933 (1978) Canada
297	A17 $\text{HF} + \text{HF}$	T	Undef	Riain, W. L.; McDonald, I. W.; O'Steen, S. F. An intermolecular force model for $(\text{HF})_2$. <i>J. Chem. Phys.</i> 69, 63 (1978) Canada
298	A17 $\text{Cl} + \text{HBr}; \text{F} + \text{H}_2; \text{H}^+ + \text{H}_2$	T	Undef	Wright, J. S.; Gray, S. K. Rotated Morse curve-spline potential function for A + BC reaction dynamics: Application to (Cl, HBr) , (F, H_2) , and (H^+, H_2) . <i>J. Chem. Phys.</i> 69, 67 (1978) Canada
299	A14 $\text{Xe} + 2\text{Xe}$	E	300 K	Millet, P.; Briot, A.; Brunet, H.; Gely, J.; Pons-Gornain, B.; Teyssier, J. L. Time resolved study of the uv and near uv continua of xenon. <i>J. Chem. Phys.</i> 69, 92 (1978) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
300	A17 $\text{He}^+ + \text{He}$ F01 HeHe^+	I	Undef	Green, T. A.; Nichols, R. M.; Ercore, J. C. Configuration interaction studies of the HeHe^+ molecular ion. IV. The triplet sigma, pi, and delta states. J. Chem. Phys. 69, 101 (1978) United States
301	M06 $\text{Ar} + \text{Ar}_2$; $\text{Ar} + \text{Kr}_2$ A17 $\text{Ar} + \text{Ar}^+$; $\text{Kr} + \text{Kr}^+$	E	504 Å	Behner, P. H.; Behner, J. L. Photoelectron spectra of Ar_2 and Kr_2 and dissociation energies of the rare gas diatomic ions. J. Chem. Phys. 69, 125 (1978) United States
302	A17 $\text{He} + \text{F}$; $\text{Ar} + \text{F}$; $\text{Kr} + \text{F}$; $\text{Xe} + \text{F}$	I	Undef	Dumming, T. M., Jr.; May, P. J. The covalent and ionic states of the rare gas monofluorides. J. Chem. Phys. 69, 134 (1978) United States
303	A14 Undef	I	Undef	Cass, D. A.; Herschbach, D. R. Information theory analysis of angular momentum disposal in chemical reactions. J. Chem. Phys. 69, 150 (1978) United States
304	A17 $\text{C} + \text{O}$ F01 CO	I	Undef	Kirby, E.; Liu, B. Theoretical study of molecular diatomic moment functions. II. The $d^2 \Sigma$ and $a^2 \Pi$ states of CO. J. Chem. Phys. 69, 290 (1978) United States
305	A14 $\text{Cl} + \text{CH}_4$	E	225-423 K	Kayser, L. F. Absolute rate and temperature dependence of the reaction between chlorine (2P) atoms and methane. J. Chem. Phys. 69, 214 (1978) United States
306	A02 $\text{Ar} + \text{CH}_4$ A03 $\text{Ar} + \text{CH}_4$	I	33° K	Nelli, T. G.; Secrest, B. A comparison of close coupling and coupled states for low energy spherical top-atom collisions: $\text{Ar}-\text{CH}_4$. J. Chem. Phys. 69, 215 (1978) United States
307	A05 $\text{La} + \text{O}_2$; $\text{Y} + \text{O}_2$; $\text{Sc} + \text{O}_2$	E	Undef	Mann, D. M.; Pearson, J. M. Chemiluminescent reactions of group IIIB atoms with O_2 : Spectral simulations and extended energy dependence. J. Chem. Phys. 69, 231 (1978) United States
308	A14 $\text{I} + \text{H}_2$	I	33°-4000 K	Gray, J. C.; Truhlar, D. G.; Ciesons, L.; Buff, J. L.; Chapman, F. M., Jr.; Morrell, G. O.; Mayne, E. F. Quasiclassical trajectory calculations compared to quantum mechanical reaction probabilities, rate constants, and activation energies for two different potential surfaces for the collinear reaction $\text{H}_2 + \text{I} \rightarrow \text{H} + \text{HI}$, including dependence on initial vibrational state. J. Chem. Phys. 69, 246 (1978) United States

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
309	A86 $H^+ + NH_3 \rightarrow H^+ + N_2S; H^+ + N_2CO; H^+ + COS;$ $H^+ + O_2; H^+ + H_2O; H^+ + CH_4;$ $H^+ + CO_2; H^+ + CO; H^+ + H_2; H^+$ $+ N_2; H^+ + NH_3; H^+ + N_2S; H^+ + N_2CO;$ $N_2^+ + COS; N_2^+ + O_2; N_2^+ + H_2O; N_2^+$ $+ CH_4; N_2^+ + CO_2; N_2^+ + CO; N_2^+$ $+ H_2; N_2^+ + H_2; N_2^+ + NH_3; N_2^+ + N_2S;$ $N_2^+ + N_2CO; N_2^+ + COS; N_2^+ + C_2;$ $N_2^+ + H_2O; N_2^+ + CH_4; N_2^+ + CO_2;$ $N_2^+ + CO; N_2^+ + H_2; N_2^+ + H_2; N_2^+ +$ $NH_3; N_2^+ + N_2S; N_2^+ + N_2CO; N_2^+ +$ $COS; N_2^+ + O_2; N_2^+ + H_2O; N_2^+ +$ $CH_4; N_2^+ + CO_2; N_2^+ + CO; N_2^+ +$ $H_2; N_2^+ + O^+ + NH_3; O^+ + N_2S; O^+$ $+ N_2CO; O^+ + COS; O^+ + O_2; O^+ + H_2O;$ $O^+ + CH_4; O^+ + CO_2; O^+ + CO; C^+$ $+ N_2; O^+ + H_2; O^+ + NH_3; O^+ + N_2S;$ $O^+ + N_2CO; O^+ + COS; O^+ + O_2;$ $O^+ + H_2O; C^+ + CH_4; O^+ + CO_2;$ $O^+ + CO; O^+ + H_2; C^+ + H_2; LC^+ +$ $NF_3; NO^+ + N_2S; NO^+ + N_2CO; NO^+ +$ $COS; NO^+ + O_2; NO^+ + H_2O; NO^+ +$ $CH_4; NO^+ + CO_2; NO^+ + CO; NO^+ + N_2;$ $NO^+ + H_2$ A13 $H^+ + NH_3; H^+ + N_2S; H^+ + N_2CO; H^+ +$ $COS; H^+ + O_2; H^+ + H_2O; H^+ + CH_4;$ $H^+ + CO_2; H^+ + CO; H^+ + H_2; H^+$ $+ N_2; H^+ + NH_3; H^+ + N_2S; H^+ +$ $N_2CO; H^+ + COS; H^+ + O_2; H^+ +$ $H_2O; H^+ + CH_4; H^+ + CO_2; H^+ +$ $CO; H^+ + H_2; H^+ + H_2; H^+ + NH_3;$ $H^+ + N_2S; H^+ + N_2CO; H^+ + COS;$ $H^+ + O_2; H^+ + H_2O; H^+ + CH_4; H^+ +$ $CO_2; H^+ + CO; H^+ + N_2; h\nu$ $H_2; N^+ + NH_3; N^+ + N_2S; N^+ +$ $N_2CO; N^+ + COS; N^+ + O_2; N^+ +$ $H_2O; N^+ + CH_4; N^+ + CO_2; N^+ +$ $CO; N^+ + H_2; N^+ + h\nu; O^+ + NH_3;$ $O^+ + N_2S; O^+ + N_2CO; O^+ + CCS; O^+ +$ $O_2; O^+ + H_2C; O^+ + CH_4; O^+ + CO_2;$ $O^+ + CO; O^+ + H_2; O^+ + h\nu; C^+ +$ $NH_3; C^+ + N_2S; O^+ + N_2CO; O^+ +$ $COS; O^+ + C_2; O^+ + H_2O; O^+ +$ $CH_4; O^+ + CO_2; O^+ + CO; O^+ + H_2;$ $O^+ + N_2; NO^+ + NH_3; NO^+ + N_2S; NO^+$ $+ N_2CO; NO^+ + COS; NC^+ + O_2; NO^+ +$ $H_2O; NO^+ + CH_4; NO^+ + CO_2; NO^+ +$ $CO; NO^+ + H_2; NO^+ + H_2$	E	38°C K	Smith, D.; Adams, W. G.; Miller, T. M. A laboratory study of the reactions of $H^+, H_2^+, N_2^+, N_3^+, C^+, O_2^+$, and HC^+ ions with several molecules at 30° K. J. Chem. Phys. 69, 308 (1978) United Kingdom
310	A86 $O^+ + U; O^+ + Th; N^+ + U; N^+ + Th;$ $N_2^+ + U; N_2^+ + Th; CC_{22}^+ + U; CC_{22}^+ +$ Th	E	1-500 eV	Rutherford, J. A.; Vroom, B. A. Production of uranium and thorium ions by charge transfer from C^+, N^+, N_2^+ , and CC_{22}^+ . J. Chem. Phys. 69, 322 (1978) United States
311	A84 $MO^+ + H_2$ A11 $NO^+ + HO; NO^+ + He; NO^+ + H_2; NO^+ +$ $CO; NO^+ + CF_4; NO^+ + N_2; NO^+ + CO_2$	E	330 K	Mihida, Y.; Mori, Y. Induced dissociation of $HO(B^{2\pi}, v'=9)$ by H_2 . J. Chem. Phys. 69, 246 (1978) Japan
312	A14 $H + O_2$	E	219-36°C K	Lee, J. W.; Michael, J. V.; Payne, R. A.; Stief, L. J. Absolute rate of the reaction of hydrogen atoms with oxone from 219-360 K. J. Chem. Phys. 69, 350 (1978) United States
313	A17 $K^+ + Na; Rb^+ + Na; Cs^+ + Na; Ba^+ +$ $Na; Rb^+ + K; Ce^+ + K; Co^+ + Rb; K^+$ $+ K; Rb^+ + Pb; Cu^+ + Cu$	T	Undef	Vallance, A. Adiabatic potential energies for $NaK^+, NaRb^+, NaCs^+, KRb^+, KCe^+, RBa^+, NaBa^+, KBa^+, RbBa^+$, and $CsBa^+$ molecular ions. J. Chem. Phys. 69, 468 (1978) France
314	G02 $He + Xe; Ne + Kr; Ar + Xe; Kr + Kr$	E	25-605 °C	Kestlin, J.; Khalifa, M. E.; Wahapoo, W. A. The viscosity and diffusion coefficients of the binary mixtures of xenon with the other noble gases. Physica A 90, 216 (1978) United States
315	G02 $Kr + Kr$	E	293 K	Codastafano, P.; Ricci, M. A.; Zenze, V. Behaviour of the self-diffusion coefficient of Kr at low densities. Physica A 92, 315 (1978) Italy

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316	C87 Undef	T	Undef	Kan, Y.-M. An estimate of the first logarithmic term in the density expansions of transport coefficients of moderately dense gases. <i>Physica A</i> 93, 191 (1978) United States
317	A87 Kr + Bi; Xe + Bi A18 Kr + Bi; Xe + Bi A20 Kr + Bi; Xe + Bi	E T	712-1130 MeV	De, J. W.; Sperber, D. The role of deformation and transfer in the analysis of strongly damped collisions. <i>Phys. Lett.</i> 72B, 293 (1978) United States
318	A19 Pb + Pb	T	970-1000 MeV	Kierch, J.; Betz, V.; Reinhardt, J.; Seff, G.; Muller, B.; Greiner, W. K-K-ray spectrum of the Pb + Pb quasimolecules. <i>Phys. Lett.</i> 72B, 290 (1978) West Germany
319	A82 H ⁺ + He	E T	551-1730 MeV	Morser, R. L.; Arnold, L. G.; Clark, B. C. Phenomenological optical model for p-He elastic scattering. <i>Phys. Lett.</i> 73B, 9 (1978) United States
320	A82 H ⁺ + Ca	T	14-55 MeV	Georgiev, B. Z.; MacKintosh, B. I. Evaluation of local equivalent methods for treating exchange in elastic proton scattering. <i>Phys. Lett.</i> 72B, 280 (1978) United Kingdom
321	A82 H ⁺ + D ⁺	E	15 MeV	Groebler, W.; Konig, V.; Schoenbach, P. A.; Jenny, B.; Burgi, M. W.; Doltschall, P.; Beldenreich, G.; Boer, M.; Sallier, F.; Reichert, U. Proton-deuteron elastic scattering. <i>Phys. Lett.</i> 74B, 173 (1978) Switzerland
322	A82 He ²⁺ + Ca	E	25-47 MeV	Gubler, M. P.; Kiebel, U.; Meyer, M. O.; Lottner, G. R.; Sick, I. Large-angle alpha scattering from ⁴⁰ Ca is not anomalous. <i>Phys. Lett.</i> 74B, 202 (1978) Switzerland
323	E85 e + He E17 e + He	E	230-4000 eV	Stefani, G.; Canloni, R.; Giordani Gaidani, A. Absolute (e, 2e) differential cross section measured in coplanar conditions. <i>Nu. Phys. Lett.</i> 64A, 364 (1978) Italy
324	E83 e + H E17 e + H	T	139-200 eV	Glen, T. T. Glauber exchange effect in the excitation of hydrogen by electron impact. <i>Phys. Lett.</i> 64A, 260 (1978) Canada
325	E83 e + Li; e + Ne; e + K	T	2-136 eV	Roy, B. M. Electron excitation cross sections of Li, Ne and K. <i>Phys. Lett.</i> 64A, 373 (1978) India
326	A87 Xe + Au; Xe + Pb; Xe + Bi; Xe + Th	E T	525 MeV	Anholt, R.; Meyerhof, V. E. Probability of forming 1s sigma vacancies in 625 MeV Xe + Au, Pb, Bi, and Th collisions at small impact parameters. <i>Phys. Lett.</i> 64A, 201 (1978) United States
327	A87 Undef	T	Undef	Kruglova, I. M.; Nikolaev, V. S.; Sergeev, V. A. About the effect of a bound state on ionization cross sections in ion-atom collisions. <i>Phys. Lett.</i> 64A, 304 (1978) Soviet Union
328	C82 Undef	T	Undef	Mukoyama, T.; Vatanabe, Y. On the energy loss of fast electrons in thin absorbers. <i>Phys. Lett.</i> 64A, 442 (1978) Japan
329	B81 Undef	T	Undef	Vaill, A.; Stenholm, S. Multi-photon processes in a strong field. <i>Phys. Lett.</i> 64A, 447 (1978) Finland
330	A87 Pb + Pb	T	1210 MeV	Seff, G.; Betz, V.; Muller, B.; Greiner, W.; Herzberger, E. Inner shell ionization in the Pb-Pb quasimolecules. <i>Phys. Lett.</i> 68A, 19 (1978) West Germany
331	B87 Undef	T	Undef	Faglia, C. Electron-atom collisions in an electric field in the eikonal approximation. <i>Phys. Lett.</i> 65A, 99 (1978) Italy

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332	F01 He	E	Under	Babko, N.; Jitochin, W.; Reisel, C.; Childs, W. J. Laser-RF double-resonance measurement of the quadrupole moments of ^{210}He and ^{210}He . Phys. Lett. 65A, 189 (1978) West Germany
333	E03 $\alpha + \text{H}$ E17 $\alpha + \text{H}$	T	183 eV	Glen, T. T. Excitation of atomic hydrogen by electron impact in the modified Glauber method with exchange. Phys. Lett. 65A, 201 (1978) Canada
334	F02 He^+	T	Under	Denis, A.; Denequeville, J. Widths of hydrogenic levels in low electric fields. Phys. Lett. 65A, 204 (1978) France
335	F01 He	E	Under	Khayrallah, G. A. Determination of the 4f and 5f lifetimes of HeI. Phys. Lett. 65A, 207 (1978) United States
336	H06 $\text{He} + \text{Xe}$	T	54 Ry	Amusia, N. Y.; Ivanov, V. K. On the existence of a collective level in the He-atom . Phys. Lett. 66A, 217 (1978) Soviet Union
337	A06 $\text{H}^+ + \text{He}^+$	T	48-108 keV	Mukherjee, S.; Bhadra, R.; Sii, R. C.; Basu, B. Capture in proton- He^+ collisions. Phys. Lett. 66A, 285 (1978) India
338	F01 $\text{He}^{2+}; \text{He}^{3+}$	T	Under	Boch, B. R.; Nicolaides, C. A. Transition probabilities for the VUV resonance lines of Ag- and Zn-like molybdenum ions. Phys. Lett. 66A, 293 (1978) Greece
339	E06 $\alpha + \text{PERT}$	E	15-65 MeV	Hoffmann, B. R. R.; Gons, L.; Lew, U.; Richter, A. Z and E dependence and scaling behavior of the K-shell ionization cross section for relativistic impact. Phys. Lett. 65A, 304 (1978) West Germany
340	D09 $\text{H} + \text{Cu}; \text{He} + \text{Cu}; \text{Cu} + \text{Cu}$	T	Under	Grondman, T. P.; Janov, R. A. Survival probabilities of excited atoms emerging from a metal surface. Phys. Lett. 65A, 396 (1978) Yugoslavia
341	D07 $\alpha + \text{H}$	T	100-500 eV	Nahon, N.; Chand, P. Electron-impact ionization of the hydrogen atom in the presence of an intense laser beam. Phys. Lett. 65A, 399 (1978) India
342	F01 $\text{He}^{2+}; \text{He}^{3+}; \text{He}^{4+}; \text{He}^{5+}; \text{He}^{6+}; \text{He}^{7+}; \text{He}^{8+}; \text{He}^{9+}; \text{He}^{10+}; \text{He}^{11+}; \text{He}^{12+}; \text{He}^{13+}; \text{He}^{14+}; \text{He}^{15+}; \text{He}^{16+}; \text{He}^{17+}; \text{He}^{18+}; \text{He}^{19+}; \text{He}^{20+}$	E	Under	Ninnov, L.; Mattioli, R. Observations of multiply ionized tungsten radiation in the EIT discharges. Phys. Lett. 66A, 109 (1978) United States
343	F01 $\text{He} \text{ Seq}$	T	Under	Sofronova, U. I.; Semchenko, V. S. One-electron and two-electron one-photon transitions in atomic systems with two K-shell vacancies. Phys. Lett. 66A, 165 (1978) Soviet Union
344	A06 $\text{Ar}^{20+} + \text{Ar}; \text{Ar}^{19+} + \text{Ar}; \text{Ar}^{18+} + \text{Ar}; \text{Ar}^{17+} + \text{Ar}; \text{Ar}^{16+} + \text{Ar}; \text{Ar}^{15+} + \text{Ar}; \text{Ar}^{14+} + \text{Ar}; \text{Ar}^{13+} + \text{Ar}; \text{Ar}^{12+} + \text{Ar}; \text{Ar}^{11+} + \text{Ar}; \text{Ar}^{10+} + \text{Ar}; \text{Ar}^{9+} + \text{Ar}; \text{Ar}^{8+} + \text{Ar}; \text{Ar}^{7+} + \text{Ar}; \text{Ar}^{6+} + \text{Ar}; \text{Ar}^{5+} + \text{Ar}; \text{Ar}^{4+} + \text{Ar}; \text{Ar}^{3+} + \text{Ar}; \text{Ar}^{2+} + \text{Ar}; \text{Ar}^{1+} + \text{Ar}; \text{Ar}^{0+} + \text{Ar}; \text{Ar}^{20+} + \text{He}; \text{Ar}^{19+} + \text{He}; \text{Ar}^{18+} + \text{He}; \text{Ar}^{17+} + \text{He}; \text{Ar}^{16+} + \text{He}; \text{Ar}^{15+} + \text{He}; \text{Ar}^{14+} + \text{He}; \text{Ar}^{13+} + \text{He}; \text{Ar}^{12+} + \text{He}; \text{Ar}^{11+} + \text{He}; \text{Ar}^{10+} + \text{He}; \text{Ar}^{9+} + \text{He}; \text{Ar}^{8+} + \text{He}; \text{Ar}^{7+} + \text{He}; \text{Ar}^{6+} + \text{He}; \text{Ar}^{5+} + \text{He}; \text{Ar}^{4+} + \text{He}; \text{Ar}^{3+} + \text{He}; \text{Ar}^{2+} + \text{He}; \text{Ar}^{1+} + \text{He}; \text{Ar}^{0+} + \text{He}; \text{Ar}^{20+} + \text{Kr}; \text{Ar}^{19+} + \text{Kr}; \text{Ar}^{18+} + \text{Kr}; \text{Ar}^{17+} + \text{Kr}; \text{Ar}^{16+} + \text{Kr}; \text{Ar}^{15+} + \text{Kr}; \text{Ar}^{14+} + \text{Kr}; \text{Ar}^{13+} + \text{Kr}; \text{Ar}^{12+} + \text{Kr}; \text{Ar}^{11+} + \text{Kr}; \text{Ar}^{10+} + \text{Kr}; \text{Ar}^{9+} + \text{Kr}; \text{Ar}^{8+} + \text{Kr}; \text{Ar}^{7+} + \text{Kr}; \text{Ar}^{6+} + \text{Kr}; \text{Ar}^{5+} + \text{Kr}; \text{Ar}^{4+} + \text{Kr}; \text{Ar}^{3+} + \text{Kr}; \text{Ar}^{2+} + \text{Kr}; \text{Ar}^{1+} + \text{Kr}; \text{Ar}^{0+} + \text{Kr}$	T	2-100 keV	Grondman, T. P.; Janov, R. A. One-electron capture in slow collisions of highly charged ions with atoms. Phys. Lett. 66A, 191 (1978) Yugoslavia
345	A06 $\text{H}^+ + \text{Hg}$	E	1-60 keV	Morgan, T. J.; Eriksen, F. Double electron capture in $\text{H}^+ + \text{Hg}$ collisions. Phys. Lett. 66A, 198 (1978) United States
346	F01 He	T	Under	Collaeny, J. Two electron excited states of helium. Phys. Lett. 66A, 201 (1978) United States
347	D01 H_2 F02 H_2	T	Under	Loxovih, T. E.; Kiyuchnik, A. V. Change of binding type and dissociation of molecules and diatoms in a strong magnetic field. Phys. Lett. 66A, 202 (1978) Soviet Union

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348	AR7 $H^+ + Xe$	T	2.1-10 MeV	Konarov, F. F.; Nevikov, A. P. Ionization cross section of <i>n</i> -subshell electrons in the binary-encounter approximation. <i>Phys. Lett.</i> 66A, 287 (1978) Soviet Union
349	HP6 $h\nu + Cl$	T	13-50 eV	Brown, E. B.; Carter, S. L.; Kelly, M. P. Photoionization cross section of chlorine I. <i>Phys. Lett.</i> 66A, 290 (1978) United States
350	AE7 $H^+ + C; He^{2+} + C$	E	100 keV/mm	Jank, W.; Ball, F.; Weber, K.-R. The impact parameter dependence of carbon K-shell ionization by proton and helium impact. <i>Phys. Lett.</i> 66A, 293 (1978) West Germany
351	ES5 $e + C^+; e + N^+; e + W^{2+}; e + O^+; e + Br^+$	T	52-5000 eV	Kumar, A.; Ray, B. M. Electron impact ionization of positive ions. <i>Phys. Lett.</i> 66A, 262 (1978) India
352	FG2 H	T	Undef	Virtanen, J. T.; Simola, J. T. A. The spreading of the proton of a hydrogen atom in strong magnetic fields. <i>Phys. Lett.</i> 66A, 371 (1978) Finland
353	AR7 $H^+ + Ag; H^+ + Au$	T	1-2 MeV	Paufl, R.; Neel, F.; Trautmann, B. Screening effects in the Coulomb ionization of inner shell electrons. <i>Phys. Lett.</i> 67A, 20 (1978) Switzerland
354	EX2 $e + Ne$	T	230 eV	Singh, S. N.; Tripathi, A. N. Application of the modified Glauber approximation to the study of elastic scattering of electrons by helium atoms. <i>Phys. Lett.</i> 67A, 21 (1978) India
355	AE7 $H^+ + Cu; D^+ + Cu; He^+ + Cu$ A18 $H^+ + Cu; D^+ + Cu; He^+ + Cu$	E T	3.5-2.0 MeV	Chen, J. F.; Andriamonje, S.; Esturier, J.; Sobye, B.; Gayet, R.; Salin, R. Projectile charge and mass dependence of large angle K-shell ionization probability on copper. <i>Phys. Lett.</i> 67A, 116 (1978) France
356	FPI Li Seq	T	Undef	Tonnell, T. W.; Mullen, C. P. Theoretical lifetimes and line fluorescence yields of $1s2p^2P$ levels. <i>Phys. Lett.</i> 67A, 119 (1978) United States
357	MS $Cl^{10+} + Cu$ D12 $Cl^{10+} + Cu$	E	25-60 MeV	Tanis, J. A.; Shafroth, S. R. Projectile fluorescence yields in heavy ion collisions. <i>Phys. Lett.</i> 67A, 120 (1978) United States
358	EO2 $Ar^+ + Cu$	T	2.1-10 keV	Falcione, G.; Piperno, F. On the use of the Brinkman cross section for sputtering yields of argon ions on a polycrystalline copper target. <i>Phys. Lett.</i> 67A, 130 (1978) Italy
359	DB4 $H^+ + Al; H^+ + Cu; H^+ + Ag; D^+ + Al;$ $D^+ + Cu; D^+ + Ag; H_2^+ + Al; H_2^+ +$ $Cu; H_2^+ + Ag; D_2^+ + Al; D_2^+ + Cu;$ $D_2^+ + Ag$	E	2-50 keV	Beragiale, R. A.; Alonso, E. V.; Auselino, O.; Ferron, J.; Lentschner, G.; Oliva Florio, P. Molecular effects in low-electron emission from clean metal surfaces. <i>Phys. Lett.</i> 67A, 211 (1978) Argentina
360	CR1 $S^{10+} + PERT; S^{10+} + PERT; S^{10+} + PERT;$ $S^{10+} + PERT; S^{10+} + PERT; S^{10+} + PERT;$ $S^{10+} + PERT; S^{10+} + PERT; S^{10+} + PERT;$ $S^{10+} + PERT; S^{10+} + PERT; S^{10+} + PERT;$ $S^{10+} + PERT; S^{10+} + PERT; S^{10+} + PERT;$ $S^{10+} + PERT; S^{10+} + PERT; S^{10+} + PERT;$	E T	54 MeV	Watson, R. L.; White, J. R.; Jensen, F. E. Yield ratios for K α satellite and hyper-satellite X-ray emission from 54 MeV sulfur ions penetrating thick solid targets. <i>Phys. Lett.</i> 67A, 265 (1978) United States
361	AR7 $H^+ + Au$	T	2.4-1.0 MeV	Aasheer, O.; Abundson, P. A.; Kockach, L. Proton-induced L-shell ionization at large scattering angles. <i>Phys. Lett.</i> 67A, 349 (1978) Norway
362	AR7 $H^+ + Na; H^+ + Mg; H^+ + Al; H^+ + Si;$ $H^+ + Ti$	E	15-65 keV	Shino, K. Na, Mg, Al, Si and Ti K-shell ionization cross sections for 15-65 keV protons. <i>Phys. Lett.</i> 67A, 361 (1978) Japan

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363	A63 He ⁺ + He	E	232 K	Coolen, F. C. R.; van Scheik, b.; Smit, B. B. R.; Prins, H.; Steenhuyzen, L. b. G. Transfer of excitation between 2p levels of neon induced by collisions with neutral neon atoms. <i>Physica Dc</i> 53, 131 (1978) The Netherlands
364	A17 Na ⁺ + He; K ⁺ + He; Li ⁺ + He C87 Na ⁺ + He; K ⁺ + He; Li ⁺ + He	T	200-900 K	Giannazzo, F. A.; Lomanna, M. T. Atomic neon interactions with alkali ions: ECM potentials and collision integrals. <i>Physica Dc</i> 53, 275 (1978) Italy
365	A67 H ⁺ + He; H ⁺ + He; H ⁺ + Ar; H ⁺ + Kr	T	100-1200 keV	Tiwary, S. N.; Chatterjee, P. b. Outer S-shell ionization of noble gas atoms by proton impact. <i>Physica Dc</i> 53, 285 (1978) India
366	E86 e + F ⁺ ; e + H ⁺ ; e + O ⁺ ; e + F ⁺ ; e + Na ⁺ ; e + Na ⁺ ; e + H ⁺ ; e + O ⁺ ; e + Na ⁺ ; e + Na ⁺	T	200-4000 K	Chandra, S.; Gupta, V.; Barin, L. Rate of radiative recombination of neon atoms and ions of the upper atmosphere. <i>Physica Dc</i> 53, 412 (1978) India
367	D85 he + Ni	E	15.0-21.2 eV	Petersson, L.-G.; Erlanson, B. The ferromagnetic to paramagnetic transition in nickel studied by angular-resolved photoemission from single crystals. <i>Phys. Rev. B</i> 17, 3006 (1978) Sweden
368	E82 e + N ₂ ; e + N ₂ ; e + CO E83 e + N ₂ ; e + N ₂ ; e + CO E17 e + N ₂ ; e + N ₂ ; e + CO	T	0.5-10 eV	Bavenport, J. W.; Ho, W.; Schrieff, J. R. Theory of vibrationally inelastic electron scattering from oriented molecules. <i>Phys. Rev. E</i> 17, 311b (1978) United States
369	D85 he + O + Ni; he + S + Ni	T	21.2 eV	Li, C. H.; Lubinsky, A. R.; Tong, S. Y. Multiple-scattering approach to angle-resolved photoemission. <i>Phys. Rev. B</i> 17, 2128 (1978) United States
370	C82 PERT + PERT	T	3-90 MeV	Varlagadda, B. S.; Robinson, J. E.; Brandt, W. Effective-charge theory and the electronic stopping power of solids. <i>Phys. Rev. B</i> 17, 3473 (1978) United States
371	C82 H ⁺ + Si C88 H ⁺ + Si	E T	31-1000 keV	Cornera, A.; Della Nca, G.; Origo, A. V.; La Russa, S.; Mazzoli, P.; Bontini, G. G. Channelled and random proton stopping power in the 10-1000 keV energy range. <i>Phys. Rev. B</i> 17, 3492 (1978) Italy
372	C88 H ⁺ + LiF; H ⁺ + NaF; H ⁺ + NaCl; H ⁺ + KCl; H ⁺ + LiF; H ⁺ + NaF; H ⁺ + NaCl; H ⁺ + KCl	E	0.7-1.3 MeV	Price, P. B.; Kelly, J. C. Channeling of protons and "He" in alkali halides in radiation-damaged conditions. <i>Phys. Rev. B</i> 17, 4237 (1978) Australia
373	D85 he + Pb; he + PbCl ₂ ; he + PbS; he + PbSe W86 he + Pb	E	22-40 eV	Bancroft, G. M.; Godet, V.; Leston, B. E. Photoionization-cross-section studies of atomic and final-state effects on the Pb 5d core levels using synchrotron radiation. <i>Phys. Rev. B</i> 17, 4499 (1978) Canada
374	D85 he + Co + Ni W86 he + Co; he + CoNi ₃	T	13-1000 eV	Grobman, W. D. Angle-resolved photoemission from molecules in the independent-atomic-center approximation. <i>Phys. Rev. B</i> 17, 4873 (1978) United States
375	D82 Ar ⁺ + [Cu + Ni]	E	500 eV	Saeki, M.; Shimizu, R. Auger study of preferential sputtering for Cu-Ni alloy sample. <i>Jap. J. Appl. Phys.</i> 17, 59 (1978) Japan
376	D87 H ⁺ + Na; H ⁺ + Cu; H ⁺ + Al; H ⁺ + SS; H ₂ ⁺ + Na; H ₂ ⁺ + Cu; H ₂ ⁺ + Al; H ₂ ⁺ + SS; H ₂ ⁺ + Na; H ₂ ⁺ + Cu; H ₂ ⁺ + Al; H ₂ ⁺ + SS	E	13-30 keV	Tanaka, S.; Morikami, T.; Shibata, T. Measurement of energy reflection from metals bombarded by 10-30 keV hydrogen ion beam. <i>Jap. J. Appl. Phys.</i> 17, 103 (1978) Japan
377	D85 he + CoAs	E	1.2 keV	Kudo, M.; Nishit, Y.; Kamada, M. Quantitative X-ray photoelectron spectroscopic (XPS) measurement on the surfaces of CoAs(111), (111) and (110) single crystals—determination of relative photo-Auger ionization cross sections and electron mean free paths by using the crystal regularity of compound semiconductors. <i>Jap. J. Appl. Phys.</i> 17, 797 (1978) Japan

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378	A13 He ⁺ + 2He	E	3000 K	Katouura, Y.; Fukuda, K. Formation of He ₂ molecules in the early afterglow of He pulsed discharge. <i>Jap. J. Appl. Phys.</i> 17, 977 (1978) Japan
379	C60 e + H ₂	T	0-80 eV	Gowinda Raju, G. R.; Guruswamy, G. P. Electron energy distributions and transport coefficients in H ₂ in E & B fields. <i>Int. J. Electron.</i> 44, 221 (1978) India
380	804 Ar ⁺ + [Pd + Ag]	E	30 ⁰ -1000 eV	Koshida, H.; Yoshida, S. High-efficiency secondary electron emission produced by laser incident on a porous MgO-Ag layer. <i>Appl. Phys. Lett.</i> 22, 708 (1978) Japan
381	802 Ar ⁺ + PtSi 814 Ar ⁺ + PtSi	E	28-100 keV	Lieu, Z. L.; Sheng, T. Y. Argon bubble formation in the sputtering of PtSi. <i>Appl. Phys. Lett.</i> 32, 718 (1978) United States
382	A11 KrF ⁺ + Ar; KrF ⁺ + Kr; KrF ⁺ + F ₂	E	330 K	Eden, J. G.; Wayman, R. W.; Searles, S. K.; Burahan, R. New quenching rates applicable to the KrF laser. <i>Appl. Phys. Lett.</i> 32, 733 (1978) United States
383	805 He + Au	E	1.750-1.862 μm	Loepke, L. A.; Hainfray, G.; Ramez, C.; Thebaud, J.; Farhas, C.; Herwath, Z. A new effect in multiphoton photoeffect of a gold surface induced by picosecond laser pulses. <i>Appl. Phys. Lett.</i> 33, 124 (1978) France
384	A13 MgCl ⁺ + He; MgCl ⁺ + Ar; MgCl ⁺ + Xe; MgCl ⁺ + H ₂ ; MgCl ⁺ + Cl ₂ ; MgCl ⁺ + HCl; MgCl ⁺ + CCl ₄ 808 He + MgCl ₂	E	A13 330 K 8C4 1818 Å	Rondl, A.; Pardo, J. R. Collisional quenching kinetics for the MgCl ⁺ (B 1/2) state. <i>Appl. Phys. Lett.</i> 33, 498 (1978) United States
385	216 e + Ar A14 Ar ⁺ + Ar + Ar	E	E16 630 keV A13 300 K	Diegelmann, N.; Uebel, W. G.; Kahl, K. Time-resolved spectroscopy of the Ar ⁺ -excimer collision. <i>Appl. Phys. Lett.</i> 33, 525 (1978) West Germany
386	802 He ⁺ + C; He ⁺ + C 814 He ⁺ + C; He ⁺ + C	E	137 keV	Sono, K.; Abe, T.; Ohara, K.; Yasuda, R.; Ohtsuka, H. Graphite surface erosion by 180 keV helium and hydrogen bombardment. <i>J. Nucl. Mater.</i> 71, 82 (1978) Japan
387	816 Cu ⁺ + Cu; Ni ⁺ + Cu; He ⁺ + Cu	E	4-56 MeV	Narayan, J.; Gan, O. S.; Reggie, T. S. Ion radiation damage in copper. <i>J. Nucl. Mater.</i> 71, 160 (1978) United States
388	814 He ⁺ + C	E	350-850 keV	Kazumoto, Y. Surface erosion of pyrolytic graphite and glassy carbons by ion bombardment. <i>J. Nucl. Mater.</i> 71, 178 (1978) Japan
389	814 He ⁺ + He	E	0.5 MeV	Kiefer, D. W.; Pard, A. G. Void formation in proton-irradiated molybdenum. <i>J. Nucl. Mater.</i> 71, 187 (1978) United States
390	814 Ar ⁺ + He 802 Ar ⁺ + He; He ⁺ + He	E	33 ⁰ keV	Kanada, K.; Karamoto, M.; Kazumoto, Y. Room temperature aging effects of blistering and surface roughening after Ar ⁺ ion bombardment on He single crystals. <i>J. Nucl. Mater.</i> 71, 245 (1978) Japan
391	802 e + SS 814 e + SS	E	1 MeV	Mahin, M. J. Void shrinkage and disappearance in stainless steel during electron irradiation. <i>J. Nucl. Mater.</i> 71, 340 (1978) United Kingdom
392	814 Ni ⁺ + Nb; Ni ⁺ + Ti + Nb	E	3.2 MeV	Loonis, B. A.; Gerber, S. D.; Busch, D. E. Redaction of void number density and size in ion-irradiated Ti-coated Nb. <i>J. Nucl. Mater.</i> 73, 58 (1978) United States
393	814 e + Al ₂ O ₃	E	137 keV	Bunch, J. R.; Hoffman, J. G.; Zeltmann, A. M. On the nature of features seen by TEM in fast neutron irradiation Al ₂ O ₃ . <i>J. Nucl. Mater.</i> 73, 69 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
394	C84 Ar ⁺ + Li ₂ O	E	330-450 keV	Nasu, S.; Shiozawa, K.; Yanifuji, T.; Noda, K.; Uchida, K. Depth distribution of argon implanted into lithium oxide. <i>J. Nucl. Mater.</i> 73, 132 (1978) Japan
395	D15 e + Zr ₂ Al	E	1 MeV	Carpenter, C. J. C.; Schiavone, E. P. The disordering of Zr ₂ Al by 1 MeV electron irradiation. <i>J. Nucl. Mater.</i> 73, 189 (1978) Canada
396	D14 He ⁺ + Nb; He ⁺ + {Ni + Zr}	E	50-220 keV	Taylor, S. K.; Goodhue, P. J. The growth of helium bubbles in niobium and Nb-15 Zr. <i>J. Nucl. Mater.</i> 74, 27 (1978) United Kingdom
397	D15 e + {Cu + Zn}	E	0.4-3 MeV	Pfeuschke, R.; Hollenberger, M. Defect production and interdiffusion in electron irradiated α-brass. <i>J. Nucl. Mater.</i> 74, 48 (1978) West Germany
398	D14 e + SS	E	1 MeV	Arkel, D. R.; Williams, T. R. Void swelling in FV607 ferritic steel- I. Irradiation with 1 MeV electrons. <i>J. Nucl. Mater.</i> 74, 144 (1978) United Kingdom
399	D14 e + SS	E	1 MeV	Hayes, R. R.; Williams, T. R. Void swelling in FV607 ferritic steel- II. A theoretic model. <i>J. Nucl. Mater.</i> 74, 151 (1978) United Kingdom
400	D14 He ⁺ + SS; Si ⁺⁺ + SS	E	1 MeV/sec	McGuire, J. R.; Chayko, V. J.; Townsend, J. B.; Chang, J. H.; Yew, J. S.; Spitznagel, J. A.; Boyle, D. J.; Wanklyn, F. J. The effects of sequential and simultaneous helium implantation or void formation in a 304 stainless steel. <i>J. Nucl. Mater.</i> 74, 174 (1978) United States
401	D16 D ⁺ + SS; D ₂ ⁺ + SS	E, T	1 keV	Wilson, R. L.; Benkes, R. I. Thermal desorption of deuterium-implanted stainless steel. <i>J. Nucl. Mater.</i> 74, 179 (1978) United States
402	D14 He ⁺ + Nb	E	850 keV	Karamoto, N.; Kameda, K. Blistar formation in a niobium single crystal on He ⁺ ion bombardment. <i>J. Nucl. Mater.</i> 74, 186 (1978) Japan
403	D14 Under	T	Under	Rosner, L. K.; Yoo, R. H. The effects of impurity trapping on irradiation-induced swelling and creep. <i>J. Nucl. Mater.</i> 74, 228 (1978) United States
404	C85 He ⁺ + SS; O ⁺ + SS D15 He ⁺ + SS; O ⁺ + SS D16 He ⁺ + SS; O ⁺ + SS D14 He ⁺ + SS; O ⁺ + SS	E	0.8-2.0 MeV	Chayko, V. J.; Spitznagel, J. A.; McGuire, J. R.; Lilly, J. S. Momentum transfer and damage energy gradient effects on helium distributions in type 304 stainless steel. <i>J. Nucl. Mater.</i> 74, 303 (1978) United States
405	D02 D ⁺ + SiC; Ar ⁺ + SiC	E	3.7-100 keV	Muhri, M.; Uetani, K.; Yamashina, T. Sputtering process of a silicon carbide surface with energetic ions by means of an AES-SIMS-FES combined system. <i>J. Nucl. Mater.</i> 75, 7 (1978) Japan
406	D15 H ⁺ + Cu; D1 ⁺ + Cu; Ar ⁺⁺ + Cu; e + Cu	E	150-600 keV; 2.0 MeV	Birtcher, R. C.; Averbach, R. S.; Elliott, T. M. Saturation behavior of cascade damage production using fission fragment and ion irradiations. <i>J. Nucl. Mater.</i> 75, 167 (1978) United States
407	D14 He ⁺ + {Ni + Al}	E	400 keV	Chen, L. J.; Ardell, A. J. Void ordering in nitrogen irradiated nickel-aluminum solid solutions. <i>J. Nucl. Mater.</i> 75, 177 (1978) United States
408	D17 D ⁺ + C; H ⁺ + C D02 H ⁺ + {C + D}	E	5-30 keV	Braganza, C. M.; Erenis, S. K.; McCashen, G. M. Interactions of 5-30 keV deuterons with a carbon surface. <i>J. Nucl. Mater.</i> 75, 220 (1978) United Kingdom

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
409	B02 $H^+ + SiC; D^+ + SiC; Ar^+ + SiC$	E	5-15 keV	Nehrl, H.; Watanabe, K.; Yamashita, T.; Doi, H.; Hayakawa, K. Measurement of erosion yield for a SiC surface on H^+ , D^+ and Ar^+ . J. Nucl. Mater. 76, 305 (1978) Japan
410	A14 $OH + COS; OH + CS_2$	E	299-436 K	Atherton, E.; Perry, R. A.; Pitts, J. N., Jr. Rate constants for the reaction of OH radicals with COS, CS_2 and CH_3SCH_3 over the temperature range 299-436 K. Chem. Phys. Lett. 54, 14 (1978) United States
411	A14 $CO + OH$	E	32 °C	Butler, R.; Solomon, I. J.; Sankar, A. Pressure dependence of the $CO + OH$ rate constant in $O_2 + H_2$ mixtures. Chem. Phys. Lett. 54, 15 (1978) United States
412	M08 $h\nu + Kr; h\nu + Xe$	E	1470-1236 Å	Matthias, E.; White, H. C.; Pollack, L. R.; Busenbarg, R. A.; Lee, S.-T.; Shirley, D. A. Time-resolved VUV spectroscopy using synchrotron radiation. Zeeman beats in resonance fluorescence of the 2p_1 states in krypton and xenon. Chem. Phys. Lett. 54, 30 (1978) United States
413	B05 $HD + U$	T	undef	Velken, G., Jr.; McCroery, J. R. Gas-solid energy transfer: effect of internal vibrational energy. Chem. Phys. Lett. 54, 35 (1978) United States
414	A17 $He + He + He$	T	undef	Lloyd, J.; Pugh, D. Some observations on the electron gas model for three-body interatomic forces. Chem. Phys. Lett. 54, 65 (1978) United Kingdom
415	A14 $U + O_2$ A27 $U + O_2$	E	330 K	Vase, P.; Lo, H. H.; Fite, W. L. Energy distribution of electrons from $U + O_2$ associative ionization. Chem. Phys. Lett. 54, 89 (1978) United States
416	A11 $Fe + HBr$	E	253-427 K	Fethia, C.; Donovan, R. J. Temperature dependence for the removal of $1(5^2P_{3/2})$ by HBr. Chem. Phys. Lett. 54, 91 (1978) United Kingdom
417	A17 $He + Ar; Ar + Kr$ G02 $He + Ar; Ar + Kr$	E T	277-323 K	Arora, P. S.; Corson, P. J.; Burles, P. J. Determination of potential parameters for the systems He-Ar and Ar-Kr from the temperature dependence of their binary diffusion coefficients. Chem. Phys. Lett. 54, 117 (1978) Australia
418	A14 $Xe^+ + Br_2$	E	23-120 kJ/mol	Lavy, H. R.; Rottner, C. T.; Simons, J. P. Molecular beam kinetics: the excitation function of the reaction $Xe(^2P_{3/2}) + Br_2 + XeBr^+ + Br$. Chem. Phys. Lett. 54, 120 (1978) United Kingdom
419	M06 Review	E	11-21 eV	de Lema, B. R.; Moynan, R.; de Lange, C. A. He(1) photoelectron spectroscopy of halogen atoms. Chem. Phys. Lett. 54, 231 (1978) The Netherlands
420	A06 $Cl_2 + Hg^+; Cl_2 + Sr^+$	E	936-1000 K	Kowalski, A.; Heldt, J. Chemiluminescent studies of excited Hg and Sr atoms with Cl_2 in the beam-gas arrangement. Chem. Phys. Lett. 54, 240 (1978) Poland
421	A14 undef	T	undef	Northrup, S. R.; Hynes, J. T. Or reaction rate constants and rate barriers. Chem. Phys. Lett. 54, 240 (1978) United States
422	A14 $H + H$	E	15-300 K	Gordon, E. B.; Mashay-Daglin, L. P.; Pogachov, O. I.; Khmelov, V. V. Gas-phase spectra of the radiative recombination of nitrogen atoms at helium temperatures. Chem. Phys. Lett. 54, 202 (1978) Soviet Union
423	A11 $Br^+ + I_2; Br^+ + Br_2; Br^+ + Cl_2; Br^+ + IBr; Br^+ + ICl; Br^+ + BrCl$	E	30° K	Moore, H.; Leone, S. R. Collisional deactivation of laser-excited $Br(^2P_{3/2})$ atoms with halogen and interhalogen molecules. Chem. Phys. Lett. 54, 314 (1978) United States

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
424	A03 He + H ₂ A14 F + H ₂	T	A33 3.5 eV A14 8.1 eV	Schatz, G. C.; Vaughn, C. The direct histogram method for quasiclassical collision dynamics: application to collinear atom-diatom scattering. Chem. Phys. Lett. 54, 327 (1978) United States
425	H06 2hv + H	T	1700-975 Å ⁰	Chu, S.-I. Quasienery formalism for intense field multiphoton ionization of atoms induced by circularly polarized radiation. Chem. Phys. Lett. 54, 387 (1978) United States
426	A14 Undef	T	Undef	Kaufman, F.; Levine, R. D. The thermal rate constant of elementary reactions: does specificity of energy disposal require a concomitant lowering of its magnitude. Chem. Phys. Lett. 54, 487 (1978) United States
427	H06 hv + SF ₆	E	10 μm	Frankel, D. S., Jr.; Manocchio, T. J. Collisionless 16 μm fluorescence in SF ₆ following 10 μm CO ₂ laser pumping: comments on the vibrational quasicontinuum. Chem. Phys. Lett. 54, 451 (1978) United States
428	A13 Review	E	390 K	Adams, N. G.; Smith, D. Reactions of CH (sub n) ⁰ ions with molecules at 300 K. Chem. Phys. Lett. 54, 530 (1978) United Kingdom
429	A13 Review	E	225-300 K	Smith, D.; Adams, N. G. Binary and ternary reactions of CH ₂ ⁺ ions with several molecules at thermal energies. Chem. Phys. Lett. 54, 535 (1978) United Kingdom
430	A10 H ₂ O + NH ₃	E	300 K	Marlemont, F.; Lyszyk, R.; Lemaire, J. Collision induced energy transfer between H ₂ O and NH ₃ molecules. Chem. Phys. Lett. 54, 603 (1978) France
431	A17 Review	T	Undef	Murrell, J. N. Potential energy surfaces for clusters of main group elements. Chem. Phys. Lett. 55, 1 (1978) Israel
432	A14 O + Cl ₂ ; O + Co ₂	E	13 kJ/mol	Gorry, P. A.; Naulkova, C. V.; Grice, R. Inactive scattering of a neon seeded oxygen atom beam. Chem. Phys. Lett. 55, 19 (1978) United Kingdom
433	A11 Review	E	327 K	Bron, J. N., Jr.; Kolts, J. N.; Seltzer, D. W. Quenching rate constants for He(2P ₁) metastable atoms at room temperature. Chem. Phys. Lett. 55, 44 (1978) United States
434	A06 Review A07 Review	E	25-300 eV	Aberle, W.; Brahm, B.; Grosser, J. Integral cross sections for ion pair and free electron production in collisions with hydrogen atoms. Chem. Phys. Lett. 55, 71 (1978) West Germany
435	A04 I ₂ + Ar	T	2000 K	Stace, A. J. A computer simulation of the iodine molecule dissociation reaction. Chem. Phys. Lett. 55, 77 (1978) United Kingdom
436	H05 hv + HCN; hv + DCN	T	147-141 nm	Ansfeld, M. N. D.; Redpherson, M. T.; Simons, J. P. The dynamics of photodissociation of HCN and DCN: theoretical predictions and experimental observations. Chem. Phys. Lett. 55, 84 (1978) United Kingdom
437	A10 He + Co ₂ ; Ar + Co ₂	T	0.069 eV	Pach, R. T. Anisotropic potentials and the damping of rainbow and diffraction oscillations in differential cross sections. Chem. Phys. Lett. 55, 197 (1978) United States
438	A03 Ar + H ₂	T	209 cm ⁻¹	Fitz, D. E. On the choice of partial wave parameter for IOS calculations of m-dependent rotationally inelastic cross sections. Chem. Phys. Lett. 55, 202 (1978) Canada

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
439	A17 $C + H^+$	T	Under	Shimohara, N.; Inouye, K.; Nonaka, H.; Soguro, K.; Ohno, K. Valence full configuration interaction calculation of the CH^+ ion. <i>Chem. Phys. Lett.</i> 55, 221 (1978) Japan
440	A13 $C^+ + H_2$	T	1.25-3.0 eV	Sullivan, J. P.; Herbst, E. A classical trajectory study of the ion-molecule reaction between C^+ and H_2 . <i>Chem. Phys. Lett.</i> 55, 226 (1978) United States
441	A18 $He + O_2$	T	3.1-2 eV	Gordon, R. J. On the relation between three-dimensional and collinear rate constants for vibrational energy transfer. <i>Chem. Phys. Lett.</i> 55, 236 (1978) United States
442	A14 $Ca + H_2O$	E	322 K	Bugdikian, P. J. Determination of the absolute chemiluminescence cross section and photon yield for the $Ca(4s4p^3P) + H_2O$ reaction. <i>Chem. Phys. Lett.</i> 55, 239 (1978) United States
443	A14 $Ge + O_2$; $Ge + NO$; $Ge + H_2O$; $Si + O_2$; $Si + NO$; $Si + H_2O$	E	323 K	Szwarcman, P. N.; Davis, S. J.; Niemczyk, T. N. Reaction rate studies of atomic germanium (^{76}Ge) and silicon (^{30}Si sub J) with various oxidizers. <i>Chem. Phys. Lett.</i> 55, 274 (1978) United States
444	D09 $CO_2^+ + C$; $H_2O^+ + C$	E	3.5 MeV	Gomell, B. S.; Kantor, E. P.; Piatetsky, V. J. Structure effects upon the dissociation of 3.5-MeV beams of CO_2^+ and H_2O^+ in thin foils. <i>Chem. Phys. Lett.</i> 55, 331 (1978) United States
445	A02 $H + H_2$	E	322 K	Torrelle, F.; Dondi, M. G. H-H ₂ elastic differential cross section. <i>Chem. Phys. Lett.</i> 55, 339 (1978) West Germany
446	E06 $e + H_2^+$; $e + H_3^+$	E	333 K	Trainer, D. W. Electron-ion dissociative recombination rate constant for the reaction $e + H$ (sub n) ⁺ . <i>Chem. Phys. Lett.</i> 55, 361 (1978) United States
447	A14 $Br + Br_2$	T	330-600 K	Thompson, D. L. On the rate and activation energy of the $Br + Br_2$ atom-exchange reaction. <i>Chem. Phys. Lett.</i> 55, 424 (1978) United States
448	A14 $H_2 + H$	T	0.1-1.0 eV	Goshkov, V. I.; Ushakov, V. G.; Lushin, L. A. The exchange reaction $H_2(v=1) + H = H + H_2$. <i>Chem. Phys. Lett.</i> 55, 513 (1978) Soviet Union
449	A02 $Ne + Ar$; $Ne + Kr$; $Ne + Xe$	E	0.5-1.4 keV/s	Brunetti, B.; Pironi, F.; Vacchiocattivi, F.; Loggatti, E. Absolute total cross sections for elastic scattering of Ne by Ar, Kr, and Xe: characterization of long range interactions. <i>Chem. Phys. Lett.</i> 55, 545 (1978) Italy
450	K01 Review K04 Review	E T	Under	Stephens, R. G.; Wilson, L. N.; Porcu, J. L. Low-energy ion beams, 1977. The Institute of Physics, London, 1978 France
451	K01 Review AC3 Review B03 Review B04 Review B06 Review C07 Review	E	10-200 keV	Gilbody, M. B. Excited state populations of beams: preparation, measurement and control. p. 186 in Low-energy ion beams, 1977, Stephens, R. G., et al., ed. The Institute of Physics, London, 1978 United Kingdom
452	A06 Review	E T	33 keV	Muller, A.; Salzborn, E. Highly charged ions: production and charge exchange. p. 165 in Low-energy ion beams, 1977, Stephens, R. G., et al., ed. The Institute of Physics, London, 1978 West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
453	A06 Ar ⁺ + Ar; Kr ⁺ + Kr; Ne ⁺ + Ne; Ne ⁺ + Ne; Ne ⁺ + Ar; B ⁺ + Ar; C ⁺ + Ar; Ne ⁺ + Ar; Al ⁺ + Ar; Cl ⁺ + Ar; Cr ⁺ + Ar; Ni ⁺ + Ar; Cu ⁺ + Ar; Kr ⁺ + Ar; Cd ⁺ + Ar; Ta ⁺ + Ar; Cs ⁺ + Ar; W ⁺ + Ar	E	13-40 keV	Layland, K.; Armour, D. G.; Carter, G.; Freeman, J. K. Charge transfer cross sections in high-flux, low-energy accelerators. p. 175, in Low-energy Ion Beams, 1977, Stephens, K. G., et al., ed. The Institute of Physics, London, 1978 United Kingdom
454	A13 I ⁺ + CH ₄	E	Undef	Becker, R.; Hölgeist, N.; Jöhl, G. R. An apparatus for the investigation of the interaction between ion beams and gases. p. 185 in Low-energy Ion Beams, 1977, Stephens, K. G., et al., ed. The Institute of Physics, London, 1978 West Germany
455	B07 Ne ⁺ + Ni; Ne ⁺ + Ni; Ne ⁺ + Ag D13 Ar ⁺ + CO + Ni; Ar ⁺ + O + Ni; Ne ⁺ + S + Ni; Ne ⁺ + CO + Ni B02 Ne ⁺ + Ag; Ne ⁺ + Ta; Ne ⁺ + Te; Ne ⁺ + U; Ne ⁺ + Hf; Ne ⁺ + V; Ne ⁺ + Hf; Ne ⁺ + Pb	E	B07 230-600 eV D13 730-2800 eV B02 180-2800 eV	Helland, W.; Tagliaver, E. Scattering of ion beams from surfaces. p. 267 in Low-energy Ion Beams, 1977, Stephens, K. G., et al., ed. The Institute of Physics, London, 1978 West Germany
456	B07 Ne ⁺ + Ni; Ne ⁺ + O + Ni	E	6 keV	van den Berg, J. A.; Armour, D. G.; Verheij, L. K. A 2-100 keV, UVV ion impact spectrometer for ion-solid interaction studies. p. 298 in Low-energy Ion Beams, 1977, Stephens, K. G., et al., ed. The Institute of Physics, London, 1978 United Kingdom
457	C04 D ⁺ + Ni; He ⁺ + Ni D14 D ⁺ + Ni; He ⁺ + Ni	E	50-100 keV	Kaminsky, M.; Das, S. K.; Ehorn, R.; Hase, E. C. An accelerator system for producing two-component beams for studies of interactive surface effects. p. 305 in Low-energy Ion Beams, 1977, Stephens, K. G., et al., ed. The Institute of Physics, London, 1978 United States
458	B07 Ar ⁺ + Cu	E	5-35 keV	Mashkev, E. S.; Melchanov, V. A. Surface analysis using the double-scattering effect. p. 313 in Low-energy Ion Beams, 1977, Stephens, K. G., et al., ed. The Institute of Physics, London, 1978 Soviet Union
459	F01 O ⁺ ; O ²⁺ ; O ³⁺	E	Undef	Pinnington, E. M.; Donnelly, K. E.; Kernahan, J. A.; Irwin, D. J. G. Beam-fall spectroscopy of oxygen in the wavelength region from 270 to 450 Å. Can. J. Phys. 56, 508 (1978) Canada
460	E12 e ⁺ + H	T	25-136 eV	Kulher, V. S.; Shastri, C. S. Excited states of positronium in positron-hydrogen charge exchange. Can. J. Phys. 56, 665 (1978) India
461	A16 H ₂ + Ar; H ₂ + Kr; H ₂ + Xe A17 H ₂ + Ar; H ₂ + Kr; H ₂ + Xe	E	237-770 K	Rull, A. M.; Smith, A. M.; Scoles, G. Intermolecular forces in hydrogen-noble gas mixtures. Can. J. Phys. 56, 783 (1978) Canada
462	F01 H ₂	E	Undef	Chien, C. W. T.; Dalby, F. W.; van der Linde, J. Radiative lifetimes and hyperfine constants for the J _d complex of molecular hydrogen. Can. J. Phys. 56, 827 (1978) Canada
463	A05 Hg + Ti A03 Hg + Ti A11 Hg + Ti	E	710-815 K	Wade, M. K.; Czajkowski, M.; Krause, L. Sensitized fluorescence in thallium induced in collisions with Hg(6 ³ P ₁) atoms. Can. J. Phys. 56, 891 (1978) Canada
464	A02 H ⁺ + H; H ⁺ + D A06 H ⁺ + H; H ⁺ + D A18 H ⁺ + H; H ⁺ + D	T	0.0-0.1 eV	Davis, J. P.; Thorson, W. R. Very low energy scattering in H ⁺ and HD ⁺ . Can. J. Phys. 56, 596 (1978) Canada
465	H02 hv + N ₂ ; hv + CO ₂ A12 N ₂ + N ₂ ; CO ₂ + CO ₂	E	4.6 cm ⁻¹	Dagg, I. R.; Reesor, G. E.; Worg, P. A microwave cavity measurement of collision-induced absorption in N ₂ and CO ₂ at 4.6 cm ⁻¹ . Can. J. Phys. 56, 1037 (1978) Canada

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
466	M02 He + [Ne + Xe]; He + [Ar + Xe] A12 He + Xe; Ar + Xe	E	4-4 cm ⁻¹	Dagg, I. R.; Reuser, G. E.; Wong, P. Collision-induced microwave absorption in He-Xe and Ar-Xe gaseous mixtures. Can. J. Phys. 56, 1046 (1978) Canada
467	M03 He* + He	T	20-10000 keV	Ojha, S. P.; Tibari, P.; Srivastava, K. P. Cross section for the excitation of helium by He*. Can. J. Phys. 56, 1232 (1978) India
468	E05 e + He; e + Ar; e + Kr; e + Xe	T	73-1000 eV	Kumar, A.; Roy, B. N. Binary encounter calculations on electron impact double ionization of noble gas atoms. Can. J. Phys. 56, 1255 (1978) India
469	G19 e + CO ₂ ; e + [CO ₂ + N ₂ + He]	E	45-99 Td	Davies, D. R. Ionization and attachment coefficients in CO ₂ :N ₂ :He and pure CO ₂ . J. Appl. Phys. 49, 127 (1978) United States
470	D14 He* + H ₁	E	500 keV	Sinha, M. K.; Das, S. K.; Kamalshy, R. Temperature dependence of helium blistering in nickel monocrystals. J. Appl. Phys. 49, 170 (1978) United States
471	C04 e + H ₂ ; e + D ₂ D06 e + H ₂ ; e + D ₂ D04 e + H ₂ ; e + D ₂	E	0.5-3 keV	Schoen, J.; Sorensen, H. The penetration depth of 0.5-3-keV electrons in solid hydrogen and deuterium. J. Appl. Phys. 49, 816 (1978) Denmark
472	C04 He* + C; He* + Al; He* + Si; He* + V; He* + Ni; He* + Zr	E	23-60 keV	Bottiger, J.; Jensen, P. S.; Littmark, U. Depth profiles of He ions implanted into solids at energies between 20 and 60 keV. J. Appl. Phys. 49, 565 (1978) Denmark
473	A11 He* + Pb; He* + Pb	E	921 K	Cross, L. A.; Cen Gokay, N. Excitation processes in a Pb-He discharge. J. Appl. Phys. 49, 2639 (1978) United States
474	E02 e + Cd E03 e + Cd E05 e + Cd G08 e + Ar G07 e + Cd G05 e + Ar	T	E02; E03; E05; G08 0-15 eV G07; G05 0.1-100 Td	Fournier, G. R.; McGeech, M. W. Kinetic model of the sustained discharge excitation of the cadmium mercury excimer. J. Appl. Phys. 49, 2611 (1978) United Kingdom
475	D08 B* + Cu; B* + Mo D03 B* + Cu; B* + Mo	E	60-200 keV	Thomas, E. W.; Inouye, M.; Rausch, E. G. Excited state formed by B* impact on metallic Cu and Mo. J. Appl. Phys. 49, 2911 (1978) United States
476	A04 H* + Cs; H + Cs A20 H* + Cs; H + Cs	E	0.5-1.1 keV	Kamperschroder, J. H.; Post, A. S. Use of a Hall accelerator in the production of negative hydrogen ions in cesium vapor. J. Appl. Phys. 45, 3859 (1978) United States
477	A11 He* + Ca; He* + Sr A06 Xe* + Ca; Xe* + Sr	E	Undef	Butterfield, K. B.; Gerstenlanger, D. C.; Shay, T.; Little, M. L.; Collins, G. . . Collisional quenching of Xe*(³ P) and He 2 ³ S metastables by calcium and strontium metal vapors. J. Appl. Phys. 45, 3888 (1978) United States
478	D04 Undef	E T	850-2600 eV	Alig, R. C.; Bloom, S. Secondary-electron-escape probabilities. J. Appl. Phys. 49, 3476 (1978) United States
479	D04 e + Si	E	15-35 keV	Muller, M. W.; Schroder, B. Electron backscattering from thin silicon crystals. J. Appl. Phys. 45, 3898 (1978) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
480	E02 $e + N_2$ E03 $e + N_2$ E05 $e + N_2$ E17 $e + N_2$ G09 $e + N_2$	E T	E02; E03; E35; E17 0-70 eV G09 5-60 eV	Cartwright, D. C. Rate coefficients and inelastic momentum transfer cross sections for electronic excitation of N_2 by electrons. J. Appl. Phys. 49, 3855 (1978) United States
481	C04 $D^+ + C$; $D^+ + Al$; $D^+ + Ni$; $D^+ + Zr$	E	17-30 keV	Bergesen, P.; Bottiger, J.; Muller, W. Ranges of 10-30-keV deuterons implanted into solids. J. Appl. Phys. 49, 4401 (1978) Denmark
482	D04 $e + [Ca + K + Na + Sb]$	E	430-2500 eV	Ghosh, C.; Varma, B. P. Secondary electron emission from multialkali photocathodes. J. Appl. Phys. 49, 4504 (1978) India
483	D04 $e + N_2$ D06 $e + N_2$; $e + C$ C04 $e + N_2$	E	1-3 keV	Sorenson, H.; Schou, J. Interaction between solid nitrogen and 1-3-keV electrons. J. Appl. Phys. 45, 5311 (1978) Denmark
484	C01 $N_2^+ + C$ C05 $N_2^+ + C$ A04 $N_2^+ + C$	E	2-1 MeV	Galliard, R. J.; Gemmell, D. S.; Gieding, G.; Levine, I.; Pletsch, W. J.; Polatz, J. C.; Rathowski, A. J.; Remilaux, J.; Veger, Z.; Zabravsky, B. J. Experimental determination of the structure of N_2^+ . Phys. Rev. A 17, 1797 (1978) United States
485	E03 $e + He^+$	T	53-1000 eV	Williamson, W., Jr.; Foster, G.; Kiang, R. Glauber exchange amplitudes for the scattering of electrons from hydrogenlike ions. Phys. Rev. A 17, 1823 (1978) United States
486	E05 $e + Ar$ E17 $e + Ar$	E	130 eV	Hong, S. P.; Bonty, E. C. Measurements of the triple-differential cross section for low-energy electron-impact ionization of argon. Phys. Rev. A 17, 1829 (1978) United States
487	A11 $F^{10} + He$; $F^{10} + He$; $F^{10} + Ar$; $F^{10} + Kr$; $F^{10} + Xe$; $F^{10} + D_2$; $F^{10} + He$; $F^{10} + He$; $F^{10} + Ar$; $F^{10} + Kr$; $F^{10} + Xe$; $F^{10} + D_2$; $F^{10} + He$; $F^{10} + He$; $F^{10} + Ar$; $F^{10} + Kr$; $F^{10} + Xe$; $F^{10} + D_2$; $F^{10} + He$; $F^{10} + He$; $F^{10} + Ar$; $F^{10} + Kr$; $F^{10} + Xe$; $F^{10} + D_2$	E	35-55 MeV	Brenn, R.; Hopkins, F.; Sprouse, G. D. Hyperfine interactions in few-electron fluorine ions recoiling in gases. Phys. Rev. A 17, 1837 (1978) West Germany
488	E17 $e + He$	E	0.5-50 eV	Kennedy, R. E.; Bonham, R. A. Electron-helium absolute total scattering cross sections from 0.5-50 eV. Phys. Rev. A 17, 1844 (1978) United States
489	E02 $e + CO_2$ G09 $e + CO_2$ E17 $e + CO_2$	E	3-90 eV	Shyn, T. V.; Sharp, W. E.; Corrigan, G. R. Angular distribution of electrons elastically scattered from CO_2 . Phys. Rev. A 17, 1855 (1978) United States
490	A11 $Ca^+ + Ca$ A03 $Ca^+ + Ca$ A05 $Ca^+ + Ca$ M08 $h\nu + Ca$	E	A03; A05; A11 330 K M08 8636-8761 A0	Tan, A. C.; Yabuzaki, T.; Curry, S. R.; Mau, M.; Hopper, W. Inelastic cross sections in $Ca(n^4D \text{ sub } j) + Ca(6^3S_{1/2})$ collisions. Phys. Rev. A 17, 1862 (1978) United States
491	E03 $e + H$	T	2-1361 eV	Chen, F. T.; Cheng, C. H.; Lieber, M.; Kim, Y.-K. Comparison of the Born and Glauber generalized oscillator strengths for the $2s, 3p$ transition of atomic hydrogen. Phys. Rev. A 17, 1865 (1978) United States

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492	ED3 $e + N_2$ ED4 $e + N_2$	T	13-40 eV	Chung, S.; Lin, C. C. Application of the close-coupling method to excitation of electronic states and dissociation of N_2 by electron impact. <i>Phys. Rev. A</i> 17, 1874 (1978) United States
493	A07 Undef A03 Undef	T	Undef	Mhamure, M.; Shirai, T.; Nakai, Y. Improved impulse approximation for ionization collisions between atoms. <i>Phys. Rev. A</i> 17, 1852 (1978) France
494	B07 $e + H$	T	Undef	Brandt, M. S.; Kellier, B.; Lima de Barros, M. G. P.; Miranda, L. C. P.; Castro, J. J. Theory of electron-hydrogen-atom collisions in the presence of a laser field. <i>Phys. Rev. A</i> 17, 1900 (1978) Brazil
495	H06 $h\nu + N$; $h\nu + N_2$; $h\nu + N_2O$ H02 $h\nu + Ar$; $h\nu + N_2$; $h\nu + N_2O$	E	330-450 eV	Bianconi, A.; Petersen, M.; Brown, F. C.; Bochrach, G. Z. K-shell photoabsorption spectra of N_2 and N_2O using synchrotron radiation. <i>Phys. Rev. A</i> 17, 1907 (1978) United States
496	H12 Undef	T	Undef	Barvick, J. Classical theory of radiative transitions. <i>Phys. Rev. A</i> 17, 1912 (1978) United States
497	E03 $e + O_2$ ED4 $e + O_2$ F01 O^+	E	E93; E84 27 eV	Mowak, G.; Borst, W. L.; Fricke, J. Lifetime determination of the $O(^3P)$ metastable state via $1356\text{-}\text{\AA}$ using a time-of-flight technique. <i>Phys. Rev. A</i> 17, 1921 (1978) West Germany
498	H06 $h\nu + Be\text{ Seq}$	T	61-1600 eV	Watson, D. K.; Balgarn, A.; Stewart, R. F. Inner-shell photoionization of the beryllium isoelectronic sequence. <i>Phys. Rev. A</i> 17, 1928 (1978) United States
499	E02 $e + Be$	T	0-50 eV	Ruscigno, T. B.; McCurdy, C. W., Jr.; Ureel, A. E. Extensions of the complex-coordinate method to the study of resonances in many-electron systems. <i>Phys. Rev. A</i> 17, 1931 (1978) United States
500	C07 $Kr^+ + C$; $Ge^+ + C$	T	Undef	Younger, S. R.; Vlasov, W. L. Theoretical simulation of beam-foil decay curves for resonance transitions of heavy ions. <i>Phys. Rev. A</i> 17, 1944 (1978) United States
501	F01 $Zn\text{ Seq}$	T		Fischer, C. F.; Hansen, J. E. Theoretical oscillator strengths for the resonance transitions in the Zn isoelectronic sequence. <i>Phys. Rev. A</i> 17, 1986 (1978) United States
502	C07 $C^+ + C$; $N^+ + C$; $O^+ + C$ F01 C^{2+} ; N^{2+}	T	C07 2-4 MeV	Livingston, A. E.; Berry, M. G. Fine structure of the $1s2s2p^2P^o$ and $1s2p^2P^o$ doubly excited states in lithiumlike carbon, nitrogen, and oxygen. <i>Phys. Rev. A</i> 17, 1966 (1978) United States
503	H01 Undef	T	Undef	Srivastava, M. P. Theoretical investigation of energy-trapping mechanism by atomic systems. <i>Phys. Rev. A</i> 17, 1976 (1978) Canada
504	B01 Undef F02 Undef	T		O'Connell, R. F. Rydberg states in strong electric and magnetic fields. <i>Phys. Rev. A</i> 17, 1984 (1978) United States
505	H02 $h\nu + Ar_2^+$; $h\nu + Kr_2^+$; $h\nu + Xe_2^+$ H05 $h\nu + Ar_2^+$; $h\nu + Kr_2^+$; $h\nu + Xe_2^+$	E	5200-8600 $\text{\AA}$	Lee, L. C.; Smith, G. P.; Miller, J. R.; Cosby, P. C. Photodissociation cross sections of Ar_2^+ , Kr_2^+ , and Xe_2^+ from 5200 to 8600 Angstroms. <i>Phys. Rev. A</i> 17, 2005 (1978) United States
506	H02 $h\nu + Mn$	T	45-66 eV	Davis, L. C.; Feldkamp, L. A. Mn_{II} spectrum of atomic Mn. <i>Phys. Rev. A</i> 17, 2012 (1978) United States
507	C02 $H^+ + PERT$; $He^+ + PERT$; $Li^+ + PERT$; $Be^+ + PERT$; $B^+ + PERT$; $C^+ + PERT$; $N^+ + PERT$; $O^+ + PERT$; $F^+ + PERT$	T	Undef	Ritchie, R. M.; Brandt, W. Projectile-charge dependence of stopping powers. <i>Phys. Rev. A</i> 17, 2102 (1978) United States

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508	ED2 e + N ₂ E17 e + N ₂	T	0-30 eV	Siegel, J.; Bill, D.; DeJong, J. L. Differential elastic electron scattering cross sections for N ₂ from 0 to 30 eV. Phys. Rev. A 17, 2106 (1978) United States
509	ED2 e + Ar; e + Kr	T	Undef	Ray, A. C.; Sil, M. C. *Erratum Elastic scattering of electrons from Ar and Kr in the second-order classical approximation [Phys. Rev. A 15, 931 (1977)]. Phys. Rev. A 17, 2115 (1978) India
510	ND3 Undef ND8 Undef	T	Undef	Courton, E.; Szoke, A. *Erratum Time and spectral resolution in resonance scattering and resonance fluorescence [Phys. Rev. A 15, 1581 (1977)]. Phys. Rev. A 17, 2115 (1978) Switzerland
511	Ar ⁺ + Pd ₂ Si; Ar ⁺ + NiSi ₂ C88 He ⁺ + Pd ₂ Si; He ⁺ + NiSi ₂	E	D15 170 keV C88 1.5 MeV	Ishiwara, N.; Mikosaka, K.; Furukawa, S. Channeling studies of radiation damage in metal-silicides. Appl. Phys. Lett. 32, 23 (1978) Japan
512	ND2 hv + CH ₃ OCH ₃ ; hv + CCl ₃ F A11 CH ₃ OCH ₃ ⁺ + CH ₃ OCH ₃ ; CCl ₃ F ⁺ + CCl ₃ F	E	ND2 10.6 μm A11 301 K	Kung, R. Y. V.; Sirchia, N. Optical saturation characteristics of CH ₃ OCH ₃ and CCl ₃ F. Appl. Phys. Lett. 32, 38 (1978) United States
513	ND2 hv + PH ₃ ; hv + AsH ₃ ; hv + B ₂ H ₆ ; hv + SiH ₄ ND5 hv + PH ₃ ; hv + AsH ₃ ; hv + B ₂ H ₆ ; hv + SiH ₄ N10 hv + PH ₃ ; hv + AsH ₃ ; hv + B ₂ H ₆ ; hv + SiH ₄	E	6 eV	Clerk, J. N.; Anderson, R. G. Silane purification via laser-induced chemistry. Appl. Phys. Lett. 32, 46 (1978) United States
514	D17 O ⁺ + GaAs	E	400 K	Toyoyama, N.; Miura, Y.; Odani, K.; Fukuta, N. Low-temperature plasma oxidation of GaAs. Appl. Phys. Lett. 32, 58 (1978) Japan
515	A09 Ar ⁺ + F ⁻ ; Ar ₂ ⁺ + F ⁻ ; Kr ⁺ + F ⁻ ; Kr ₂ ⁺ + F ⁻ ; Ar ⁺ + Cl ⁻ ; Ne ⁺ + Cl ⁻	T	320 K	Madhava, J. N.; Bardeley, J. M. Calculations in ion-ion recombination rates at high pressures. Appl. Phys. Lett. 32, 76 (1978) United States
516	D07 Na ⁺ + Si; Na ⁺ + V C88 Na ⁺ + Si; Na ⁺ + V	E	0.4-3 MeV	Kauffman, R. L.; Feldman, L. C.; Silverman, P. J.; Zehr, R. A. Significance of the channeling surface peak in thin-film analysis. Appl. Phys. Lett. 32, 53 (1978) United States
517	A09 Kr ⁺ + F ⁻ A11 KrF ⁺ + F ₂ ; KrF ⁺ + Kr E16 e + [Kr + F ₂]	E	A09 377 K A11 300 K E16 150 keV	Jacob, J. N.; Rahni, M.; Kangawa, J. A.; Brochu, M. Formation and quenching processes in e-beam-pumped Kr/F ₂ mixtures. Appl. Phys. Lett. 32, 109 (1978) United States
518	D16 B ⁺ + Si	E	35 keV	Young, R. Y.; White, C. V.; Clark, G. J.; Norayan, J.; Christie, W. N.; Murahani, M.; King, P. W.; Krawar, S. D. Laser annealing of boron-implanted silicon. Appl. Phys. Lett. 32, 139 (1978) United States
519	D16 BF ₃ ⁺ + Si	E	150 keV	Toni, M. Y.; Streetman, B. G.; Williams, P.; Evans, C. A., Jr. Anomalous migration of fluorine and electrical activation of boron in BF ₃ ⁺ -implanted silicon. Appl. Phys. Lett. 32, 144 (1978) United States
520	D16 Te ⁺ + GaAs	E	51 keV	Golovchenko, J. A.; Vonkateson, T. R. C. Annealing of Te-implanted GaAs by ruby laser irradiation. Appl. Phys. Lett. 32, 147 (1978) United States
521	ND6 hv + U	E	3.5 eV	Nochizaki, T.; Marikawa, N.; Yamashita, C. Photoionization of uranium atoms by an argon ion laser. Appl. Phys. Lett. 32, 212 (1978) Japan

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
512	HP4 $h\nu + \text{CH}_2\text{F}$	E	9.4 μm	Proenitz, B.; Jacobs, R. H.; Bischof, U. K.; Rhodes, C. K. Stimulated emission at 9.75 μm following two-photon excitation of methyl fluoride. <i>Appl. Phys. Lett.</i> 32, 221 (1978) United States
523	A11 $\text{XeF}^+ + \text{He}; \text{XeF}^+ + \text{F}_2; \text{XeF}^+ + \text{Xe};$ $\text{XeF}^+ + [\text{Xe} + \text{He}]$	E	333 K	Rehal, M.; Jacob, J. H.; Mangano, J. A.; Brochu, R. Formation and quenching of XeF^+ in $\text{He}/\text{Xe}/\text{F}_2$ mixtures. <i>Appl. Phys. Lett.</i> 32, 223 (1978) United States
524	E16 $e + [\text{Hg} + \text{Cl}_2 + \text{Xe} + \text{Ar}]$	E	150 keV	Yang, L. Y.; Hunter, R. C., Jr.; Oldenettel, J.; Newton, C.; Mueslin, B.; Echstrom, B.; Perry, D.; McCusker, R. Electron-beam-controlled discharge HgCl^+ laser. <i>Appl. Phys. Lett.</i> 32, 226 (1978) United States
525	HP5 $h\nu + \text{SeF}_6$	E	13.1 μm	Tice, J. J.; Wittig, C. Isotopically selective IR photodissociation of SeF_6 . <i>Appl. Phys. Lett.</i> 32, 230 (1978) United States
526	E16 $e + [\text{Ar} + \text{Hg} + \text{Cl}_2]; e + [\text{Ar} + \text{Hg} + \text{BrCCl}_2]$	E	50 keV	Whitney, W. T. Sustained discharge excitation of HgCl and HgBr $B^2\Sigma^+_{1/2} \leftarrow A^2\Sigma^+_{1/2}$ and $B^2\Sigma^+_{1/2} \leftarrow A^2\Sigma^+_{1/2}$ lasers. <i>Appl. Phys. Lett.</i> 32, 239 (1978) United States
527	HP6 $h\nu + \text{CO}_2$	E	12.4 μm	Chin, S. L.; Faubert, D. Energy dependence of collisionless multiphoton ionization of CO_2 molecules by a TEA- CO_2 laser. <i>Appl. Phys. Lett.</i> 32, 303 (1978) Canada
528	A06 $\text{H}^+ + \text{Ca}; \text{K}^+ + \text{Na}$ A03 $\text{H}^+ + \text{Ca}; \text{H}^+ + \text{Na}$	E	53° eV	Mausman, D. C.; Mohr, H.; Cassidy, J. C.; Yang, C. L.; Copeland, D. A.; Mortson, P. L. Lyman- α radiation from Ca-H^+ and Na-H^+ charge transfer processes with a plasma gun. <i>Appl. Phys. Lett.</i> 32, 308 (1978) United States
529	A19 $\text{Na}^+ + \text{F}^-; \text{Na}^+ + \text{F}^-; \text{Ar}^+ + \text{F}^-; \text{Kr}^+ + \text{F}^-;$ $\text{Xe}^+ + \text{F}^-$	E	333 K	Flannery, M. R.; Yang, T. P. Ionic recombination of rare-gas atomic ions X^+ with F^- in a dense-gas X . <i>Appl. Phys. Lett.</i> 32, 327 (1978) United States
530	E04 $e + \text{F}_2$ E09 $e + \text{F}_2$	E	6 eV	Mygaard, K. J.; Hunter, S. R.; Fletcher, J.; Feltz, S. R. Electron attachment in dilute fluorine-helium mixtures. <i>Appl. Phys. Lett.</i> 32, 351 (1978) United States
531	A09 $\text{Na}_2^+ + \text{F}^-; \text{Na}_2^+ + \text{F}^-; \text{Ar}_2^+ + \text{F}^-;$ $\text{Kr}_2^+ + \text{F}^-; \text{Xe}_2^+ + \text{F}^-$	E	330 K	Flannery, M. R.; Yang, T. P. Ionic recombination of rare-gas molecular ions X_2^+ with F^- in a dense gas X . <i>Appl. Phys. Lett.</i> 32, 356 (1978) United States
532	A11 $\text{ArF}^+ + \text{F}_2$	E	330 K	Chen, C. H.; Payne, R. G. ArF^+ radiative lifetime measurement. <i>Appl. Phys. Lett.</i> 32, 368 (1978) United States
533	D17 $\text{H}^+ + \text{Si}_2\text{H}_6; \text{He}^+ + \text{Si}_2\text{H}_6$	E	75 keV	Stein, M. J. Ion-bombardment-induced transfer of H from H^+ to Si in amorphous Si_2H_6 . <i>Appl. Phys. Lett.</i> 32, 379 (1978) United States
534	D03 $\text{Ar}^+ + \text{GdF}_3$	E	15-20 keV	Tsong, T. S. T.; Shalla, A. S. Hydrogen and fluorine profiles in GdF_3 films measured by sputter-induced optical emission. <i>Appl. Phys. Lett.</i> 32, 381 (1978) United States
535	H02 $h\nu + \text{CF}_3\text{I}$ H10 $h\nu + \text{CF}_3\text{I}$	E	9.6 μm	Pomeroy, M.; Eggleston, J.; Bischof, U. K.; Rhodes, C. K. Ultraviolet absorption of CF_3I induced by excitation of the ν_3 vibrational mode at 9.6 μm . <i>Appl. Phys. Lett.</i> 32, 427 (1978) United States
536	D18 $\text{Ge}^+ + \text{Ge}$ D16 $\text{Ge}^+ + \text{Ge}$	E	15-40 keV	Graczyk, J. F.; Chaudhuri, P. Effects of ion implantation on the structure of amorphous germanium. <i>Appl. Phys. Lett.</i> 32, 466 (1978) United States
537	HP6 $h\nu + \text{TlI}; h\nu + \text{InI}; h\nu + \text{HgI}_2; h\nu + \text{MgBr}_2;$ $h\nu + \text{ZnI}_2; h\nu + \text{CdI}_2$ HP8 $h\nu + \text{TlI}; h\nu + \text{InI}; h\nu + \text{HgI}_2; h\nu + \text{MgBr}_2;$ $h\nu + \text{ZnI}_2; h\nu + \text{CdI}_2$	E	0.2 μm	May, J. Fluorescence yields of metal halide vapors excited by photodissociation. <i>Appl. Phys. Lett.</i> 32, 484 (1978) United States

REF. NO.	REACTANTS	EXP. OR TECH.	ENERGY RANGE	REFERENCE
538	B14 $\text{Ar}^+ + \text{Si}$	E	100-270 keV	Hittmair, R.; Koch, V. Blistering effects in organ-bombarded silicon. <i>Appl. Phys. Lett.</i> 32, 532 (1978) West Germany
539	A11 $\text{CO}_2^+ + \text{HBr}$	E	350 K	Osgood, R. M., Jr. 1-mJ line-tunable optically pumped 16 μm laser. <i>Appl. Phys. Lett.</i> 32, 564 (1978) United States
540	E16 $e + [\text{He} + \text{Xe} + \text{HF}_2]$	E	32? K	Forestier, B.; Fontaine, D. Long-gain ultraviolet laser emission in an electron-beam-excited supersonic flow. <i>Appl. Phys. Lett.</i> 32, 565 (1978) France
541	E04 $e + \text{HBr}; e + \text{Br}_2$ E0. $e + \text{H}; e + \text{Br}_2$	E	0-1.2 eV	Trainer, D. W.; Boness, M. J. V. Dissociative attachment of electrons to Br_2 and HBr . <i>Appl. Phys. Lett.</i> 32, 604 (1978) United States
542	H11 $\text{He} + [\text{e} + \text{H}_2]; \text{He} + [\text{e} + \text{H}_2]$	E	12.6 μm	Alroy, S.; Christensen, U. N. Observation of electron-neutral inverse bremsstrahlung in an electron-beam-sustained discharge. <i>Appl. Phys. Lett.</i> 32, 607 (1978) United States
543	G05 $e + [\text{He} + \text{F}_2]; e + \text{He}$	E	393 K	Bygaard, K. J.; Fletcher, J.; Mester, S. S.; Feltyn, S. R. Electron drift velocities in helium-fluorine gas mixtures. <i>Appl. Phys. Lett.</i> 32, 612 (1978) United States
544	H02 $\text{He} + \text{Ar}_2^+; \text{He} + \text{Xe}_2^+; \text{He} + \text{Ne}_2^+$	E	340 nm	Bohni, M.; Jacob, J. R.; Mangano, J. A. Absorption in He- and Ar-rich XeF laser mixtures. <i>Appl. Phys. Lett.</i> 32, 622 (1978) United States
545	A11 $\text{KrF}^+ + \text{F}_2; \text{KrF}^+ + [\text{Kr} + \text{Kr}]$	E	303 K	Quigley, G. P.; Hughes, V. N. The radiative lifetime and quenching of KrF^+ . <i>Appl. Phys. Lett.</i> 32, 627 (1978) United States
546	A11 $\text{Kr}_2\text{F}^+ + \text{F}_2; \text{Kr}_2\text{F}^+ + \text{Kr}; \text{Kr}_2^+ + \text{F}_2; \text{Kr}_2^+ + \text{Kr}$	E	335 K	Quigley, G. P.; Hughes, V. N. Lifetime and quenching rate constants for Kr_2F^+ and Kr_2^+ . <i>Appl. Phys. Lett.</i> 32, 649 (1978) United States
547	H08 $\text{He} + \text{I}_2$	E	0-5 μm	Davis, S. J. Dye laser pumped atomic iodine laser. <i>Appl. Phys. Lett.</i> 32, 650 (1978) United States
548	F02 F_2^+	T		de Melo, L. C.; Das, T. R.; Ferreira, R. C.; Miranda, L. C. R.; Brandi, M. S. The F_2^+ molecule in strong magnetic fields, studied by the method of linear combinations of orbitals. <i>Phys. Rev. A</i> 18, 12 (1978) Brazil
549	A17 Undef	T	Undef	Kelley, E. J.; Spruch, L. Retardation effects on high Rydberg states: A retarded K^+ polarization potential. <i>Phys. Rev. A</i> 18, 15 (1978) United States
550	A03 $\text{H}^+ + \text{He}; \text{H}^+ + \text{Ne}; \text{H}^+ + \text{Ar}; \text{H}^+ + \text{Kr}; \text{H}^+ + \text{Xe}$ A06 $\text{H}^+ + \text{He}; \text{H}^+ + \text{Ne}; \text{H}^+ + \text{Ar}; \text{H}^+ + \text{Kr}; \text{H}^+ + \text{Xe}$	E	13-155 keV	Dougherty, D. R.; Good, M. L.; Cornsough, R. V. Electron capture into the 4s state of atomic hydrogen by H^+ impact on noble gases. <i>Phys. Rev. A</i> 18, 29 (1978) United States
551	E03 $e + \text{Na Seq}$ E05 $e + \text{Na Seq}$	T	0-50 keV	Kim, T.-K.; Chung, K.-T. Some cross sections for the sodium isoelectronic sequence. <i>Phys. Rev. A</i> 18, 36 (1978) United States
552	A03 $\text{H}^+ + \text{He}$ A18 $\text{H}^+ + \text{He}$	E	25-100 keV	Park, J. T.; George, J. R.; Peacher, J. L.; Aldag, J. E. Angular differential cross sections for 25-, 50-, and 100-keV-proton excitation of helium to the $\text{ns}2$ level. <i>Phys. Rev. A</i> 18, 48 (1978) United States
553	A03 $\text{He}^+ + \text{He}; \text{He}^+ + \text{K}; \text{H}^+ + \text{He}; \text{H}^+ + \text{K}$ A06 $\text{He}^+ + \text{He}; \text{He}^+ + \text{K}; \text{H}^+ + \text{He}; \text{H}^+ + \text{K}$	E	19-600 eV	Seaton, G. N.; Alcock, B. D.; Loewenthal, J. J. Inelastic processes leading to excited-state formation in He^+ and H^+ collisions with He and K. <i>Phys. Rev. A</i> 18, 66 (1978) United States

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554	EX3 $e + H_2$ E17 $e + H_2$	T	3.9-39.3 eV	Rehner, M. K.; Gianturco, F. A.; Lammann, U. T. Glauber amplitudes for rotational excitation in e^- -molecule scattering via quadrupole potentials. <i>Phys. Rev. A</i> 18, 74 (1978) Italy
555	EX5 $e + Pb^+$	E	27-200 eV	Feeney, M. K.; Sayle, W. E., II; Divine, T. F. Absolute experimental cross sections for the electron-impact ionization of Pb^+ ions. <i>Phys. Rev. A</i> 18, 82 (1978) United States
556	AE3 $He^{2+} + He$; $He^{2+} + He$; $He^{2+} + H_2$ $He^{2+} + C_2$ AE6 $He^{2+} + He$; $He^{2+} + He$; $He^{2+} + H_2$ $He^{2+} + C_2$	E	4-600 eV	Ryers, C. D.; Ambrose, J. G.; Jasse, P. B.; Leventhal, J. J. Spin conservation in electron-capture collisions. <i>Phys. Rev. A</i> 18, 22 (1978) United States
557	A01 Undef	T	Undef	Thorsen, V. R.; Dules, J. P. Theory of near-adiabatic collisions. I. Electron transition factor method. <i>Phys. Rev. A</i> 18, 117 (1978) Canada
558	A01 Undef	T	Undef	Thorsen, V. R.; Dules, J. B. Theory of near-adiabatic collisions. II. Scattering coordinate method. <i>Phys. Rev. A</i> 18, 135 (1978) Canada
559	A04 $H_2^+ + Ar$; $H_2^+ + H_2$; $H_2^+ + Air$ A05 $H_2^+ + Ar$; $H_2^+ + H_2$; $H_2^+ + Air$ A07 $H_2^+ + Ar$; $H_2^+ + H_2$; $H_2^+ + Air$	E	400-800 keV	Nir, D.; Roemer, D.; Ramm, A.; Koster, J. Charge-state distribution of products from dissociative collisions of 400-800-keV H_2^+ ions: Experiment and semiempirical model. <i>Phys. Rev. A</i> 18, 156 (1978) Israel
560	H05 $h\nu + H_2$ H06 $h\nu + H_2$	E	43 eV	Dehmer, J. L.; Dill, D. Photoion angular distributions in dissociative photoionization of H_2 at 384 Å. <i>Phys. Rev. A</i> 18, 164 (1978) United States
561	B02 Undef H05 Undef	T	H05 Undef	Lee, A. M. F. Laser-induced molecular predissociation without absorption or emission of laser photons. <i>Phys. Rev. A</i> 18, 172 (1978) United States
562	B07 Undef	T		Navroynian, C. Two-atom resonance fluorescence. <i>Phys. Rev. A</i> 18, 165 (1978) Canada
563	F01 Au	T		Kin, Y. S.; Oh, S. B.; Pratt, R. M. Analytic description of inner-shell bound-bound transitions. <i>Phys. Rev. A</i> 18, 194 (1978) United States
564	F01 Fe^{22+} ; Fe^{22+}	E		Dienrich, D. D.; Leavitt, J. A.; Moshkin, S.; Conway, J. G.; Gould, H.; MacDonald, D.; Morris, B.; Johnson, B. M.; Pegg, D. J. Oscillator strengths of the $2s^2s_{1/2}-2p^2p^0_{1/2,3/2}$ transitions in Fe XXIV and the $2s^2s_{1/2}-2p^2p^0_{1/2}$ transition in Fe XXIII. <i>Phys. Rev. A</i> 18, 268 (1978) United States
565	F01 He A11 $He^+ + He$	E	A11 300 K	Kramer, P. B.; Pipkin, F. R. New measurement of the fine structure in the 3^3P state of 4He . <i>Phys. Rev. A</i> 18, 212 (1978) United States
566	F01 H_2	E		Reid, J.; McKellar, A. R. M. Observation of the $S_0(3)$ pure rotational quadrupole transition of H_2 with a tunable diode laser. <i>Phys. Rev. A</i> 18, 224 (1978) Canada
567	A06 $H^+ + H$ A1A $H^+ + H$	T	15-200 keV	Shakeshaft, R. Angular distribution for electron capture by protons from hydrogen atoms in the energy range 15-200 keV. <i>Phys. Rev. A</i> 18, 307 (1978) United States
568	F01 He Seq	T		Kelsey, E. J.; Sucher, J. Erratum 2 $^3S_1 + 1^1S_0 +$ one photon in heliumlike ions: Exact result for the lowest-order effect of the electron-electron interaction [<i>Phys. Rev. A</i> 11, 1829 (1975)]. <i>Phys. Rev. A</i> 18, 309 (1978) United States

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569	Ag H ⁺ + H Al H ⁺ + H	T	Undef	Glenbocki, O.; Halpern, A. R. "Erratum: Angular distribution in proton-hydrogen charge-transfer collisions (Phys. Rev. A 10, 981 (1977))." Phys. Rev. A 18, 389 (1978) United States
570	Ag Undef	T	Undef	McGuire, E. J. "Erratum: Multiplet effects on the widths of photoelectron peaks (Phys. Rev. A 10, 32 (1974))." Phys. Rev. A 18, 389 (1978) United States
571	Ag e + C; e + Al; e + Ti; e + Cu; e + Ag; e + Au Cu e + C; e + Al; e + Ti; e + Cu; e + Ag; e + Au	E T	5-39 keV	Lowe, G.; Cox, R. G.; Scott, V. L. A versatile atomic number correction for electron-probe microanalysis. J. Phys. D 11, 7 (1978) United Kingdom
572	Ag e + Ni; e + Ti; e + Al Ag e + Ni; e + Ti; e + Al	T	1.5-39 keV	Lowe, G.; Cox, R. G.; Scott, V. L. The surface ionization function $\Phi(5)$ derived using a Monte Carlo method. J. Phys. D 11, 23 (1978) United Kingdom
573	Ag e + Kr ₂ ⁺ F ₂ e + Kr ₂ ⁺	E	Thermal	Nihus, O. Electron temperature dependence of the dissociative recombination coefficient in krypton. J. Phys. D 11, L35 (1978) Czechoslovakia
574	Ag e + Hg; e + Na; e + Ti	E	Thermal	Nakamura, Y.; Lucas, J. Electron drift velocities in mercury, sodium and thallium vapours: I. Experimental. J. Phys. D 11, 325 (1978) United Kingdom
575	Ag e + Hg; e + Na; e + Ti Ag e + Hg; e + Na; e + Ti	T	Thermal	Nakamura, Y.; Lucas, J. Electron drift velocity and momentum cross-section in mercury, sodium and thallium vapours: II. Theoretical. J. Phys. D 11, 337 (1978) United Kingdom
576	D15 H ₂ ⁺ + Si D87 H ⁺ + Si	T	D15 0.8-1.2 MeV D87 1.5 MeV	Nishiyama, I. Depth profile analysis of proton damage by channeling. Phys. Rev. D 17, 104 (1978) Japan
577	D15 Na ⁺ + Cu	T	Undef	Rushes, M. I.; Holbrook, J. N. Volume changes in copper due to point defects. Phys. Rev. D 17, 422 (1978) United States
578	D85 hv + [Cu + Ni]	E	21 eV	Saizawa, P.; Rodermeier, H.; Poeschl, M. High-resolution photoemission study of the surface and bulk electronic structure of copper-nickel alloys. Phys. Rev. D 17, 427 (1978) West Germany
579	D85 hv + Ag	E	7-11.6 eV	Manasson, G. V.; Flodstrom, S. A. Angular-resolved photoemission from low-index crystal faces of silver—bulk and surface contributions. Phys. Rev. D 17, 473 (1978) Sweden
580	D85 hv + Cu	E	32-160 eV	Stehr, J.; Vohner, P. S.; Williams, R. S.; Agal, G.; Shirley, D. A. Bulk versus surface effects in normal photoemission from Cu(111) in the range 32 less than or equal to hv less than or equal to 160 eV. Phys. Rev. D 17, 587 (1978) United States
581	D86 e + Be	E T	227 keV	Melander, A. L.; Schluter, H.; Pfaund, W.; Brown, G. S. Inelastic electron scattering near the edge in Be. Phys. Rev. D 17, 666 (1978) United States
582	D84 e + Si	T	Undef	Fel'dman, P. J.; McGuire, E. J. Valence-band Auger line shapes for Si surfaces: Simplified theory, and corrected numerical results. Phys. Rev. D 17, 696 (1978) United States
583	D84 e + V D86 e + V	E T	Undef	McRae, E. G. Measurement of surface resonance bands on V(001). Phys. Rev. D 17, 587 (1978) United States

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504	W4 e + W W6 e + W	E	Under	Willis, D. F. Surface-resonance-band fine structure in low-energy-electron diffraction from W(001). <i>Phys. Rev. B</i> 17, 909 (1978) The Netherlands
505	W7 He ⁺ + He C08 He ⁺ + He	E	1.9 MeV	Kaufmann, E. N. Oscillatory channel-ion scattering yield in beryllium. <i>Phys. Rev. B</i> 17, 1024 (1978) United States
506	W4 Kr ⁺ + Ti; Kr ⁺ + Cu; Xe ⁺ + Ti; Xe ⁺ + Cu; Ar ⁺ + Ti; Ar ⁺ + W; Ar ⁺ + Cu; Ar ⁺ + Zr; Ar ⁺ + Nb; Ar ⁺ + Mo; Ar ⁺ + Pd; Ar ⁺ + Ag; Ar ⁺ + Ta; Ar ⁺ + W; Ar ⁺ + Au	E	1.25 keV	Oschauer, M. Electron yields from clean polycrystalline metal surfaces by noble-gas-ion bombardment at energies around 1 keV. <i>Phys. Rev. B</i> 17, 1052 (1978) West Germany
507	W6 e + W	E	25-150 eV	Kalluswart, W.; O'Neill, M. A.; Fiddle, T. V.; Manning, F. L.; Valters, G. E. Electron-spin polarization in low-energy electron diffraction from tungsten (001). <i>Phys. Rev. B</i> 17, 1570 (1978) United States
508	W5 Under	T	Under	Wallace, S.; Bill, D. Detector integrated angular distribution: Chemisorption-site geometry, axial-recoil photofragmentation, and molecular-tran orientation. <i>Phys. Rev. B</i> 17, 1652 (1978) United States
509	W5 hv + W	E	15.0 eV	Weeks, S. P. Final-state effects in angle-resolved photoemission from Si(100). <i>Phys. Rev. B</i> 17, 1730 (1978) United States
510	W6 hv + He W4 hv + Mg ²⁺ ; hv + Al ³⁺	T	W6 15-90 eV W4 75-140 eV	Bryant, G. W.; Mahan, G. B. Atoms in jellium. <i>Phys. Rev. B</i> 17, 1744 (1978) United States
511	W5 hv + Au	T	1.0 keV	Pollard, W. B.; Joannopoulos, J. D. Excitations in overlayer pyramidal bonded solids. I. Electrons. <i>Phys. Rev. B</i> 17, 1770 (1978) United States
512	W6 hv + CO	T	17 eV	Wallace, S.; Bill, D.; Bohner, J. L. Fixed-molecule photoelectron angular distributions: K-shell cross sections of CO at fixed detection angles. <i>Phys. Rev. B</i> 17, 2004 (1978) United States
513	W5 hv + BaTiO ₃ ; hv + KNO ₃	E	1- ⁴ keV	Porteau, P.; Michel-Calodini, F. N. X-ray photoelectron spectra, theoretical band structures, and densities of states for BaTiO ₃ and KNO ₃ . <i>Phys. Rev. B</i> 17, 2011 (1978) France
514	W5 hv + H + W; hv + W	E	15-20 eV	Anderson, J.; Lepore, G. J.; Smith, R. J. Symmetry-related polarization effects in angle-resolved synchrotron photoemission from W(001) and W(001) + H. <i>Phys. Rev. B</i> 17, 2436 (1978) United States
515	W4 Under	T	Under	Cini, M. Theory of the Auger effect in solids: Plankian effects in electron spectroscopies of valence states. <i>Phys. Rev. B</i> 17, 2486 (1978) Italy
516	W6 hv + NaCl	E	15-30 eV	Hinpsel, F.-J.; Steinmann, U. Angle-resolved photoemission from the NaCl (100) face. <i>Phys. Rev. B</i> 17, 2537 (1978) West Germany
517	W6 hv + Cl + Si; hv + Si	E	23 eV	Lauzon, P. R.; Smith, R. V.; Schluter, M.; Ho, K. N.; Cohen, M. L.; Farrell, N. N. Surface energy bands and atomic position of Cl chemisorbed on cleaved Si(111). <i>Phys. Rev. B</i> 17, 2612 (1978) The Netherlands
518	W1 He	T		Jankowski, K.; Polakowski, P.; Polakowski, M. Application of a modified interelectronic potential to the calculation of the energy of some helium s states (L, M, N). <i>Acta Phys. Pol. A</i> 53A, 123 (1978) Poland

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599	F01 H_2	T		Kelen, V.; Potholowski, J. Improved ground state dissociation energy for the hydrogen molecule (E, 500). Acta Phys. Pol. A 53A, 281 (1978); Poland
600	F01 Si^+	T		Brzezinski, J. SCF treatment of higher excited states of atoms. Transition probabilities between excited states of Si II (E, 500). Acta Phys. Pol. A 54A, 243 (1978); Poland
601	E03 $e + H$	T	2-300 E/Å	Sebenavsky, E. Vergleich von klassischen und Born-Virungswegschritten bei Elektronenstoßen an H-Atomen. Mit 3 Abbildungen. Ann. Phys. (Germany) 32, 81 (1978); East Germany
602	H02 Review	E	9-2-10.8 μm	Mayer, A.; Comers, J.; Charpentier, H.; Jousseaume, C. Absorption coefficients of various pollutant gases at CO ₂ laser wavelengths; application to the remote sensing of these pollutants. Appl. Opt. 17, 393 (1978); France
603	H06 $h\nu + NO_2$	E	6500-1200 Å°	Barnes, R. W.; Kircher, J. F. Laser NO ₂ fluorescence measurements in flames. Appl. Opt. 17, 1099 (1978); United States
604	H02 $h\nu + NO$	E	2262 Å°	Tajima, T.; Sakaki, T.; Ito, K. Absorption characteristics of the γ -O band of nitric oxide. Appl. Opt. 17, 1290 (1978); Japan
605	H02 $h\nu + H_2O$	E	1200 cm^{-1}	Montgomery, C. P., Jr. Temperature dependence of infrared absorption by the water vapor continuum near 1200 cm^{-1} . Appl. Opt. 17, 2259 (1978); United States
606	H02 $h\nu + H_2C$	E	6.0-3.5 μm	White, K. O.; Watkins, W. R.; Bruce, C. B.; Norrish, R. G.; Smith, F. G. Water vapor continuum absorption in the 3.5-6.0 μm region. Appl. Opt. 17, 2711 (1978); United States
607	H02 $h\nu + SO_2$	E	2.10-8.99 μm	Bocher, J.; Schaefer, G.; Englich, W.; Wiesenmann, B. Sulfur dioxide absorption cross sections for ¹² C ¹⁸ O ₂ laser lines around 9 μm . Appl. Opt. 17, 3347 (1978); West Germany
608	D13 $e + [O_2 + V]$ D17 $e + [O_2 + V]$	E	100 eV	Steinbruechel, C.; Gomer, R. Oxygen adsorption on the tungsten (110) plane. Electron impact and thermal desorption at high temperatures. Appl. Phys. (Germany) 15, 141 (1978); United States
609	D13 $e + [CO + Ru]$	E	150 eV	Faulner, P.; Engelhardt, H. A.; Rapp, D. CO on Ru(001): Electron stimulated desorption and its correlation with other measurements. Appl. Phys. (Germany) 15, 356 (1978); West Germany
610	H02 $HI + Ni$	E	9.075-3.0 keV	Nachtli, E.; Bay, M. L.; Schenck, J. Low energy self-sputtering yields of nickel. Appl. Phys. (Germany) 16, 147 (1978); West Germany
611	H07 $H + Cu; H + Fe; H + Ni$	T	3.7-106 keV	Littorath, W.; Gros-Warth, A. Energy spectra of light ions backscattered from random solids. Appl. Phys. (Germany) 16, 247 (1978); Denmark
612	H02 $Ar^+ + [O_2 + Ti]; Ar^+ + [O_2 + V];$ $H_2^+ + [O_2 + Ti]; H_2^+ + [O_2 + V]$	E	11 keV	Maier, W. G.; Martin, P. J. On the influence of reactive gases on sputtering and secondary ion emission. Oxidation of titanium and vanadium during energetic particle irradiation. Appl. Phys. (Germany) 16, 271 (1978); West Germany
613	D14 $He + Rh$	E	21 keV	van Goyene, J.; Wandelaar, R. V.; Stals, L.; Doruyter, A. Sputtering of rhodium irradiated with 21 keV helium ions. Appl. Phys. (Germany) 17, 49 (1978); Belgium
614	H07 $H + Ni$	T	0.1-5 keV	Mow, M.; Robinson, M. F. Mechanisms for the reflection of light atoms from crystal surfaces at kiloelectronvolts. Appl. Phys. (Germany) 17, 290 (1978); United States

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615	807 I + Cu; H + Cu; He + Cu; Ar + Cu; Ca + Cu; Xe + Cu; Au + Cu	T	3.1-7.5 keV	Hou, R.; Robinson, R. V. The conditions for total reflection of low-energy atoms from crystal surfaces. Appl. Phys. (Germany) 17, 371 (1978) United States
616	808 hv + AsI ₃	E	1300 Å°	Mathmer, E. B.; Plankay, F. W. Continuous source atomic fluorescence of arsenic. Appl. Spectrosc. 32, 288 (1978) United States
617	802 hv + SF ₆	E	943-952 cm ⁻¹	Kin, R. C.; Holland, R. F.; Fille, B. Infrared spectroscopy in supersonic molecular beams: P ₂ band of SF ₆ at 10-6 cm. Appl. Spectrosc. 32, 287 (1978) United States
618	802 hv + Na 808 hv + Na	E	5590 Å°	Reuch, J. B.; Piquelot, E. B. Laser saturation broadening in flame absorption and fluorescence experiments. Appl. Spectrosc. 32, 466 (1978) United States
619	802 hv + CH ₄ ; hv + C ₂ H ₂	E	2948 cm ⁻¹	Giam, B. B.; Hallard, W. G.; Gardiner, B. C., Jr. High temperature absorption of the 3.38 μm Na-Ne laser line by small hydrocarbons. Appl. Spectrosc. 32, 489 (1978) United States
620	873 o + C ²⁺ ; o + O ²⁺ 887 o + C ²⁺ ; o + O ²⁺ 883 N ⁺ + O ²⁺	T	10 ⁵ K	Dutton, P. L.; Berrington, K. A.; Burke, P. G.; Kingston, A. E. The interpretation of CIII and ON emission line ratios in the sun. Astron. Astrophys. 62, 131 (1978) United Kingdom
621	791 Si ⁺	E		Janer, C.; Mocaer-Marcot, D.; Frederic, F. Absolute ultraviolet spectrophotometry from the TDI satellite X. The ultraviolet spectrum of the Pp stars. Astron. Astrophys. 63, 185 (1978) Belgium
622	807 hv + O ⁻	E	2280 Å°	Reichjohng, N. Interstellar heating by photoelectrons from negative oxygen. Astron. Astrophys. 63, 188 (1978) Denmark
623	811 hv + o 812 hv + o	T	Undef	Niyamoto, S. Radiative transfer effect in an ionized medium at high temperature. Astron. Astrophys. 63, 69 (1978) Japan
624	866 C ⁺ + N; C ²⁺ + N; N ⁺ + N; N ²⁺ + N; O ²⁺ + N; N ²⁺ + N; S ⁺ + N; S ²⁺ + N	T	10 ⁵ K	Piquelot, D.; Aldrovandi, S. N. V.; Staelche, G. Charge transfer reactions: A consistent model of the planetary nebula NGC 7027. Astron. Astrophys. 63, 313 (1978) France
625	791 Ti	E		Kuhn, H.; Benzmann, K.; Koch, H. Oscillator strengths of TiII from Moos and emission measurements. Astron. Astrophys. 64, 111 (1978) West Germany
626	781 C ²⁺	T		Huebner, H.; Storey, P. J. The CIII transition probabilities. Astron. Astrophys. 64, 139 (1978) Switzerland
627	791 Ni ⁺	E		Molty, J. Oscillator strengths for some NiII lines in the near-ultraviolet from well-stabilized arc measurements. Astron. Astrophys. 64, 168 (1978) France
628	791 Ti	E		Gehlen, H.; Helweg, M.; Benzmann, K.; Koch, H.; Kuhn, H. A solar abundance study using recent TiII oscillator strengths. Astron. Astrophys. 64, 286 (1978) West Germany

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629	E83 e + He Seq E86 e + He Seq E87 e + He Seq H84 hv + He Seq A83 H ⁺ + He Seq; He ⁺ + He Seq E85 e + Li Seq	T	13 ³ -10 ⁴ K	Roos, R.; Schrijver, J. Heliumlike ion line intensities. I. Stationary plasmas. Astron. Astrophys. 65, 95 (1978) The Netherlands
630	E83 e + He Seq E86 e + He Seq E87 e + He Seq E85 e + Li Seq	T	10 ³ K	Roos, R.; Schrijver, J. Heliumlike ion line intensities. II. Non-stationary plasmas. Astron. Astrophys. 65, 115 (1978) The Netherlands
631	E83 e + C ²⁺ ; e + O ⁺	T	13 ³ K	Feldman, U.; Beucheh, G. A. The electron density at 10 ³ K in different regions of the solar atmosphere derived from an interystem line of O IV. Astron. Astrophys. 65, 215 (1978) United States
632	B01 Underf B07 Underf	T		Landi Degl'Innocenti, E. Non-LTE line formation in a magnetic field. The two-level atom with a frequency independent source function. I: Formulation. Astron. Astrophys. 66, 119 (1978) Italy
633	B01 Underf	T		Stenflo, J. O. Resonance-line polarization. III. The Hanle effect in a compact non-LTE radiative transfer formulation. Astron. Astrophys. 66, 241 (1978) Sweden
634	E83 e + OH A83 H + OH; H + OH	T	13 ³ K	Gilbert, J.; Elitzur, N.; Nguyen-Q-Rieu OH excitation in interstellar clouds. Astron. Astrophys. 66, 395 (1978) France
635	E83 e + Li E85 e + Li H86 hv + Li	T	E83; E85 2090-3000 K H86 3500-1200 A ⁰	de la Haza, R.; Querel, F. Lithium line formation in carbon stars. Astron. Astrophys. 67, 7 (1978) France
636	E83 e + Fe ¹⁰⁺ ; e + Fe ¹¹⁺ F01 Fe ¹⁰⁺ ; Fe ¹¹⁺ ; Fe ¹⁰⁺ ; Si ¹⁰⁺ ; Si ¹¹⁺ Si ¹⁰⁺ ; Si ¹¹⁺	E T	E83 13 ³ K	Kastner, S. O.; Mason, H. E. Lieht-brightening observations for the OSO-7 satellite. III. Comparison of EUV line intensities of Fe XII, Fe XI, Fe X, Si I and Si XII, Si I3 and Si XI with predictions. Astron. Astrophys. 67, 119 (1978) United States
637	E82 e + H ₂ ; e + H ₂ H11 hv + e	T	E82 13 eV H11 2520-6360 K	John, T. L. Neutral Bremsstrahlung from molecular hydrogen and nitrogen. Astron. Astrophys. 67, 395 (1978) United Kingdom
638	A86 C ⁺ + N; C + N ⁺	T	13 ³ K	Hippelstein, M.; Runch, G. Neutral carbon emission in M42. Astron. Astrophys. 68, L7 (1978) West Germany
639	H85 hv + CO; hv + OH; hv + CH; hv + H ₂ CO; hv + NH ₃	T	5700-1000 A ⁰	Sandell, G. Lifetime of molecules in a dark cloud model. Astron. Astrophys. 69, 85 (1978) Finland
640	A86 H ⁺ + D	T	25-100 K	Watson, W. D.; Christensen, R. B.; Boesler, R. J. Rate coefficient for H ⁺ + D + H ⁺ near threshold: Significance for interstellar clouds. Astron. Astrophys. 69, 159 (1978) United States
641	E83 e + Fe ⁹⁺ F01 Fe ⁹⁺	T	E83 0.4-1 Ry	Huubner, H.; Storey, P. J. [Fe VI] emission under nebular conditions. Astron. Astrophys. 70, 37 (1978) Switzerland

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642	A12 He + Al; Ar + Al	E	1400 K	Bondigs, G.; Kusch, M. J. Broadening and shift of neutral aluminum lines by van der Waals-interaction with argon and helium atoms. <i>Astron. Astrophys.</i> 70, 151 (1978) West Germany
643	A03 H + H ₂	T	500-5000 K	Ellitzer, M.; Watson, W. D. Cooling by H ₂ molecules in hot interstellar gases. <i>Astron. Astrophys.</i> 70, 443 (1978) United States
644	E05 e + PERT E96 e + PERT	T	10 ⁴ -10 ⁶ K	Jain, B. K.; Nayak, U. Ionization equilibrium of some elements of astrophysical importance. <i>Astron. Astrophys., Suppl. Ser.</i> 31, 1 (1978) India
645	H06 hv + C ²⁺	T	5300-70 Å	Sakhubullin, N.; Willis, A. J. Photoionization cross sections for some C III levels. <i>Astron. Astrophys., Suppl. Ser.</i> 31, 11 (1978) Soviet Union
646	F01 He Seq	T		Blemond, E. Theoretical f values for sodium-like ions (11 less than or equal to Z less than or equal to 26). <i>Astron. Astrophys., Suppl. Ser.</i> 31, 285 (1978) Belgium
647	E11 e + PERT E06 e + PERT E07 e + PERT	T	10 ⁴ -10 ⁶ K	Gronenschild, E. M. R. N.; Nave, R. Calculated X-radiation from optically thin plasmas. III. Abundance effects on continuum emission. <i>Astron. Astrophys., Suppl. Ser.</i> 32, 283 (1978) The Netherlands
648	H06 hv + He; hv + He ⁺ ; hv + He ²⁺ ; hv + C; hv + C ⁺ ; hv + C ²⁺ ; hv + N; hv + N ⁺ ; hv + N ²⁺ ; hv + O; hv + O ⁺ ; hv + O ²⁺ ; hv + Ne; hv + Ne ⁺ ; hv + Ne ²⁺ ; hv + S ⁺ ; hv + S	T	0.1-100 eV	Stasinska, G. Ionization and temperature structure of H II regions: the influence of the star, the gas density and its chemical composition. <i>Astron. Astrophys., Suppl. Ser.</i> 32, 429 (1978) France
649	E03 e + He Seq	T	10 ⁴ -10 ⁶ K	Nave, R.; Schrijver, J. Heliumlike ion line intensities. III. Results. <i>Astron. Astrophys., Suppl. Ser.</i> 33, 311 (1978) The Netherlands
650	H02 hv + Si ⁺ ; hv + Si ²⁺ ; hv + Si ³⁺	T	5300-1000 Å	Kamp, L. W. On the theory of silicon spectra in C and B stars. <i>Astrophys. J., Suppl. Ser.</i> 36, 143 (1978) United States
651	A03 H ₂ + H ₂	T	2 x 10 ⁴ K	Green, S.; Ramsdunn, R.; Rabitz, J. Collisional excitation of interstellar molecules: H ₂ . <i>Astrophys. J., Suppl. Ser.</i> 36, 483 (1978) United States
652	A03 He + CO; He + CS; He + OCS; He + HC ₃ N; H ₂ + CO; H ₂ + CS; H ₂ + OCS; H ₂ + HC ₃ N	T	10-100 K	Green, S.; Chapman, S. Collisional excitation of interstellar molecules: linear molecules of CO, CS, OCS, and HC ₃ N. <i>Astrophys. J., Suppl. Ser.</i> 37, 169 (1978) United States
653	A03 He + H ₂ CC	T	10-80 K	Green, S.; Garrison, B. J.; Lester, W. A., Jr.; Miller, W. H. Collisional excitation of interstellar formaldehyde. <i>Astrophys. J., Suppl. Ser.</i> 37, 321 (1978) United States
654	F01 PERT	E		Cohen, L.; Feldman, U.; Doschev, G. A. XUV spectra of the 1973 June 15 solar flare observed from Skylab. III. A list of spectral lines from 1060 to 1940 Å. <i>Astrophys. J., Suppl. Ser.</i> 37, 392 (1978) United States
655	E03 e + H Seq	T	0.1-100 keV	Golden, L. B.; Sampson, D. H. Scaled Coulomb-Born-Oppenheimer collision strengths for hydrogenic ions in the limit Z = infinity. <i>Astrophys. J., Suppl. Ser.</i> 38, 19 (1978) United States
656	F01 H Seq; He Seq	T		Vainshtein, L. A.; Safronova, V. I. Wavelength, and transition probabilities of satellites to resonance lines of H- and He-like ions. <i>Atomic Data and Nuclear Data Tables</i> 21, 49 (1978) Soviet Union

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
657	G09 e + Me; e + D; e + Ne; e + Ar; e + Ng; e + N ₂ ; e + CO; e + H ₂ O; e + CO ₂ ; e + Li; e + K	E T	0.01-10 eV	Itihawa, Y. Momentum-transfer cross sections for electron collisions with atoms and molecules: revision and supplement, 1977. Atomic Data and Nuclear Data Tables 21, 69 (1978) Japan
658	J01 Review	E	0.015-50 MeV/amu	Gardner, R. K.; Gray, T. J. Cross sections for K-shell ionization, x-ray production, or Auger-electron production by ion impact. Atomic Data and Nuclear Data Tables 21, 515 (1978) United States
659	J01 Review	E	Under	Albritton, D. L. Ion-neutral reaction-rate constants measured in flow reactors through 1977. Atomic Data and Nuclear Data Tables 22, 1 (1978) United States
660	E04 e + [F ₂ + Ar] E09 e + [F ₂ + N ₂]	E	0.9-4.0 eV	Schneider, H. L.; Bross, C. A. Dissociative attachment of electrons to F ₂ . Appl. Phys. Lett. 33, 569 (1978) United States
661	A09 Kr ⁺ + [F ⁻ + Ne]; Kr ⁺ + [F ⁻ + He]; Kr ⁺ + [F ⁻ + Ar]; Kr ⁺ + [F ⁻ + Xe]; Kr ₂ ⁺ + [F ⁻ + Ne]; Kr ₂ ⁺ + [F ⁻ + He]; Kr ₂ ⁺ + [F ⁻ + Ar]; Kr ₂ ⁺ + [F ⁻ + Xe]	T	350 K	Flannery, M. R.; Yang, T. P. Ionic recombination of Kr ⁺ and Kr ₂ ⁺ with F ⁻ in dense buffer rare gases. Appl. Phys. Lett. 33, 574 (1978) United States
662	D13 He ⁺ + [CO + Fe]; He ⁺ + [CO + Ni]; Ar ⁺ + [CO + Ni]	E	2 keV	MacDonald, R. J.; Holland, W.; Taglewer, E. A comparison of surface analysis using ion scattering, ion-produced photons, and secondary ion emission. Appl. Phys. Lett. 33, 576 (1978) West Germany
663	D03 Under	T	Under	Deline, V. R.; Evans, C. A., Jr.; Williams, P. A unified explanation for secondary ion yields. Appl. Phys. Lett. 33, 578 (1978) United States
664	A03 XeF + CHF ₃ ; XeF + CClF ₃ ; XeF + F ₂ ; XeF + NF ₃ ; XeF + Xe; XeF + CF ₄ ; XeF + Kr; XeF + N ₂ ; XeF + SF ₆ ; XeF + Ar; XeF + He; XeF + Ne A11 XeF + CHF ₃ ; XeF + CClF ₃ ; XeF + F ₂ ; XeF + NF ₃ ; XeF + Xe; XeF + CF ₄ ; XeF + Kr; XeF + N ₂ ; XeF + SF ₆ ; XeF + Ar; XeF + He; XeF + Ne	E	30° K	Brashears, H. C., Jr.; Sotner, D. b. Transfer and quenching rate constants for XeF(111,1/2) and XeF(11,3/2). Appl. Phys. Lett. 32, 821 (1978) United States
665	D03 O ⁻ + [B + Sn]; O ⁻ + [B + Ge]; O ⁻ + [B + GaAs]; O ⁻ + [B + Si]; O ⁻ + [Sb + Sn]; O ⁻ + [Sb + Ge]; O ⁻ + [Sb + GaAs]; O ⁻ + [Sb + Si]; O ⁻ + [As + Sn]; O ⁻ + [As + Ge]; O ⁻ + [As + Si]; O ⁻ + [P + Sn]; O ⁻ + [P + Ge]; O ⁻ + [P + GaAs]; O ⁻ + [P + Si]; O ⁻ + [P + C]; Cu ⁺ + [F + Sn]; Cu ⁺ + [F + GaAs]; Cu ⁺ + [F + Ge]; Cu ⁺ + [F + Si]; Cu ⁺ + [Sb + Sn]; Cu ⁺ + [Sb + GaAs]; Cu ⁺ + [Sb + Si]; Cu ⁺ + [C + Sn]; Cu ⁺ + [C + Si]; Cu ⁺ + [As + Sn]; Cu ⁺ + [As + GaAs]; Cu ⁺ + [As + Si]; Cu ⁺ + [P + Sn]; Cu ⁺ + [P + GaAs]; Cu ⁺ + [P + Ge]; Cu ⁺ + [P + Si]; Cu ⁺ + [P + C]; Cu ⁺ + [B + GaAs]; Cu ⁺ + [B + Ge]; Cu ⁺ + [B + Si]; Cu ⁺ + Pt ₂ Si; Cu ⁺ + PtSi; Cu ⁺ + Pd ₂ Si; Cu ⁺ + Ni ₂ Si; Cu ⁺ + NiSi; Cu ⁺ + Si	E	Under	Deline, V. R.; Kitz, W.; Evans, C. A., Jr.; Williams, P. Mechanism of the SIMS matrix effect. Appl. Phys. Lett. 33, 832 (1978) United States
666	D12 H + Under	T	1-50 keV	DeRaad, L. L., Jr.; Erber, T. Transition radiation from neutral beams of hydrogen isotopes. Appl. Phys. Lett. 33, 908 (1978) United States
667	D17 He ⁺ + Ta ₂ O ₅ ; Ar ⁺ + Ta ₂ O ₅	E	3.3-1.8 keV	Taglewer, E.; Holland, W. Mass and energy dependence of the equilibrium surface composition of sputtered tantalum oxide. Appl. Phys. Lett. 33, 960 (1978) West Germany

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668	A14 $O^+ + CH$	E	230 K	Schaatzko, K. J.; Voffrum, J. Reactions of molecules in defined vibrational states, VI: energy distribution in the reactions $CH(v) + O(^4P)$, C_2 . Ber. Bunsenges, Phys. Chem. 82, 419 (1978) West Germany
669	A14 $OH + CO$	E	30° K	Biermann, H. W.; Zetzsch, C.; Stuhl, F. On the pressure dependence of the reaction of OH with CO. Ber. Bunsenges, Phys. Chem. 82, 622 (1978) West Germany
670	A14 $H + S_2Cl_2; H + SOCl_2; H + SCl_2$	E	33° K	Bardorff, W.; Feydtmann, M. Infrared chemiluminescence studies of the reactions $H + S_2Cl_2$, $H + SOCl_2$ and $H + SCl_2$. Ber. Bunsenges, Phys. Chem. 82, 645 (1978) West Germany
671	A11 $O_2^+ + H_2; O_2^+ + D_2$	E	230 K	Kokke-Moisinghaus, K.; Stuhl, F. H_2 -laser photolysis study of the quenching of $O_2(b^1 \Sigma_g^+)$ by H_2 and D_2 . Ber. Bunsenges, Phys. Chem. 82, 828 (1978) West Germany
672	A14 $NH^+ + O_2$	E	296 K	Zetzsch, C.; Hanson, I. Rate constant for the reaction of $NH(X^2\Sigma^-)$ with O_2 determined by pulsed vacuum uv photolysis of NH_3 and resonance fluorescence detection of NH . Ber. Bunsenges, Phys. Chem. 82, 838 (1978) West Germany
673	A11 $NH^+ + Xe; ND^+ + Xe; NH^+ + HCl; ND^+ + HCl$	E	333 K	Zetzsch, C. Fast quenching processes for $NH(b^1\Sigma^+)$ and $ND(b^1\Sigma^+)$: the quenching by Xe , HCl , benzene, propene, 1-butene, 1,3-butadiene, hydrazine, methanol and ethanol. Ber. Bunsenges, Phys. Chem. 82, 1098 (1978) West Germany
674	A14 Review	E T	333 K	Thrush, B. A. Laboratory kinetic studies in relation to atmospheric chemistry. Ber. Bunsenges, Phys. Chem. 82, 1159 (1978) United Kingdom
675	A14 $OH + HO_2$	E	33° K	Hack, W.; Prauss, A. W.; Wagner, H. G. Rate measurement of the reaction of OH and HO_2 radicals with laser magnetic resonance technique. Ber. Bunsenges, Phys. Chem. 82, 1167 (1978) West Germany
676	A14 $OH + NH_3; OH + NO; OH + SO_2; ClO + NO_2; NO_2 + NO_2$	T	25°-298 K	Zellner, R. Recombination reactions in atmospheric chemistry. Ber. Bunsenges, Phys. Chem. 82, 1172 (1978) West Germany
677	F01 D_2	E		McKellar, A. R. W.; Oke, T. A study of the electric quadrupole fundamental band of D_2 using an infrared difference frequency laser system. Can. J. Phys. 56, 1315 (1978) Canada
678	B01 H	T		Brandt, M. S.; Kollmer, B. Hydrogen atoms in the presence of a homogeneous magnetic field: a variational approach. Can. J. Phys. 52, 1545 (1978) Canada
679	E04 $e + H_2O; e + D_2O$ E05 $e + H_2O; e + D_2O$ E09 $e + H_2O; e + D_2O$	E	3-31 eV	Lafolvre, D.; Marmet, P. Electrochemical reduction of D_2O and H_2O and study of fragments H^+ and D^+ . Can. J. Phys. 52, 1649 (1978) Canada
680	M02 $h\nu + [Ne + Xe]; h\nu + [Ar + Xe]$ R07 $h\nu + [Ne + Xe]; h\nu + [Ar + Xe]$	E	M02 2.3 cm^{-1}	Dagg, I. R.; Rensor, G. E.; Wong, P. Collision-induced microwave absorption in $Ne-Xe$ and $Ar-Xe$ gaseous mixtures at 2.3 cm^{-1} . Can. J. Phys. 52, 1559 (1978) Canada
681	G07 $Mg + N_2$	E	230 K	Oke, K.; Cveticovic, R. J. Study of $Mg(^3P_0) + Mg(^3P_0)$ excitation induced by collisions with N_2 using a double modulation technique. Can. J. Phys. 52, 1565 (1978) Canada
682	A14 $F + HD$	T	1-15 kcal/mol	Polanyi, J. C.; Schreiber, J. L. Test of the information theory of branching ratios by classical trajectory computations. Chem. Phys. 31, 11J (1978) Canada

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683	A17 Li + F; H + F; Li + F ₂ ; Li + HF	T	Undef	Zelvi, Y.; Shapiro, N. Semi-empirical potential surfaces for electron transfer reactions: the Li + Fh and Li + F ₂ reactions. Chem. Phys. 31, 217 (1978) Israel
684	E21 Review	E	Undef	Alfassi, Z. B.; Ginzler, M.; Heller, E.; Kestner, M. Spectroscopy and energy distribution study of the Cl + H ₂ chemical laser. Chem. Phys. 31, 263 (1978) Israel
685	A03 He + H ₂ ; Kr + CO ₂	T	0-1.0 eV	Schatz, G. C. A generalized Langevin equation approach to molecular collision dynamics. Chem. Phys. 31, 255 (1978) United States
686	B01 CO; H ₂	T		Greedy, J. E.; Bacskay, G. B.; Hush, N. S. Comparison of multipole moment expansions by direct summation or finite-field SCF methods with full electrostatic interaction energies: application to Cu and H ₂ . Chem. Phys. 31, 375 (1978) Australia
687	A03 H ⁺ + H ₂	T	4.67-10 eV	Schinke, R.; McGuire, P. Combined rotationally sudden and vibrational exact quantum treatment of proton-H ₂ collisions. Chem. Phys. 31, 391 (1978) West Germany
688	A03 Ar + HCl; He + HCl; He + CO; He + HCN; H ₂ + CS; H ₂ + OCS	T	0-300 cm ⁻¹	Green, S. Computational test of the infinite order sudden approximation for excitation of linear rigid rotors by collisions with atoms. Chem. Phys. 31, 425 (1978) United States
689	B01 H ₂ ; CO; CH ⁺ ; HCN	T		Greedy, J. E.; Bacskay, G. B.; Hush, N. S. Finite-field method calculations. IV. Higher-order moments, dipole moment gradients, polarizability gradients and field-induced shifts in molecular properties: application to H ₂ , CO, CH ⁺ , HCN and HNC. Chem. Phys. 31, 467 (1978) Australia
690	A11 Br ₂ ⁺ + Ar	T	90-1500 K	Freasier, B. C.; Jolly, D. L.; Mordahl, S. Ergodic collision theory of intermolecular energy transfer. III. The deactivation of bromine in argon. Chem. Phys. 32, 169 (1978) Australia
691	A17 H + CH; H ⁺ + CH	T	Undef	Pacansky, J.; Delal, M. S.; Bagus, P. S. SCF ab-initio ground state potential energy surfaces for HCH and HCH ⁺ . Chem. Phys. 32, 183 (1978) United States
692	A11 He ⁺ + H ₂ O; He ⁺ + H ₂ S	E	A14 33° K	Yench, A. J.; Lu, K. T. Energy transfer processes in reactions of He(2 ⁴ S) with triatomic molecules. II. H ₂ O and H ₂ S. Chem. Phys. 32, 247 (1978) United States
693	H05 hv + CH ⁺	T	2500-3500 Å	Uzer, T.; Dalgarno, A. The photodissociation of CH ⁺ through absorption into the A ¹ u state. Chem. Phys. 32, 301 (1978) United States
694	A17 Undef	T	Undef	Kutzelnigg, V.; Meader, F. Natural states of interacting systems and their use for the calculation of intermolecular forces. I. General theory of the natural states of interacting systems. Chem. Phys. 32, 461 (1978) West Germany
695	A17 Undef	T	Undef	Meader, F.; Kutzelnigg, V. Natural states of interacting systems and their use for the calculation of intermolecular forces. II. Natural states in the asymptotic 1/R expansion. Chem. Phys. 32, 487 (1978) West Germany
696	A03 HF + HF	T	500-6000 cm ⁻¹	Alper, J. S.; Carroll, M. A.; Gelb, A. Classical trajectory study of rotationally inelastic scattering of two HF molecules. Chem. Phys. 32, 471 (1978) United States
697	A14 Ca ⁺ + O ₂ ; Ca ⁺ + CO ₂ F01 CaO ⁺	E	A14 33° K	Pasterneck, L.; Dagdigan, P. J. The reaction of metastable Ca atoms with O ₂ and CO ₂ . Chem. Phys. 33, 1 (1978) United States

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698	E03 $e + SF_6$ E15 $e + SF_6$	E	2.5 keV	Hitchcock, A. P.; Brion, C. E. Inner shell excitation of SF_6 by 2.5 keV electron impact. <i>Chem. Phys.</i> 33, 55 (1978) Canada
699	E03 $e + H_2O$ E04 $e + H_2O$ E05 $e + H_2O$	E	3-2 keV	van Sprang, N. A.; Rohmann, G. F.; de Meer, F. J. Emission of radiation due to ionization and dissociation of H_2O by electron impact. <i>Chem. Phys.</i> 33, 62 (1978) The Netherlands
700	E03 $e + HF$ E04 $e + HF$	E	0-2 keV	van Sprang, N. A.; de Meer, F. J. A study of the emission spectrum of HF excited by electrons. <i>Chem. Phys.</i> 33, 73 (1978) The Netherlands
701	H06 $h\nu + CO_2$	E	584 Å	Loach, S.; Beverat, N.; Eland, J. L. B. Fluorescence quantum yields of isotopic CO_2^* ions. <i>Chem. Phys.</i> 33, 113 (1978) France
702	A07 $Ar + He$	T	24×10^{-10} a.u.	Lee, K.-S.; Bellue, J. C.; George, T. F. A semiclassical approach to collisional ionization with application to the $Ar-He$ system. <i>Chem. Phys.</i> 33, 219 (1978) United States
703	A10 $H_2 + C\Gamma_2$	T	33° K	Billing, G. D. On a semiclassical approach to energy transfer in polyatomic molecules. <i>Chem. Phys.</i> 33, 227 (1978) Denmark
704	A14 $H + H_2$	T	33° K	Asher, A.; Cohen, A. C.; Rabitz, H. A. Finite element methods for reactive scattering. <i>Chem. Phys.</i> 33, 267 (1978) United States
705	A14 $H + F_2$; $D + F_2$; $H + Cl_2$; $D + Cl_2$; $Cl + HI$; $Cl + DI$	T	33° K	Vanzl, G.; Fischer, S. F. Detailed product energy distributions for exothermic triatomic exchange reactions from a statistical dynamic model. <i>Chem. Phys.</i> 33, 305 (1978) West Germany
706	A14 $H + Cl_2$; $H + F_2$; $D + F_2$; $T + F_2$	T	33° K	Korach, M. J. Vibrational state distributions for impulsive triatomic reactions. <i>Chem. Phys.</i> 33, 313 (1978) West Germany
707	H06 $h\nu + SF_6$	E	584 Å	Seli, J. A.; Kuppermann, A. Angular distributions in the photoelectron spectroscopy of SF_6 . <i>Chem. Phys.</i> 33, 379 (1978) United States
708	A17 $HF + HF$; $H_2O + H_2O$	T	Undef	Otto, P. Investigation of the interaction between molecules at medium distances. III. SCF LCAO MO supermolecule, perturbational and PCF calculations for two and three interacting molecules. <i>Chem. Phys.</i> 33, 407 (1978) West Germany
709	A03 $Ar + H_2$	T	310-768 K	Eno, L.; Galint-Kurti, G. G. The centrifugally decoupled exponential distorted wave (CEDW) approximation for the calculation of rotationally inelastic molecular collision cross sections. <i>Chem. Phys.</i> 33, 435 (1978) United States
710	A02 $H_2 + Kr$	T	33° K	Jacobs, N.; Kuiper, J. Calculation of reorientation cross sections for atom-diatom systems. <i>Chem. Phys.</i> 33, 443 (1978) The Netherlands
711	A02 Undef	T	Undef	Glasston, E. A.; Sachs, J. G. Expansion of classical differential cross sections in Legendre polynomials: nonreactive scattering. <i>Chem. Phys.</i> 33, 419 (1978) United States
712	E02 $e + HF$	E	9-15 eV	Mather, D.; Mestel, J. B. Electron spectroscopy of hydrogen fluoride resonances. <i>Chem. Phys.</i> 34, 29 (1978) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
713	A86 $O_2 + He; O_2 + K; O_2 + Co$ A84 $O_2 + He; O_2 + K; O_2 + Co$	E	10 ⁻² -2 keV	Klayn, A. W.; Hubers, M. N.; Lee, J. Ion-pair formation in small atom-oxygen molecule collisions. <i>Chem. Phys.</i> 34, 55 (1978) The Netherlands
714	A83 $Li^+ + H_2$	T	5-9 eV	Schinke, R. Theoretical studies of vib-rotational excitation of Li^+-H_2 collisions at intermediate energies. <i>Chem. Phys.</i> 34, 65 (1978) West Germany
715	A10 $CO^+ + CO$	E	120-300 K	Brachignac, P. Near-resonant V-V transfer rates for high-lying vibrational states of CO. <i>Chem. Phys.</i> 34, 119 (1978) France
716	H86 $h\nu + H_2O; h\nu + CO_2$	E	22-60 eV	Jrison, C. E.; Tan, K. N. Partial oscillator strengths for the photoionization of H_2O and CO_2 (20-60 eV). <i>Chem. Phys.</i> 34, 141 (1978) Canada
717	E84 $e + H_2O$	E	10-100 eV	Allcock, G.; McConkey, J. W. Dissociation patterns in H_2O following electron impact. <i>Chem. Phys.</i> 34, 165 (1978) Canada
718	H86 $h\nu + SF_2$	E	15 eV	de Lamer, B. N.; Moynagh, R.; de Lange, C. A. Mo(I) photoelectron spectroscopy of transient species: the SF_2 molecule. <i>Chem. Phys.</i> 34, 287 (1978) The Netherlands
719	A17 $He + H_2$	T	Underf	Busselt, J.; Peyerimhoff, S. D.; Eschner, S. J. An SCF and MRD-CI study of the ground and excited states of the $He + H_2$ system. I. Calculated potential surfaces. <i>Chem. Phys.</i> 34, 413 (1978) West Germany
720	A14 $H + ClF$	E	320 K	Brandt, B.; Polanyi, J. C. Energy distribution among reaction products. XI. $H + ClF \rightarrow HF + Cl, CHl + F$. <i>Chem. Phys.</i> 35, 23 (1978) Canada
721	A14 $H + CO; H + SO_2$	E	325-375 K	Gordon, E. B.; Ivanov, B. I.; Perminov, A. P.; Belanov, V. E. A measurement of formation rates and lifetimes of intermediate complexes in reversible chemical reactions involving hydrogen atoms. <i>Chem. Phys.</i> 35, 79 (1978) Soviet Union
722	A14 $H + F_2$ A17 $H + F_2$	T	0.1-1.5 eV	Jakubetz, V. On the potential surface dependence of the $H + F_2$ reaction. I. Quantum mechanical and information theoretic investigations for various extended LEPS-surfaces. <i>Chem. Phys.</i> 35, 129 (1978) United Kingdom
723	A14 $H + F_2$ A17 $H + F_2$	T	0.1-1.5 eV	Jakubetz, V. On the potential surface dependence of the $H + F_2$ reaction. II. The influence of shoulder-and corner regions. <i>Chem. Phys.</i> 35, 141 (1978) United Kingdom
724	A85 $F + H_2; F + H_2S; Cl + H_2S$	E	132 K	Dill, B.; Heydtmann, H. Infrared chemiluminescent reactions of halogen atoms with hydrogen sulfide and methanethiol. <i>Chem. Phys.</i> 35, 161 (1978) West Germany
725	A11 $He^+ + H_2; He^+ + CO; He^+ + HC; He^+ + O_2$	E	320 K	Cheng, R. S. F.; Setser, D. W.; Taylor, G. W. Assignment of rate constants to exit channels from quenching of $He(2^1S)$ with various atoms. <i>Chem. Phys.</i> 35, 281 (1978) United States
726	A10 $Li_2 + Li$	E	320 K	Vidal, C. R. Collisional depolarization and rotational energy transfer of the $Li_2(814 \text{ nm}) \leftarrow Li(2S_{1/2})$ system from laser-induced fluorescence. <i>Chem. Phys.</i> 35, 215 (1978) West Germany
727	E83 $e + MgCl; e + MgBr; e + MgI$ E84 $e + MgCl; e + MgBr; e + MgI$	E	5-200 eV	Allison, J.; Zera, R. M. Study of excited fragment emission from the electron impact dissociation of volatile mercury (II) halides. <i>Chem. Phys.</i> 35, 263 (1978) United States

REF. NO.	REACTANTS	EXP OF METHOD	ENERGY RANGE	REFERENCE
728	AP2 H + Ar; D + Ar A18 H + Ar; D + Ar	E	42° K	Este, G. O.; Knight, C.; Scelen, C. Scattering experiments with hydrogen atoms. I. Differential collision cross sections for H + Ar, D + Ar and H + CH ₄ . Chem. Phys. 35, 421 (1978) Canada
729	AC3 Li + H ₂	T	9.6-2.5 eV	Gianturco, F. A.; Lamanna, U. I. Rotationally sudden calculations of vibrational excitation for Li + H ₂ collisions. Chem. Phys. 35, 483 (1978) Italy
730	AP4 Na ₂ + He; Na ₂ + Ne; Na ₂ + Ar	E	45° K	Huber, R.; Weber, H. G. Collision induced dissociation of Na ₂ : dependence of the dissociation rate on the vibrational distribution. Chem. Phys. 35, 461 (1978) West Germany
731	A17 H ⁺ + Na; H ⁺ + K; H ⁺ + Rb; H ⁺ + Cs	T	Underf	Valence, A. Pseudopotential calculations for NaH ⁺ , KH ⁺ , RbH ⁺ and CsH ⁺ . Chem. Phys. Lett. 36, 409 (1978) France
732	A19 I + Br ⁺ M55 hv + IBr	E	A1 ⁺ 17° cm/s M25 530-400 nm	de Vries, M. S.; van Veen, M. J. A.; de Vries, A. E. Curve crossing in two excited states of IBr studied by photofragmentation. Chem. Phys. Lett. 36, 15 (1978) The Netherlands
733	A14 H ₂ + C ₂	T	Underf	Lehr, L. L., Jr. A possible transition state for the H ₂ + C ₂ exchange reaction. Chem. Phys. Lett. 36, 22 (1978) United States
734	A14 CH ₂ + H ₂	T	11.8 kcal/mol	Bauschlicher, C. W., Jr. Barrier height for the abstraction reaction of methylene with hydrogen, CH ₂ (³ E _g) + H ₂ → CH ₃ + H. Chem. Phys. Lett. 36, 31 (1978) United States
735	M4 3hv + SF ₆ M55 3hv + SF ₆ M56 3hv + SF ₆	T	15.6 μ	Ber-Ziv, E.; Kafri, O. Multiphoton excitation and dissociative ionization of SF ₆ . Chem. Phys. Lett. 36, 47 (1978) Israel
736	AC3 K + Hg	E	50-1500 eV	Duren, R.; Krause, U.; Moritz, G. Integral cross sections for electronic excitation in K-Hg collisions. Chem. Phys. Lett. 36, 62 (1978) West Germany
737	AP2 Na + Ar A18 Na + Ar A17 Na + Ar	E	10 ⁻¹² erg	Duren, R.; Gröger, W. A determination of the Na-Ar ground state potential from differential cross section measurements. Chem. Phys. Lett. 36, 67 (1978) West Germany
738	A14 Sn + Cl ₂ ; Sn + Br ₂	E	133-1970 e/s	Perr, T. P.; Behrens, R., Jr.; Freedman, A.; Moran, R. Reactive scattering of Sn from Cl ₂ and Br ₂ and a lower limit on E ₀ (SnBr). Chem. Phys. Lett. 36, 71 (1978) United States
739	AP4 I ₂ ⁺ + H ₂	E	0.65-3.2 keV	Moran, T. F.; Turner, T.; Abbey, L. E. The effect of internal excitation on the collision induced dissociation of I ₂ ⁺ (v sub y, v) ions. Chem. Phys. Lett. 36, 76 (1978) United States
740	A18 CO + I ₂ ⁺ ; CO + ICl ₂ ⁺ ; CO + NC ₂ ⁺	E	297 K	Hsu, E. S. Y.; Lin, M. C. Two-laser studies of E + v energy transfer reactions involving CO and electronically excited I ₂ , ICl and NO ₂ . Chem. Phys. Lett. 36, 79 (1978) United States
741	AC5 O + NO	E	Underf	Kasai, T.; Masui, T.; Nakane, H.; Kamezaki, I.; Kuwata, K. Study of chemiluminescence in C + NO elementary reaction by a crossed beam technique. Chem. Phys. Lett. 36, 84 (1978) Japan
742	G02 Underf	T	33° K	Lise-Nielsen, I.; Bjerre, A.; Nyeland, C. Diffusion of atoms in diatomic gases in the dominant coupling limit. Chem. Phys. Lett. 36, 109 (1978) Denmark

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743	A10 Undef	F	40°-5000 K	Penner, A. P.; Forst, W. Relaxation times in a system with exponential transition probabilities. Chem. Phys. Lett. 56, 117 (1978) Canada
744	A09 Hg* + [I ⁻ + Ar]; Hg* + [Cl ⁻ + Ar]; Hg* + [Br ⁻ + Ar]; Hg* + [I ⁻ + Ar]	F	300 K	Flannery, M. R. Three-body ion-ion recombination in mercury-halide lasers. Chem. Phys. Lett. 56, 143 (1978) United States
745	F01 He	F		Warner, J. W.; Bilsder, S. P. Relativistic corrections in a series of helium excited states. Chem. Phys. Lett. 56, 164 (1978) United States
746	A10 Kr + CO ₂	F	3.5-1.4 eV	Bauman, J. R.; Lussard, S. Deactivation pathways in collisions of Kr with CO ₂ (001). Chem. Phys. Lett. 56, 183 (1978) United States
747	H05 hv + ICH	E	5000-100000 cm ⁻¹	West, G. A.; Berry, M. J. ICH photodissociation and predissociation: CH(A ² sub 1) fluorescence excitation spectrum and CH(X ² Σ ⁺) chemical laser emission. Chem. Phys. Lett. 56, 423 (1978) United States
748	A14 O ₂ * + O	E	30° K	West, G. A.; Weston, R. L., Jr.; Flynn, G. W. The influence of reactant vibrational excitation on the O ₂ (³ P) + O, bimolecular reaction rate. Chem. Phys. Lett. 56, 429 (1978) United States
749	A10 Undef	F	Undef	Fain, B. On the theory of rate processes: integral equation for nonradiative transition rates. Chem. Phys. Lett. 56, 563 (1978) Israel
750	A17 Ar* + He	F	Undef	Olson, R. E.; Liu, B. CI potentials for the X ² Π and A ² Σ states of Ar* + He. Chem. Phys. Lett. 56, 537 (1978) United States
751	A12 Ar + HCl	E	295 K	van der Peijl, G. J. G.; Frankel, L.; van der Eischen, J. Experimental and calculated cross sections for pressure broadening of pure rotational Raman lines of HCl. Chem. Phys. Lett. 56, 662 (1978) The Netherlands
752	A11 CO* + He; CO* + Ar; CO* + Kr	E	33° K	Griehart, D.; Louville, R.; Ritzon, A.; Trauer, A. Mechanism of collision-induced intersystem crossing in CO. Chem. Phys. Lett. 57, 45 (1978) France
753	E02 e + CO; e + CO ₂ ; e + OCS	E	1-6 eV	Szaythowski, C.; Zuban, N. Absolute total electron scattering cross section of CO, CO ₂ , and OCS in the low energy region. Chem. Phys. Lett. 57, 103 (1978) Poland
754	H02 hv + ClC	E	313-273 nm	Joerdain, J. L.; le Bras, G.; Poulet, G.; Lebourieu, J.; Rigaud, P.; Leroy, B. UV absorption spectrum of ClO(A ² Π - X ² Π) up to the (1,0) band. Chem. Phys. Lett. 57, 169 (1978) France
755	A17 Ar + Kr	F	Undef	Schramm, B. The Ar-Kr pair potential function. Chem. Phys. Lett. 57, 128 (1978) West Germany
756	A02 Undef A03 Undef	F	Undef	Lin, C. S. Molecular basis sets for atom-molecule collisions. Chem. Phys. Lett. 57, 186 (1978) Canada
757	A02 F + H ₂ A14 F + H ₂	F	1-5 kcal/mol	Schnobel, F.; Chapman, S. Reactive bonds and rebounding trajectories in collisional F + H ₂ . Chem. Phys. Lett. 57, 189 (1978) United States
758	A07 Ar* + I ₂	E	25-133 eV	Gillon, K. Y.; Golly, T. D.; Lorente, D. C. Ion-pair formation in fast collisions of metastable argon with iodine. Chem. Phys. Lett. 57, 191 (1978) United States

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759	FeI Pb ⁰	E		Nguyen Xuan, C.; di Stefano, G.; Lenzi, R.; Rargani, A.; Nelo, A. Radiative lifetime and collisional relaxation of $Pb(b^1E^0)$. Chem. Phys. Lett. 57, 287 (1978) Italy
760	Ar Ar + Ar	T	Under	Spiegelmann, F.; Nairieu, J.-P. Theoretical calculation of the excited states of the Ar_2 dimer. Chem. Phys. Lett. 57, 214 (1978) France
761	Ar $H_2 + H_2^+$	T	Under	Cobb, R.; Moran, T. F.; Berkman, R. F.; Childs, R. Ab initio potential energy curves for $H_2-H_2^+$ interactions. Chem. Phys. Lett. 57, 326 (1978) United States
762	Ar $H + H_2$	T	3.1-8.5 eV	Oral, A. E.; Miller, W. H. Infrared laser induced chemical reactions. Chem. Phys. Lett. 57, 362 (1978) United States
763	Ar $F + HI$; $F + HBr$; $F + HCl$; $F + DI$; $F + DBr$; $F + DCl$	E	350 K	Verzberg, E.; Grimsley, A. J.; Mouton, P. L. Hydrogen abstraction by fluorine atoms: $F + HX$ and $F + DX$ ($X=I, Br, Cl$). Chem. Phys. Lett. 57, 372 (1978) United States
764	Ar $F + H_2$	T	0-1 eV	Shan, Y.; Choi, B. H.; Poe, R. T.; Tong, K. T. Three-dimensional quantum mechanical study of the $F + H_2$ reactive scattering. Chem. Phys. Lett. 57, 375 (1978) United States
765	Ar $Si + F_2$	E	65° K	Armstrong, R. A.; Davis, S. J. Rate coefficient for the reaction $Si + F_2 \rightarrow$ products. Chem. Phys. Lett. 57, 446 (1978) United States
766	Ar $HF^0 + HF$	E	25.3 K	Douglas, D. J.; Moore, C. B. Vibrational relaxation of $HF(v=2,4)$. Chem. Phys. Lett. 57, 485 (1978) United States
767	Ar $Sr^0 + HF$; $Sr^0 + HCl$	E	33° K	Solarz, R. W.; Johnson, S. A.; Preston, R. K. The deposition of energy from reactions of laser excited atoms: Strontium Sr^0 with hydrogen halides. Chem. Phys. Lett. 57, 514 (1978) United States
768	Ar $Kr^0 + CC$	E	33° K	Vihle, A. C. Sensitized fluorescence ($A^2\pi - X^1\Sigma^+$ and $b^2\Sigma^+ - a^2\Sigma^+$) of $^{12}Cr^{16}O$, $^{12}Cr^{18}O$, and $^{12}Cr^{16}O$ by $Kr(^2P_{1/2})$ and $Kr(^2P_{3/2})$. Chem. Phys. Lett. 57, 522 (1978) Canada
769	Ar $Pb^0 + H$	E	1530 K	Grady, T. J.; Phillips, L. F. $5p_{1/2}$ -orbital relaxation of $Pb(^2P_{1/2})$ by atomic hydrogen. Chem. Phys. Lett. 57, 535 (1978) New Zealand
770	Ar $OH + HCN$	E	225-563 K	Phillips, L. F. Pressure dependence of the rate of reaction of OH with HCN. Chem. Phys. Lett. 57, 538 (1978) New Zealand
771	Ar $F + D_2$	T	0-8000 cm^{-1}	Rabentrast, F. Electronic-to-rotational energy transfer in the system $F + D_2$. Chem. Phys. Lett. 58, 18 (1978) West Germany
772	Ar $Na + K$	T	Under	Janoschek, R.; Lee, M. U. Ab initio and pseudopotential energy curves for NaK . Chem. Phys. Lett. 58, 47 (1978) West Germany
773	Ar $He + Ar$	E	1550-1407 $\text{\AA}$	Dutuit, O.; Gutchech, R. A.; le Calve, J. Spectral and kinetic studies of the second continuum fluorescence of xenon excited by synchrotron radiation. Chem. Phys. Lett. 58, 65 (1978) France
774	Ar $H + Cl_2$; $H + SCl_2$; $H + S_2Cl_2$; $H + SOCl_2$; $H + SO_2Cl_2$	E	33° K	Sun, J. P.; Sato, D. W. Comparisons of energy disposal by the reactions of H atoms with Cl_2 , SCl_2 , S_2Cl_2 , $SOCl_2$ and SO_2Cl_2 from observation of HCl infrared chemiluminescence. Chem. Phys. Lett. 58, 68 (1978) United States

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775	M86 hv + Cl; hv + Br	E	504 Å ⁰	Kimura, K.; Yanozaki, T.; Achiba, Y. No I(504 Å ⁰) photoelectron spectra and photoionization cross sections of atomic chlorine and bromine. Chem. Phys. Lett. 50, 174 (1978) Japan
776	M85 hv + HgCl ₂ ; hv + HgBr ₂ ; hv + HgI ₂	E	193 nm	Cool, T. A.; McGarvey, J. A., Jr.; Erlendsson, A. C. Two-photon excitation of mercury atoms by photodissociation of mercury halides. Chem. Phys. Lett. 50, 188 (1978) United States
777	M88 hv + CH	E	431 nm	Filenth, S. V.; Zacharias, N.; Bence, J.; Ballenstein, P.; Volge, K. M. Laser excited fluorescence of CH in a low pressure flame. Chem. Phys. Lett. 52, 140 (1978) West Germany
778	M84 Ar ⁺ + HCl	E	32° K	Suzuki, K.; Shishiyama, I.; Czah, Y.; Kuchitsu, K. Light emission from chlorine atoms formed in the dissociative excitation of HCl in a flowing afterglow of discharged argon. Chem. Phys. Lett. 50, 145 (1978) Japan
779	A14 O + HCl	E	33° K	Butler, J. E.; Rodgers, J. L.; Lin, M. C.; Smith, G. A. Observation of CH(v=0,1) in the reactions of O(2P) with HCl(v=0,1,2). Chem. Phys. Lett. 52, 216 (1978) United States
780	A14 OH + [OCS + CS]	E	29° K	Kurylo, M. J. Flash photolysis resonance fluorescence investigation of the reactions of OH radicals with OCS and CS ₂ . Chem. Phys. Lett. 52, 228 (1978) United States
781	M72 hv + H ₂	E	433-450 eV	Peterson, W.; Bianconi, A.; Braun, F. C.; Bachrach, R. Z. The absolute H ₂ K-photoabsorption cross section up to hv = 450 eV. Chem. Phys. Lett. 50, 263 (1978) United States
782	D87 He + U; He + Lif	T	0.7092 a.u.	Vinnon, A. T.; Besancon, S.; Garber, P. B.; Murrell, J. N. Coupled-channel calculations and the accuracy of the sudden approximation for atom-surface scattering. Chem. Phys. Lett. 50, 364 (1978) Israel
783	A14 H + N ₂ ; H + ND; H + D ₂	E	333-1060 K	Gordon, E. B.; Ivanov, B. I.; Perminov, A. P.; Balalaev, V. E.; Ponomarev, A. N.; Filatov, V. V. Measurement of rate constants of hydrogen atom exchange with vibrationally excited N ₂ , ND, and D ₂ molecules. Chem. Phys. Lett. 50, 425 (1978) Soviet Union
784	A62 H + He	T	35-10° e/s	Goyat, R.; McCarroll, W.; Vallon, P. Model potential calculation of the H-He interaction; application to low energy elastic scattering. Chem. Phys. Lett. 52, 501 (1978) France
785	A62 He + He A17 He + He	E	0.5-1.4 Å/s	Brunetti, B.; Pirani, F.; Vecchiattivi, I.; Luzzatti, E. Characterization of He-He long range interaction by absolute total cross section measurement. Chem. Phys. Lett. 50, 504 (1978) Italy
786	F82 e + N ₂ E83 e + N ₂	T	33 eV	Mullandy, N. A.; Trahler, D. G. Rotationally and orbitally adiabatic basis sets for electron-molecule scattering. Chem. Phys. Lett. 50, 512 (1978) United States
787	A14 OH + H ₂	T	254 K	Light, G. C.; Matsumoto, J. M. The effect of vibrational excitation in the reactions of OH with H ₂ . Chem. Phys. Lett. 50, 578 (1978) United States
788	A11 CO ₂ ⁺ + N ₂ ; CO ₂ ⁺ + CO; CO ₂ ⁺ + O ₂	E	15°-375 K	Taine, J.; Lepoutre, F.; Louin, G. A photoacoustic study of the collisional deactivation of CO ₂ by N ₂ , O ₂ and O ₂ between 160 and 375 K. Chem. Phys. Lett. 50, 611 (1978) France
789	A10 Cd + N ₂	E	333 K	Breckenridge, W. M.; Malm, O. K.; Nikolai, W. L.; Nee, D. A rapid pump-and-probe laser technique for determining state-resolved product distributions. Chem. Phys. Lett. 50, 38 (1978) United States

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799	A14 $C + PbO$	E	30° K	Srinivasan, M. C.; DiGiuseppe, T. G.; McFadden, B. L.; Benicewicz, P. Chemiluminescence from the gas phase reaction of atomic carbon with lead oxide. <i>Chem. Phys. Lett.</i> 59, 43 (1978) United States
791	MGB $He + H_2$	E	541-480 nm	Lebster, C. R.; Boute, F. The dye laser induced fluorescence excitation and emission spectrum of the H ₂ molecule. <i>Chem. Phys. Lett.</i> 55, 57 (1978) France
792	A11 $Se^+ + CCl_4; Se^+ + CCl_2; Se^+ + H_2; Se^+ + H_2; Se^+ + He$	E	33° K	Powell, M. T.; Bazl, A. W. Quenching of high concentrations of Se(1S) produced by photolysis. <i>Chem. Phys. Lett.</i> 59, 71 (1978) United States
793	A14 $Cl + NO_2$	E	30° K	Niki, N.; Noller, P. D.; Savage, C. R.; Brettonbach, L. P. Fourier transform IR spectroscopic observation of chlorine nitrate, ClONO ₂ , formed via $Cl + NO_2 \rightarrow ClONO_2$. <i>Chem. Phys. Lett.</i> 55, 78 (1978) United States
794	A13 $Ar^+ + H_2O; Ar^+ + H_2O; CO^+ + H_2O; CO_2^+ + H_2O; CH_3^+ + H_2O; HCC^+ + H_2O; H_2S^+ + H_2O; HS^+ + H_2C$	E	30° K	Karpas, Z.; Amlich, V. G.; Montross, W. T., Jr. An ion cyclotron resonance study of reactions of some atomic and simple polyatomic ions with water. <i>Chem. Phys. Lett.</i> 59, 84 (1978) United States
795	A13 $OH^+ + CCl_4; OH^+ + CCl_2; OH^+ + O_2; OH^+ + H_2; OH^+ + H_2O; OH^+ + H_2O; OH^+ + H_2S; H_2C^+ + NO; H_2O^+ + O_2; H_2C^+ + H_2S$	E	31° K	Karpas, Z.; Montross, W. T., Jr. Reactions of OH ⁺ and H ₂ O ⁺ ions with some diatomic and simple polyatomic molecules. <i>Chem. Phys. Lett.</i> 55, 87 (1978) United States
796	A14 $He + H_2^+$	F	0.5-1 eV	Sathyanarthy, N. Effect of potential well in an endothermic system: reactive and vibrationally inelastic He + H ₂ ⁺ collisions. <i>Chem. Phys. Lett.</i> 55, 95 (1978) Canada
797	A13 $H_2 + H_2$	F	12°-30° K	Bergman, C.; Lefortier, C.; Lours, J. R. On the fixed-nuclei approximation as applied to rotational excitation of molecules by atoms. <i>Chem. Phys. Lett.</i> 59, 129 (1978) France
798	A15 $He + Br_2$	E	2.4-1.3 eV	Pattner, C. T.; Simons, J. F. Rotational polarization in the chemiluminescent reaction $He(^3P_{0,2}) + Br_2 \rightarrow HeHe + Br$. <i>Chem. Phys. Lett.</i> 59, 178 (1978) United Kingdom
799	M16 $Zn + Na$	E	599-317 nm	Strand, M. P.; Hanson, J.; Chien, F.-L.; Barry, H. S. Influence of nuclear spin on angular distribution and polarization of photoelectrons: resonant two-photon ionization of Na. <i>Chem. Phys. Lett.</i> 59, 285 (1978) United States
800	M18 $3He + I_2$	E	46413-51871 cm ⁻¹	Chen, K.; Steenhuis, L. C.; Young, L. S. Resonance enhanced three-photon absorption of molecular iodine. <i>Chem. Phys. Lett.</i> 59, 266 (1978) United States
801	M14 $2He + CO$	E	4543-3650 nm	Ascher, M.; Haas, Y. Two-photon excitation of nitric oxide to levels near and above the dissociation limit. <i>Chem. Phys. Lett.</i> 59, 231 (1978) Israel
802	F15 $n + H_2^+$	E	3.5 keV	Brion, C. E.; Cook, J. P. D.; Jar, A. N. The valence shell binding energy spectrum of H ₂ (0-34 eV) by dipole (e,2e) and binary (e,2e) spectroscopy. <i>Chem. Phys. Lett.</i> 59, 241 (1978) Canada
803	A17 $He + Ar$	E F	30-100	Kell, M.; Kuppermann, A.; Slonka, J. T. An accurate determination of the He-Ar van der Waals potential. <i>Chem. Phys. Lett.</i> 59, 339 (1978) United States
804	A19 $O_3 + H_2$	E	157-424 K	Rea, C.-R.; May, J.; Gordon, R. J. Vibrational relaxation of ozone by para and ortho hydrogen. <i>Chem. Phys. Lett.</i> 59, 425 (1978) United States

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818	A13 $\text{HC}^+ + \text{H}_2^+; \text{HC}^+ + \text{H}_2; \text{HNC}^+ + \text{H}_2$	T	10^4 K	Loew, G. W.; Bernholtz, D. L.; Chang, S. Candidate interstellar molecules formed from ion-molecule reactions of H_2 . <i>Astrophys. J.</i> , Part 1 219, 458 (1978) United States
819	A84 $\text{H}^+ + \text{H}_2$ A67 $\text{H}^+ + \text{H}_2$	T	1-100 MeV	Crook, T. E.; Delgado, A. Ionization, dissociation, and heating efficiencies of cosmic rays in a gas of molecular hydrogen. <i>Astrophys. J.</i> , Part 1 219, 756 (1978) United States
828	F81 Be Seq	T		Liu, E. L.; Fielder, W. J.; Armstrong, L., Jr. Multiconfiguration Hartree-Fock calculation of magnetic quadrupole transitions of Be in electronic sequence. <i>Astrophys. J.</i> , Part 1 219, 1053 (1978) United States
821	A63 $\text{H}^+ + \text{Fe}^{11+}$	T	10^4 K	Landman, B. A. Proton collisional excitation in the ground configuration of Fe^{11+} . <i>Astrophys. J.</i> , Part 1 220, 366 (1978) United States
822	A73 $\text{H}_2 + \text{H}_2$ A18 $\text{H}_2 + \text{H}_2$ A11 $\text{H}_2 + \text{H}_2$	T	10^4 K	Shull, J. R.; Hollenbach, D. J. H_2 cooling, dissociation, and infrared emission in shocked molecular clouds. <i>Astrophys. J.</i> , Part 1 220, 525 (1978) United States
823	A13 $\text{H}^+ + \text{He}; \text{HeH}^+ + \text{H}; \text{CH}^+ + \text{H}$ A65 $\text{He} + \text{HeH}^+; \text{He} + \text{CH}; \text{He} + \text{CH}^+$ E64 $\text{e} + \text{HeH}^+; \text{e} + \text{CH}^+$	T	10^4 K	Black, J. M. Molecules in planetary nebulae. <i>Astrophys. J.</i> , Part 1 222, 125 (1978) United States
824	E63 $\text{e} + \text{Fe}^{2+}; \text{e} + \text{Fe}^{3+}$ F61 $\text{Fe}^{2+}; \text{Fe}^{3+}$	T	E13 3-14 eV	Garstang, R. H.; Rahn, W. D.; Reintjes, S. P. Electron collisional excitation cross sections for Fe III and Fe VI and iron abundances in gaseous nebulae. <i>Astrophys. J.</i> , Part 1 222, 384 (1978) United States
825	E64 $\text{e} + \text{HCN}^+; \text{e} + \text{H}_2\text{O}^+; \text{e} + \text{CH}_3^+; \text{e} + \text{NH}_4^+$	T	10-100 K	Herbst, E. What are the products of polyatomic ion-electron dissociative recombination reactions. <i>Astrophys. J.</i> , Part 1 222, 508 (1978) United States
826	F81 $\text{Fe}^{10+}; \text{Fe}^{9+}; \text{Fe}^{8+}$	F		Widing, K. G. Forbidden lines of Fe XII, Fe XI, and Fe X in solar flares. <i>Astrophys. J.</i> , Part 1 222, 735 (1978) United States
827	M62 $\text{H} + \text{Fe}$	T	6-10 keV	Langer, S. W.; Ross, R. W.; McCray, R. Optically thick x-ray transfer: the shell game. <i>Astrophys. J.</i> , Part 1 222, 556 (1978) United States
828	E73 $\text{e} + \text{He Seq}; \text{e} + \text{He Seq}$ F66 $\text{e} + \text{He Seq}; \text{e} + \text{He Seq}$	T	10^4 K	Reynolds, J. C. On dielectronic recombination and resonances in excitation cross sections. <i>Astrophys. J.</i> , Part 1 222, 1116 (1978) United States
829	M66 $\text{H} + \text{LiH}; \text{H} + \text{NaH}$	T	3000-2500 A9	Kirby, K.; Delgado, A. H α and LiH in diffuse interstellar clouds. <i>Astrophys. J.</i> , Part 1 224, 444 (1978) United States
830	M64 $\text{H} + \text{H}_2$	T	1216 A9	Shull, J. R. H_2 resonance fluorescence with Lyman- α . <i>Astrophys. J.</i> , Part 1 224, 843 (1978) United States
831	F81 Ni II α	F		Pegg, D. J.; Griffin, P. H.; Jochen, B. H.; Jones, R. W.; Kruze, T. M. A measurement of oscillator strengths for solar 300 Å lines in Ni XVIII. <i>Astrophys. J.</i> , Part 1 224, 1016 (1978) United States
832	F61 N	T		Lugger, P. H.; York, D. J.; Blanchard, T.; Morton, L. C. New oscillator strengths for 16 resonance lines of N I and the interstellar abundance of nitrogen. <i>Astrophys. J.</i> , Part 1 224, 1015 (1978) United States

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833	EP8 Under	T	10-10 ⁶ K	Freudenstein, S. A.; Cooper, J. A simple formula for estimating Stark widths of neutral lines. <i>Astrophys. J.</i> , Part 1 224, 1075 (1978) United States
834	A13 CS ⁺ + H ₂ ; C ⁺ + H ₂ S	T	15 ⁺ K	McAllister, T. The formation of interstellar MCS ⁺ . <i>Astrophys. J.</i> , Part 1 225, 857 (1978) United States
835	A13 C ⁺ + H ₂ ; N ⁺ + H ₂	T	10 ⁺ K	Langer, W. D. The formation of molecules in interstellar clouds from singly and multiply ionized atoms. <i>Astrophys. J.</i> , Part 1 225, 860 (1978) United States
836	G89 e + H; e + He	T	10-60 eV	Wu, F.-M.; Judge, D. L. Electron heating of inflowing interstellar gas. <i>Astrophys. J.</i> , Part 1 225, 1045 (1978) United States
837	E83 e + O ⁺ E86 e + O ⁺	T	10 ⁺ K	Acton, L. W.; Brown, J. A. Temperature and ionization balance dependence of O VII line ratios. <i>Astrophys. J.</i> , Part 1 225, 1065 (1978) United States
838	H83 He + O ⁺	T	21.6 eV	Acton, L. W. Radiative transfer of x-rays in the solar corona. <i>Astrophys. J.</i> , Part 1 225, 1065 (1978) United States
839	F42 H	T		Madhava, J. M. Transition probabilities and some expectation values for the hydrogen atom in intense magnetic fields. <i>Astrophys. J.</i> , Part 1 226, 372 (1978) United States
840	H88 He + Fe ⁺	T	5 eV	Phillips, M. M. Permitted Fe II emission in Seyfert 1 galaxies and QSOs. II. The excitation mechanism. <i>Astrophys. J.</i> , Part 1 226, 736 (1978) United States
841	A13 Review	T	10 ⁺ K	Iglesias, E. M.; Silk, J. Nonequilibrium chemistry in shocked molecular clouds. <i>Astrophys. J.</i> , Part 1 226, 851 (1978) Argentina
842	G82 He + H ⁺	T	10 ⁺ K	Nichoud, G.; Martel, A.; Ratel, A. Neutral helium diffusion coefficients in stars. <i>Astrophys. J.</i> , Part 1 226, 403 (1978) Canada
843	E83 e + B Seq; e + Li Seq	T	10 ⁺ K	Vernazza, J. E.; Mason, H. L. Density sensitivity of the solar EUV emission from boron-like ions. <i>Astrophys. J.</i> , Part 1 226, 720 (1978) United States
844	A13 CH ₃ ⁺ + H ₂ O; CH ₃ ⁺ + H ₂ ; CH ₃ ⁺ + H ₂ CH ₃ ⁺ + O ₂ ; CH ₃ ⁺ + CO; CH ₃ ⁺ + CO ₂ CH ₃ ⁺ + NH ₃ ; CH ₃ ⁺ + CCl ₄	E T	20-100 K	Smith, D.; Adams, M. G. Molecular synthesis in interstellar clouds: radiative association reactions of CH ₃ ⁺ ions. <i>Astrophys. J.</i> , Part 2 226, L87 (1978) United Kingdom
845	E84 e + CH ⁺ E86 e + CH ⁺	E	12 ⁺ K	Mitchell, J. B. A.; McGowan, J. W. The dissociative recombination of CH ⁺ X ¹ Σ ⁺ (v=0). <i>Astrophys. J.</i> , Part 2 222, L77 (1978) Canada
846	A13 C ⁺ + H ₂ A83 H + H ₂	T	10 ⁺ K	Eltzner, M.; Watson, W. D. Formation of molecular C ⁺ in interstellar shocks. <i>Astrophys. J.</i> , Part 2 222, L141 (1978) United States
847	H82 He + CH ₄ ; He + C ₂ H ₆	E	1500-1300 Å	Mount, G. M.; Moos, H. W. Photoabsorption cross sections of methane and ethane, 1300-1600 Angstrom, at T = 260 K and T = 200 K. <i>Astrophys. J.</i> , Part 2 224, L35 (1978) United States
848	H82 He + H ₂	E	10000-5000 Å	Trauger, P. T.; Nicholson, M. E.; Larson, L. L. Laboratory absorption strengths for the H ₂ (4,0) and (3,0) S(1) lines. <i>Astrophys. J.</i> , Part 2 225, L157 (1978) United States
849	F81 He	T		Mo, S.-T.; Kuriyan, M.; Pritchard, H. U. Variational energies for highly excited states of the helium atom. <i>Can. J. Chem.</i> 56, 884 (1978) Canada

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850	GD6 Undef	E	Undef	Sennhauser, E. S.; Armstrong, D. A. Ion mobilities in gaseous ammonia. Can. J. Chem. 54, 2337 (1976) Canada
851	A14 O + HBr; O + HI	E	298-554 K	Singleton, B. L.; Cveticanovic, A. J. Temperature dependence of rate constants for the reactions of oxygen atoms, O(³ P), with HBr and HI. Can. J. Chem. 54, 2934 (1976) Canada
952	AC6 Si ²⁺ + H; Mg ²⁺ + H; C ²⁺ + H; C ³⁺ + H; N; Li ²⁺ + H; B ²⁺ + H; B ³⁺ + He; Li ³⁺ + He; Al ³⁺ + He; Mg ³⁺ + He; Be ³⁺ + He	T	10° K	Delgarno, A.; Butler, S. E. Charge transfer of multiply-ionized species. Comments At. Mol. Phys. 7, 129 (1978) United States
853	E17 e + LiF	E T	27 eV	Schneider, B. I. Theoretical atomic and molecular physics at X ICPEAC. Comments At. Mol. Phys. 7, 187 (1978) United States
854	E11 e + Ar; e + Ne	E T	0-21 eV	Coville, M.; van der Ziel, M. Free-free radiative transitions of electron-atom systems. Comments At. Mol. Phys. 8, 1 (1978) The Netherlands
855	FE1 H	T		Russe, F. A new relativistic model for the hydrogen atom. Helv. Phys. Acta 51, 157 (1978) Switzerland
856	A17 Undef	T	Undef	Drayfus, T. The number of states bound by non-central potentials. Helv. Phys. Acta 51, 321 (1978) Switzerland
857	GI9 e + CO ₂ ; e + Cl ₂ ; e + Br ₂ ; e + SF ₆ GI1 e + CO ₂ ; e + Cl ₂ ; e + Br ₂ ; e + SF ₆	E T	15-1000 V/(cm Torr)	Rishbud, A. V.; Naidu, M. S. Sparking potentials and ionization coefficients in some electro-negative gases and their mixtures. Indian J. Pure Appl. Phys. 16, 32 (1978) India
858	A17 B + BF ₃ ; C + CF ₃ ; N + NF ₃ ; Al + AlF ₃ ; Zr + ZrF ₄ ; B + BCl ₃ ; C + CCl ₄ ; L + VCl ₃ ; B + BBF ₃ ; C + CBr ₄ ; B + BI ₃ ; C + Cl ₂	T	Undef	Mohan, S.; Manichavechegao, R. Molecular dynamics of nonlinear XY ₃ system. Indian J. Pure Appl. Phys. 16, 55 (1978) India
859	EF3 e + Li; e + Na; e + K; e + Rb; e + Cs	T	1-50 eV	Tiwary, S. N.; Rai, D. K. Electron impact excitation of alkali metal atoms. Indian J. Pure Appl. Phys. 16, 442 (1978) India
860	A14 O + DCI; O + DBr	E	295-489 K	Brown, R. D. H.; Smith, I. W. M. Absolute rate constants for reactions of O(P-3) atoms with DCI and DBr. Int. J. Chem. Kinetics 10, 1 (1978) United Kingdom
861	A14 S + NO	E	298 K	Vanroodselaar, A.; Obl, K.; Strausz, O. P. Reaction of S(P-3) atoms with nitric oxide. Int. J. Chem. Kinetics 10, 31 (1978) Canada
862	A14 MO ₂ + NO; NO ₂ + NO ₂	E	215-328 K	Simonaitis, R.; Melchian, J. Temperature dependence of reactions of MO ₂ with NO and NO ₂ . Int. J. Chem. Kinetics 10, 67 (1978) United States
863	HR8 hv + SO ₂	E	3273-2975 Å ⁰	Su, F.; Bottenheim, J. W.; Sidebottom, H. W.; Colvert, J. G.; Damon, E. K. Kinetics of fluorescence decay of SO ₂ excited in 2662-3273 Angstrom region. Int. J. Chem. Kinetics 10, 125 (1978) United States
864	A14 Review	E	33° K	Hippler, H.; Luu, S. M.; Tittelbaum, M.; Treu, J. Flash photolysis study of NO-catalyzed recombination of bromine atoms. Int. J. Chem. Kinetics 10, 185 (1978) West Germany
865	A14 H + [H + M]	T	77-1800 K	Stace, A. J.; Murrell, J. N. Computer study of hydrogen atom recombination reaction under high pressure conditions. Int. J. Chem. Kinetics 10, 157 (1978) United Kingdom

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866	A13 Review	E	295 K	Sieck, L. W. Reactions of $(\text{Cu}_2)_2^+$ and $(\text{Cl}_2)_2^+$ association ions. <i>Int. J. Chem. Kinetics</i> 10, 335 (1978) United States
867	A14 Review	E	298 K	Clyne, M. A. A.; Nip, W. S. Kinetics of fluorine atom reactions using resonance absorption spectroscopy in far vacuum ultraviolet reactions $\text{F} + \text{MCl}$, CH_4 , CHCl_2 , and CHClF_2 . <i>Int. J. Chem. Kinetics</i> 10, 367 (1978) United Kingdom
868	A14 $\text{CO} + \text{O}$	E	1300-2270 K	Hardy, J. E.; Gardiner, W. C.; Bercet, A. Recombination of carbon monoxide and oxygen atoms. <i>Int. J. Chem. Kinetics</i> 10, 503 (1978) United States
869	A14 $\text{ZI} + \text{NO}$	E	295 K	Basco, M.; Hunt, J. E. Recombination of iodine atoms in presence of nitric oxide. <i>Int. J. Chem. Kinetics</i> 10, 733 (1978) Canada
870	H06 $3h\nu + \text{NO}$ H04 $3h\nu + \text{NC}$	E	3936-3003 Å	Jackson, W. M.; Lin, C. S. Competition between multiphoton fluorescence and multiphoton ionization in NO. <i>Int. J. Chem. Kinetics</i> 10, 945 (1978) United States
871	A14 $\text{O} + \text{SO}_2 + \text{Ar}; \text{O} + \text{SO}_2 + \text{N}_2$	E	299-445 K	Atkinson, R.; Pitts, J. N. Kinetics of reaction $\text{O}(\text{^1P}) + \text{SO}_2 + \text{M} \rightarrow \text{SO}_3 + \text{M}$ over temperature range of 259-degrees-440-degrees K. <i>Int. J. Chem. Kinetics</i> 10, 1081 (1978) United States
872	H10 $h\nu + [\text{Cl}_2 + \text{O}_2]$	E	300 K	Ashford, R. D.; Basco, M.; Hunt, J. E. Kinetics of ClO formation in flash photolysis of chlorine-oxygen mixtures. <i>Int. J. Chem. Kinetics</i> 10, 1233 (1978) Canada
873	A17 $\text{Xe} + \text{Xe}; \text{Ar} + \text{F}; \text{Ar}_2 + \text{F}$	T	Undef	Michels, M. H.; Hobbs, R. H.; Bright, L. A.; Connolly, J. W. D. Electronic structure of excimer molecular lasers. <i>Int. J. Quantum Chem.</i> 13, 189 (1978) United States
874	EC2 $e + \text{SF}_6$	T	10-60 eV	Benedict, M. G.; Gymer, I. Total cross section of the SF_6 molecule for elastic electron scattering. <i>Int. J. Quantum Chem.</i> 13, 597 (1978) Hungary
875	F01 B^+	T		Larson, E. G. Comparisons of the FFA, SCRPA, Tamm-Dancoff, and full CI methods by analysis of their transition density matrices, oscillator strengths, and energy moments of oscillator strengths for the electric dipole transitions from the ground state of the B^+ ion (frozen K-shell model). <i>Int. J. Quantum Chem.</i> 13, 743 (1978) United States
876	A17 $\text{F}^+ + \text{Ar}; \text{F}^+ + \text{Kr}; \text{F}^+ + \text{Xe}$	T	Undef	Sannigrahi, A. B.; De, B. R. Selected valence-electron split-shell MO calculations on ArF^+ , KrF^+ , and XeF^+ . <i>Int. J. Quantum Chem.</i> 14, 329 (1978) India
877	A17 $\text{O} + \text{ClO}; \text{Cl} + \text{O}_2$ A14 $\text{O} + \text{ClO}; \text{Cl} + \text{O}_2$	T	298 K	Farantos, S. C.; Murrell, J. N. Classical dynamics of the $\text{O} + \text{ClO} \rightarrow \text{Cl} + \text{O}_2$ and $\text{Cl} + \text{O}_2 \rightarrow \text{ClO} + \text{O}$ reactions. <i>Int. J. Quantum Chem.</i> 14, 659 (1978) United Kingdom
878	5 $h\nu + \text{C}; h\nu + \text{Al}; h\nu + \text{Cu}; h\nu + \text{Sn}; h\nu + \text{Pb}; h\nu + \text{Mo}; h\nu + \text{W}$	E	100-1300 keV	Nakamura, M.; Kikuchi, B. The energy spectra of secondary electrons from the metallic elements irradiated with ^{60}Co and ^{137}Cs gamma rays. <i>Jap. J. Appl. Phys.</i> 17, 1463 (1978) Japan
879	F03 $\text{H}; \text{Be}; \text{B}; \text{C}; \text{N}; \text{O}; \text{F}$	T		Dewar, M. J. S.; Rzepa, M. S. Calculations of electron affinities using the MNDU semiempirical SCF-MO method. <i>J. Am. Chem. Soc.</i> 100, 784 (1978) United States
880	A13 $\text{O}^+ + \text{N}_2$	T	0-100 eV	Hopper, D. G. Mechanisms of the reaction of positive atomic oxygen ions with nitrogen. <i>J. Am. Chem. Soc.</i> 100, 1019 (1978) United States
881	A14 $\text{H} + \text{NH}_2$	T	Thermal	Nakatsuji, H.; Koga, T.; Kondo, K.; Yonezawa, T. Force and density study on the chemical reaction process $\text{H} + \text{H}_2 \rightarrow \text{H}_2$. <i>J. Am. Chem. Soc.</i> 100, 1029 (1978) Japan

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882	A13 $\text{OH}^- + \text{CCl}_2$	T	Under	Jonsson, B.; Karlstrom, G.; Samuelsson, H. An initial molecular orbital calculations of the water-carbon dioxide system. The reaction $\text{OH}^- + \text{CCl}_2 \rightarrow \text{HCO}_2^-$. J. Am. Chem. Soc. 100, 1658 (1978) Sweden
883	A13 $\text{ND}_2^- + \text{D}_2$; $\text{D}^- + \text{H}_2$	E	0.7-189 eV	Lifshitz, C.; Wu, R. L. C.; Tierney, T. O. Excitation functions of slow proton transfer reactions involving negative ions. J. Am. Chem. Soc. 100, 2848 (1978) United States
884	F01 Ni_2 ; Ni_2^+	T		Upton, T. H.; Goddard, W. A., III The electron states of Ni_2 and Ni_2^+ . J. Am. Chem. Soc. 100, 5659 (1978) United States
885	K*1 Review	E T	Under	Sellier, I. A., Ed. Structure and collisions of ions and atoms (Topics in Current Physics, Volume 5). Springer-Verlag Heidelberg, 1978 United States
885	K*1 Review	E T	Under	Levine, R. D.; Jortner, J., Ed. Molecular energy transfer. John Wiley and Sons New York, 1976 Israel
887	A11 $\text{KrF} + \text{He}$; $\text{KrF} + \text{Ne}$; $\text{KrF} + \text{Ar}$; $\text{KrF} + \text{Xe}$	E	Thermal	Eden, J. G.; Weynant, R. W.; Searles, S. K.; Burnham, R. $\text{KrF}(B)$ quenching by He, Ne, Ar, and H_2 . J. Appl. Phys. 49, 5368 (1978) United States
888	C02 $\text{Br} + \text{Au}$; $\text{Cl} + \text{Au}$; $\text{F} + \text{Au}$; $\text{O} + \text{Au}$; $\text{N} + \text{Au}$ D*2 $\text{Br} + \text{Au}$; $\text{Cl} + \text{Au}$; $\text{F} + \text{Au}$; $\text{C} + \text{Au}$; $\text{N} + \text{Au}$ D14 $\text{Br} + \text{Au}$; $\text{Cl} + \text{Au}$; $\text{F} + \text{Au}$; $\text{O} + \text{Au}$; $\text{N} + \text{Au}$	E	13-15 MeV	Andersen, M. H.; Knudsen, M.; Petersen, P. M. Degradation of discontinuous gold films under MeV heavy-ion bombardment. J. Appl. Phys. 45, 5638 (1978) Denmark
889	D14 $\text{He}^+ + \text{V}$	E	23-520 keV	Kaminsky, M.; Das, S. K. Correlation of blister diameter and blister skin thickness for helium-bombarded V. J. Appl. Phys. 49, 5673 (1978) United States
897	A*3 $\text{SF}_6 + \text{He}$; $\text{SF}_6 + \text{Ar}$	E	15°-30° K	Woodroffe, J. A.; Kivai, B. Energy removed from vibration in V-V collisions between SF_6 and helium or argon. J. Appl. Phys. 49, 5763 (1978) United States
891	G05 $e + \text{CO}$ G07 $e + \text{CO}$ G08 $e + \text{CO}$ G09 $e + \text{CO}$ G10 $e + \text{CO}$ F*3 $e + \text{CO}$ E*5 $e + \text{CO}$	E	0-101 eV	Land, J. E. Electron scattering cross sections for momentum transfer and inelastic excitation in carbon monoxide. J. Appl. Phys. 45, 5718 (1978) United States
892	D*2 $\text{H}^+ + \text{B}$; $\text{He}^+ + \text{B}$	E	23-200 keV	Miyajima, S.; Ato, Y.; Moriya, Y. Sputtering yields of boron bombarded by light ions. J. Appl. Phys. 49, 6154 (1978) Japan
893	A12 $\text{H}_2\text{O} + \text{H}_2$; $\text{H}_2\text{O} + \text{CO}_2$; $\text{H}_2\text{O} + \text{Ar}$	E	Under	Godlevskii, A. F.; Kapitanov, V. A. Changes in the line shapes of water vapor due to broadening by foreign gases. J. Appl. Spectrosc. 28, 142 (1978) Soviet Union
894	G*8 $e + [\text{Ar} + \text{H}_2]$	E	25°-30° K	Shalkauskas, V. S. Estimation of radial temperature distribution and determination of relative chemical composition in the plasma of a low-voltage pulse discharge. J. Appl. Spectrosc. 28, 260 (1978) Soviet Union
895	H*2 Under	T	Under	Gelsenok, V. A.; Zhoinerovich, I. I.; Sorzhevskii, A. M. Role of diffusion rotation of molecules during absorption from excited states. J. Appl. Spectrosc. 28, 562 (1978) Soviet Union

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895	D07 $P^+ + [H + SiO_2]; P^+ + [H_2O + SiO_2]$ D16 $P^+ + [H + SiO_2]; P^+ + [H_2O + SiCl_2]$	E	83 keV	Gerasimenko, N. N.; Kovalevskaya, I. I.; Tseltin, G. M. Investigation of hydrogen capture in ion-beam-irradiated silica dioxide films by the ATR method. <i>J. Appl. Spectrosc.</i> 28, 680 (1978) Soviet Union
897	A04 $He^+ + H_2$ A06 $He^+ + H_2$	T	0.005-0.28 eV	Preston, R. K.; Thompson, B. L.; McLaughlin, D. R. A theoretical prediction of vibrational enhancement for dissociative charge transfer in the HeH_2^+ system. <i>J. Chem. Phys.</i> 68, 13 (1978) United States
898	A11 $O + He; O + Ne; O + Ar; O + Kr; O + Xe;$ $S + He; S + Ne; S + Ar; S + Kr;$ $S + Xe; Se + He; Se + Ne; Se + Ar;$ $Se + Kr; Se + Xe$	T	31° K	Julienne, P. S. Theory of rare gas-group VI 1S-1p collision-induced transitions. <i>J. Chem. Phys.</i> 68, 22 (1978) United States
899	A03 $I_2^+ + I_2$ A11 $I_2^+ + I_2$	E T	35° K	Kato, H. Molecular collisions and depolarization of emission from I_2 in the gas phase excited by circularly polarized light. <i>J. Chem. Phys.</i> 67, 86 (1978) Japan
900	D07 Under	T		Beilun, J. C.; George, T. F. Quantum mechanical theory of collisional ionization in the presence of intense laser radiation. <i>J. Chem. Phys.</i> 68, 134 (1978) United States
901	A04 $HF + Ar; HCl + Ar; CO + Ar$	T	25°K-9500 K	Ramakrishna, N.; Babu, S. V. Steady state dissociation of shock heated HF, HCl, and CO in excess Ar. <i>J. Chem. Phys.</i> 68, 163 (1978) India
902	A17 $H_2^+ + H_2$	T	Under	Stine, J. R.; Nuckerman, J. I. Charge exchange and chemical reaction in the $H_2^+ + H_2$ system. I. Characterization of the potential energy surfaces and nonadiabatic regions. <i>J. Chem. Phys.</i> 68, 185 (1978) United States
903	A06 $O^- + O_2; OH^- + O_2; F^- + O_2; Cl^- + O_2;$ $Br^- + O_2; I^- + O_2; S^- + O_2; SH^- + O_2;$ $Cl_2^- + O_2; C_2H^- + O_2; NO_2^- + O_2;$ $CO_2^- + O_2; C_2^- + O_2; CO_2^- + O_2;$ A13 $O^- + O_2; OH^- + O_2; F^- + O_2; Cl^- + O_2;$ $Br^- + O_2; I^- + O_2; S^- + O_2; SH^- + O_2;$ $Cl_2^- + O_2; C_2H^- + O_2; NO_2^- + O_2;$ $CO_2^- + O_2; C_2^- + O_2; CO_2^- + O_2;$ $O_2^- + O_2; NO_2^- + O_2$	E	0.1-12 eV	Lifshitz, C.; Vu, R. L. C.; Tierney, T. U.; Terwilliger, D. I. Negative ion-molecule reactions of ozone and their implications on the thermochemistry of O_3^- . <i>J. Chem. Phys.</i> 68, 247 (1978) United States
904	A04 $CO^+ + CO$	E	3.55-3.2 keV	Moran, T. F.; Wilson, J. B.; Abbey, L. E. Collision-induced dissociation of CO^+ in Ar^+ and metastable states in CO^+-CO interactions. <i>J. Chem. Phys.</i> 68, 261 (1978) United States
905	A13 $Kr^+ + H_2; Kr^+ + D_2; Kr^+ + HD$	T	10°-40° K	Kempner, P. R.; Neilson, P. V.; Parent, D.; Bowers, P. T. Temperature dependence of the reaction of Kr^+ with H_2 , D_2 , and HD : an unusual isotope effect. <i>J. Chem. Phys.</i> 68, 322 (1978) United States
906	A05 $Cl + K_2$	E	1200 K	Kranos, J. On electronic emission intensity in chemiluminescent reactions. <i>J. Chem. Phys.</i> 68, 342 (1978) United States
907	A14 Under	T	30° K	Xystris, N.; Dahler, J. S. A reactive collision model for use in kinetic theory. <i>J. Chem. Phys.</i> 68, 345 (1978) United States
908	G02 Under G09 Under	T	30° K	Xystris, N.; Dahler, J. S. Mass and momentum transport in dilute reacting gases. <i>J. Chem. Phys.</i> 68, 356 (1978) United States
909	A17 $Ar + Ar^+; Kr + Kr^+; Xe + Xe^+$	T	Under	Wadt, W. R. The electronic states of Ar_2^+ , Kr_2^+ , Xe_2^+ . I. Potential curves with and without spin-orbit coupling. <i>J. Chem. Phys.</i> 68, 462 (1978) United States

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910	A03 $\text{CO}_2 + \text{Ne}; \text{CO}_2 + \text{Ar}; \text{CO}_2 + \text{Kr}$	T	0.1-10 eV	Suzukawa, M. H., Jr.; Wolfberg, M.; Thompson, B. L. A quasiclassical trajectory study of the energy transfer in CO_2 -rare gas systems. <i>J. Chem. Phys.</i> 68, 450 (1978) United States
911	A11 $\text{MCl} + \text{O}$ A14 $\text{MCl} + \text{O}$	E	296 K	Macdonald, R. G.; Moore, C. W. Reaction and deactivation of MCl ($\text{M}=\text{V}, \text{Cr}$) by O atoms. <i>J. Chem. Phys.</i> 68, 513 (1978) United States
912	A05 $\text{He}_2^+ + \text{H}_2\text{C}; \text{He}_2^+ + \text{CH}_3\text{CN}$ A11 $\text{He}_2^+ + \text{H}_2\text{O}; \text{He}_2^+ + \text{CH}_3\text{CN}$ A13 $\text{He}_2^+ + \text{H}_2\text{C}; \text{He}_2^+ + \text{CH}_3\text{CN}$	E	327 K	Blinn, W. R.; Ahl, J. L. Excitation and quenching reactions in E-beam excited $\text{He}/\text{H}_2\text{O}$ and $\text{He}/\text{CH}_3\text{CN}$ systems. <i>J. Chem. Phys.</i> 68, 522 (1978) United States
913	A14 $\text{K} + \text{NaCl}; \text{K} + \text{NaI}$	T	327 K	Pollak, E. Prior statistical distributions for the collision of an atom with a diatomic. <i>J. Chem. Phys.</i> 68, 547 (1978) United States
914	H06 $\text{hv} + \text{Ne}; \text{hv} + \text{Ar}; \text{hv} + \text{CH}_4; \text{hv} + \text{NH}_3; \text{hv} + \text{H}_2\text{O}; \text{hv} + \text{CO}; \text{hv} + \text{H}_2; \text{hv} + \text{C}_2$	E	21-1253 eV	Allison, D. A.; Cavell, K. G. Photoelectron spectroscopy with 2π (sub zero) (151 eV) radiation. A study of the variation of relative photoionization cross sections of molecules containing first row atoms ($\text{C}, \text{N}, \text{O}$) with exciting radiation from Ne^I to Ag (sub 0) limits. <i>J. Chem. Phys.</i> 68, 593 (1978) Canada
915	A03 $\text{He} + \text{H}_2; \text{He} + \text{O}_2; \text{Ar} + \text{H}_2$	T	0.75-9.4 eV	Tarr, S. W.; Rabitz, H. Rapid and accurate evaluation of inelastic molecular cross sections. <i>J. Chem. Phys.</i> 69, 642 (1978) United States
916	A11 $\text{He} + \text{H}_2$	T	3000 K	Tarr, S. W.; Rabitz, H. High-temperature vibrational-rotational relaxation in $\text{He}-\text{H}_2$. <i>J. Chem. Phys.</i> 68, 647 (1978) United States
917	A02 $\text{He} + 2\text{He}$	T	367 K	Lin, T. K.; Duffy, K. Faddeev-UFE theory and the three ^4He -atom system: bound states and zero-energy atom-diatom scattering. <i>J. Chem. Phys.</i> 68, 655 (1978) United States
918	H06 $\text{hv} + \text{Zn}; \text{hv} + \text{Cd}$	E	412-1032 eV	Benne, M. S.; Frost, D. C.; McDowell, C. A.; Balibesh, B. Free-atom core binding energies from x-ray photoelectron spectroscopy. I. Zinc and cadmium. <i>J. Chem. Phys.</i> 68, 656 (1978) Canada
919	A17 $\text{H}_2 + \text{Ar}; \text{H}_2 + \text{Kr}; \text{H}_2 + \text{Xe}; \text{D}_2 + \text{Ne}$	T	Under	Dunbar, A. M.; Gordon, R. G. Bound atom-diatomic molecule complexes. Anisotropic intermolecular potentials for the hydrogen-rare gas systems. <i>J. Chem. Phys.</i> 69, 700 (1978) United States
920	H06 $\text{hv} + \text{H}_2$	T	1.11-14 eV	Pitcher, B.; Teabe, B. W. Theoretical studies in photoelectron spectroscopy: extraction of dynamical and structural information from the angular distributions for oriented or rotationally resolved unoriented molecular samples. <i>J. Chem. Phys.</i> 68, 755 (1978) United States
921	F03 $\text{e} + \text{NO}$	E	3-7.4 eV	Frueholz, R. P.; Riende, M.; Kuppermann, A. Doublet + quartet transitions in nitric oxide as detected by electron-impact spectroscopy. <i>J. Chem. Phys.</i> 68, 775 (1978) United States
922	A17 $\text{F}^+ + \text{H}_2$	T	Under	Mahan, B. M.; Schaefer, M. F., III; Ungewach, S. H. Some features of the potential energy surfaces for the $\text{F}^+ + \text{H}_2$ ion-molecule reaction. <i>J. Chem. Phys.</i> 68, 781 (1978) United States
923	A17 $\text{Cs} + \text{Cs}; \text{Fb} + \text{Rb}$ H02 $\text{hv} + \text{Cs}_2; \text{hv} + \text{Rb}_2$	E	4272-7480 Å	Gupte, R.; Meppert, W.; Wagner, J.; Wannenoy, L. Absorption studies of Cs_2 and Rb_2 molecular bands in the visible and near visible. <i>J. Chem. Phys.</i> 68, 785 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
924	A64 $Ar^+ + N_2; Ar^+ + O_2; Ar^{2+} + N_2; Ar^{2+} + O_2$ A86 $Ar^+ + N_2; Ar^+ + O_2; Ar^{2+} + N_2; Ar^{2+} + O_2$	E	33° K	Mowerha, F. Reactions of singly and doubly charged argon ions with N_2 and O_2 in a steady state hollow cathode discharge. <i>J. Chem. Phys.</i> 68, 884 (1978) Austria
925	A13 $CO_2^+ + 2CO_2$	E	33° K	Nelsons, G. C.; Illies, A. J.; Stradling, G. S.; Jennings, K. R. Time resolved measurements in high pressure mass spectrometry: an analysis of assumptions. <i>J. Chem. Phys.</i> 68, 866 (1978); United States
926	A13 $C^+ + D_2; N_2O^+ + N_2; D_2O^+ + D_2$	T	1-5 eV	Chekanovich, V. J.; Bowers, R. T. Threshold behavior of endoergic bimolecular reactions: a statistical phase space approach. <i>J. Chem. Phys.</i> 66, 501 (1978) United States
927	A86 $K + H_2O; K + D_2O; CS + H_2O; Cs + D_2O$ A87 $K + H_2O; K + D_2O; Cs + H_2O; Cs + D_2O$	E	12-200 eV	Veranck, R. J.; Stockdale, J. A. D.; Compton, R. H. Ionizing collisions of cesium and potassium atoms with water. <i>J. Chem. Phys.</i> 68, 916 (1978) United States
928	A11 $CO^+ + H_2$	T	250-2000 K	Stricker, J. Vibrational deactivation of carbon monoxide by hydrogen from 250 to 2000 K. <i>J. Chem. Phys.</i> 68, 934 (1978) Israel
929	H84 $h\nu + N_2$ H86 $h\nu + N_2$	T	10-50 eV	Rescigno, T. M.; Bender, C. F.; McRoy, B. V.; Langhoff, P. W. Photoabsorption in molecular nitrogen: a recent analysis of discrete-basis-set calculations in the static-exchange approximation. <i>J. Chem. Phys.</i> 68, 570 (1978) United States
930	A11 $O^+ + N_2C; O^+ + CO_2; O^+ + H_2O; O^+ + NO$ A14 $O^+ + N_2C; O^+ + CO_2; O^+ + H_2O; O^+ + NO$	E	33° K	Slanger, T. G.; Black, G. $G(^1S)$ interactions—the product channels. <i>J. Chem. Phys.</i> 68, 985 (1978) United States
931	A11 $O^+ + O_2$	E	33° K	Slanger, T. G.; Black, G. Products of the $G(^1S)-O_2$ interaction. <i>J. Chem. Phys.</i> 68, 598 (1978) United States
932	A11 $NO + O_3^+$ A14 $NO + O_3^+$	E	154-437 K	Bar-Ziv, E.; May, J.; Gordon, R. J. Temperature dependence of the laser-enhanced reaction $NO + O_3$ (DCI). II. Contributions from reactive and nonreactive channels. <i>J. Chem. Phys.</i> 68, 1012 (1978) United States
933	A11 $NO + O_3^+$ A14 $NO + O_3^+$	E	134-410 K	Mul, K.-K.; Cool, T. A. Experiments concerning the laser-enhanced reaction between vibrationally excited O_3 and NO . <i>J. Chem. Phys.</i> 68, 1022 (1978) United States
934	A14 $CH_3I + R; CH_3I + Rb$	E	0.777-1.7 eV	Wu, K. T.; Peng, M. F.; Bernstein, R. D. Comparison of the cross sections for reaction of ethyl iodide with potassium and rubidium. <i>J. Chem. Phys.</i> 68, 1064 (1978) United States
935	A14 $NO_2^+ + CO$	E	33° K	Herman, I. P.; Mariella, R. P., Jr.; Javan, A. Analysis of the laser-stimulated reactions: $NO_2^+ + CO$ and $NO_2^+ + CO_2$. <i>J. Chem. Phys.</i> 68, 1078 (1978) United States
936	A84 Unref	T	Unref	Rusinek, J.; Roberts, R. E. Semiclassical calculation for collision induced dissociation. II. Morse oscillator model. <i>J. Chem. Phys.</i> 68, 1147 (1978) United States
937	A67 $He^+ + Ar; He_2^+ + Ar$ A14 $He^+ + Ar; He_2^+ + Ar$	E	33° K	Pitchford, L. C.; Seleche, F. Destruction rates of metastable helium atoms and molecules in collisions with argon atoms. <i>J. Chem. Phys.</i> 68, 1185 (1978) France
938	A13 $NO^+ + NC_2^-; NO^+ + NO_2^-; CCl_2^+ + Cl^-; NH_4^+ + Cl^-$	E	220-400 K	Smith, D.; Church, M. J.; Miller, I. M. Mutual neutralization of simple and clustered positive and negative ions. <i>J. Chem. Phys.</i> 68, 1224 (1978) United Kingdom

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946	A17 Cs + H	T	Undef	Maich, V.-K.; Yang, S.-C.; Tom, A. C.; Stueley, b. C. The potential energy curves of the $X^1\Sigma^+$ and $A^1\Pi$ states of CsH. J. Chem. Phys. 68, 1448 (1978) United States
947	A84 H ₂ ⁺ + He; H ₂ ⁺ + Ar; H ₂ ⁺ + N ₂ ; H ₂ ⁺ + Kr; H ₂ ⁺ + N ₂ ; HD ⁺ + He; HD ⁺ + Ar; HD ⁺ + N ₂ ; HD ⁺ + Kr; H ₂ ⁺ + Ar; D ₂ ⁺ + Kr; D ₂ ⁺ + N ₂ ; D ₂ ⁺ + He; H ₂ ⁺ + He; H ₂ ⁺ + Ar; H ₂ ⁺ + Kr; H ₂ ⁺ + N ₂ ; H ₂ ⁺ + D ₂ ; HD ₂ ⁺ + He; HD ₂ ⁺ + Ar; HD ₂ ⁺ + N ₂ ; HD ₂ ⁺ + Kr; HD ₂ ⁺ + D ₂ ; D ₂ ⁺ + He; D ₂ ⁺ + Ar; D ₂ ⁺ + N ₂ ; D ₂ ⁺ + Kr; D ₂ ⁺ + N ₂ A16 H ₂ ⁺ + He; H ₂ ⁺ + Ar; H ₂ ⁺ + N ₂ ; H ₂ ⁺ + Kr; H ₂ ⁺ + N ₂ ; HD ⁺ + He; HD ⁺ + Ar; HD ⁺ + N ₂ ; HD ⁺ + Kr; D ₂ ⁺ + Ar; D ₂ ⁺ + N ₂ ; D ₂ ⁺ + He; D ₂ ⁺ + Kr; D ₂ ⁺ + N ₂ ; H ₂ ⁺ + He; H ₂ ⁺ + Ar; H ₂ ⁺ + N ₂ ; HD ₂ ⁺ + He; HD ₂ ⁺ + Ar; HD ₂ ⁺ + N ₂ ; HD ₂ ⁺ + Kr; HD ₂ ⁺ + D ₂ ; D ₂ ⁺ + He; D ₂ ⁺ + Ar; D ₂ ⁺ + N ₂ ; D ₂ ⁺ + Kr; D ₂ ⁺ + N ₂	E	5-15 keV	Schultzer, R.; Odom, R. W.; Anbar, M. Collision-induced formation of positive and negative ions from diatomic and triatomic negative hydrogen ions. J. Chem. Phys. 64, 1485 (1976) United States
948	A83 Li ⁺ + Hg; Na ⁺ + Hg; K ⁺ + Hg	E	3.75-3 keV	Aquilanti, V.; Casavecchia, P.; Grossi, G. Excitation of Hg(6 ³ P-1) by low energy alkali ion impact: optical polarization and cross sections for magnetic sublevels. J. Chem. Phys. 68, 1499 (1978) Italy
949	E83 e + H	T	11-214 eV	Truhler, D. G.; Mullaney, R. A. Semiclassical exchange approximation for inelastic electron scattering. J. Chem. Phys. 68, 1574 (1978) United States
950	A83 He + CO ₂ CF ₂ He + CO ₂	T	10 ⁴ -10 ⁶ K	Parmer, G. A.; Fack, R. Y. Rotational and vibrationally inelastic scattering in the rotational IOS approximation. Ultrasonic calculation of total (differential, integral, and transport) cross sections for nonspherical molecules. J. Chem. Phys. 68, 1585 (1978) United States
951	H85 hv + HOCI	T	43 ⁰ -260 nm	Jaffe, R. L.; Lenghoff, S. R. Theoretical study of the photodissociation of HOCI. J. Chem. Phys. 68, 1632 (1978) United States
952	A14 H + O ₂ A17 H + O ₂	T	1630-2500 K	Gauss, A., Jr. Trajectory calculations on the H + O ₂ + OH + O combustion reaction. J. Chem. Phys. 68, 1685 (1978) United States
953	A11 H + HF ⁺ ; D + HF ⁺ A14 H + HF ⁺ ; D + HF ⁺	E	231-295 K	Ett, J. F.; Haldner, R. F., III Kinetic study of h + HF(v=2): kinetic isotope effect and temperature dependence. J. Chem. Phys. 68, 1708 (1978) United States
954	A11 S ₂ ⁰ + He; S ₂ ⁰ + Ar; S ₂ ⁰ + Xe; S ₂ ⁰ + N ₂ ; S ₂ ⁰ + S ₂ ; S ₂ ⁰ + CF ₄ ; S ₂ ⁰ + C ₂ F ₆ A10 S ₂ ⁰ + He; S ₂ ⁰ + Ar; S ₂ ⁰ + Xe; S ₂ ⁰ + N ₂ ; S ₂ ⁰ + S ₂ ; S ₂ ⁰ + CF ₄ ; S ₂ ⁰ + C ₂ F ₆	E	31 ⁰ K	McGee, T. H.; Weston, R. L., Jr. Collisional quenching of fluorescence from S ₂ (B ³ Π sub u ⁺). J. Chem. Phys. 68, 1736 (1978) United States
955	A17 Xe + F; Xe + Xe; Xe + Xe ⁺	T	Undef	Bedt, W. R.; May, P. J.; Kahn, L. P. Relativistic and nonrelativistic effective core potentials for xenon. Applications to XeF, Xe ₂ , and Xe ₂ ⁺ . J. Chem. Phys. 68, 1752 (1978) United States
956	A13 Undef	T	Undef	Castleman, A. W., Jr.; Holland, F. R.; Keegan, R. G. The properties of ion clusters and their relationship to heteromolecular nucleation. J. Chem. Phys. 68, 1760 (1978) United States
957	H85 hv + CO ₂ ; hv + 2CO ₂ H86 hv + CO ₂ ; hv + 2CO ₂	E	1300-500 Å	Jones, G. G.; Taylor, J. W. A photoionization study of carbon dioxide dimer in a supersonic molecular beam. J. Chem. Phys. 68, 1768 (1978) United States

REF. NO.	REACTANTS	EXP. OF THEORET.	ENERGY RANGE	REFERENCE
958	2F9 $N_2^+ + Si; N_2^+ + SiO; N_2^+ + SiC_2$ D17 $N_2^+ + Si; N_2^+ + SiO; N_2^+ + SiC_2$	E	3.-10 ¹⁰ eV	Taylor, J. A.; Lancaster, G. N.; Ignatiev, A.; Babalms, J. W. Interactions of ion beams with surfaces. Reactions of nitrogen with silicon and its oxides. J. Chem. Phys. 68, 1776 (1978) United States
959	H88 $Hu + Hg_x$	E	25 ⁺ nm	Stock, N.; Smith, E. W.; Drellinger, R. L.; Hessel, R. M.; Purcino, J. Analysis of the decay of molecular fluorescence in optically excited mercury vapor. J. Chem. Phys. 68, 1785 (1978) United States
960	A14 $La + H_2C; La + D_2O; Sc + H_2C; Sc + D_2O; Y + H_2C; Y + D_2O$	E	32 ⁺ K	Liu, K.; Parson, J. R. Mechanisms of central U-atom abstraction reactions: a molecular beam, laser-induced fluorescence study of group IIIB + ACN systems. J. Chem. Phys. 68, 1794 (1978) United States
961	EC9 $e + F_2$ EC3 $e + F_2$	T	3.-5 eV	Hall, R. J. Dissociative attachment and vibrational excitation of F_2 by slow electrons. J. Chem. Phys. 68, 1803 (1978) United States
962	H16 $Hu + CO_2$	E	1470-1302 Å	Slanger, T. G.; Black, G. Cl_2 photolysis revisited. J. Chem. Phys. 68, 1844 (1978) United States
963	H42 $Hu + O_2$	E	35 ⁺ -55 Å	Mahman, G.; Ederer, D. L.; Salazar, E. b. The photoabsorption cross section of O_2 from 25-350 Å. J. Chem. Phys. 68, 1862 (1978) United States
964	AC3 Ne FR1 Ne	E		Kocher, C. A.; Fairchild, C. E. Time-of-flight determination of radiative decay rates for high Rydberg states in atomic nitrogen. J. Chem. Phys. 68, 1884 (1978) United States
965	A17 $H^- + Li; H^- + Na; H^- + Cs$	F	Interf	Kiro, A. M.; Gardner, M. A.; Nishes, J. b. Ab initio MC-SCF ground-state potential energy curves for LiH^- , NaH^- , and CaH^- . J. Chem. Phys. 68, 1942 (1978) United States
966	A1F $Kr + CO_2$	F	Interf	Schatz, G. C.; Poser, P. D. The importance of anharmonicity on the rates of energy transfer in rare gas/ CO_2 systems. J. Chem. Phys. 68, 1952 (1978) United States
967	A17 Unref	T	Unref	Gray, S. K.; Wright, J. J. On the spline interpolation of potential energy data. J. Chem. Phys. 68, 2002 (1978) United States
968	A14 $CHF + O_2; CHF + NO$	E	32 ⁺ K	Lin, P. C. Energy distribution in HF from the reaction of CHF with O_2 and NO. J. Chem. Phys. 68, 2004 (1978) United States
969	A11 $H_2^+ + SF_2$	F	32 ⁺ K	Whitson, M. E., Jr.; McNeal, R. J. Quenching of vibrationally excited H_2 by SO_2 . J. Chem. Phys. 68, 2014 (1978) United States
970	A11 $NH_3 + NH_3$	F	Interf	Kano, S.; Morita, N.; Amato, T.; Spigizu, T. Note on infrared-microwave double resonance study of collisional relaxation of NH_3 . J. Chem. Phys. 68, 2025 (1978) Japan
971	AC2 $Br + I$ AC3 $Br + I$	F	Interf	Faist, M. B.; Bernstein, J. b. *Erratum Computational study of elastic and electronically inelastic scattering of Br by ground state I atoms: role of potential curve crossing [J. Chem. Phys. 64, 2671 (1976)]. J. Chem. Phys. 68, 2022 (1978) United States
972	AC4 $Ne + SF_6; Ne + SeF_6; Ne + TeF_6; He + MoF_6; He + WF_6; He + ReF_6; He + IrF_6; He + PtF_6; K + SF_6; K + SeF_6; K + TeF_6; K + MoF_6; K + WF_6; K + ReF_6; K + IrF_6; K + PtF_6; Cs + SF_6; Cs + SeF_6; Cs + TeF_6; Cs + MoF_6; Cs + WF_6; Cs + ReF_6; Cs + IrF_6; Cs + PtF_6$	E	6-40 eV	Compton, M. N.; Reinhardt, P. W.; Cooper, C. D. Collisional ionization between fast alkali atoms and selected hexafluoride molecules. J. Chem. Phys. 68, 2023 (1978) United States

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973	EFS $e + He$	E	300-500 eV	Dillon, V. A. Generalized differential oscillator strengths for the electron impact ionization of helium determined for large and intermediate momentum transfers at 300 to 500 eV incident energies. <i>J. Chem. Phys.</i> 66, 2737 (1978) United States
974	HMS Undef	T	Undef	Heller, E. J. Quantum corrections to classical photodissociation models. <i>J. Chem. Phys.</i> 66, 2466 (1978) United States
975	A13 $CO_2^- + H_2C_2; NO_2^- + H_2O_2; F^- + H_2O_2; Cl^- + H_2O_2; Br^- + H_2O_2; I^- + H_2O_2; N_3^- + H_2O_2; NO^- + H_2O_2; H_3C^+ + H_2O_2; NO_2^+ + H_2O_2$	E	300 K	Davidson, J. A.; Viggiano, A. A.; Peward, C. J.; Lotan, I.; Fehsenfeld, F. C.; Albritton, D. L.; Ferguson, E. E. Rate constants for the reactions of O_2^+ , NO_2^+ , NO^+ , H_3C^+ , CO_2^+ , NO_2^+ , and halide ions with H_2O_2 at 300 K. <i>J. Chem. Phys.</i> 68, 2385 (1978) United States
976	A10 $Br^+ + H_2O$ A11 $Br^+ + H_2O$	E	300 K	Hariri, A.; Wittig, C. Electronic to vibrational energy transfer, from $Br(4^2F_{5/2})$ to H_2O . <i>J. Chem. Phys.</i> 68, 2109 (1978) United States
977	A17 $Hg + Hg$	T	Undef	Purvis, G. D.; Bartlett, R. J. The potential energy curve for the $X^1\Sigma_{g^+}$ state of Hg_2 calculated with many-body perturbation theory. <i>J. Chem. Phys.</i> 68, 2114 (1978) United States
978	EC2 $e + H_2$	T	100-2000 eV	Gupta, P.; Khare, S. P. Elastic scattering of electrons by molecular hydrogen for incident energies 100-2000 eV. <i>J. Chem. Phys.</i> 68, 2193 (1978) India
979	A*2 $B^+ + He; B^+ + Ne; B^+ + Ar; B^+ + Kr; B^+ + Xe$ A12 $B^+ + He; B^+ + Ne; B^+ + Ar; B^+ + Kr; B^+ + Xe$	E, T	4-54 eV	Ding, A.; Karle, J.; Weise, J.; Kendrick, J.; Kuntz, P. J.; Millier, I. H.; Guest, M. F. Potential interactions between boron ions and rare gases. <i>J. Chem. Phys.</i> 68, 2216 (1978) West Germany
980	A13 $F^+ + H_2$ A17 $H^+ + F; F^+ + H; F^+ + H_2$	T	300 K	Kendrick, J.; Kuntz, P. J.; Millier, I. H. Theoretical study of reactive processes in the FH_2^+ system by ab initio MCSCF-CL and diatomics-in-molecules calculations. <i>J. Chem. Phys.</i> 68, 2373 (1978) West Germany
981	H05 $He + Kr_2^+$ A17 $Kr + Kr^+$	E	7333-4600 Å	Abouef, A.; Huber, B. A.; Cosby, P. C.; Bason, M. P.; Mosley, J. T. Photofragment spectroscopy and potential curves of Kr_2^+ . <i>J. Chem. Phys.</i> 68, 2466 (1978) United States
982	A14 $Cl + D_2$	T	4-15 kcal/mol	Persky, A. Quasiclassical trajectory studies of the chlorine-hydrogen system. II. $Cl + D_2 + DCl + D$. <i>J. Chem. Phys.</i> 68, 2411 (1978) Israel
983	AC7 $He^+ + Li; He^+ + Na; He^+ + K; He^+ + Rb; He^+ + Cs$	T	10-100 keV	Tilvary, G. A.; Pál, U. A. Ionization of alkali-metal atoms by He^+ impact. <i>J. Chem. Phys.</i> 68, 2427 (1978) India
984	DC2 $UF_6 + C; UF_6 + Pt; UF_6 + W$	E	300 K	Dittner, P. F.; Datz, S. Molecular negative surface ionization of UF_6 . <i>J. Chem. Phys.</i> 68, 2451 (1978) United States
985	A17 $H + [H + H]$	T	Undef	Siegbahn, P.; Liu, B. An accurate three-dimensional potential energy surface for H_3 . <i>J. Chem. Phys.</i> 68, 2457 (1978) United States
986	A17 $H + H_2$	T	Undef	Truhlar, D. G.; Moravitz, C. J. Functional representation of Liu and Siegbahn's accurate ab initio potential energy calculations for $H + H_2$. <i>J. Chem. Phys.</i> 68, 2466 (1978) United States
987	H04 $He + Na_2$	E	210-450 nm	Mathur, R. P.; Rothe, F. W.; Neek, G. P. Two-photon ionization of Na_2 by an Ar^+ laser. <i>J. Chem. Phys.</i> 68, 2518 (1978) United States

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990	AE4 $\text{He}^+ + \text{H}_2\text{O}; \text{C}^+ + \text{H}_2\text{O}; \text{N}_2^+ + \text{H}_2\text{O}; \text{O}_2^+ + \text{H}_2\text{O}; \text{Ar}^+ + \text{H}_2\text{O}$	E	5 ⁺ -250 keV	Buehler, G. H.; Cathers, A. M. Production of the excited Oh radical in collisions of 50-250 keV He^+ , C^+ , N_2^+ , O_2^+ , and Ar^+ ions with H_2O molecules in water vapor. <i>J. Chem. Phys.</i> 66, 2521 (1978) United States
999	A17 $\text{NH}_3 + \text{NH}_3$ AP2 $\text{NH}_3 + \text{NH}_3$	T	31 ⁺ -13 ⁺ K	Duquette, G.; Ellis, F. M.; Seelen, G.; Wette, R. G.; Klein, M. L. An intermolecular potential for $(\text{NH}_3)_2$. <i>J. Chem. Phys.</i> 68, 2544 (1978) Canada
997	A17 $\text{H}_2 + \text{H}_2; \text{H}_2 + \text{HCl}$ AP2 $\text{H}_2 + \text{H}_2; \text{H}_2 + \text{HCl}$	T	21 ⁺ -14 ⁺ 90 1/cm	Hell, T. G.; Green, S.; Kouri, D. J. The coupled states approximation for scattering of two atoms. <i>J. Chem. Phys.</i> 68, 2562 (1978) United States
991	HC8 $\text{Na} + \text{Na}_2$ A17 $\text{Na} + \text{Na}$	E	5145-4745 Å	Rusch, P.; Messel, R. M. An analysis of the B ² (sub u)-X ² +I(sub g) ⁺ band system of Na_2 . <i>J. Chem. Phys.</i> 68, 2591 (1978) United States
992	A13 $\text{N}_2^+ + \text{O}_2; \text{N}_2^+ + \text{CO}_2; \text{N}_2^+ + \text{H}_2; \text{N}_2^+ + \text{D}_2$ GP6 $\text{N}_2^+ + \text{N}_2$	E	3 ⁺ -4 ⁺ -16 eV	Lindinger, W.; Eder, I.; Albritton, D. L.; Fehsenfeld, F. C. Reactions of N_2^+ with O_2 , CO_2 , H_2 , and D_2 and mobilities of N_2^+ in nitrogen. <i>J. Chem. Phys.</i> 68, 2607 (1978) United States
993	HS5 $\text{H} + \text{HCl}; \text{H} + \text{ICl}; \text{H} + \text{CCl}_2$	T	5-70 eV	Sand, Y. B.; Morse, M. D.; Freed, B. F. Comparison of semiclassical treatments for evaluating branch-Canon transition amplitudes for molecular dissociation. <i>J. Chem. Phys.</i> 68, 2702 (1978) United States
994	A17 Unref	T	Unref	Verbanc, G. M. L.; Melius, L. G. Angular momentum distributions in collision processes and the location of the transition state in ion-molecule reactions. <i>J. Chem. Phys.</i> 68, 2714 (1978) United States
995	A14 $\text{H}_2 + \text{CC}; \text{N}_2 + \text{NO}; \text{N}_2 + \text{C}_2\text{H}_4; \text{N}_2 + \text{CO}_2; \text{CO} + \text{CC}$ AE6 $\text{H}_2 + \text{CO}; \text{N}_2 + \text{NO}; \text{N}_2 + \text{CH}_4; \text{N}_2 + \text{CO}_2; \text{CO} + \text{CC}$ AE7 $\text{H}_2 + \text{CO}; \text{N}_2 + \text{NO}; \text{N}_2 + \text{CH}_4; \text{N}_2 + \text{CO}_2; \text{CO} + \text{CC}$ DA4 $\text{H}_2 + \text{Au}; \text{CC} + \text{Au}$	E	A14: 4/6; A ⁺ 51-180 ⁺ eV DA4 22-124 ⁺ eV	Utterback, M. G.; van Zyl, B. Low energy ionizing collisions between H_2 and CC bear molecules and Cu , H_2 , NO , CH_4 , and CO_2 target molecules. <i>J. Chem. Phys.</i> 68, 2742 (1978) United States
996	HC6 $\text{H} + \text{NO}$	E	1337-1232 Å	Miescher, L.; Lee, Y. T.; Gortler, P. Autoionization structure of nitric oxide (NO) at the first ionization limit. <i>J. Chem. Phys.</i> 68, 2753 (1978) Switzerland
997	EP5 $\text{e} + \text{H}_2\text{O}$	E	31 ⁺ K	Shimozono, M.; Fessenden, R. W. Mechanism of thermal electron attachment in H_2O and H_2O -hydrocarbon mixtures in the gas phase. <i>J. Chem. Phys.</i> 68, 2757 (1978) United States
994	A17 $\text{Al} + \text{H}; \text{Al} + \text{H}^+$	T	Unref	Seibell, H. M.; Kantor, P.; Beresnev, R.; Gilbert, T. L. SCF potential curves for AlH and AlH^+ in the attractive and repulsive regions. <i>J. Chem. Phys.</i> 68, 2767 (1978) United States
996	A17 $\text{Ca}^+ + \text{Ar}; \text{Ca}^+ + \text{Kr}; \text{Ca}^+ + \text{Xe}$ GP6 $\text{Ca}^+ + \text{Ar}; \text{Ca}^+ + \text{Kr}; \text{Ca}^+ + \text{Xe}$	E ⁺	Unref	Theakston, M. G.; Pope, W. P.; Livels, F. L.; Ellis, M. W.; McDaniel, E. W. Mobilities and interaction potentials for Ca^+-Ar , Ca^+-Kr , and Ca^+-Xe . <i>J. Chem. Phys.</i> 68, 2775 (1978) United States
1000	HS5 $\text{H} + \text{CH}$ HFA $\text{H} + \text{CH}$	T	5-45 eV	Bersohn, J.; Nesbet, M. K. The photoionization and photodissociation of CH in the vicinity of the ionization threshold. <i>J. Chem. Phys.</i> 68, 2801 (1978) United States
1001	A14 $\text{O} + \text{H}_2$	E	31 ⁺ K	Light, G. C. The effect of vibrational excitation on the reaction of $\text{O}(^1P)$ with H_2 and the distribution of vibrational energy in the product OH. <i>J. Chem. Phys.</i> 68, 2831 (1978) United States

REF. NO.	REACTANTS	EXP. CF. TYPE	ENERGY RANGE	REFERENCE
1002	All $\text{XeF}^+ + \text{He}; \text{XeF}^+ + \text{Xe}; \text{XeF}^+ + \text{NF}_3;$ $\text{XeF}^+ + \text{F}_2$	E	331 K	Eden, J. G.; Waynant, P. W. Collisional deactivation studies of the $\text{XeF}^+(B)$ state by He, Xe, NF_3 , and F_2 . J. Chem. Phys. 68, 2856 (1978) United States
1003	M64 $\text{C}^+ + \text{Ar}; \text{C}^+ + \text{N}_2; \text{C}^+ + \text{H}_2; \text{C}^+ + \text{CO};$ $\text{C}^+ + \text{CO}_2; \text{C}^+ + \text{O}_2$	E	3.7-2.4 keV	Moran, T. F.; Wilson, J. D. Charge transfer reactions of ground $\text{C}^+(^2P)$ and excited $\text{C}^+(^4P)$ state ions with neutral molecules. J. Chem. Phys. 68, 2825 (1978) United States
1004	A17 $\text{B} + \text{F}$	T	Unref	Dupuis, R.; Liu, B. The ground electronic state of B_2 . J. Chem. Phys. 68, 2902 (1978) United States
1005	E95 $\text{e} + \text{Xe}$	E	43-56 eV	Spence, D. The effects of post-collision interactions on near-threshold measurements of autoionizing states in Xe from scattered electron spectra. J. Chem. Phys. 68, 2908 (1978) United States
1006	H05 $\text{hv} + \text{HCl}; \text{hv} + \text{DCI}$	E	3953-3243 Å	Stein, I.; Godashen, A. The photodissociation of HCl and DCI. J. Chem. Phys. 68, 2582 (1978) United States
1007	EC3 $\text{e} + \text{HF}$	E	14-17 eV	Foner, S. N.; Hudson, R. L. Mass spectrometry of excited state molecules: observation of highly vibrationally excited HF by ionization potential measurement. J. Chem. Phys. 68, 2587 (1978) United States
1008	A06 $\text{Ne}^+ + \text{Kr}; \text{Ne}_2^+ + \text{Kr}; \text{Ar}^+ + \text{Kr}; \text{Ar}_2^+ + \text{Kr}; \text{Ne}^+ + \text{Xe}; \text{Ne}_2^+ + \text{Xe}; \text{Ar}^+ + \text{Xe}; \text{Ar}_2^+ + \text{Xe}$	E	337 K	Johnson, R.; Macdonald, J.; Bland, M. A. Thermal energy charge transfer rates for Ne^+ , Ne_2^+ , Ar^+ , and Ar_2^+ ions with Kr and Xe atoms. J. Chem. Phys. 68, 2991 (1978) United States
1009	A04 $\text{NF}_3 + \text{NF}_3$	E	1330-2000 K	Breshears, W. D.; Bird, P. F. Dissociation of NF_3 in shock waves. J. Chem. Phys. 68, 2996 (1978) United States
1010	GF3 $\text{e} + \text{CH}_4; \text{e} + \text{CD}_4$ G05 $\text{e} + \text{CH}_4; \text{e} + \text{CD}_4$	T	Unref	Alieba, P.; Davis, M. T. Electron drift and diffusion in polyatomic gases: calculations for CH_4 , CD_4 , and related models. J. Chem. Phys. 68, 2995 (1978) United States
1011	H05 $\text{hv} + \text{SF}_6$	T	3.1-2.0 eV	Shultz, M. J.; Yablonovitch, E. A statistical theory for collisionless multiphoton dissociation of SF_6 . J. Chem. Phys. 68, 3007 (1978) United States
1012	A11 $\text{He}_2^+ + \text{Ar}$	E	337 K	Lee, F. W.; Collins, C. S.; Pitchford, L. C.; Deloche, R. Pressure dependence of the reaction of $\text{He}_2^+(^1\Sigma)$ metastable molecules with Ar. J. Chem. Phys. 68, 2125 (1978) United States
1013	A11 $\text{O}_3 + \text{He}; \text{O}_3 + \text{Ar}; \text{O}_3 + \text{Xe}; \text{h}_2\text{C} + \text{Ar}$	T	337-1700 K	Stace, A. J.; Murrell, J. N. A classical trajectory study of collisional energy transfer in thermal unimolecular reactions. J. Chem. Phys. 68, 3028 (1978) United Kingdom
1014	H05 Unref	T	Unref	Yuen, J.-W.; George, T. F. Semiclassical theory of unimolecular dissociation induced by a laser field. J. Chem. Phys. 68, 3043 (1978) United States
1015	A17 $\text{H} + \text{F}; \text{F} + \text{F}; \text{H} + \text{Cl}; \text{Li} + \text{Cl}; \text{Cl} + \text{Cl}$	T	Unref	May, P. J.; Wadt, W. R.; Kohn, L. S. Ab initio effective core potentials for molecular calculations. II. All-electron comparisons and applications of the procedure. J. Chem. Phys. 68, 3015 (1978) United States
1016	A11 $\text{GeF}^+ + \text{He}; \text{GeF}^+ + \text{N}_2; \text{GeF}^+ + \text{SF}_6; \text{SiF}^+ + \text{He}$ H04 $\text{hv} + \text{GeF}$	E	All 337 K H ⁺ 4577-4130 Å	Anderson, R. A.; Manke, L.; Davis, S. J. Time resolved fluorescence of the $\text{P } 41\sigma$ state of GeF . J. Chem. Phys. 68, 3246 (1978) United States
1017	A11 $\text{Br}^+ + \text{CCl}_2; \text{Br}^+ + \text{HCl}$	E	337-400 K	Reisler, H.; Wittig, C. Temperature dependence of the quenching of $\text{Br}(^4P_{3/2})$ by CCl_2 and HCl with accompanying vibrational excitation. J. Chem. Phys. 68, 1308 (1978) United States

REF. NO.	REACTANTS	EXP. Q ^a THEORY	ENERGY RANGE	REFERENCE
1715	229 $e + SF_6$	E	3.1 eV	Rains, L. J.; Peore, M. J.; McIver, R. T., Jr. Equilibrium electron-transfer reactions in the gas phase involving long-lived negative ion radicals. <i>J. Chem. Phys.</i> 68, 3309 (1978) United States
1719	HF5 $h\nu + Ar_2^+$; $h\nu + Kr_2^+$; $h\nu + Xe_2^+$	E	3.1-3.5 eV	Vanderhoff, J. A. Photodissociation cross sections for Ar_2^+ , Kr_2^+ , and Xe_2^+ at 3.0 and 3.2 eV. <i>J. Chem. Phys.</i> 68, 3311 (1978) United States
1727	A03 $Ar + HCl$	T	6.36-1.956 eV	Pattengill, M. E. Comparison of planar trajectory and classical centrifugal decoupling cross sections for rotationally inelastic $Ar-HCl$ collisions. <i>J. Chem. Phys.</i> 68, 3315 (1978) United States
1721	A11 $N_2^+ + H_2O$	E	15°C-310° K	Center, R. E.; Newton, J. F. Vibrational relaxation of N_2 by H_2O . <i>J. Chem. Phys.</i> 68, 2327 (1978) United States
1722	A17 $Ar + Kr$	E	Uncal	Buch, U.; Mulken, F.; Paul, H.; Schluesser, J. Intermolecular potentials by the inversion of differential cross sections. <i>V. Arkr. J. Chem. Phys.</i> 68, 3334 (1978) West Germany
1723	A06 $Ar^+ + N_2$; $H^+ + O_2$ A03 $N_2^+ + He$; $N_2^+ + Ar$; $N_2^+ + Xe$	E	100-1000 eV	Kelley, J. D.; Beaman, G. W.; Harris, M. M.; Leventhal, J. J. Energy transfer in atom-diatom collisions: vibronic excitation. <i>J. Chem. Phys.</i> 68, 3345 (1978) United States
1724	A14 $Ca + HF$; $Ca + DF$; $Sr + HF$; $Sr + DF$	E	30° K	Karny, Z.; Zare, R. N. Effect of vibrational excitation on the molecular beam reactions of Ca and Sr with HF and DF. <i>J. Chem. Phys.</i> 68, 3360 (1978) United States
1725	A11 $I^+ + HCl$; $I^+ + HBr$; $I^+ + HI$	E	30° K	Grimley, A. J.; Houston, P. L. Electronic to vibrational energy transfer from $I(^2P_{1/2})$ to HCl , HBr , and HI . <i>J. Chem. Phys.</i> 68, 3366 (1978) United States
1725	A02 $H + Cl_2$; $H + Br_2$ A17 $H + Cl_2$; $H + Br_2$	E	3.1-1.2 eV	Bauer, V.; Shubatake, K.; Tonnies, J. P.; Walschowski, K. Determination of the long range nonreactive anisotropic potential of $H + Cl_2$ and $H + Br_2$ from nonreactive scattering experiments. <i>J. Chem. Phys.</i> 68, 3413 (1978) West Germany
1727	A11 $N_2 + O_2$	T	3-5 eV	Jolicard, G. Vibrational transitions in N_2-O_2 collisions: a theoretical treatment and comparison with computer calculations. <i>J. Chem. Phys.</i> 68, 3454 (1978) France
1728	H06 $h\nu + Xe_2$ A17 $Xe^+ + Xe$	E	384 Å	Dehaer, P. M.; Dehaer, J. L. Photoelectron spectrum of Xe_2 and potential energy curves for Xe_2^+ . <i>J. Chem. Phys.</i> 68, 3462 (1978) United States
1732	H05 Uncal	T	Uncal	Meller, E. J. Photofragmentation of symmetric triatomic molecules: time dependent picture. <i>J. Chem. Phys.</i> 68, 3491 (1978) United States
1737	A11 $NH_3 + He$; $NH_3 + H_2$	E	3-5 eV	Morita, N.; Kano, S.; Shimizu, T. Double and triple resonance studies of rotational relaxation in NH_3 -He and NH_3 - H_2 collisions. <i>J. Chem. Phys.</i> 68, 3897 (1978) Japan
1831	D03 $Ar^+ + HCl_2$; $Ar^+ + PbCl_2$; $Ar^+ + PbBr_2$; $Ar^+ + PbI_2$; $Ar^+ + PbCl$; $Ar^+ + NaCl$; $Ar^+ + Bi_2I_3$	E	5 keV	Morgan, A. E.; Berner, M. W. Molecular versus atomic secondary ion emission from solids. <i>J. Chem. Phys.</i> 68, 3500 (1978) The Netherlands
1732	A14 $H + H_2$	T	1.4-1.6 eV	Bowman, J. M.; Lee, K. T. Sudden approximation calculations of reactive scattering: the $H + H_2$ reaction. <i>J. Chem. Phys.</i> 68, 3546 (1978) United States
1833	H05 $h\nu + CH_4^+$	T	1.7-2.7 eV	McGilvery, D. C.; Morrison, J. D.; Smith, E. L. Photodissociation of CH_4^+ . <i>J. Chem. Phys.</i> 68, 3945 (1978) Australia

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1934	G04 Cs ⁺ + Ar; Cs ⁺ + Kr; Cs ⁺ + Xe	E	0-12-6.7 eV	Thackston, M. G.; Eiselo, F. L.; Pope, W. M.; Ellis, H. W.; McDaniel, E. W. Further tests of the generalized Einstein relation: Cs ⁺ ions in Ar, Kr, and Xe. J. Chem. Phys. 68, 3950 (1978) United States
1935	A10 Undef	T	Undef	Altich, P. L.; Shin, M. K. A model calculation of vibration-translation energy transfer. J. Chem. Phys. 68, 3573 (1978) United States
1936	A17 Cd; Hg	T	Jadef	Basch, H.; Neuton, R. D.; Jofri, J.; Moskowitz, J. W.; Topiol, S. Effective core potentials for the cadmium and mercury atoms. J. Chem. Phys. 68, 4805 (1978) United States
1937	A17 MgF ₂	T	Jadef	Pendergast, P.; Hayes, E. F. All-electron nonempirical study of the ground state of MgF ₂ . J. Chem. Phys. 68, 4022 (1978) United States
1938	H10 hv + [H ₂ + Mg] A03 Mg ⁰ + H ₂	E	H10: 253.7 mμ A03: 300 K	Degani, J.; Rosenfeld, E.; Yatsiv, S. Vibrational excitation of H ₂ during optical pumping of Mg by 253.7 mμ resonance radiation. J. Chem. Phys. 68, 4841 (1978) Israel
1939	A14 H + H ₂	T	300 K	Garrett, B. C.; Miller, W. H. Quantum mechanical reactive scattering via exchange kernels: application to the collinear H + H ₂ reaction. J. Chem. Phys. 68, 4051 (1978) United States
1940	A14 Br + O ₃	E	200-360 K	Michael, J. V.; Lee, J. H.; Payne, W. A.; Stief, L. J. Absolute rate of the reaction of bromine atoms with ozone from 200 to 360 K. J. Chem. Phys. 68, 4893 (1978) United States
1941	A17 HCN ⁺ H06 hv + HCN	T	Undef	Mansow, J. P.; Gelloy, C.; Lorquet, J. C. Anomalous effects in photoelectron spectroscopy. The third electronic state of HCN ⁺ . J. Chem. Phys. 68, 4185 (1978) Belgium
1942	G02 Cl + Ar; Cl + Ne	E	295 K	Judekiss, M. S.; Dun, M. Measurement of chlorine atom diffusion. J. Chem. Phys. 68, 4123 (1978) United States
1943	A11 Hg ₂ ⁺ + Hg	E	473-1073 K	Stock, M.; Smith, E. W.; Drullinger, R. L.; Messel, R. M. Relaxation of the first excited (sub v) state of Hg ₂ ⁺ . J. Chem. Phys. 68, 4167 (1978) United States
1944	H05 hv + SF ₆	E	344 1/cm	Bado, P.; van den Bergh, M. Pressure dependence in the multiphoton dissociation of SF ₆ . J. Chem. Phys. 68, 4188 (1978) Switzerland
1945	H05 hv + UF ₆	E	255 nm	Kroger, P. M.; Riley, S. J.; Kwai, G. M. Polyhalide photofragment spectra. II. Ultraviolet photodissociation dynamics of UF ₆ . J. Chem. Phys. 68, 4155 (1978) United States
1946	A02 Undef	T	Undef	Budenzholzer, F. E.; Glisson, L. A. Classical differential cross sections for anisotropic potentials. J. Chem. Phys. 68, 4222 (1978) United States
1947	A04 He ²⁺ + He; He ²⁺ + Ne; He ²⁺ + Ar; He ²⁺ + Kr; He ²⁺ + Xe; He ²⁺ + Rn; Ne ²⁺ + Ar; Ne ²⁺ + Kr; Ne ²⁺ + Xe; Ar ²⁺ + Ar; Ar ²⁺ + Kr; Ar ²⁺ + Xe; Kr ²⁺ + Ar; Kr ²⁺ + Kr; Kr ²⁺ + Xe; Xe ²⁺ + Ar; Xe ²⁺ + Kr; Xe ²⁺ + Xe; Rn ²⁺ + Ar; Rn ²⁺ + Kr; Rn ²⁺ + Xe; Rn ²⁺ + Rn	E	0-40 eV	Maier, W. B., II; Stewart, B. Electron transfer in collisions of doubly charged atomic ions with rare-gas atoms for primary-ion energies below 100 eV. J. Chem. Phys. 68, 4228 (1978) United States
1948	A17 O ₂ ⁻	T	Undef	Dae, G.; Vohl, A. C.; Zenne, W. T.; Stuelley, W. C. Accurate ad initio potential curves for the X ² (sub g), A ² (sub u), B ² (sub u), and C ² (sub u) states of the O ₂ ⁻ ion. J. Chem. Phys. 68, 4262 (1978) United States

REF. NO.	REACTANTS	EXP. CO. TECH.	ENERGY RANGE	REFERENCE
1749	A10 HCl + HCl	E	0.725 eV	Bhattacharyya, S. S.; Saha, S. Resonant and inelastic transitions in collision between HCl molecules. <i>J. Chem. Phys.</i> 68, 4292 (1978) India
1750	EF4 Undef	E	Undef	Goursaud, S.; Sizun, R.; Piquet-Lahard, P. Translational energies from triatomic negative ions fragmentation. <i>J. Chem. Phys.</i> 68, 4318 (1978) France
1751	A18 Xe* + N ₂ G2 Xe* + Xe; Xe* + 2Xe A11 Xe* + Xe; Xe* + 2Xe	E	377 K	Tracy, C. J.; Brindley, R. C.; Csan, H. J. Properties of metastable xenon atoms in afterglows produced in xenon and xenon-nitrogen mixtures. <i>J. Chem. Phys.</i> 68, 4321 (1978) United States
1752	AC5 Ar* + N ₂	E	6 > V	Pothwell, H. L., Jr.; Amos, M. C.; van Zyl, E. Excited hydrogen and argon atom production by charge transfer of metastable Ar* ions in N ₂ molecules. <i>J. Chem. Phys.</i> 68, 4326 (1978) United States
1753	D18 H ₂ + Fe	E	Undef	Wolken, G., Jr. Model potential for reactions with solid surfaces: H ₂ + Fe(301). <i>J. Chem. Phys.</i> 68, 4338 (1978) United States
1754	A11 N ₂ * + O ₂ ; N ₂ * + N ₂ ; N ₂ * + He	E	5.5-12 keV	Sheridan, J. R.; Marlo, T. A.; Lazbeller, J. Deactivation of N ₂ (A ¹ Σ _g ⁺) at above thermal energies. <i>J. Chem. Phys.</i> 68, 4342 (1978) United States
1755	A14 Sn + O ₂	E	1370 K	Freedson, A.; Behrens, R., Jr.; Farr, T. P.; Horn, R. W. Crossed molecular beams kinetics: SnO recoil velocity spectra from Sn + O ₂ . <i>J. Chem. Phys.</i> 68, 4368 (1978) United States
1756	A13 HCl + N ₂	E	317 K	Corbin, R. J.; Hygaard, A. J.; Snow, V. M.; Schearer, L. D. Production of Cl--HCl cluster ions in HCl-N ₂ mixtures. <i>J. Chem. Phys.</i> 68, 4372 (1978) United States
1757	A14 HgH + NC; HgH + N ₂	E	238-473 K	Chen, H.; Cveticovic, R. J. Temperature dependence of the rates of reactions HgH + NC + HNC + Hg and HgH + N + Hg + N + N. <i>J. Chem. Phys.</i> 68, 4381 (1978) Canada
1758	A17 Hg + Xe	E	Undef	Lam, L. K.; Gellagher, A.; Drullinger, M. Measurement of HgXe excimer potentials. <i>J. Chem. Phys.</i> 68, 4411 (1978) United States
1759	A11 F + Xe; F + H ₂ ; F + H ₂ ; F + H ₂ ; Hg + H ₂ ; Hg + D ₂ ; Hg + CO ₂ ; Hg + CO ₂ ; Hg + N ₂ A17 F + Xe; F + H ₂ ; F + H ₂ ; Hg + H ₂ ; Hg + D ₂ ; Hg + CO ₂ ; Hg + CO ₂ ; Hg + N ₂	E	0-1 eV	Zvijac, D. J.; Ross, J. Franck-Condon factors in studies of dynamics of chemical reactions. IV. Nonadiabatic collisions. <i>J. Chem. Phys.</i> 68, 4468 (1978) United States
1760	HPR hv ArI ₂	E	8700-4000 Å	Kubick, G.; Fitch, P. S. M.; Wherton, L.; Levy, D. R. The fluorescence excitation spectrum of the ArI ₂ van der Waals complex. <i>J. Chem. Phys.</i> 68, 4477 (1978) United States
1761	A14 D + HCl; D + HBr; D + HI	E	1270 K	Mueller, W.; Rusin, L. Y.; Toennies, J. P. Molecular beam scattering experiments on the abstraction and exchange reactions of deuterium atoms with the hydrogen halides HCl, HBr, and HI. <i>J. Chem. Phys.</i> 68, 4496 (1978) West Germany
1762	H2 hv + Ne ₂ *; hv + Ar ₂ *; hv + Kr ₂ *; hv + Xe ₂ *	E	14700-7300 Å	Arai, S.; Oka, T.; Kogoma, K.; Issura, K. Near infrared absorption of neon, argon, krypton, and xenon excited diatomic molecules. <i>J. Chem. Phys.</i> 68, 4552 (1978) Japan
1763	A13 Ar + N ₂ ; Ar + TIF	E	37 K	Thorn, V. On the f (sub x)-conserving energy sudden approximation for atom-diatom scattering. <i>J. Chem. Phys.</i> 68, 4531 (1978) West Germany

REF. NO.	REACTANTS	EXP. METHOD	ENERGY RANGE	REFERENCE
1964	E16 $e + [F_2 + Ar]; e + [F_2 + Kr]; e + [Cl_2 + Ar]; e + [Cl_2 + Xe]$	E	500 K	Lorente, D. C.; Huestis, D. L.; McCusker, R. V.; Nahata, H. M.; Hill, R. M. Optical emissions of triatomic rare gas halides. <i>J. Chem. Phys.</i> 68, 4057 (1978) United States
1965	A17 $Ne_2 + H; Ne_2 + H^+; He + H; He + H^+$	I	Undef	Hatcha, R. L.; Rilleur, R. B.; Meier, P. F. Theoretical studies of hydrogen rare gas complexes. II. $He (sub n)H$ and $He (sub n)H^+$ clusters. <i>J. Chem. Phys.</i> 68, 4748 (1978) United States
1965	HC5 $h\nu + C_2^+$	E	1.6-2.6 eV	McGilveray, D. C.; Morrison, J. D.; Smith, E. J. The photodissociation of O_2^+ . <i>J. Chem. Phys.</i> 68, 4755 (1978) Australia
1967	GP4 $Cs^+ + He; Cs^+ + He$ GP6 $Cs^+ + He; Cs^+ + He$	E	3.74-10 eV	Pope, W. M.; Ellis, H. W.; Elseid, F. L.; Ibachston, R. G.; McDaniel, E. W.; Langley, K. A. Mobilities and longitudinal diffusion coefficients for Cs^+ ions in He and Ne gas. <i>J. Chem. Phys.</i> 66, 4761 (1978) United States
1968	A17 $He + Ar; He + Kr; He + Xe$	I	Undef	Hize, M. J.; Robinson, R. L., Jr. Comments on intermolecular forces in mixtures of helium with the heavier noble gases. <i>J. Chem. Phys.</i> 68, 4768 (1978) United States
1969	A17 $H + Br_2$	I	Undef	Haybutt, P.; Bobrowicz, F. W.; Kahn, L. R.; Truhlar, D. G. Generalized valence-bond investigation of the reaction $H + Br_2 \rightarrow HBr + Br$. <i>J. Chem. Phys.</i> 68, 4815 (1978) United States
1971	C92 $Ar^+ + Ar; Kr^+ + Ar; Xe^+ + Ar$ A11 $Ar^+ + Ar; Kr^+ + Ar; Xe^+ + Ar$ A14 $Ar^+ + Ar; Kr^+ + Ar; Xe^+ + Ar$	E	32 K	Kolts, J. H.; Setser, D. W. Decay rates of $Ar(4s,^3P_2)$, $Ar(4s,^1P_1)$, $Ar(3p,^4P_2)$, and $Ar(3s,^4P_2)$ states in argon. <i>J. Chem. Phys.</i> 68, 4848 (1978) United States
1971	A17 $K^+ + OH^-$	I	Undef	England, W. B. Theoretical studies of RMD plasma molecules. I. Potential energy curves and dipole moments of linear KOH. <i>J. Chem. Phys.</i> 68, 4896 (1978) United States
1972	A96 $O_2^+ + O_2$	E	1-40 eV	Beer, T.; Murray, P. T.; Squires, L. Total cross sections for symmetric charge transfer reactions of L_2^+ in selected translational and internal energy states. <i>J. Chem. Phys.</i> 69, 4901 (1978) United States
1973	A92 $H + He; H + Ne; H + Ar; H + Kr; H + Xe$ A17 $H + He; H + Ne; H + Ar; H + Kr; H + Xe$	I	Undef	Das, G.; Wagner, A. F.; Wahl, A. C. Calculated long-range interactions and low energy scattering in $He + H$, $He + H$, $Ar + H$, $Ar + H$, $Ar + H$, and $Ar + H$. <i>J. Chem. Phys.</i> 68, 4917 (1978) United States
1974	A97 $CuCl + Ar; CuCl + Kr; CuCl + Xe; Cu_2Cl_2 + Ar; Cu_2Cl_2 + Kr; Cu_2Cl_2 + Xe$	E	3-14 eV	Sheen, S. M.; Dimaplan, G.; Parks, L. K.; Westler, D. Collision-induced ion-pair formation of $CuCl$ and Cu_2Cl_2 . <i>J. Chem. Phys.</i> 69, 4520 (1978) United States
1975	A17 $Ar + H_2$	I	Undef	Kim, Y. S. Study of the $Ar-H_2$ interaction. I. Electron gas model (Gordon-Kim) potential calculation. <i>J. Chem. Phys.</i> 68, 5001 (1978) Korea
1976	HC6 $h\nu + Ne$	E	1447 eV	Martin, R. L.; Davidson, L. R.; Earna, R. S.; Wallbank, P.; Frost, D. C.; McDowell, C. A. The x-ray photoelectron spectrum of atomic sodium. <i>J. Chem. Phys.</i> 69, 5006 (1978) United States
1977	A17 $H_2 + He; HCl + Ar; ClF + Kr$	I	Undef	Liu, W.-K.; Grabenstetter, J. L.; Le Roy, F. J.; McCourt, F. R. Effect of asymmetric isotopic substitution on atom-diatom potentials. <i>J. Chem. Phys.</i> 69, 5028 (1978) Canada

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1079	A07 $\text{He}^+ + \text{He}^+$	E	$1.1-1^+$ eV	Keyser, R. H.; Magnusson, G. D.; Lang, S. Y. Chem-ionization in collisions of metastable helium with metastable helium. <i>J. Chem. Phys.</i> 68, 5112 (1978) United States
1079	A11 $\text{HF} + \text{HF}$	T	32-350° K	Poulsen, L. L.; Billing, G. D.; Steinfeld, J. I. Temperature dependence of HF vibrational relaxation. <i>J. Chem. Phys.</i> 68, 5121 (1978) United States
1080	A11 $\text{HF} + \text{HF}$	T	22°-170° K	Billing, G. D.; Poulsen, L. L. Theory of V-V and V-1/2 energy transfer for $\text{HF} (n=1 \text{ to } 7) + \text{HF} (0)$. <i>J. Chem. Phys.</i> 68, 5128 (1978) Denmark
1081	E16 $e + [\text{Ar} + \text{Xe} + \text{F}_2]$	E	1-2 MeV	Tellinghuisen, J.; Tellinghuisen, F. G.; Iisaka, G. C.; Hoffman, J. M.; Hays, A. R. Spectroscopic studies of diatomic noble gas halides. II. Analysis of XeF 3506 Å band system. <i>J. Chem. Phys.</i> 68, 5177 (1978) United States
1082	A20 $\text{XeF}_2 + \text{Ar}^+; \text{XeF}_2 + \text{Kr}^+; \text{XeF}_2 + \text{Xe}^+$	E	33° K	Tellinghuisen, P. C.; Tellinghuisen, J.; Canon, J. A.; Velasco, J. E.; Setser, D. W. Spectroscopic studies of diatomic noble gas halides. IV. Vibrational and rotational constants for the X, B, and D states of XeF . <i>J. Chem. Phys.</i> 68, 5187 (1978) United States
1083	A11 $\text{HCl} + \text{Cl}$	T	10°-100° K	Shin, H. K. Transfer of vibrational energy to oscillatory, restricted rotational, and translational motion in $\text{HCl} + \text{Cl}$. <i>J. Chem. Phys.</i> 68, 5265 (1978) United States
1084	H06 $h\nu + \text{Ar}_2^+$	T	3-14 eV	Rescigno, T. M.; Hazi, A. U.; Grei, A. E. Calculation of the photoionization cross section of the $^1\Sigma^+$ excited state of Ar_2^+ . <i>J. Chem. Phys.</i> 68, 5283 (1978) United States
1085	A11 $\text{Ar}^+ + \text{H}_2\text{O}; \text{Ar}^+ + \text{D}_2\text{O}; \text{Kr}^+ + \text{H}_2\text{O}; \text{Kr}^+ + \text{D}_2\text{O}$	E	65°-1050° a/sec	Shelden, J. W.; Ruschultz, E. L., Jr. Quenching cross sections for $\text{Ar}(^3P_{0,2})$ and $\text{Kr}(^3P_{0,2})$ by H_2O and D_2O . <i>J. Chem. Phys.</i> 68, 5288 (1978) United States
1086	A17 $\text{He}^+ + \text{He}; \text{He}^+ + \text{H}; \text{He}^+ + \text{Ne}; \text{He}^+ + \text{Ar}; \text{He}^+ + \text{Kr}; \text{He}^+ + \text{Xe}$	T	Under	Proctor, T. M.; Stuelley, W. C. The long-range interactions of metastable helium atoms ($2^1S, 2^3S$) with rare gas and hydrogen atoms. <i>J. Chem. Phys.</i> 68, 5252 (1978) United States
1087	A03 $\text{He} + \text{H}_2$	T	4-10 eV	Olsen, D. P.; Martell, M. A. Inelastic scattering at moderate collision energies. <i>J. Chem. Phys.</i> 68, 5254 (1978) United States
1088	H08 $h\nu + \text{Cd}_2$	E	325 nm	Drullinger, P. E.; Stock, M. The Cd_2^+ excimer: fluorescence band shape and decay rates. <i>J. Chem. Phys.</i> 68, 5299 (1978) United States
1089	A13 $\text{Ne}^+ + \text{Ne}; \text{Ar}^+ + \text{Ar}; \text{Kr}^+ + \text{Kr}; \text{Xe}^+ + \text{Xe}$	E	77-30° K	Helm, M.; Varney, H. W. On the conversion of atomic rare gas ions $X^+(^3P_{0,2})$ into rare gas diatomic ions. <i>J. Chem. Phys.</i> 68, 5301 (1978) Austria
1090	A11 $\text{OH} + \text{He}; \text{OH} + \text{Ar}; \text{OH} + \text{H}_2; \text{OH} + \text{D}_2; \text{OH} + \text{N}_2; \text{OH} + \text{ND}_2; \text{OH} + \text{ND}_2 + \text{Ar}; \text{OH} + \text{H}_2; \text{OH} + \text{D}_2; \text{OH} + \text{N}_2$	E	33° K	Lengel, R. K.; Croxley, D. R. Energy transfer in $\text{A}^1\Sigma^+$ OH. II. Vibrational. <i>J. Chem. Phys.</i> 68, 5309 (1978) United States
1091	A14 $\text{HCl}_2 + \text{H}_2$	T	Under	Rival, B. Theory for $\text{HCl}_2 + \text{H}_2$ laser induced chemistry. <i>J. Chem. Phys.</i> 68, 5378 (1978) United States
1092	A14 $\text{Cl} + \text{NO} + \text{N}_2$	E	20°-40° K	Lee, J. H.; Michael, J. V.; Payne, W. A., Jr.; Stiel, L. J. The temperature dependence of the rate constant for $\text{Cl} + \text{NO} + \text{N}_2 \rightarrow \text{NOCl} + \text{N}_2$. <i>J. Chem. Phys.</i> 68, 5410 (1978) United States
1093	A13 $\text{Cl} + \text{HCl}; \text{Cl}_2 + \text{HCl}; \text{NO}_2 + \text{HCl}; \text{Cl}_2 + \text{HCl}; \text{CO}_2 + \text{HCl}; \text{ClO} + \text{Cl}_2; \text{ClO} + \text{NO}_2; \text{ClO} + \text{SO}_2; \text{ClO} + \text{CO}_2$	T	35° K	Dolan, J.; Albritton, D. L.; Fehsenfeld, F. C.; Stritt, G. L.; Ferguson, E. I. Rate constants for the reactions of Cl , Cl_2 , NO_2 , CO_2 , and ClO with HCl and ClO with NO , NO_2 , SO_2 , and CO_2 at 300 K. <i>J. Chem. Phys.</i> 68, 5414 (1978) United States

REF. NO.	REACTANTS	EXP. CO. TECH.	ENERGY RANGE	REFERENCE
1094	HG5 hv + Na; hv + K; hv + Rb; hv + Cs; hv + Mg	E	1579 eV	Bonne, M. S.; Wallbank, M.; Frost, D. C.; McDowell, C. A.; Perera, J. S. M. G. Free atom core binding energies from x-ray photoelectron spectroscopy. II. Na, K, Pb, Cs, and Pg. <i>J. Chem. Phys.</i> 68, 3455 (1978) Canada
1095	A20 Na + N ₂ C A18 Na + N ₂ C A14 Na + N ₂ C	E	6.1-1.0 eV	Tang, S. P.; Mies, B. G.; Fricke, J. F. Studies of the chemiluminescent reaction Na + N ₂ C + NaO ⁺ + N ₂ . <i>J. Chem. Phys.</i> 68, 3471 (1978) United States
1096	A17 Ne + H ₂ ; Ne + N ₂	T	Undef	Tang, K. T.; Toennies, J. P. A simple theoretical model for the van der Waals potential at intermediate distances. II. Anisotropic potentials of He-H ₂ and He-N ₂ . <i>J. Chem. Phys.</i> 68, 3561 (1978) West Germany
1097	EF3 Undef	T	Undef	Gianterco, F. A.; Lammma, U. T.; Fehsenfeld, G. A. The Glauber approximation in molecular scattering. II. Rotational excitation by electron impact. <i>J. Chem. Phys.</i> 68, 5538 (1978) Italy
1098	A14 Undef	T	Undef	Netrooulos, A.; Chiu, Y.-M. Rotation-vibration symmetry correlation in bimolecular reactions: building-up principle from molecular fragments. <i>J. Chem. Phys.</i> 68, 5607 (1978) United States
1099	E09 e + I ₂ ; e + Br ₂ ; e + Cl ₂ ; e + F ₂	E	0-9.0 eV	Tan, L.-C.; Wong, S. F. Dissociative attachment of halogen molecules by 0-8 eV electrons. <i>J. Chem. Phys.</i> 68, 5626 (1978) United States
1100	A03 ND + D ₂	E	45 meV	Buch, U.; Huisken, F.; Schuevener, J. Diffraction oscillations in rotationally inelastic differential cross sections: ND + D ₂ . <i>J. Chem. Phys.</i> 68, 5654 (1978) West Germany
1101	H06 hv + NH ₃	E	Undef	Nieman, G. C.; Colson, S. D. A new electronic state of ammonia observed by multiphoton ionization. <i>J. Chem. Phys.</i> 68, 5656 (1978) United States
1102	A17 D ₂ ⁺ + CH ₄	E	3.54-1.3 eV	Doten, I.; Fehsenfeld, F. C.; Albritton, D. L. Energy dependence of the reaction of D ₂ ⁺ with CH ₄ . <i>J. Chem. Phys.</i> 68, 5665 (1978) United States
1103	B05 NO ₂	E		Levy, D. H. Comment on Mechanism of NO ₂ fluorescence quenching. <i>J. Chem. Phys.</i> 68, 5665 (1978) United States
1104	B05 NO ₂	E		Donnelly, V. M.; Kaufman, F. Reply to comment on Mechanism of NO ₂ fluorescence quenching. <i>J. Chem. Phys.</i> 68, 5671 (1978) United States
1105	H06 hv + O ₂ ; hv + N ₂ ; hv + CO	E	745-304 Å	Gardner, J. L.; Sisson, J. A. F. Vibrational intensity distributions for the various electronic states of O ₂ ⁺ , N ₂ ⁺ , and CO ⁺ produced by photoionization. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 12, 7 (1978) United States
1106	H06 hv + Ar	E	3.5 keV	Tan, A. M.; Brice, C. E. Branching ratios and the partial photoionization cross-section for the 3s electron of argon. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 13, 27 (1978) Canada
1107	EF5 e + Ne HAK h _ν + Ne	T	3-4 Å.U.	Chatterji, D.; Pohlhorn, W.; Schiele, V. Electron shake-off in neon and the interaction of continuum states. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 12, 57 (1978) West Germany
1108	D09 N ₂ ⁺ + C; N ₂ ⁺ + Si; N ₂ ⁺ + SiO; N ₂ ⁺ + SiO ₂ ; N ₂ ⁺ + Ge; N ₂ ⁺ + Sn; N ₂ ⁺ + SnO; N ₂ ⁺ + SnO ₂ ; N ₂ ⁺ + Pb; N ₂ ⁺ + PbO; N ₂ ⁺ + PbO ₂	E	50 ⁺ eV	Taylor, J. A.; Lancaster, G. M.; Rabalais, J. W. Chemical reactions of N ₂ ⁺ ion beams with group IV elements and their oxides. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 13, 43 (1978) United States

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1109	F15 $e + \text{Xe}$	E	10 keV	Ayres, M.; Nordgren, J.; Selander, L.; Nordling, C.; Siegbahn, K. Multiplet structure in the high-resolution x-ray emission spectrum of neon. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 14, 27 (1978) Sweden
1110	C74 $e + \text{Xe}$	E	70-145 eV	Szymon, J.; Jenkin, J. G.; Liesegang, J.; Leckey, F. C. G. Electron mean free paths in Ge in the range 70-1400 eV. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 14, 41 (1978) Australia
1111	H6F $\text{He} + \text{H}_2\text{S}; \text{He} + \text{PH}_3$ F15 $e + \text{H}_2\text{S}; e + \text{PH}_3$	E I	43 eV	Donche, W.; Cederbaum, L. S.; Schirmer, J.; von Niessen, W.; Meier, J. P. Breakdown of the molecular orbital picture of ionization for inner valence electrons: experimental and theoretical study of H_2S and PH_3 . <i>J. Electron. Spectrosc. Relat. Phenomena</i> 14, 59 (1978) West Germany
1112	E93 $e + \text{CCl}_2$	E	33"-500 eV	Kump, K. M.; Lassetter, L. H. Generalized oscillator strengths for two transitions in CCl_2 at incident electron energies of 300, 400 and 500 eV. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 14, 215 (1978) United States
1113	H76 $\text{He} + \text{PERT}$	E	1 keV	Evans, S.; Pritchard, W. G.; Thomas, J. M. Relative differential subshell photoionization cross-sections (σ/σ_e) from lithium to uranium. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 14, 341 (1978) United Kingdom
1114	F91 D_2 F72 D_2	E		Miller, T. A.; Zegarshi, B. W.; Freund, M. S. Singlet-triplet anticrossings between the $G(3d)^4(\text{sub } \pi)^4$ and $J(3d)^4(\text{sub } \pi)^4$ states of D_2 . <i>J. Mol. Spectrosc.</i> 65, 199 (1978) United States
1115	A11 $\text{NO} + \text{He}; \text{NO} + \text{Ne}$	E	33" K	Miladi, N.; Nonin, J.-Y.; Daman, M. Pressure induced configuration dealing in the electronic spectrum of NO. <i>J. Mol. Spectrosc.</i> 65, 260 (1978) France
1116	E73 $e + \text{NO}$	E	32 eV	Vichon, D.; Hall, M. I.; Urestraw, F.; Razeeu, J. Observation of the σ^* and π^* states of NO by electron-impact spectroscopy. <i>J. Mol. Spectrosc.</i> 65, 341 (1978) France
1117	M78 $\text{He} + \text{VO}$	E	521-570 nm	Linton, C. Photoluminescence of the $A^2\Pi - X^2\Sigma^+$ system of the yttrium oxide molecule. <i>J. Mol. Spectrosc.</i> 65, 351 (1978) Canada
1118	H68 $\text{He} + \text{CBr}$	E	13'00-17'00 cm^{-1}	Wainstock, E. P.; Preston, A. A laser fluorescence study of the $(\text{He } 4^1P) + \text{CBr} \rightarrow \text{CBr}^* + \text{He}$ system. <i>J. Mol. Spectrosc.</i> 70, 1A9 (1978) United States
1119	H65 $\text{He} + \text{D}_2$ A17 $\text{Cl}_2 + \text{He}$	E	4 eV	Aldritton, D. L.; Moseley, J. I.; Cosby, P. C.; Tadjeddine, M. The dissociation energy of $\text{L}_2(\text{K}^2 \text{sub } \pi^*)$. <i>J. Mol. Spectrosc.</i> 70, 326 (1978) United States
1120	A10 Under	E	33" K	Glorieux, P.; Hille, G. J. Double resonance and collision-induced transitions in the radiofrequency spectra of H_2CO and N_2O observed inside the cavity of a CO_2 laser. <i>J. Mol. Spectrosc.</i> 70, 459 (1978) Canada
1121	A12 Under	I	33" K	Depristo, A. L.; Habitz, H. Direct inversion of pressure-broadened half-widths to yield rotationally inelastic rate constants. <i>J. Mol. Spectrosc.</i> 70, 476 (1978) United States
1122	A12 $\text{CO}_2 + \text{Ar}; \text{CO}_2 + \text{N}_2; \text{CO}_2 + \text{CCl}_4$	E	107-224 K	Quarez, C. B.; Valero, J. V. J. Intensities, self-broadening, and broadening by Ar and N_2 for the $\text{NO}(\text{sub III})$ coming from 00 band of CO_2 measured at different temperatures. <i>J. Mol. Spectrosc.</i> 71, 46 (1978) United States

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1123	A17 C + O; C + CO	T	Unref	Huffaker, J. B. High-accuracy analytic potential function for diatomic molecules; application to CO. <i>J. Mol. Spectrosc.</i> 71, 160 (1978) United States
1124	FC1 H ₂	T		Wolniewicz, L.; Poll, J. D. An initial nonadiabatic vibrational energies of the hydrogen molecule ion. <i>J. Mol. Spectrosc.</i> 72, 264 (1978) Canada
1125	A17 H ₂	T	Jodel	Nies, F. H.; Stevens, W. J.; Krauss, R. Model calculation of the electronic structure and spectroscopy of H ₂ . <i>J. Mol. Spectrosc.</i> 72, J03 (1978) United States
1126	FC1 Fe ²⁺	E		Brownage, G. E.; Cowan, R. B.; Fawcett, B. C.; Midgley, A. Classification of Fe I-like and Fe II-like iron and vanadium spectra from laser-produced plasmas. <i>J. Opt. Soc. Am.</i> 68, 48 (1978) United Kingdom
1127	HF6 Ho + Ce; Ho + Pr; Ho + Nd; Ho + Sm; Ho + Eu; Ho + Dy; Ho + Ho; Ho + Er	E	M35 5-7 eV	Worden, E. F.; Solarz, H. W.; Falsser, J. A.; Conway, J. G. First ionization potentials of lanthanides II, laser spectroscopy. <i>J. Opt. Soc. Am.</i> 67, 12 (1978) United States
1128	FC1 Si ⁴⁺ ; Si ³⁺	E		Gardner, R. K.; Cocke, C. L.; Sayler, T. K.; Cornutt, D. Lifetimes of some L-x-ray emitting levels in silicon, sulfur, and chlorine. <i>J. Opt. Soc. Am.</i> 67, 130 (1978) United States
1129	FC1 Ne Seq	T		Kim, Y.-K.; Chen, L.-T. Transition probabilities for the resonance transitions of Ne-like ions. <i>J. Opt. Soc. Am.</i> 66, 826 (1978) United States
1130	FC1 B ³⁺ ; B ²⁺	E		Gonchar, D. J.; McIntyre, L. C., Jr.; Rathmann, P. Beam-foil measurements of mean lives in B IV and B V below 450 Å. <i>J. Opt. Soc. Am.</i> 67, 998 (1978) United States
1131	FC1 C ²⁺ ; C ³⁺ ; C ⁴⁺	E		Donnelly, R. E.; Kernehan, J. A.; Flinnington, L. H. Mean-life measurements for some terms in C II, C III, and C IV. <i>J. Opt. Soc. Am.</i> 67, 1600 (1978) Canada
1132	FC1 Fe ⁴⁺ ; Mo ⁴⁺ ; Mo ⁵⁺ ; Mo ⁶⁺ ; Mo ⁷⁺	T		Rauche-Arnoult, C.; Bauche, J. Mean wavelength and spectral width of transition arrays in X-ray atomic spectra. <i>J. Opt. Soc. Am.</i> 68, 1126 (1978) France
1133	A14 OH + HO ₂	T	235 K	Cheng, J. S.; Kaufman, F. Upper bound and probable value of the rate constant of the reaction OH + HO ₂ → H ₂ O + O ₂ . <i>J. Phys. Chem.</i> 82, 1862 (1978) United States
1134	A14 Ar + F ₂ ; Ar + ClF; Ar + CF ₃ CF; Ar + CF ₃ F; Ar + NF ₃ ; Ar + N ₂ F ₂ ; Ar + CCl ₂ F ₂ ; Ar + CCl ₂ F ₂ ; Ar + CClF ₃ ; Ar + CF ₃ H; Ar + CH ₃ F; Ar + CHF ₃ ; Ar + ClF ₃ ; Ar + SO ₂ F ₂ ; Ar + SOF ₂ ; Ar + CF ₄ ; Ar + BrF ₃ ; Ar + SF ₆ ; Ar + BF ₃	E	331 K	Kolts, J. H.; Betser, L. W. Rate constants for ArF ₂ formation from reactions of Ar(F ₂) ₂ with fluorine containing molecules and the pressure dependence of the C to F state ratios for ArF ₂ , ArF ₃ , and ArF ₄ . <i>J. Phys. Chem.</i> 82, 1765 (1978) United States
1135	A14 O + Cl ₂ C	T	234-295 K	Mizolich, A. M.; Molina, M. J. The rate constant for the reaction of oxygen (¹ O) atoms with dichlorine monoxide. <i>J. Phys. Chem.</i> 82, 1765 (1978) United States
1136	A14 ClO + NO	E	227-415 K	Lau, M. T.; DeMore, W. B. Rate constant for the reaction ClO + NO → Cl + NO ₂ . <i>J. Phys. Chem.</i> 82, 2745 (1978) United States
1137	A14 H + NO ₂	E	331 K	Smith, G. K.; Fisher, E. M. Vibrationally excited in the products of the H + NO ₂ reaction. <i>J. Phys. Chem.</i> 82, 2139 (1978) United States

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1130	A ⁺ S Ar ⁺ + H ₂ O; Ar ⁺ + HCOOH	F	2-1.4 eV	Perr, T. P.; Martin, R. M. Energy dependence of ionization and dissociative fluorescence of water and formic acid by metastable argon. <i>J. Phys. Chem.</i> 82, 2226 (1978) United States
1132	A14 H + HNC	E	327 K	Washida, R.; Asimoto, M.; Ueda, M. HNC formed in the H + NC + H reaction system. <i>J. Phys. Chem.</i> 82, 2252 (1978) Japan
1137	H10 He + (C ₂ + NH ₃)	E	10-400 eV	Lin, C. T.; Bertran, C. A. Single-pulse carbon disulfide laser photochemistry of ammonia and oxygen. <i>J. Phys. Chem.</i> 82, 2293 (1978) Brazil
1141	A14 Hg + 2NI; Hg + 2NH ₂ I	E	622-625 K	Jeannotte, A.; Appelmann, L. M.; Schreiner, F.; Abraham, E. N. Gas-phase reaction of mercury with ammonium iodide and hydrogen iodide. <i>J. Phys. Chem.</i> 82, 2302 (1978) United States
1142	A14 Cl + C ₂ F A ⁺ S Cl + C ₂ F	E	327 K	Cocube, M. D.; Filipovich, L.; Morris, R. R. Chemical generation of electronically excited ClF ⁺ (b ² g _u) and the B + I emission spectrum. <i>J. Phys. Chem.</i> 82, 2484 (1978) United States
1143	D05 He + Cu	F	1-7 keV	Lindsay, R. H.; Pandey, J. B. The application of the chain method to electron emission. <i>J. Phys. C</i> 11, 1821 (1978) United Kingdom
1144	D05 He + Cu	E, F	unsel	Saunders, R.; Shorchik, N. J. Polarization dependence of the angle resolved photoemission spectra of Cu. <i>J. Phys. C</i> 11, L253 (1978) United States
1145	D12 e + GaAs	E	57 keV	Lightowler, E. C.; Penchina, L. R. Fine structure in the cathodoluminescence spectrum from chromium-doped gallium arsenide. <i>J. Phys. C</i> 11, L465 (1978) United Kingdom
1146	D05 Under	F	unsel	Hartstein, A.; Weinberg, Z. A. In the nature of the image force in quantum mechanics with application to photon assisted tunnelling and photoemission. <i>J. Phys. C</i> 11, L465 (1978) United States
1147	D12 e + Al	F	10 ⁻¹⁰ -10 ⁻¹² MeV	Marino, A. M.; Tosio, F. Optical emissions from rough surfaces irradiated by charged particles. <i>J. Phys. C</i> 11, 2271 (1978) Italy
1148	D05 e + Ni	F	2-150 eV	Kinniburgh, J. C.; Pandey, J. B. The phase problem in LEIS. <i>J. Phys. C</i> 11, 2415 (1978) United Kingdom
1149	D12 e + C	F	2 MeV	Collins, A. F. Fine structure in the 401 cathodoluminescence from natural semiconducting diamond. <i>J. Phys. C</i> 11, 2457 (1978) United Kingdom
1150	CC2 H ₂ ⁺ + C; H ₂ ⁺ + Si	F	57-100 keV	Steinbeck, J.; Bettmann, R. Energy loss of fast H ₂ ⁺ molecules in solids: I. <i>J. Phys. C</i> 11, 2507 (1978) West Germany
1151	CC2 H ₂ ⁺ + C; H ₂ ⁺ + Si	F	10 ⁻¹⁰ -10 ⁻¹² keV	Ayalash, A. M.; Sternheimer, W.; Lucas, R. W. Energy loss of fast H ₂ ⁺ molecules in solids: II. <i>J. Phys. C</i> 11, 2517 (1978) United Kingdom
1152	CC2 He ²⁺ + Ge	F	1-7 MeV	Jarvis, J. H.; Sherwood, A. C.; Whitehead, C.; Lucas, R. W. The stopping power for fast channelled alpha particles in germanium. <i>J. Phys. C</i> 11, 2523 (1978) United Kingdom
1153	CC2 He + Cu	F	6.5-200 keV	Martens, G.; Kato, K.; Schwenker, A.; Werner, A. LEIS in photoelectron yield spectra and optimization of photon glancing angle. <i>J. Phys. C</i> 11, 3129 (1978) West Germany
1154	D05 Under	F	unsel	Shorchik, N. J. Atomic dipole theory of photoemission from molecules adsorbed on surfaces. <i>J. Phys. C</i> 11, 3521 (1978) United States

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1155	CF ₂ H ⁺ + C; H ⁺ + Al; H ₂ ⁺ + C; H ₂ ⁺ + Al	E	12.5-260 eV	Echerat, J. C.; Lantychner, G.; Frisic, R. M.; Faragola, R. A. Electronic stopping of slow molecular ions in solids. <i>J. Phys. C</i> 11, L621 (1978) Argentina
1156	OMS hv + Cu	E	21 eV	Richardson, R. V.; Sess, J. R. The symmetry properties of energy bands in solids determined by UV photoemission with unpolarized radiation. <i>J. Phys. C</i> 11, L55 (1978) United Kingdom
1157	DCS hv + Cu; hv + Ni	E	15.1-21.2 eV	Pender, J. B.; Hopkinson, J. F. L. Photoemission from transition metal surfaces. <i>J. Phys. F</i> 9, 1009 (1979) United Kingdom
1158	WPS hv + Xe	E	21.5-37.7 eV	Adam, R. V.; Guillemer, F.; Jorjers, R.; Schmidt, G.; Wendin, G. Satellite lines in the 2s-2p photoelectron spectrum of xenon. <i>J. Phys. (Paris)</i> 39, 125 (1978) France
1159	A12 Hg ⁺ + Ar A17 Hg ⁺ + Ne; Hg ⁺ + Ne; Hg ⁺ + Ar; Hg ⁺ + Kr; Hg ⁺ + Xe	E, T	35° K	Ben Lohder, Z.; Perrin, D.; Lennert, M. On the interatomic potentials of Hg(6 ¹ S ₀) and Hg(6 ³ P ₁) in presence of rare gases. <i>J. Phys. (Paris)</i> 35, 127 (1978) France
1160	RII hv + Ar; hv + Xe	T	12400 Å	Blanc, A.; Decoster, A.; Louis-Jacquet, R. Experimental study of neutral-atom inverse bremsstrahlung and theoretical study of the laser-induced electron cascade in a gas. <i>J. Phys. (Paris)</i> 39, 122 (1978) France
1161	A12 Na + Ar; Na + Kr; Na + Xe; K + Ar; K + Kr; K + Xe; Cs + Ar; Cs + Kr; Cs + Cu; Cs + Na A17 Na + Ar; Na + Kr; Na + Xe; K + Ar; K + Kr; K + Xe; Cs + Ar; Cs + Kr; Cs + Cu; Cs + Na	T	422-573 Å	Jager, B.; Visticot, J. P.; Pascale, J. Band profiles associated with induced dipole transitions in alkali-rare gas systems. <i>J. Phys. (Paris)</i> 39, 101 (1978) France
1162	A19 Ne ⁺ + Ne	T	31° K	Stechel, F.; Lombardi, P. Electron pumping of the ground state of ²¹ Ne. Transfers and multiple diffusion processes. <i>J. Phys. (Paris)</i> 39, 405 (1978) France
1163	H76 4He + Cu	E	10-100 Å	Louppe, L. A.; Mainfray, C.; Tancus, C.; Thémault, J. Resonant multiphoton ionization of caesium atoms by ultra-short laser pulses at 1.06 μm. <i>J. Phys. (Paris)</i> 39, 619 (1978) France
1164	A10 N ₂ + N ₂	T	31° K	Jerrue, J.; Chave, A.; Duon, B.; Ithier, P. Measurements of depolarized light scattering from compressed nitrogen and theoretical calculations of different contributing processes. <i>J. Phys. (Paris)</i> 39, 415 (1978) France
1165	A10 Ar ⁺ + He; Ar ⁺ + Ne; Ar ⁺ + Ar; Ar ⁺ + Kr	E	31° K	Grandin, J. P.; Hesson, A. Depolarization by collision of the 2p levels of argon selectively excited in a discharge by a tunable dye laser. <i>J. Phys. (Paris)</i> 39, 371 (1978) France
1166	H65 hv + He	T	Unif	Durand, J. Isotope effects in the predissociation of H ₂ . <i>J. Phys. (Paris)</i> 39, 541 (1978) France
1167	A14 Ne ⁺ + Ne; Ne ⁺ + He	T	22-100 Å	Vannier, J. Thermal dependence of population transfers between 2p levels of neon induced by collisions with neon or helium atoms in their ground state. <i>J. Phys. (Paris)</i> 39, 1078 (1978) France
1168	A11 H ⁺ + H ₂ ; H ₂ ⁺ + H ₂	E	3-10 eV	Cherbul, B.; Gherinot, A. Laser perturbation study of a hydrogen glow discharge: atomic and molecular relaxations and dissociation rates. <i>J. Phys. (Paris)</i> 39, 1071 (1978) France
1169	A17 He + He; H + H	T	Unif	Levy, L. E.; Shultz, R. Frequency-dependent multipole polarizabilities of atomic systems. <i>J. Phys. (Paris)</i> 39, 1072 (1978) 1978

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1170	C83 $e + Ar$	T	0.946-0.019 Te	Braglia, G. L.; Balocchi, A. The diffusion and drift of electrons in gases. <i>Physica E+C</i> 95, 227 (1978) Italy
1171	A10 Under	T	331 e	Nienhuis, G. Multiplet-mixing collisions and nearly resonant light scattering. <i>Physica B+C</i> 50, 266 (1978) Italy
1172	E11 Under	T	Under	Goltman, S. Stimulated multiphoton bremsstrahlung in electron-ion collisions. <i>J. Res. Bur. Stand. Phys. Chem.</i> 82, 173 (1977) United States
1173	D13 $e + [F + SS]; e + [H + SS]$	E	1.2-6.0 keV	Drinkwine, M. J.; Lichtman, D. Study of ESD from type 304 stainless steel in relation to CTR first wall applications. <i>J. Vac. Sci. Technol.</i> 15, 74 (1978) United States
1174	D02 $H^+ + [C + Cu]; H^+ + [O + Cu]; H^+ + [S + Cu]; H^+ + [C + SS]; H^+ + [C + SS]; H_2^+ + [C + Cu]; H_2^+ + [O + Cu]; H_2^+ + [S + Cu]; H_2^+ + [C + SS]; H_2^+ + [O + SS]; H_2^+ + [C + Cu]; H_2^+ + [S + Cu]; H_2^+ + [C + SS]; H_2^+ + [O + SS]; D13H^+ + [C + Cu]; H^+ + [O + Cu]; H^+ + [S + Cu]; H^+ + [C + SS]; H^+ + [C + SS]; H_2^+ + [C + Cu]; H_2^+ + [O + Cu]; H_2^+ + [S + Cu]; H_2^+ + [C + SS]; H_2^+ + [O + SS]; H_2^+ + [C + Cu]; H_2^+ + [S + Cu]; H_2^+ + [C + SS]; H_2^+ + [O + SS]; Cu; H_2^+ + [C + SS]; H_2^+ + [O + SS]$	E	0.5 keV	Bouwen, R.; van Mechelen, J. B.; Polischer, A. A. Surface cleaning by low-temperature bombardment with hydrogen particles: an ALS investigation on copper and Fe-Cr-Ni steel surfaces. <i>J. Vac. Sci. Technol.</i> 15, 51 (1978) The Netherlands
1175	D07 $He + Pt; C_2 + Pt; CO_2 + Pt$	E	300 K	Cardillo, W. J.; Ching, C. S. Y.; Greene, E. F.; Becker, G. E. Molecular-beam apparatus for the study of gas-surface interactions. <i>J. Vac. Sci. Technol.</i> 15, 423 (1978) United States
1175	D05 $h\nu + [C + Ni]$ H06 $h\nu + CO; h\nu + N_2$	T	D05 21 eV H06 14-16 eV	Davenport, J. W. Determination of adsorbate bond geometry using photoemission. <i>J. Vac. Sci. Technol.</i> 15, 433 (1978) Sweden
1177	D04 $e + TiC; e + Ti; e + Al; e + Fe$ D06 $e + TiC; e + Ti; e + Al; e + Fe$	E	0-500 eV	den Boer, W. L.; Cohen, P. I.; Park, R. L. Elastic and inelastic contributions to secondary electron yield structure. <i>J. Vac. Sci. Technol.</i> 15, 502 (1978) United States
1178	D03 $Ar^+ + [C + Mo]; Ar^+ + [O + Co]$	E	3 keV	Benninghoven, A.; Genschow, G.; Wiedmann, L. Quasimultaneous SIMS, AES, and XPS investigations of the oxidation of Mo, Ti, and Co in the monolayer range. <i>J. Vac. Sci. Technol.</i> 15, 506 (1978) West Germany
1179	D15 $H^+ + Ni; H^+ + Cu; H^+ + Nb; n + Ni; n + Cu; n + Nb$	E	10-16 MeV	Styrin, D. L.; Jones, R. M. Abstract: Experimental studies using light ions to simulate fusion neutron damage effects on mechanical properties. <i>J. Vac. Sci. Technol.</i> 15, 661 (1978) United States
1180	D02 $He^+ + [O + U]; He^+ + [O + Mo]$	E	0.15-2.0 keV	Ye, M. L. Effect of primary ion energy and surface chemistry on the secondary ion yields in low-energy SIMS experiments. <i>J. Vac. Sci. Technol.</i> 15, 668 (1978) United States
1181	D14 $He^+ + Mo$	E	75-777 keV	Fahnestrom, C. R.; Sinha, M. K. Surface blistering of molybdenum irradiated with 75-350-keV helium ions. <i>J. Vac. Sci. Technol.</i> 15, 675 (1978) United States
1182	D02 $Ar^+ + Cu$	E	1-3 keV	Lundquist, T. R. Energy distributions of sputtered copper neutrals and ions. <i>J. Vac. Sci. Technol.</i> 15, 684 (1978) United States
1183	D07 $He^+ + Ta_2O_5; He^+ + CuO$	E, F	0.5-3.0 keV	Nelson, G. C. Combined low-energy ion scattering and x-ray photoelectron spectroscopy study of Ta_2O_5 bombarded by 500-2000-eV He ions. <i>J. Vac. Sci. Technol.</i> 15, 762 (1978) United States

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1184	D16 D ⁺ + SS	E	7 keV	Altstetter, C. J.; Behrisch, R.; Scherzer, B. W. U. Trapping of deuterium implanted into stainless steel at low temperatures. J. Vac. Sci. Technol. 15, 706 (1978) West Germany
1185	D14 D ⁺ + Mo	E	43-120 keV	Des, S. K.; Kaminsky, M.; Dusze, P. Surface damage of molybdenum and TZM alloy under D ⁺ impact. J. Vac. Sci. Technol. 15, 717 (1978) United States
1186	D12 Ar ⁺ + Fe ₂ O ₃	E	1-15 keV	Hart, R. G.; Simmons, C. V. Determination of quantitative sputter rates of iron oxide by Auger electron spectroscopy (AES) and ellipsometry. J. Vac. Sci. Technol. 15, 714 (1978) United States
1187	D16 Cr ⁺ + Fe; Cu ⁺ + Fe	E	15 keV	Iwaki, M.; Namba, S.; Yoshida, K.; Soda, M.; Sato, I.; Yabum, K. Annealing and rolling behaviors of concentration profiles of Cr and Cu implanted into mild steel. J. Vac. Sci. Technol. 15, 1089 (1978) Japan
1188	D13 Ar ⁺ + [H ₂ + Al]; Ar ⁺ + [CO + Al]; Ar ⁺ + [CO ₂ + Al]; Ar ⁺ + [CH ₄ + Al]; e ⁻ + [H ₂ + Al]; e ⁻ + [CO + Al]; e ⁻ + [CO ₂ + Al]; e ⁻ + [CH ₄ + Al]	E	3.5-1.0 keV	Edwards, D., Jr. Desorption of neutral molecules from Al(6061) by electron and ion bombardment. J. Vac. Sci. Technol. 15, 1506 (1978) United States
1189	D16 Au ⁺ + Fe; Au ⁺ + Cu	E	15 keV	Liao, Z. L.; Mayer, J. W. Limits of composition achievable by ion implantation. J. Vac. Sci. Technol. 15, 1629 (1978) United States
1190	D16 Review	E ?	Under	Poste, J. M. Metastable alloy formation. J. Vac. Sci. Technol. 15, 1636 (1978) United States
1191	D16 Review	E	Under	Grant, W. A. Amorphous metals and ion implantation. J. Vac. Sci. Technol. 15, 1644 (1978) United Kingdom
1192	D16 Review	E	Under	Myers, S. M. Annealing behavior and selected applications of ion-implanted alloys. J. Vac. Sci. Technol. 15, 1650 (1978) United States
1193	D14 Ar ⁺ + Si; He ⁺ + Si; Ne ⁺ + Si; Xe ⁺ + Si	E	1-3 keV	Powell, R. A. Ion-excited Auger electron emission from silicon. J. Vac. Sci. Technol. 15, 1797 (1978) United States
1194	A17 H + CH ₃ ; H + HSi	T	Under	Murrell, J. N.; Carter, S.; Varandas, A. J. C. Analytical potentials for triatomic molecules from spectroscopic data. IV. Application to linear molecules. Mol. Phys. 35, 1325 (1978) United Kingdom
1195	A17 Kr + Xe; Ar + Xe; Ne + Xe; Ar + Ar; Ne + Kr; He + Ar	T	Under	Maitland, G. C.; Vanecko, V. A. Direct determination of intermolecular potentials from gaseous transport coefficients alone. Part II. Application to unlike nonstatic interactions. Mol. Phys. 35, 1443 (1978) United Kingdom
1196	A17 NH ₂ ⁺	T	Under	Hirst, J. M. Ab initio potential energy surfaces for triplet states of NH ₂ ⁺ . Mol. Phys. 35, 155V (1978) United Kingdom
1197	D16 He + O ₂ A17 O ₂	T	Under	Monjou, M.; Tanaka, K.; Ohno, K.; Ishida, M. Configuration interaction calculation of the O ₂ ⁺ ion and study of the photoelectron spectra of O ₂ . Mol. Phys. 35, 1569 (1978) Japan
1198	A13 Ar ⁺ + H ₂	T	0.4-0.7 eV	Bier, M. Electronic non-adiabatic transitions in the reaction Ar ⁺ + H ₂ (v sub 1 = 0) → ArH ⁺ + H. A comparison between exact collinear results and a two-state model calculation. Mol. Phys. 35, 1627 (1978) United Kingdom
1199	D17 He + He	E	1-100 eV	Cahuzac, P.; Drago, K. Time-resolved saturated-absorption experiment. Effect of velocity-changing collisions upon non-thermal-equilibrium atomic velocities. Opt. Commun. 24, 61 (1978) France

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1200	G07 Ne* + Ar; Ne* + Ne	E	61° K	Flusberg, A.; Rosenberg, T.; Hartmann, S. M. Excited-state photon-echo relaxation in Ne vapor. Opt. Commun. 24, 207 (1978) United States
1201	B03 Underf	T		Danberg, R. J.; Kolesov, V. V. Ionization threshold for excited atomic states in a uniform electric field. Opt. Commun. 24, 211 (1978) Soviet Union
1202	A03 Cs* + Cs	E	23° °C	Yabuzaki, T.; Tan, A. C.; Hou, M.; Happer, W.; Curry, S. M. Preferential excitation transfer in Cs*(6D _{5/2})-Cs(6S _{1/2}) collisions. Opt. Commun. 24, 305 (1978) United States
1203	H05 hv + SF ₆	E	947 cm ⁻¹	Rothschild, M.; Tsay, W.-S.; Nam, E. U. Threshold behavior of multiple photon dissociation of SF ₆ . Opt. Commun. 24, 327 (1978) United States
1204	G07 CO + CO	E	33° K	Brechignac, P. Transfer of rotational population in CO by IR laser double resonance. Opt. Commun. 25, 53 (1978) France
1205	A03 Hg* + He	E	43° K	Lukazevskii, M.; Leciev, D. Laser excitation of 6s6d 6D _{5/2} level of mercury: transition probabilities and collisional excitation transfer. Opt. Commun. 25, 189 (1978) France
1206	D12 α + Ag	E	77 keV	Hellmann, D.; Pernier, V. Transition radiation from rough surfaces. Opt. Commun. 25, 196 (1978) West Germany
1207	B01 Underf	T		Delone, G. A.; Grinchuk, V. A.; Kazantsev, A. P.; Surdutovich, G. I. Scattering of atoms and molecules by an electromagnetic field. Opt. Commun. 25, 395 (1978) Soviet Union
1208	A07 H* + Eu; H* + Eu*	E	133 eV	Boerner, M.; Harzer, M.; Jitschin, W.; Meisel, G.; Matthews, M. G.; Penselin, S. Laser isotope enrichment using charge transfer ionization. Opt. Commun. 26, 351 (1978) West Germany
1209	B01 Underf B07 Underf	T		Ehlotzky, F. Laser-induced bremsstrahlung beyond the dipole-approximation. Opt. Commun. 27, 65 (1978) Canada
1210	A12 Na + He; Na + Ar; Na + N ₂	E	34° °C	Bruce, D. M.; Mirza, M. Y.; Daley, W. W. Collision broadening and shift of the sodium 3S-4D and 3S-5S lines. Opt. Commun. 27, 76 (1978) Canada
1211	F01 Cu	E		Khan, M. A. New classifications in the spectra of highly ionized Cu and Zn in the region below 55 Å. Opt. Commun. 27, 242 (1978) Pakistan
1212	D12 α + LiF	E	75 keV	Hellmann, D. Excitation of guided waves by fast electrons. Opt. Commun. 27, 385 (1978) West Germany
1213	D05 hv + Y; hv + Zr; hv + Mo; hv + Ag; hv + Cd; hv + Sn	E	652 keV	Allawadhi, A. L.; Verma, S. L.; Ghuman, B. S.; Sood, N. S. Measurement of K shell photoelectric cross section of Be K α-rays in Y, Zr, Mo, Ag, Cd, and Sn. Physica 84C 45, 424 (1978) India
1214	A11 NO* + NC; N ₂ * + NO; N ₂ * + NO; N ₂ * + N ₂ ; N ₂ * + O ₂	E	33° K	Prasad, J.; Bisit, S. D.; Ghosh, S. B. High frequency discharge through nitric oxide. Ann. Geophys. 34, 331 (1978) India
1215	A11 XeF* + Ne; XeF* + Ar; XeF* + Xe; XeF* + XeF ₂	E	Underf	Fden, J. G.; Waynant, R. W. Lifetime and collisional quenching measurements of XeF*(B) by photolysis of XeF ₂ . Opt. Lett. 2, 13 (1978) United States

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1216	HC2 hv + [Sr + Ar] A12 Sr* + Sr B*7 Sr* + Sr	E	HC2 4517 Å ⁰ A12 30° K	Szoke, A. Optical collisions in an intense laser field. Opt. Lett. 2, 30 (1978); United States
1217	HC4 2hv + Sr HC6 2hv + Sr	E	2540 Å ⁰	Green, W. R.; Falcone, R. W. Inversion of the resonance line of Sr* produced by optically pumping Sr atoms. Opt. Lett. 2, 115 (1978); United States
1218	HC4 nhv + SF ₆	I	345 cm ⁻¹	Centrell, C. D.; Fox, A. Effects of molecular rotation and vibration-rotation interaction on collisionless multiple-photon excitation of SF ₆ . Opt. Lett. 2, 101 (1978); United States
1219	HC6 Undef	I	Undef	den-Aryeh, Y. Molecular ionization by absorption of spontaneous emission. Opt. Lett. 2, 154 (1978); United States
1220	HC6 2hv + NC ₂	E	4773-4400 Å ⁰	Antonov, V. S.; Ryzhev, I. K.; Letchov, V. S.; Matius, V. P.; Povshev, V. G.; Pctepcv, V. A. Stepwise laser photoionization of molecules in a mass spectrometer: a new method for probing and detection of polyatomic molecules. Opt. Lett. 2, 37 (1978); Soviet Union
1221	HC2 nhv + SF ₆	E	13.6 μ	Quigley, G. P. Collisional effects in multiple infrared photon absorption in SF ₆ . Opt. Lett. 3, 100 (1978); United States
1222	HC2 nhv + SF ₆ HC4 nhv + SF ₆	E	13.6 μ	Galbraith, H. W.; Ackerhalt, J. R. Calculation of the temperature dependence of the multiphoton absorptive spectrum of SF ₆ . Opt. Lett. 3, 105 (1978); United States
1223	HC2 nhv + SF ₆ HC4 nhv + SF ₆	I	13.6 μ	Galbraith, H. W.; Ackerhalt, J. R. Comparison of multiple-photon excitation models. Opt. Lett. 3, 100 (1978); United States
1224	HC7 Sr* + Sr A14 Sr* + Sr	E	Undef	Warden, E. F.; Fainner, J. A.; Conway, J. G. Associative ionization of laser-excited Rydberg states in strontium vapor. Opt. Lett. 3, 150 (1978); United States
1225	HC4 2hv + Yb B*1 Yb*	E	5077 Å ⁰	Seakov, G. I.; Letokhov, V. S.; Matveev, L. I.; Mirlin, V. I. Single-shot detection of ytterbium by selective laser excitation and field ionization from Rydberg states. Opt. Lett. 3, 159 (1978); Soviet Union
1226	HC1 He	E		Falcone, R. W.; Millison, J. H.; Young, J. B.; Harris, S. L. Measurement of the He 1s2s 1S ₀ isotopic shift using a tunable VUV anti-stokes light source. Opt. Lett. 3, 162 (1978); United States
1227	A11 He* + He M14 hv + [He* + He] B*5 He* B*7 He*	E	A11 337 Å ⁰ M14: 3444 Å ⁰	Reep, T.; Abelle, L. D. Photon echoes in plasmas: collisional relaxation in helium of 2 ³ S ₁ -3 ³ P _{0,1,2} . Opt. Lett. 3, 171 (1978); United States
1228	HC4 4hv + Sr	E	4177-4070 Å ⁰	LeGros, A. P.; Freeman, M. R.; Bjorklund, G. C. Effects of magnetic fields on four-wave mixing processes in atomic vapors. Opt. Lett. 3, 205 (1978); United States
1229	HC4 hv + Rg; hv + Ti; hv + Pb; hv + Bi	I	3.17 Å ⁰	Hurnham, H.; Djou, H. Efficient Raman conversion of HeI-laser radiation in metal vapors. Opt. Lett. 3, 210 (1978); United States
1230	HC2 nhv + SF ₆	E	13.6 μ	Lyman, J. L.; Anderson, R. W.; Hester, R. A.; Feldman, M. J. Absorption of pulsed CO ₂ -laser radiation by R ₂ at 10° K. Opt. Lett. 3, 238 (1978); United States

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1231	FCI He Seq	T		Ivanov, L. A.; Ivanova, L. F.; Sefremova, U. I.; Shavtvalishvili, I. A. Relativistic calculation of the level-widths of two-electron atomic systems. Opt. Spectrosc. 44, 6 (1978) Soviet Union
1232	FCI He	T		Anisimova, G. P.; Myzhakova, E. I.; Semenov, N. I. Fine structure of the triplet term of the $1s3d$ configuration of He I. Opt. Spectrosc. 44, 10 (1978) Soviet Union
1233	EC3 $e + Cu$	E	0-700 eV	Golovchan, N. V.; Garga, I. I.; Shlegh, L. L. Experimental study on electron-impact excitation of spectral lines of europium. Opt. Spectrosc. 44, 12 (1978) Soviet Union
1234	DC3 $Ar^+ + Cu$; $Ar^+ + [Cu + O_2]$ DC8 $Ar^+ + Cu$; $Ar^+ + [Cu + O_2]$	F	25 keV	Koval, A. G.; Loyachen, Y. E.; Fizgeer, B. M. Luminescence spectrum of excited particles produced on bombardment on copper target by an Ar^+ -ion beam. Opt. Spectrosc. 44, 23 (1978) Soviet Union
1235	HC2 $He + Na$	T	2370-18000 Å	Andreev, S. I.; Varlamov, Y. V. Optical properties of a sodium plasma. Opt. Spectrosc. 44, 29 (1978) Soviet Union
1236	A12 $C + Cl$; $C + O$	T	Undef	Makushkin, Y. S.; Ulenikov, L. N. Potential function of a diatomic molecule. Opt. Spectrosc. 44, 41 (1978) Soviet Union
1237	FC1 Cu	E		Malenkov, Y. I. Lifetimes of CuI levels. Opt. Spectrosc. 44, 125 (1978) Soviet Union
1238	BC1 Undef	T		Mineev, B. F. Spin-orbital interaction in molecules and mechanism of the effect of an external magnetic field on luminescence. Opt. Spectrosc. 44, 148 (1978) Soviet Union
1239	FC2 $e + H_2$ EC5 $e + H_2$	E	47-407 eV	Semenova, I. V.; Smirnov, Y. M. Determination of excitation cross sections and transition probabilities of H_2 II. Opt. Spectrosc. 44, 241 (1978) Soviet Union
1240	FA2 H	T		Shestakov, A. F. General formula for dipole polarizability of a hydrogen atom in a spectroscopic state. Opt. Spectrosc. 44, 357 (1978) Soviet Union
1241	FC3 $e + N_2$	T	10-107 eV	Rosoruchaina, A. D.; Trekhov, L. S. Electron-impact excitation function of the $C^2\ \Pi(\text{and } u)$ state of N_2 . Opt. Spectrosc. 44, 359 (1978) Soviet Union
1242	FC1 H_2	F		Lavrov, N. P.; Otorbaev, D. A. Identification of various lines of the Fulcher states of the H_2 molecule. Opt. Spectrosc. 44, 360 (1978) Soviet Union
1243	AC2 $Ne^+ + Zn$ AC2 $Ne^+ + Zn$; $Ne^+ + Zn$	E	Thermal	Kartazhev, V. A.; Plotovskii, Y. A.; Tolmachev, Y. A. Charge exchange and Penning ionization in a pulsed discharge in a mixture of neon and zinc. Opt. Spectrosc. 44, 362 (1978) Soviet Union
1244	FC1 MolFe	T		Ermer, M. A.; Ivanov, L. M. Calculation of complex atomic ions using relativistic perturbation theory with a model potential. Opt. Spectrosc. 44, 363 (1978) Soviet Union
1245	FC3 $e + Ar$	F	2-100 eV	Bogdanova, I. M.; Marusin, V. G.; Tikhonova, V. E. Some special features of the excitation of argon atoms by slow electrons. Opt. Spectrosc. 44, 368 (1978) Soviet Union
1246	A12 $Pb + He$; $Rb + Ne$; $Rb + Ar$; $Rb + Kr$; $Pb + Xe$	F	45° K	Kazantsev, S. A.; Kaliteevskii, A. I.; Nish, U. M. Application of the magnetic scanning technique for measuring the broadening and shifts of the D_1 resonance line of rubidium caused by inert gases. Opt. Spectrosc. 44, 372 (1978) Soviet Union

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1247	A12 Rb + Ar; Rb + Kr; Rb + Xe; Cs + Ar; Cs + Kr; Cs + Xe	T	450 K	Rebane, V. N. Calculation of the collisional broadening and shift of the hyperfine components of the D ₂ lines of rubidium and cesium during collisions with atoms of heavy inert gases. Opt. Spectrosc. 44, 326 (1978) Soviet Union
1248	A03 Under BP7 Under	T	Unif	Pokrov, D. S.; Vdovin, Y. A. Line shape of radiative collisions in an external magnetic field. Opt. Spectrosc. 44, 383 (1978) Soviet Union
1249	A12 Zn + Zn; Cd + Cd	E	65° K	Vablachkov, E. Y.; Muradov, V. G. Determination of atomic vapor pressure by an optical absorption method using two resonance lines of the element investigated. Opt. Spectrosc. 44, 382 (1978) Soviet Union
1250	H05 hv + Na ₂ ; hv + K ₂ ; hv + Rb ₂ ; hv + Cs ₂	E	5300 Å	Grushchinskii, V. B.; Papernov, S. M.; Yanson, M. L. Some characteristic features of the photodecomposition of alkali metal dimers. Opt. Spectrosc. 44, 475 (1978) Soviet Union
1251	A11 Na + He	E	Thermal	Baganov, S. A.; Uginets, G. V.; Salinets, V. B.; Tolmachev, Y. A. Role of the triplet states of He I in processes of excitation energy transfer among upper levels. Opt. Spectrosc. 44, 462 (1978) Soviet Union
1252	A06 Li ⁻ + Li; Li ⁻ + Na; Li ⁻ + K; Li ⁻ + Pb; Na ⁻ + Li; Na ⁻ + Na; Na ⁻ + K; Na ⁻ + Rb; K ⁻ + Li; K ⁻ + Na; K ⁻ + K; K ⁻ + Pb; Rb ⁻ + Li; Rb ⁻ + Na; Rb ⁻ + K; Rb ⁻ + Pb	T	0.1-1000 eV	Evseev, A. V.; Fedtsig, A. A.; Salinets, V. B. Asymptotic form of the wave function of an electron in an atom or ion. Opt. Spectrosc. 44, 495 (1978) Soviet Union
1253	F01 Fe ¹⁷⁺	E		Boiko, V. A.; Pikuz, S. A.; Salinets, V. B.; Fyodorov, A. Y. Transitions between 1s ² 2s ² 2p ⁶ - 1s ² 2s ² 2p ⁵ 3s and 1s ² 2s ² 2p ⁵ - 1s ² 2p ⁶ 3s configurations in the spectra of Fe XVII-Zn XXII, Ge XXIV, and Se XXVI ions. Opt. Spectrosc. 44, 498 (1978) Soviet Union
1254	B07 Under	T		Vetchinkin, S. I.; Bakhramov, V. L.; Ushinski, I. N. Resonance charge exchange in a laser emission field. Opt. Spectrosc. 44, 507 (1978) Soviet Union
1255	BP7 Under	T		Trakhtenberg, L. I. Resonance emission and absorption of photons in a threshold collision of an electron, a photon, and an atom. Opt. Spectrosc. 44, 516 (1978) Soviet Union
1256	A02 Under	T	Unif	Alexandrov, A. I.; Basharov, A. M. Photon echo as a method of investigating the resonance interaction of like atoms. Opt. Spectrosc. 44, 513 (1978) Soviet Union
1257	H06 hv + Na; hv + K	T	Threshold	Avilova, I. V.; Podlubnyi, L. I. Calculation of photoionization cross sections by the model-potential method. Opt. Spectrosc. 44, 517 (1978) Soviet Union
1258	H06 Under	T	Unif	El'yutin, P. V. Multiphoton resonant ionization in an incoherent field. Opt. Spectrosc. 44, 520 (1978) Soviet Union
1259	B01 H Seq	T		Zapryagaev, S. A. Stark effect of fine-structure levels of a hydrogenlike atom. Opt. Spectrosc. 44, 527 (1978) Soviet Union
1260	GP7 Xe + 2Xe; Xe ₂ + Xe	E	Unif	Belousova, I. M.; Dymshits, Y. I.; Aevetskii, A. G.; Korobitsyn, V. A.; Nezerov, V. G. Radiation of compressed xenon excited by a beam of fast electrons. Opt. Spectrosc. 44, 555 (1978) Soviet Union
1261	H04 hv + Rb	T	Unif	Besedina, A. M.; Khvostenko, G. I.; Chalka, M. P. Calculation of optical pumping of an atomic beam. Opt. Spectrosc. 44, 571 (1978) Soviet Union

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
1287	CEB H ⁺ + Ti; H ₂ ⁺ + Ti; H ₂ ⁺ + Ti; H ⁺ + Cu	E	72 ⁺ -2199 eV	Alexander, R. S.; Petty, R. J. Experimental study of flux peaking for channelled ions using ¹⁰⁰ Ti. <i>Phys. Rev. E</i> 18, 981 (1978) Sweden
1289	CE2 C ⁺ + W; O ⁺ + W; D ⁺ + W CE6 C ⁺ + W; C ⁺ + W; D ⁺ + W	E	92 eV	Brice, D. K. Effect of surface imperfections on low-energy implanted-ion depth distributions. <i>Phys. Rev. E</i> 18, 990 (1978) United States
1289	DC2 He ⁺ + Au; Ar ⁺ + Au; Ag ⁺ + Au; Bi ⁺ + Au	E	50-563 eV	Ecker, K. H.; Muehle, K. L. Transmission sputtering by heavy ions. <i>Phys. Rev. B</i> 18, 1526 (1978) United States
1290	CFR He ⁺ + Si	T	1 MeV	Ellison, J. A.; Picraus, S. T. Filmer-channeling spatial density under statistical equilibrium. <i>Phys. Rev. E</i> 18, 1828 (1978) United States
1291	CEB H ⁺ + Si	E	3.2 MeV	Roemer, J. S.; Gibson, W. R.; Schleichmann, J. A.; Goland, A. V.; Baygar, M. L. Quantitative study of the transmission of axially channelled protons in thin silicon crystals. <i>Phys. Rev. E</i> 18, 1868 (1978) United States
1292	DC5 hv + Al	E	7-11.6 eV	Hansson, G. V.; Flodstrom, S. A. Photoemission from surface states and surface resonances on the (100), (110), and (111) crystal faces of aluminum. <i>Phys. Rev. E</i> 18, 1562 (1978) Sweden
1292	DC5 hv + Au	E	7-11.6 eV	Hansson, G. V.; Flodstrom, S. A. Photoemission study of the bulk and surface electronic structure of single crystals of gold. <i>Phys. Rev. E</i> 18, 1572 (1978) Sweden
1294	DC5 Under	T	Under	Shaychik, B. J.; Liebowitz, D. Theory of angle-resolved photoemission from the bulk bands of solids. I. Formalism. <i>Phys. Rev. E</i> 18, 1818 (1978) United States
1295	DC5 hv + Ag	E, T	15.9-4 ⁺ -8 eV	Liebowitz, D.; Shaychik, B. J. Theory of angle-resolved photoemission from the bulk bands of solids. II. Application to Ag(111). <i>Phys. Rev. B</i> 18, 1630 (1978) United States
1295	MC6 hv + Cu	E	1254 eV	Plummer, E. W.; Salaneck, U. R.; Miller, J. S. Photoelectron spectra of transition-metal carbonyl complexes: comparison with the spectra of adsorbed CO. <i>Phys. Rev. B</i> 18, 1673 (1978) United States
1297	DC5 hv + W; hv + Mo	E	19-35 eV	Wang, S.-L.; Plummer, E. W.; Gustafsson, T. Experimental and theoretical study of the surface resonances on the (100) faces of W and Mo. <i>Phys. Rev. E</i> 18, 1718 (1978) United States
1298	CEB H ⁺ + Al; He ⁺ + Al	E	3.5-7.8 MeV	Picraus, S. T.; Rimini, G.; Forl, G.; Compagno, S. U. Dechanneling by dislocations in ion-implanted Al. <i>Phys. Rev. B</i> 18, 2070 (1978) United States
1299	DC5 Al + Au; hv + Sn; hv + [Au + In]; hv + Cu; hv + [Au + Ga]; hv + Cd; hv + [Au + Cd]; hv + [Ag + In]; hv + [Ag + Cd]	E	43.9 eV	Nicholson, J. A.; Riley, J. D.; Lechey, M. C. G.; Jenkins, J. G.; Liangong, J.; Azoulay, J. Ultraviolet photoelectron spectroscopy of the valence bands of some Au alloys. <i>Phys. Rev. B</i> 18, 2061 (1978) Australia
1300	D15 e + Al	E	3 MeV	Roberts, J. W.; Schoenfeld, B.; Ehrhart, F. Investigation of interstitial clustering in Al following electron irradiation at low temperature. <i>Phys. Rev. B</i> 18, 2691 (1978) West Germany
1301	D12 Under	T	Under	McRae, L. L., Jr.; Tsai, W.-Y.; Ertel, T. Interference between transition and Compton radiation. <i>Phys. Rev. D</i> 18, 2152 (1978) United States
1302	CF2 Fe ⁺ + Fe	E	25 MeV	Fahlender, C.; Johansson, K.; Karlsson, L.; Norlin, L. C.; Pasenart, G. Velocity- and <i>z</i> -dependence of transient magnetic fields in ferromagnetic Co. <i>Phys. Scripta</i> 17, 31 (1978) Finland

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1303	FeI C; N; O	E		Bromander, J.; Boric, B.; Erman, P.; Larsson, M. Lifetimes of some levels in neutral carbon, nitrogen and oxygen and oxygen. Phys. Scripta 17, 119 (1978) Sweden
1304	FeI Fe ²⁰⁺ ; Fe ²¹⁺ ; Si ¹⁰⁺ ; Ti ¹⁰⁺ ; Fe ¹⁷⁺ ; Fe ¹⁸⁺ ; Fe ¹⁹⁺ ; Fe ²⁰⁺ ; Fe ²¹⁺ ; Ti ¹⁰⁺ ; Fe ²⁰⁺ ; Fe ²¹⁺ ; Ni ¹⁰⁺ ; Ni ¹¹⁺ ; Ni ¹²⁺ ; Ni ¹³⁺ ; Ni ¹⁴⁺ ; Ni ¹⁵⁺ ; Ni ¹⁶⁺ ; Ni ¹⁷⁺ ; Ni ¹⁸⁺ ; Ni ¹⁹⁺ ; Ni ²⁰⁺ ; Ni ²¹⁺ ; Ni ²²⁺ ; Ni ²³⁺ ; Li Seq; C Seq; O Seq	E		Kononov, E. V. Spectra of very highly ionized atoms. Phys. Scripta 17, 425 (1978) Soviet Union
1305	EES e + Cr; e + Fe	E	15-75 keV	Seljesmaa, S.; Keshi-Nahkonen, O. Measurement of the electron double ionization cross section of the K-shell in Cr and Fe. Phys. Scripta 17, 421 (1978) Finland
1306	EES e + Cr; e + Fe	T	15-100 keV	Seljesmaa, J. Calculation of the electron double ionization cross section of the K-shell in Cr and Fe. Phys. Scripta 17, 427 (1978) Finland
1307	FeI O ²⁺ ; O ³⁺ ; O ⁴⁺ ; O ⁵⁺	E		Konnewer, F.; Battler, M. V.; Neumann, P. H. The quartet term system of doubly excited O VI. Phys. Scripta 17, 475 (1978) West Germany
1308	FeS hv + OH	E		Brzeczanski, J.; Erman, P.; Lyrra, P. Precision estimates of the predissociation rates of the OH A ² (v less than 2). Phys. Scripta 17, 227 (1978) Sweden
1309	FeI Si ⁺	E		Smith, V. M. Radiative lifetimes for selected astrophysically important resonance transitions of P I, Si II, S I, II, III, P II and Co. Phys. Scripta 17, 513 (1978) United States
1310	FeI Fe ²⁰⁺	T		Rogdanovich, P. O.; Morhale, G. V.; Rudzhus, Z. B.; Sadziovionca, S. D.; Safronova, L. I. Theoretical investigation of transition probabilities for 2s ² 2p ² -2s2p ² -2p ² of Ca IV, Fe XII. Phys. Scripta 17, 549 (1978) Soviet Union
1311	FeI No Seq	E T		Edlen, B. The transitions 3s-2p and 3p-2s, and the ionization energy in the Fe I ion-electronic sequence. Phys. Scripta 17, 566 (1978) Sweden
1312	CC7 Si ¹⁰⁺ + C FeI Si ¹¹⁺ ; Si ¹²⁺ ; Be Seq	E	CC7 28-40 MeV	Pegg, D. J.; Griffin, P. M.; Allen, G. D.; Elston, S. B.; Forster, J. P.; Suter, H.; Thae, M. Z.; Vane, C. R.; Johnson, B. M. Radiative lifetimes and oscillator strengths for allowed transitions in Li-like and Be-like Si. Phys. Scripta 18, 18 (1978) United States
1313	Co7 Cl ⁺ + C	E	42 MeV	Ishii, K.; Alvarez, E.; Mallin, P.; Lindskog, J.; Marallos, A.; Pihl, J.; Sjodin, P.; Tanno, S.; Engstrom, L.; Haidt, S.; Martinson, I. Lifetime measurements for some 2s + 0 transitions in C(XII)-Cl(XV). Phys. Scripta 18, 67 (1978) Sweden
1314	H94 2hv + CaCl	E	623-616 nm	Berg, L.-E.; Rynning, L.; Martin, M. Observations of two photon absorption in gaseous CaCl. A study of the D ² I and D ² II states. Phys. Scripta 18, 61 (1978) Sweden
1315	FeI Nb ²⁰⁺ ; Nb ²¹⁺ ; Nb ²²⁺ ; Mo ²⁰⁺ ; Mo ²¹⁺ ; Mo ²²⁺	E		Rahimullah, K.; Chaghtai, M. S. Z.; Khatoon, S. The 4p-4d transitions of V VI, VII, VIII, 2r VII, VIII, IX, Nb VIII, IX, X and Mo IX, X, XI. Phys. Scripta 18, 96 (1978) India
1316	FeI Fe ²⁰⁺	E T		Ekberg, J. O.; Edlen, B. Term analysis of Fe IV. Phys. Scripta 18, 107 (1978) Sweden
1317	FeI H ⁺	T		Yildiz, S.; Oksuz, I. S autoionizing states of H ⁺ . Phys. Scripta 18, 175 (1978) Turkey

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1318	W6 Sh ⁺ + K	E	3.2x10 ⁻³ -3.5 x10 ⁻³ cm ⁻¹	Wheatley, S. E.; Agostini, P.; Dixit, S. B.; Levenson, P. B. Saturation effects in resonant three-photon ionization of potassium. <i>Phys. Scripta</i> 18, 177 (1978) United States
1319	Fe1 Fe ⁺	E		Johansson, S. The spectrum and term system of Fe II. <i>Phys. Scripta</i> 18, 217 (1978) Sweden
1321	C88 e + W	E	1-2 MeV	Fujimoto, F.; Sumida, H.; Fujita, H.; Uchida, Y. Electron channeling in (111) direction of tungsten crystals. II. Energy range of 1000 to 2000 keV. <i>Phys. Status Solidi A</i> 46, 411 (1978) Japan
1321	B16 Fe ²⁺ + Zn	E	6.1 MeV	Ruggen, J.; Rineel, J.; Stals, L.; Cornet, J. α -particle irradiation damage and stage I recovery in zinc. <i>Phys. Status Solidi A</i> 46, 439 (1978) Belgium
1322	B12 e + [Cd + Hg + Te]	E	undef	Ivanov-Ombki, V. I.; Maltsev, V. A.; Britov, A. E.; Sivachenko, S. E. Photo- and cathodoluminescence of Cd, Hg, Te alloys. <i>Phys. Status Solidi A</i> 46, 77 (1978) Soviet Union
1323	B02 He ⁺ + SiO ₂ ; He ⁺ + SiC ₂ ; Ar ⁺ + SiO ₂	E	22-60 keV	Rauschenbach, R.; Ritz, V. Sputtering of flat glass surfaces with noble gas ions. <i>Phys. Status Solidi A</i> 47, 76 (1978) East Germany
1324	C04 C ⁺ + Si	E	2 MeV	Kappert, H. F.; Waidemann, K. F.; Gröbe, S.; To Kaut, E. Range and damage profiling after heavy ion implantation in the MeV region. <i>Phys. Status Solidi A</i> 47, 751 (1978) West Germany
1325	D17 H ⁺ + Si; H ⁺ + Fe; H ⁺ + Cu; H ⁺ + Au; D ⁺ + Si; D ⁺ + Fe; D ⁺ + Cu; D ⁺ + Au; T ⁺ + Si; T ⁺ + Fe; T ⁺ + Cu; T ⁺ + Au; H ⁺ + Nb; H ⁺ + Ti; D ⁺ + Nb; D ⁺ + Ti; He ⁺ + Ni; He ⁺ + Ti	T	2-15 keV	Anderson, A. F. Reflection of slow hydrogen and helium ions from solid surfaces. <i>Phys. Status Solidi A</i> 48, 447 (1978) Soviet Union
1326	B12 e + MgO; e + GaP	E	23 keV	Llopis, J.; Piqueras, J. Cathodoluminescence from grain boundaries in MgO and GaP. <i>Phys. Status Solidi A</i> 49, 85 (1978) Spain
1327	C04 e + Si	T	1-5 MeV	Kaplin, V. V.; Popov, B. E.; Varchev, S. A. Quantum-mechanical treatment of anisotropic Rutherford scattering of swift electrons in crystals. <i>Phys. Status Solidi B</i> 96, K35 (1978) Soviet Union
1328	C08 He ²⁺ + Au; He ²⁺ + Ag; He ²⁺ + Cu C02 He ²⁺ + Au; He ²⁺ + Ag; He ²⁺ + Cu	T	1-5 MeV	Pathak, A. P. Stopping power of solids in planar channeling. <i>Phys. Status Solidi B</i> 86, 781 (1978) India
1329	B05 undef	T	undef	Poensch, G. Theory of angle-resolved photoemission: the role of electron diffraction in the UPS spectra. <i>Phys. Status Solidi B</i> 87, 191 (1978) East Germany
1330	CC8 e + Si; e + Cu; e + Ge; e + W; e ⁺ + Si; e ⁺ + Cu; e ⁺ + Ge; e ⁺ + W	T	undef	Wodell, R. Radiative damping effect for ultrarelativistic channelled particles. <i>Phys. Status Solidi B</i> 87, 451 (1978) Soviet Union
1331	B08 H ⁺ + Au B09 H ⁺ + Au	T	17-1000 eV	Horiguchi, S.; Koyama, K.; Chikui, Y. M. Auger neutralization of slow protons at solid surfaces. <i>Phys. Status Solidi B</i> 87, 767 (1978) Japan
1332	C02 e + C; e + Fe; e + Mg; e + Al; e + Si; e + K; e + Ge; e + Sb; e + Bi	T	0.1-28 keV	Anderson, A. F.; Chernov, G. Y. Mean free paths by inelastic interactions, stopping powers, and energy straggling for electrons of energies up to 20 keV in various solids. <i>Phys. Status Solidi B</i> 85, 329 (1978) Soviet Union
1333	B08 He ⁺ + Cu	E	3.2-4.9 eV	Hueberg, H.; Ratz, H. Polarization dependence of the photoelectron energy distribution curves of cesium. <i>Phys. Status Solidi B</i> 89, 397 (1978) West Germany

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1334	CH ₂ CH ₃ + C ₂ H ₂ + C	E	15-63 hV	Ellenberg, R.; Stern, J. Energy-angle distributions of ion and alpha ions after passage through thin carbon foils. Phys. Status Solidi 8 81, 811 (1972)
1335	CH ₂ CH ₃ + C ₂ H ₂ + C	E	2-6 eV	Kawaguchi, H.; Togauchi, S.; Goto, T.; Shimizu, T. Two-photon photoionization in CH ₂ and CH ₃ . Phys. Status Solidi B 69, K145 (1972)
1336	CH ₂ CH ₃ + C ₂ H ₂ + C	T	Thermal	Bates, B. B.; Nandorff, L. Local recombination in an ambient gas. II. Computer experiment with specific allowance for binary recombination. Proc. Roy. Soc. London A 359, 277 (1972)
1337	CH ₂ CH ₃ + C ₂ H ₂ + C	T	Thermal	Bates, B. B.; Nandorff, L. Local recombination in an ambient gas. I. Computer experiment with specific allowance for binary recombination. Proc. Roy. Soc. London A 359, 287 (1972)
1338	CH ₂ CH ₃ + C ₂ H ₂ + C	T	0.78-25.1 hV	Greuter, B. S. F.; Hobbins, J. C. Proton hydrogen electron-capture collision spectroscopy. Proc. Roy. Soc. London A 359, 245 (1972)
1339	CH ₂ CH ₃ + C ₂ H ₂ + C	T	Thermal	Bates, B. B.; Nandorff, L. Transition state theory for ion-molecule reactions. Proc. Roy. Soc. London A 359, 1 (1972)
1340	CH ₂ CH ₃ + C ₂ H ₂ + C	T	Under	Langley, G. Dissociative attachment potentialities: accuracy of representations. J. Chem. Phys. 60, 2214 (1974)
1341	CH ₂ CH ₃ + C ₂ H ₂ + C	E	17.5-24.75 K	Millar, W. J.; Gould, R. K. Electron attachment kinetics in flames. II. Dissociative attachment to CH ₂ . J. Chem. Phys. 60, 3542 (1974)
1342	CH ₂ CH ₃ + C ₂ H ₂ + C	E	331 K	Lee, L. K.; Fujimoto, T.; Collings, A. C.; Hanson, R. J. Collisional excitation transfer between CH ₂ and CH ₃ . J. Chem. Phys. 60, 3553 (1974)
1343	CH ₂ CH ₃ + C ₂ H ₂ + C	T	1-74 eV	Tanaka, B. B.; Ritchie, B. Continuum states for hydrogen molecule: a study of convergence in σ -H ₂ scattering equations. J. Chem. Phys. 60, 3555 (1974)
1344	CH ₂ CH ₃ + C ₂ H ₂ + C	T	3-50 eV	Brown, H. J.; Silver, D. M. Resonance and inelastic scattering of H ₂ + D ₂ using a repulsive model potential energy surface. J. Chem. Phys. 60, 3567 (1974)
1345	CH ₂ CH ₃ + C ₂ H ₂ + C	E	Under	Sayer, B. J.; Ferry, M. J.; Vlasov, J. P.; Loring, J. Bonds associated with C ₂ H ₂ -C ₂ H ₂ and C ₂ H ₂ -C ₂ H ₂ transitions perturbed by helium. J. Chem. Phys. 60, 3510 (1974)
1346	CH ₂ CH ₃ + C ₂ H ₂ + C	E	0.7-400 mV	Kahn, D.; Johnson, P. Two and three-photon resonances in the four-photon ionization spectrum of nitric oxide at low temperatures. J. Chem. Phys. 60, 3544 (1974)
1347	CH ₂ CH ₃ + C ₂ H ₂ + C	E	3.7-4.5 kcal/mole	Zander, L.; Berenstein, H. B. Metastable energy effect upon the branching fraction for selective decay of the R ₁ + R collision complex. J. Chem. Phys. 60, 3765 (1974)

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REF. NO.	REACTANTS	EXP OR THEOP	ENERGY RANGE	REFERENCE
1348	RES $h\nu + O_2^-; h\nu + O_2H_2O^-; h\nu + CO_2^-;$ $h\nu + CO_2^-; h\nu + CO_2H_2O^-; h\nu +$ $HCO_2^-; h\nu + HCO_2H_2O^-; h\nu + C_2H_3O^-;$ $h\nu + O_2HONH_2^-; h\nu + NO_2H_2O^-; h\nu +$ $CO_2H_2O^-$ W7 $h\nu + O_2^-; h\nu + O_2H_2O^-; h\nu + O_2H_2O^-;$ $h\nu + CO_2^-; h\nu + CO_2^-; h\nu + CO_2H_2O^-;$ $h\nu + HCO_2^-; h\nu + HCO_2H_2O^-; h\nu +$ $O_2H_2O^-; h\nu + O_2HONH_2^-; h\nu + NO_2H_2O^-;$ $h\nu + CO_2H_2O^-$	E	6410-7730 Å	Smith, G. P.; Lee, L. C.; Cosby, P. C.; Peterman, J. R.; Rowley, J. T. Photodissociation and photoelectron of molecular negative ions. V. Atmospheric ions from 7010 to 6400 Å. J. Chem. Phys. 68, 3810 (1978) United States
1349	A19 Under E15 Under	T	Under	Part'o, R. L.; Kowalczyk, S. P.; Shirley, D. A. The relation between satellite peaks in x-ray emission and x-ray photoemission spectra. J. Chem. Phys. 68, 3629 (1978) United States
1350	A17 $Ar_2 + F; Kr_2 + F$	T	Under	Wadt, W. R.; May, P. J. Electronic states of Ar_2F and Kr_2F . J. Chem. Phys. 68, 2886 (1978) United States
1351	D2 $Ar^+ + Cu$	T	6.25-5.0 keV	Giber, J.; Kozschi, J.; Koblínger, L. Computer modelling of sputtering processes. Acta Phys. Acad. Sci., Hung. 44, 227 (1978) Hungary
1352	CP7 $e + N_2; e + N_2; N_2 + He; N_2 + N_2$	T	Under	Michel, P.; Peau, S.; Minier, R. Greifswald: Der Einfluss der Stoßkonstanten auf die Elektronenionisation in schwachionisierten Mischplasma. Ann. Phys. (Germany) 35, 441 (1978) East Germany
1353	FE1 $Li^+; Be^{2+}; B^{3+}; C^{4+}$ FE3 W	T		Pukharjee, P. K.; Roy, M. P.; Gupta, A. Correlation energy in two electron atomic systems. Indian J. Phys. B 51, 383 (1977) India
1354	A10 $CO_2^+ + CO_2$	E	350-1650 K	Lesbenyuk, R. S.; Novosel, V. V.; Erlov, L. B.; Trushin, S. A.; Cherkov, V. V. Investigation of the rate of relaxation of the energy of the antisymmetric vibrational mode of CO_2 molecules as a function of the temperature. J. Appl. Spectrosc. 28, 664 (1978) Soviet Union
1355	EP9 $e + [O_2 + N_2]$	E	6.1-3.6 eV	Aleksandrov, B. L. Mechanism of electron binding of oxygen molecules in nitrogen plasma. High Temp. 16, 192 (1978) Soviet Union
1356	EP2 $e + H_2O; e + OH; e + NOH; e + C_2; e +$ $CO_2; e + CO; e + H_2; e + H; e +$ $H_2; e + N_2; e + NO; e + Co; e + CS;$ $e + Fe; e + C_2H_5OH$	T	3.1-4.1 eV	Atrazhev, V. A.; Zelener, B. V.; Yashov, I. T. The electric conductivity of a plasma of combustion products of hydrocarbon fuels with alkali impurity. High Temp. 16, 326 (1978) Soviet Union
1357	D02 $Ar^+ + W$	E	12-18 eV	Kovalov, V. M.; Lyapin, A. A.; Chursin, M. R. Sputtering of a high-current ionized cathode. High Temp. 16, 349 (1978) Soviet Union
1358	EP2 $e + N_2$	E	6.04-3.7 eV	Gus'kov, Y. K.; Savov, M. V.; Stetskyonyuk, V. A. Scattering of electrons with $E_{0.04-3.7}$ eV by N_2 molecules. High Temp. 16, 361 (1978) Soviet Union
1359	A14 $Ca + CO_2$	E	75-76 K	Stetski, G. I.; Ivanov, R. S.; Karslov, B. P.; Malikov, M. M. Rate of interaction of calcium and CO_2 in a gaseous mixture in a rapidly circulating laser. High Temp. 16, 572 (1978) Soviet Union
1360	FE3 $e + N_2$	E	11-16 eV	Vichon, D.; Grosseau, F.; Meutz, A.; Hazan, J. Resonant excitation of a new valence state in N_2 by electron impact. J. Mol. Spectrosc. 73, 405 (1978) France
1361	D02 $PERT + Si; PERT + Cu; PERT + Ag;$ $PERT + Au; PERT + Nb$	T	45 keV	Imada, M. Mass dependence of the sputtering yield—boundary effect. J. Phys. Soc., Jap. 46, 1967 (1978) Japan

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1362	ED4 $e + N_2$ ED5 $He + N_2$	E	10-30 eV	Zipf, E. C.; McLaughlin, R. G. On the dissociation of nitrogen by electron impact and by a.u.v. photo-absorption. <i>Planet. Space Sci.</i> 25, 449 (1978) United States
1363	CD4 $H^+ + Al$; $H^+ + Ti$; $H^+ + Ni$; $H^+ + Cu$; $H^+ + Zn$; $H^+ + Mo$; $H^+ + Ag$; $H^+ + Te$; $H^+ + U$; $H^+ + Au$	E T	27-100 keV	Luomaajervi, R.; Kainonen, J.; Ristari, K.; Anttila, A. Ranges of H^+ ions in ten metals measured by (p,α); resonance broadening. <i>Phys. Rev. E</i> 18, 4467 (1978) Finland
1364	CD2 $H^+ + Be$; $H^+ + C$; $H^+ + Al$; $H^+ + Si$ CD5 $H^+ + Be$; $H^+ + C$; $H^+ + Al$; $H^+ + Si$ ED7 $H^+ + Be$; $H^+ + C$; $H^+ + Al$; $H^+ + Si$	E	130-3000 keV	Langley, R. A.; Brice, D. E. Energy straggling of protons in Be, C, Al, and Si. <i>Phys. Rev. B</i> 18, 4673 (1978) United States
1365	ED3 $Ar^+ + TiC$; $Ar^+ + VC$; $Ar^+ + Cr_2C_2$; $Ar^+ + ZrC$; $Ar^+ + MoC$; $Ar^+ + Nb_2C_2$; $Ar^+ + NiC$; $Ar^+ + TaC$; $Ar^+ + WC$	E	8 keV	Cherapin, G. I.; Kopylov, A. P.; Vasiliev, N. A. Secondary ion emission of transition metal carbides. <i>Phys. Status Solidi A</i> 50, 1113 (1978) Soviet Union
1366	CE6 Under	T	Under	Boryshovskii, V. G.; Grubich, A. O.; Dubrovskaya, I. Y. Diffraction of radiation from channelled charged particles. <i>Phys. Status Solidi B</i> 88, 361 (1978) Soviet Union
1367	D12 $e + Ag$	T	80 keV	Witteborn, D. Theory and experiment of the light emission of surface plasmons induced by fast electrons on modulated surfaces. <i>Phys. Status Solidi B</i> 88, 453 (1978) West Germany
1368	CD2 $e + Li$	T	1 keV	Zhivopistov, F. A.; Hernandez, F. C. Fast electron scattering in metals with the excitation of a core electron. <i>Phys. Status Solidi B</i> 50, 441 (1978) Soviet Union
1369	A17 $Ar^+ + Cu$; $He^+ + Cu$ CD4 $Ar^+ + Cu$; $H^+ + U$	T	2-6 MeV	Pothos, A. P.; Srivastava, R. V. Channeling and a semiempirical model for the interatomic potential. <i>Phys. Status Solidi B</i> 91, 703 (1978) India
1370	ED4 $He + Cd$	E	Under	Rhodov, V. A.; Chigir, N. A. Investigation of the absorption spectrum of a two-level system subjected to intense two-photon excitation. <i>Sov. Phys.-JETP</i> 47, 34 (1978) Soviet Union
1371	ED4 $e + H_2^+$; $e + D_2^+$ ED6 $e + H_2^+$; $e + D_2^+$	T	1-10 eV	Zhdanov, V. P.; Chibrikov, N. I. Dissociative recombination of electrons on the molecular ions H_2^+ and D_2^+ with production of strongly excited atoms. <i>Sov. Phys.-JETP</i> 47, 38 (1978) Soviet Union
1372	D09 Under	T	Under	Kozlov, Y.; Kononov, Y. V.; Babushnikov, N. A. Dynamic-interaction effects in the decay of fast molecules in thin films. <i>Sov. Phys.-JETP</i> 47, 148 (1978) Soviet Union
1373	H05 Under ED7 Under	T	H25 50-300 K	Akulov, V. N.; Allopov, S. S.; Kozlov, N. V. Mechanism of collisional dissociation of polyatomic molecules. <i>Sov. Phys.-JETP</i> 47, 287 (1978) Soviet Union
1374	A01 $H + H_2O$; $H + N_2$ A04 $H + H_2O$; $H + N_2$	T	60 eV	Roudachin, V. G.; Levin, V. G.; Smirnov, V. F. Quasistatic knockout of atoms from molecules by high-energy atoms. <i>Sov. Phys.-JETP</i> 47, 287 (1978) Soviet Union
1375	D09 Under	T	63° K	Kogan, E. Y.; Mal'nev, V. N. Association coefficient of a diatomic molecular gas. <i>Sov. Phys.-JETP</i> 47, 276 (1978) Soviet Union
1376	A06 $H + Co^+$; $H + O^+$	T	0.1-1 a.u.	Abraham, V. A.; Boryshnikov, V. F.; Litke, V. S. Charge transfer between hydrogen atoms and the nuclei of multicharged ions with allowance for the degeneracy of the final states. <i>Sov. Phys.-JETP</i> 47, 469 (1978) Soviet Union
1377	ED2 Under	T	Under	Kozlov, N. Y.; Kuchlov, N. Y. Analytic properties of the amplitude for elastic forward scattering of electrons by atoms. <i>Sov. Phys.-JETP</i> 47, 484 (1978) Soviet Union

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1378	Si2 Under	T	Under	Kavchik, N. V.; Kharlamov, E. E.; Yuravov, V. L. Calculation of sputtering based on [sic] model. Sov. Phys.-Solid State 20, 1186 (1978) Soviet Union
1379	Al ⁺ CH ₄ ⁺ + CH ₄	T	32° K	Vargin, A. N.; Gopshlye, V. V.; Konyukhov, V. L.; Lukovnikov, A. I. Model of the kinetic cooling of carbon dioxide gas. Sov. J. Quantum Electron. 5, 601 (1978) Soviet Union
1380	Al ⁺ CF ₃ + F	E	32° K	Kozlov, S. V.; Maslov, A. I. Reaction rate constants of CF ₃ , CF ₂ , and F-CF ₂ radicals. Sov. J. Quantum Electron. 5, 986 (1978) Soviet Union
1381	Al ⁺ WF ₆ + WF ₆	E	33° K	Amorimov, R. V.; Zuberov, I. G.; Kogachen, A. A.; Kozlov, A. V. Investigation of the kinetics of the vibrational excitation of the WF ₆ molecule by the 15-W resonance method. Sov. J. Quantum Electron. 5, 910 (1978) Soviet Union
1382	Al ⁺ SF ₆ ⁺ + SF ₆ SF ₆ ⁺ + SF ₆	E	Al ⁺ 30° K	Gordienko, V. N.; Nishchenko, A. V.; Panchenko, V. Y. Vibrational-translational relaxation in SF ₆ at high excitation rates. Sov. J. Quantum Electron. 5, 1013 (1978) Soviet Union
1383	Si1 Review	T	10 ⁻⁴ -10 ⁴ eV	Mikhailin, E. E.; Solovov, B. N. Quasi-resonant processes in sputter collisions. Sov. Phys.-Usp. 21, 55 (1978) Soviet Union
1384	Si1 F + e ⁻ ; O ₂ + He; O ₂ + N ₂ ; O ₂ + CO ₂	E	Under	Granberg, B. Electron attachment in air and mixtures of O ₂ with He, N ₂ , and CO ₂ . Z. Naturforsch. A 33, 1104 (1978) West Germany
1385	Al2 Hg + Ar Al7 Hg + Ar	E	473-1273 K	Patzold, H. C.; Behnberg, W. Interaction potentials of Hg-Ar from temperature dependent absorption spectra. Z. Naturforsch. A 33, 1461 (1978) West Germany
1386	Si1 Review Si4 Review Si5 Review Si6 Review	E, T	10 ⁻⁴ -10 ⁴ eV	Bauer, W. Surface processes in plasma wall interactions. J. Nucl. Mater. 76-77, 3 (1978) United States
1387	Si1 Review Si4 Review Si6 Review	E, T	Under	Ginet, P. Review of plasma wall interactions in tokamaks. J. Nucl. Mater. 76-77, 35 (1978) France
1388	Si1 Review Si4 Review	E	Under	Stall, P.; Staudenmaier, G. Surface effects and impurity production in tokamak machines. J. Nucl. Mater. 76-77, 78 (1978) West Germany
1389	Si2 He ⁺ + He; He ⁺ + Ag; Ar ⁺ + Fe; Ar ⁺ + Ag	E	15-85 keV	Knuth, B.; Fried, T.; Braun, P. Angular distributions of sputtered He and Ag during He ⁺ and Ar ⁺ ion bombardment. J. Nucl. Mater. 76-77, 129 (1978) Sweden
1390	Si2 He ⁺ + He; He ⁺ + Au; Ar ⁺ + He; Ar ⁺ + Cu	E	15-30 keV	Hoch, P.; Stocklin, C.; Vietzke, E.; Vogelbruch, E. Energy and angular distribution of gold and copper atoms sputtered with either 15 or 30 keV He ⁺ , He ⁺ and Ar ⁺ ions. J. Nucl. Mater. 76-77, 136 (1978) West Germany
1391	Si2 He ⁺ + Fe; He ⁺ + SS; He ⁺ + Fe; He ⁺ + SS; Ar ⁺ + Fe; Ar ⁺ + SS	E	10 keV	Elhorn, A.; Hintz, E.; Scherer, B. Measurement of the velocity distribution of metal atoms sputtered by light and heavy particles. J. Nucl. Mater. 76-77, 143 (1978) West Germany
1392	Si2 He ⁺ + C; He ⁺ + Ni; He ⁺ + Mo; He ⁺ + Au; He ⁺ + C; He ⁺ + Ni; He ⁺ + Mo; He ⁺ + Au; He ⁺ + C; He ⁺ + Ni; He ⁺ + Mo; He ⁺ + Au; He ⁺ + C; He ⁺ + Ni; He ⁺ + Mo; He ⁺ + Au	T	0.04-15 keV	Hagmann, L. G.; Wilson, V. D. Monte Carlo studies of sputtering. J. Nucl. Mater. 76-77, 149 (1978) United States
1393	Si2 Ar ⁺ + Ti; Ar ⁺ + V; He ⁺ + Ti; He ⁺ + V	E	3.4-11 keV	Meier, W. O.; Rapp, H. L.; Martin, F. J. Sputter-erosion and impurity emission from titanium and vanadium at low-energy ion bombardment. J. Nucl. Mater. 76-77, 156 (1978) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1394	D02 $H^+ + B_4C$; $H^+ + SiC$; $H^+ + TiC$; $H^+ + C$; $D^+ + B_4C$; $D^+ + SiC$; $D^+ + TiC$; $D^+ + C$; $He^+ + B_4C$; $He^+ + SiC$; $He^+ + TiC$; $He^+ + C$	E	0.1-8 keV	Sobdany, J.; Bay, R. L.; Eitenberger, B. Sputtering yields of graphite and carbides and their potential use as first wall materials. <i>J. Nucl. Mater.</i> 76-77, 163 (1978) West Germany
1395	D02 $H^+ + SS$; $H^+ + C$; $H^+ + BaO$; $D^+ + SS$; $D^+ + C$; $D^+ + BaO$	E	0.33-9 keV	Bordern, J. A.; Langley, R. A.; Wilson, R. L. Low-energy hydrogen and deuterium sputtering measurements of stainless steel, graphite and beryllium oxide. <i>J. Nucl. Mater.</i> 76-77, 161 (1978) United States
1395	D02 Under	T	Under	Diablo, S.; Kelly, R. Recoil implantation from a thin source. <i>J. Nucl. Mater.</i> 76-77, 171 (1978) Canada
1397	D17 $H^+ + SS$; $Ar^+ + SS$	E	3 keV	Bustanz, R. J.; Thoenes, G. J. Surface analysis of sputtered stainless steel. <i>J. Nucl. Mater.</i> 76-77, 183 (1978) United States
1398	D02 $H^+ + He$	E	0.2-10 keV	Ohtsuka, H.; Yasuda, R.; Sone, K.; Abe, T. Measurement of the sputtering yield by Auger electron spectroscopy. <i>J. Nucl. Mater.</i> 76-77, 186 (1978) Japan
1399	D02 Under	T	Under	Andersen, N. H. A note on neutron-sputtering measurements. <i>J. Nucl. Mater.</i> 76-77, 190 (1978) Denmark
1403	D02 $H_2^+ + [C + Pt]$	E	5 keV	Smith, J. M., Jr.; Nayer, C. M., Jr. Temperature dependence of hydrogen sputtering of carbon coatings on platinum. <i>J. Nucl. Mater.</i> 76-77, 193 (1978) United States
1401	D02 $H^+ + Al$; $H^+ + Au$; $H^+ + SS$	E	150-250 eV	Clausing, R. E.; Emerson, L. C.; Neuberly, L. Sputtering and chemical attack of 304 stainless steel, titanium and gold by hydrogen ions of 100-eV energy. <i>J. Nucl. Mater.</i> 76-77, 195 (1978) United States
1402	D17 $D^+ + SiC$	E	0.7 keV	Yasoshima, T.; Mohri, M.; Watanabe, K.; Saito, M.; Hayakawa, K. Application of ALE-2102 (10A)-705 combined systems of physical and chemical sputtering processes of graphite and silicon carbide surfaces with energetic ions. <i>J. Nucl. Mater.</i> 76-77, 202 (1978) Japan
1403	D03 $D^+ + C$; $D^+ + [D + C]$ D13 $D^+ + C$; $D^+ + [D + C]$	E	5-30 keV	Briggs, J. A.; Evans, S. K.; Petrochen, G. H. Energy dependence of methane production during deuterium bombardment of pyrolytic carbon. <i>J. Nucl. Mater.</i> 76-77, 204 (1978) United Kingdom
1404	D03 $H^+ + Be$; $D^+ + Be$; $He^+ + Be$; $H^+ + Be$; $O^+ + Be$; $He^+ + Be$; $Kr^+ + Be$; $Ar^+ + Be$	E	0.2-15 keV	Wright, R. B.; Liu, H.-B.; Gruen, L. M. Chemical effects on secondary photon and ion emission of ion bombarded beryllium, carbon and boron carbide surfaces. <i>J. Nucl. Mater.</i> 76-77, 205 (1978) United States
1405	D14 $He^+ + SS$	E	175 keV	Ivanov, L. I.; Komissarov, A. P.; Pechin, B. A.; Reznikov, V. N.; Chubovskiy, V. F. Stressed state blistering of stainless steel. <i>J. Nucl. Mater.</i> 76-77, 211 (1978) Soviet Union
1406	D14 $He^+ + Ni$; $He^+ + Be$	E	20-500 keV	Das, S. K.; Kaminsky, M.; Fenech, G. The significance of a correlation of blister diameter with skin thickness for Ni and Be for blistering models. <i>J. Nucl. Mater.</i> 76-77, 215 (1978) United States
1407	D14 $He^+ + V$	E	2 MeV	Kajotto, B. Low-cycle irradiations of vanadium with 2-MeV helium ions at elevated temperatures. <i>J. Nucl. Mater.</i> 76-77, 221 (1978) West Germany
1408	D14 $H^+ + V$; $H^+ + Ti$; $He^+ + V$; $He^+ + Ti$	E	13-40 keV	Guseva, N. I.; Ionova, E. S.; Zhybova, N. N.; Kalyagin, V. N.; Kravulin, V. L.; Kurekino, I. S.; Medvedev, A. V.; Reznikov, V. N. Influence of target structure on blister formation by helium and hydrogen ion bombardment. <i>J. Nucl. Mater.</i> 76-77, 224 (1978) Soviet Union

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1009	D14 Under	T	Under	Evans, J. R. The role of implanted gas and lateral stress in blister formation mechanism. <i>J. Nucl. Mater.</i> 76-77, 228 (1978) United Kingdom
1010	D14 $D^+ + C$; $D^+ + SiC$; $D^+ + Mo$	E	1-10 keV	Matsumoto, K.; Suzuki, K.; Nohri, M.; Yamashita, T. Quantitative measurement of surface roughness of graphite, silicon carbide and polycrystalline irradiated with energetic deuterons. <i>J. Nucl. Mater.</i> 76-77, 226 (1978) Japan
1011	D13 $He^+ [He + He]$ D14 $He^+ + He$ D16 $He^+ + He$	T	1-10-100 keV	Sono, K.; Saitoh, M.; Yamada, S.; Chikawa, N. Prediction of erosion by blistering in polycrystalline surfaces with a multi-groove microstructure. <i>J. Nucl. Mater.</i> 76-77, 240 (1978) Japan
1012	D14 $He^+ + Ni$	E	20-500 keV	Fawcett, G.; Das, S. K.; Kaminsky, P.; Wiley, C. W. Depth distribution of bubbles in He^+ -ion irradiated nickel and the mechanism of blister formation. <i>J. Nucl. Mater.</i> 76-77, 247 (1978) United States
1013	D14 $He^+ + Cu$	E	20 keV	Terrault, B.; Abel, G.; Martel, J. G.; St-Jacques, R. G.; Labrie, J. P.; L'Ecuier, J. Further observations of helium concentration profiles in copper and their relation to blistering. <i>J. Nucl. Mater.</i> 76-77, 245 (1978) Canada
1014	D14 $He^+ + U$	E	0.2-3.0 keV	Nicholson, R. J. K.; Ellis, J. W. EPR studies of the lattice damage in tungsten following low-energy helium ion bombardment. <i>J. Nucl. Mater.</i> 76-77, 241 (1978) United Kingdom
1015	D14 $He^+ + Si$; $He^+ + Ni$	E	10-12 keV	Mavinkov, B.; Peternel, M.; Zehner, A. Equilibrium surface of technological materials bombarded with high dose He^+ ion bombardment. <i>J. Nucl. Mater.</i> 76-77, 253 (1978) Yugoslavia
1016	D14 $He^+ + Si$	E	10 keV	Kaminsky, M.; Das, S. K. Surface escape of Si^{16} stainless steel irradiated with He^+ to high doses. <i>J. Nucl. Mater.</i> 76-77, 256 (1978) United States
1017	D14 $He^+ + [Pt + Rh]$	E	Under	McDonnell, W. R. Whisker growth—a new mechanism for helium blistering of surfaces in complex radiation environments. <i>J. Nucl. Mater.</i> 76-77, 258 (1978) United States
1018	D14 $He^+ + V$	E	0.1 keV	Langley, R. A.; Blower, M. S.; Pearcey, P. S. Surface preparation effects on blister formation and stress buildup in polycrystalline vanadium. <i>J. Nucl. Mater.</i> 76-77, 261 (1978) United States
1019	D16 $D^+ + Zr$	E	10-30 keV	Møller, J.; Bergesen, P.; Bettiger, J. Temperature-dependent depth profiles of deuterons implanted into zirconium. <i>J. Nucl. Mater.</i> 76-77, 267 (1978) Denmark
1020	D16 $D^+ + Si$	E	1-10 keV	Wilson, K. L.; Buehler, M. I. Deuterium trapping in irradiated Si^{16} stainless steel. <i>J. Nucl. Mater.</i> 76-77, 261 (1978) United States
1021	D13 $He^+ + [D + Si]$ D14 $D^+ + Si$	E	5-10 keV	Braganza, C. M.; Evans, S. R.; Holston, E. S.; McCracken, G. R. Ion-induced release of deuterium trapped in stainless steel. <i>J. Nucl. Mater.</i> 76-77, 264 (1978) United Kingdom
1022	D13 $He^+ + [D + Si]$ D14 $D^+ + Si$	E	1-10 keV	Blower, M. S.; Behrman, R.; Scherzer, B. M. U.; Schulz, R. Trapping and replacement of 1-10-keV hydrogen and deuterium in stainless steel. <i>J. Nucl. Mater.</i> 76-77, 265 (1978) United States
1023	C84 $D^+ + C$; $He^+ + C$ D14 $D^+ + C$; $He^+ + C$	E	0 keV	Langley, R. A.; Blower, M. S.; Roth, J. Behaviour of implanted D and He in pyrolytic graphite. <i>J. Nucl. Mater.</i> 76-77, 213 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1424	D13 $D^+ + (D + SS)$ D16 $D^+ + SS$	E	15-750 eV	Farrell, G.; Donnelly, S. E. Thermal desorption and bombardment-induced release of deuterium implanted into stainless steels at low energy. <i>J. Nucl. Mater.</i> 76-77, 322 (1978) United Kingdom
1425	D13 $He^+ + (H + U); He^+ + (D + Ti); He^+ + (O + U); He^+ + (O + Ni); He^+ + (O + Pd)$	E	50-2200 eV	Tagliavini, E.; Mollard, V. Ion impact desorption cross sections of hydrogen and oxygen from metals by light ion bombardment. <i>J. Nucl. Mater.</i> 76-77, 328 (1978) West Germany
1426	D15 $D^+ + SS$	E	0.3-5.0 keV	Thomas, G. J.; Wilson, K. L. Microstructure of ion-implanted deuterium in stainless steel. <i>J. Nucl. Mater.</i> 76-77, 332 (1978) United States
1427	D07 $He^+ + Si; He^+ + SiO_2; H^+ + Si; H^+ + SiO_2$	E, T	2.5-5.0 keV	Robinson, J. E.; Jackson, D. P. Scattering of keV hydrogen and helium ions and neutrals from oxygen-covered surfaces. <i>J. Nucl. Mater.</i> 76-77, 333 (1978) Canada
1428	D07 $He^+ + Cu; He^+ + Ag; He^+ + Au$	E	5-10 keV	Schoen, J.; Sorensen, M.; Littmark, B. Energy reflection coefficients for 5-10 keV He ions incident on Au, Ag, and Cu. <i>J. Nucl. Mater.</i> 76-77, 338 (1978) Denmark
1429	D07 $H^+ + C; H^+ + Ti; H^+ + Mo; H^+ + U; H^+ + Au; H^+ + TiO_2; H^+ + TiN_2; H^+ + C; H^+ + Ti; H^+ + Mo; H^+ + U; H^+ + Au; H^+ + TiO_2; H^+ + TiN_2; He^+ + C; He^+ + Ti; He^+ + Mo; He^+ + U; He^+ + Au; He^+ + TiO_2; He^+ + TiN_2$	E	0.2-20 keV	Eckstein, O.; Verbeek, R. Reflection of H, He and Ne from C, Ti, Ni, Mo, U, and Au. <i>J. Nucl. Mater.</i> 76-77, 345 (1978) West Germany
1430	D07 $Ti^+ + Ti; Ti^+ + Fe; Ti^+ + TiN_2; Ti^+ + FeN_2; Ti^+ + FeN; Ti^+ + FeTi; Ti^+ + FeN_2; H^+ + Ti; H^+ + Fe; H^+ + TiN_2; H^+ + FeN_2; H^+ + FeN; H^+ + FeTi; H^+ + FeN_2; D02Ti^+ + Ti; Ti^+ + Fe; Ti^+ + TiN_2; Ti^+ + FeN_2; Ti^+ + FeN; Ti^+ + FeTi; Ti^+ + FeN_2; H^+ + Ti; H^+ + Fe; H^+ + TiN_2; H^+ + FeN_2; H^+ + FeN; H^+ + FeTi; H^+ + FeN_2$	T	3.1-2.0 keV	Gun, O. S.; Robinson, N. T. Computer simulation of the reflection of hydrogen and the sputtering of hydrogen from metal hydrides. <i>J. Nucl. Mater.</i> 76-77, 376 (1978) West Germany
1431	D13 $He^+ + (C + Mo)$	E	1-1.5 keV	Akashi, K.; Miyahara, A.; Sagara, A. Low-energy ion scattering study of adsorbed layers on molybdenum surface. <i>J. Nucl. Mater.</i> 76-77, 378 (1978) Japan
1432	D06 $e + N_2; e + D_2$ D04 $e + N_2; e + D_2$	E	1-3 keV	Sorensen, M.; Schoen, J. On secondary electron emission from solid N_2 and D_2 . <i>J. Nucl. Mater.</i> 76-77, 626 (1978) Denmark
1433	D13 $e + (N_2 + SS); e + (CO + SS); e + (CH_4 + SS); e + (N_2 + Al); e + (CO + Al); e + (N_2 + C); e + (CH_4 + C); e + (CO + C); e + (CH_4 + C); e + (N_2 + Inconel); e + (CO + Inconel); e + (CH_4 + Inconel)$	E	10 ⁻⁴ -150 eV	Leisegang, J.; Schram, A. Induced desorption, diffusion or production of gases by 100 eV electron bombardment on some wall materials for tokamaks. <i>J. Nucl. Mater.</i> 76-77, 637 (1978) France
1434	C04 $He^+ + Nb$ D16 $He^+ + Nb$	E	45-676 keV	Stierbach, J. P.; Kozlovskii, V.; Hay, J.; Rahin, B. R.; Fickert, A.; Thacker, G. R.; Uecker, H. Simulation of 14 MeV neutrons by protons of higher energies. <i>J. Nucl. Mater.</i> 76-77, 640 (1978) West Germany
1435	D03 $H^+ + SS; H^+ + Inconel; H_2^+ + SS; H_2^+ + Inconel; H_2^+ + SS; H_2^+ + Inconel$	E	5 keV	Smith, J. R., Jr. Secondary ion emission from stainless steel and Inconel due to hydrogen ion bombardment. <i>J. Nucl. Mater.</i> 76, 117 (1978) United States
1436	D14 $Ta^{2+} + Fe; He^+ + Mo$	E	0.3-7.2 MeV	Rissinger, H. E.; Brimhall, J. L.; Simons, E. P.; Charlot, L. A. Dual-beam ion bombardment of molybdenum. <i>J. Nucl. Mater.</i> 76, 210 (1978) United States
1437	D14 $H^+ + SS$	T	45 MeV	Hayne, M. R. Numerical evaluation of combined self-ion injection and vacancy loop production in proton-ion irradiations. <i>J. Nucl. Mater.</i> 76, 229 (1978) United Kingdom

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1438	D14 Undef	T	Undef	Wayne, R. B.; Gallagher, J.; Sallough, R. The derivation of a simple solid-solution equation for cold-rolled 316 austenitic steel. <i>J. Nucl. Mater.</i> 78, 236 (1978) United Kingdom
1439	D14 $V^+ + [V + Cr]$	E	3.5 MeV	Agarwal, S. C.; Beha, L. E.; Neill, F. V., Jr. Irradiation-induced void swelling and solute segregation in a V-10%Cr-irradiated-35 wt % Cr bcc alloy. <i>J. Nucl. Mater.</i> 78, 336 (1978) United States
1440	D15 $HI^+ + HI; HI^+ + [HI + Al]; HI^+ + [HI + Si]; HI^+ + [HI + Nb]$	T	75-1000 keV	Lee, H. Q.; Ghazali, P. R.; Johnson, R. A. Solute segregation and precipitation under heavy-ion bombardment. <i>J. Nucl. Mater.</i> 78, 468 (1978) United States
1441	D15 $Co^+ + [Ti + Al + V]$	E	17.5 MeV	Wilken, P.; Kalcinski, G. L. Heavy ion irradiation of a Ti-6Al-4V alloy. <i>J. Nucl. Mater.</i> 78, 427 (1978) United States
1442	A03 $He + He$	E T	1-10 keV	Pedersen, E. R.; Vohnsen, P.; Gussacroppe, C.; Anderson, H.; Anderson, T.; Bohr, K.; Burst, H.; Cocher, C. L.; Olsen, J. G.; Pommier, J.; Sidic, V. Impact-parameter dependence of $He(3s + 3p)$ excitation in He-He collisions. <i>J. Phys. B</i> 11, L317 (1978) Denmark
1443	A06 $H^+ + H_2$	T	1-20 keV	Piacentini, R. B.; Salin, A. Electron capture by protons in molecular hydrogen. <i>J. Phys. B</i> 11, L323 (1978) France
1444	E03 $e + He^+$	T	88 eV	Sinha, C.; Sii, M. C. Electron impact excitation of hydrogenic ions to arbitrary n states including exchange effects. <i>J. Phys. B</i> 11, L323 (1978) India
1445	A12 $Ca + Na; Ca + Ar; Ca^+ + Na; Ca^+ + Ar$	E	520-640 K	Boman, H. J.; Lewis, E. L. Collisional broadening and shifts in the spectra of neutral and singly ionized calcium. <i>J. Phys. B</i> 11, 1783 (1978) United Kingdom
1446	D02 $He + Cd$	E	49-750 eV	Codling, K.; Woolley, J. R.; West, J. B. The absolute photoabsorption cross section of atomic cadmium from the 4d threshold to 250 eV. <i>J. Phys. B</i> 11, 1713 (1978) United Kingdom
1447	D06 $3He + He$	T	Undef	Agostini, P.; Georges, A. Y.; Wheatley, S. E.; Lambropoulos, P.; Levron, R. B. Saturation effects in resonant three-photon ionization of sodium with a non-monochromatic field. <i>J. Phys. B</i> 11, 1733 (1978) United States
1448	D06 $He + Ca; He + Zn; He + Cu; He + Kr; He + Cd; He + Hg; He + Se; He + Xe; He + Ng; He + Y$	T	Undef	Berezko, E. G.; Kabachnik, M. N.; Rostovsky, V. S. Potential-barrier effects in inner-shell photoionization and their influence on the anisotropy of x-rays and Auger electrons. <i>J. Phys. B</i> 11, 1745 (1978) Soviet Union
1449	A03 $H^+ + He; H^+ + Ar$ A06 $H^+ + He; H^+ + Ar$	E	2-15 keV	Riis, J. S.; de Meer, F. J.; Kerbijn, C. B. Electron-transfer cross sections to ionizing excited states of hydrogen in collisions of protons with helium and argon. <i>J. Phys. B</i> 11, 1789 (1978) The Netherlands
1450	A03 $H^+ + He; H^+ + Ar$ A16 $H^+ + He; H^+ + Ar$	E	1-6 keV	Riis, J. S.; de Meer, F. J.; Kerbijn, C. B. Electron-detachment cross sections to ionizing excited states of hydrogen in collisions of negative hydrogen ions with helium and argon. <i>J. Phys. B</i> 11, 1783 (1978) The Netherlands
1451	A06 $He^{2+} + H_2; He^{2+} + He$ A11 $He^{2+} + H_2$	E	230 keV	Dunn, K. F.; Gilmore, B. J.; Simpson, F. B.; Gilbody, M. B. $He(2^1S)$ and He^+ formation in fast charge-changing collisions and evidence for a long-lived doublet state of He^+ . <i>J. Phys. B</i> 11, 1767 (1978) United Kingdom
1452	E03 $e + H Seq$	T	Undef	Sinha, C.; May, M.; Sii, M. C. Excitation of ground-state hydrogenic ions to an arbitrary n state. <i>J. Phys. B</i> 11, 1807 (1978) India

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1453	E95 e + Ar; e + Kr; e + Xe E17 e + Ar; e + Kr; e + Xe	T	0.01-5 Ry	Berezko, E. G.; Kabachnik, N. N.; Sinaev, V. V. The theory of coincidence experiments on electron impact ionization of inner atomic shells. <i>J. Phys. B</i> 11, 1819 (1978) Soviet Union
1454	E95 e + Ar E17 e + Ar	E	350-50000 eV	Sander, W.; Schmitt, V. Energy-dependence of the L ₂ -shell alignment of argon following electron impact ionization. <i>J. Phys. B</i> 11, 1832 (1978) West Germany
1455	E92 e + He E93 e + He E17 e + He	T	0.3-7.5 eV	Ruhr, K. Interaction mechanisms and cross sections for the scattering of low-energy electrons from He. <i>J. Phys. B</i> 11, 1849 (1978) West Germany
1456	A93 He ⁺ + He A96 He ⁺ + He	E	150-1000 keV	Hippler, R.; Schertner, K.-H.; Beyer, R. F. Direct and charge-exchange excitation of the 2 ³ P level in He ⁺ -He collisions. <i>J. Phys. B</i> 11, 1337 (1978) West Germany
1457	E12 e ⁺ + He	E T	2 eV	Hammerston, J. B. A comparison of experimental and theoretical total cross sections for low-energy positron-helium scattering. <i>J. Phys. B</i> 11, L343 (1978) United Kingdom
1458	E93 e + Kr	E	9.7-14.8 eV	Jureta, J.; Cvijanovic, S.; Brunt, J. N. P.; Reed, F. R. Threshold electron spectroscopy of Kr, Xe atoms. <i>J. Phys. B</i> 11, L347 (1978) United Kingdom
1459	M94 He + Cu	E	Undef	Mirza, M. V.; Duley, W. W. Energy levels for highly excited 2F states in Cu. <i>J. Phys. B</i> 11, 1917 (1978) Canada
1460	M96 4He + Cu	T	Undef	Crance, M. Four-photon ionization in Cu I near the 6f resonance. <i>J. Phys. B</i> 11, 1931 (1978) France
1461	A11 He ⁺ + He	T	0.10-0.25 eV	Ray, S.; Saha, S.; Barua, A. K. Rotational transitions of He ⁺ in collisions with He. <i>J. Phys. B</i> 11, 1963 (1978) India
1462	A93 TiF + Ar	T	330 K	Bhattacharyya, S. S.; Saha, S.; Barua, A. K. Small-angle scattering in atom-molecule collisions: an interpretation of experimental results for the Ar-TiF system. <i>J. Phys. B</i> 11, 1965 (1978) India
1463	A93 He ⁺ + He; He ⁺ + He; He ⁺ + He	E	100-1000 keV	Mauselkamp, D.; Schermann, A.; Schertner, K.-H. The polarization degree of some prominent helium lines after collisional excitation by fast ions. <i>J. Phys. B</i> 11, 1975 (1978) West Germany
1464	A93 He + He	E	50-700 eV	Martin, P. J.; Riecke, G.; Hermann, J.; Zehle, L.; Kempter, V. Study of the simultaneous emission of two photons in collisions between neon atoms using photon coincidence techniques. <i>J. Phys. B</i> 11, 1991 (1978) West Germany
1465	M97 e + [He + H]	E		Rahoon, M. K.; Faisal, F. H. N. High-energy resonant cross sections for simultaneous electron-photon excitation of the 3s state of hydrogen. <i>J. Phys. B</i> 11, 2003 (1978) Italy
1466	E95 e + Ar E17 e + Ar	E	150 eV	Williams, J. F. High-resolution energy and angular correlations of the scattered and ejected electrons in electron impact ionization of argon atoms. <i>J. Phys. B</i> 11, 2015 (1978) United Kingdom
1467	E93 e + He	E	10-40 eV	Williams, V.; Trajnar, S. Electron impact excitation of magnesium at 10, 20 and 40 eV impact energies. <i>J. Phys. B</i> 11, 2021 (1978) United States

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1468	ED2 e + Na ED3 e + Na E17 e + Na	E	10-100 eV	Williams, W.; Cheshborough, J. C., III; Trajens, S. Elastic and inelastic scattering of electrons by atomic cations. <i>J. Phys. B</i> 11, 2031 (1978) United States
1469	A03 Ar ²⁰⁺ + He; Kr ²⁰⁺ + He; Pb ⁸⁰⁺ + He	E	1.4 MeV/cm	Bayer, H. F.; Scharner, K.-H.; Follmann, F.; Mohler, P. H. X-ray transitions in four-electron He ions excited by 1.4 MeV/cm very heavy ion impact on He atoms. <i>J. Phys. B</i> 11, 1363 (1978) West Germany
1470	ED3 e + CO ₂ ED7 e + CO ₂	T	2-2-5.6 eV	Szythowski, C.; Zabek, R.; Drusko, J. Calculation of cross sections for vibrational excitation and de-excitation of CO ₂ by electronic collisions. <i>J. Phys. B</i> 11, 1371 (1978) Poland
1471	ED4 He + He	T	10-700 K	Dickinson, A. S.; Lee, R. S. The stability of protons in helium. <i>J. Phys. B</i> 11, 1377 (1978) United Kingdom
1472	H06 He + He; He + He; He + Ar; He + Kr; He + Xe; He + Ne ₂	T	Undef	Hartquist, T. U. Photoionization cross sections of excited noble-gas atoms and diatoms. <i>J. Phys. B</i> 11, 2101 (1978) United States
1473	A17 He ⁰ + He; He ⁰ + He	T	Undef	Poach, G. Low-energy scattering of excited helium atoms by rare gases. I. The model potential. <i>J. Phys. B</i> 11, 2107 (1978) United Kingdom
1474	A03 K + He; K + He; K + Ar; K + Kr A16 K + He; K + He; K + Ar; K + Kr	E	42-770 eV	Zahra, L.; Clement, E.; Horta, P. J.; Schauble, B.; Kemper, V. Differential cross sections for collisional excitation of the potassium 4 ² P states by noble-gas atoms. <i>J. Phys. B</i> 11, 2133 (1978) West Germany
1475	A11 He ⁰ + He A17 He ⁰ + He A18 He ⁰ + He	E	8.25x10 ⁻³ a.u.	Duran, R.; Meppe, H.-O. Measurement and evaluation of differential scattering cross sections for He ² P _{1/2} with He. <i>J. Phys. B</i> 11, 2143 (1978) West Germany
1476	A19 He ⁰ + He	E	35-200 keV	Mayerhof, W. E. Recoil effects in He ⁰ + He molecular-orbital n-rays. <i>J. Phys. B</i> 11, 2169 (1978) United States
1477	A03 He ⁰ + Ca; He ⁰ + Se; He ⁰ + Ti; He ⁰ + V; He ⁰ + Cr; He ⁰ + Mn; He ⁰ + Fe	E	3.5-2 MeV	Lopes, J. S.; Jesus, A. P.; Ferreira, G. P.; Gil, F. B. X-ray production in Ca, Se, Ti, V, Cr, Mn, and Fe by protons of 0.5-2 MeV energy. <i>J. Phys. B</i> 11, 2181 (1978) Portugal
1478	A11 Ar ⁰ + He; Ar ⁰ + He	E	Undef	Chen, C. H.; Judish, J. P.; Payne, R. G. Energy-transfer processes in proton-excited Ar-He and Ar-He ₂ mixtures. <i>J. Phys. B</i> 11, 2189 (1978) United States
1479	A06 He ⁰ + He	E	2-100 eV	Hinde, E. A.; Ravich, R. Precise resonant charge-transfer cross sections for He-He ⁰ between 2 and 100 eV. <i>J. Phys. B</i> 11, 2201 (1978) United States
1480	ED6 e + He ⁰ Seq	T	Undef	Banks, D.; Beeston, L. G. J. Ionization of He ⁰ ions by electron impact. <i>J. Phys. B</i> 11, 2209 (1978) United Kingdom
1481	ED3 e + LiH; e + LiCl; e + CaF; e + NaCl; e + CaCl; e + HI	T	0.25-0.0 eV	Rudge, M. R. H. Electron collisions with strongly polar molecules. <i>J. Phys. B</i> 11, 2221 (1978) United Kingdom
1482	F01 He Seq	T		Loughlin, C. 2 ² P _{1/2} -1 ² S, and 3 ² P _{1/2} -1 ² S, intercombination-line transitions in helium-like ions. <i>J. Phys. B</i> 11, 1391 (1978) United Kingdom
1483	H02 2He + Yb	E	Undef	Casse, P.; Debarre, A.; Morillon, C. Two-photon absorption spectroscopy in ytterbium. <i>J. Phys. B</i> 11, 1395 (1978) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1484	EIS $e + C^{2+}; e + N^{2+}; e + O^{2+}; e + N^{3+}$	T	50-5000 eV	Rees, D. L. Electron impact ionization of Li-like and Be-like carbon and nitrogen ions. <i>J. Phys. B</i> 11, L483 (1978) United Kingdom
1485	F01 Be Seq	T		Laughlin, C.; Constantino, E. R.; Victor, G. A. Two-valence-electron model-potential studies of the Be I fine-structure sequence. <i>J. Phys. B</i> 11, 2243 (1978) United Kingdom
1486	F01 B; C; N; O; F	T		Glass, R.; Hibbert, A. The hyperfine structure of the ground states of first-row atoms. <i>J. Phys. B</i> 11, 2257 (1978) United Kingdom
1487	A02 $He^{2+} + He; He^{2+} + He; He^{2+} + Ar$ A03 $He^{2+} + He; He^{2+} + He; He^{2+} + Ar$ A06 $He^{2+} + He; He^{2+} + He; He^{2+} + Ar$ A10 $He^{2+} + He; He^{2+} + He; He^{2+} + Ar$	E	200-600 eV	Rees, D. L.; Boring, J. V.; Johnson, R. E. Scattering of He^{2+} from He ; comparison of $He^{2+} + He$ with $He^{2+} + He$ and Ar . <i>J. Phys. B</i> 11, 2319 (1978) United States
1488	A03 $He^+ + He; He^+ + K; He^+ + Ca$ A06 $He^+ + He; He^+ + K; He^+ + Ca$ A11 $He^+ + He; He^+ + He; He^+ + Ar; He^+ + N_2$	E	5-100 keV	McCallough, R. V.; Coffe, T. V.; Gilbody, R. B. Formation of fast metastable helium atoms in electron capture by He^+ ions in alkali-metal vapours. <i>J. Phys. B</i> 11, 2333 (1978) United Kingdom
1489	E02 $e + He$ E17 $e + He$	E	50-150 eV	Teubner, P. J. G.; Duchman, S. J.; Noble, C. J. Differential cross sections for the elastic scattering of intermediate-energy electrons from sodium. <i>J. Phys. B</i> 11, 2345 (1978) Australia
1490	E11 $e + Ar$	E		Andrick, D.; Langhans, L. Measurement of the free-free cross section of e^- -Ar scattering. <i>J. Phys. B</i> 11, 2355 (1978) West Germany
1491	E02 $e + Ba$ E03 $e + Ba$ E17 $e + Ba$	E	25-150 eV	Jensen, S.; Registor, D.; Trajner, S. Elastic and inelastic ($5^1D, 6^1P$) electron scattering cross sections for barium. <i>J. Phys. B</i> 11, 2367 (1978) United States
1492	E03 $e + He$ E17 $e + He$	T	65-110 eV	Nicherson, D. L.; Nisidnow, L.; Zahler, J. S. Influence of electronic correlation on the electron impact excitation of the doubly excited $^2P_{sub g}$ and $^2P_{sub u}$ states of helium. I. The Born-Oppenheimer approximation. <i>J. Phys. B</i> 11, 2377 (1978) United States
1493	E03 $e + He$ E17 $e + He$	T	65-110 eV	Nicherson, D. L.; Leung, C. W.; Kwong, W. K.; Bohler, J. S. Influence of electronic correlation on the electron impact excitation of the doubly excited $^2P_{sub g}$ and $^2P_{sub u}$ states of helium. II. Rudge-type approximations. <i>J. Phys. B</i> 11, 2391 (1978) United States
1494	H06 $h\nu + Ar$	E	45-85 eV	Aden, N. V.; Vulliamier, F.; Kraussch, S.; Schmidt, V.; Nohlhorn, W. Correlation satellites in the outer-shell photoelectron spectrum of argon. <i>J. Phys. B</i> 11, L413 (1978) France
1495	A07 $He^+ + He; He^+ + He$	T	Under	Barzakh, E. G.; Kobachnik, N. N.; Sizov, V. V. On the alignment of ions in inner-shell ionization by MeV, particle impact. <i>J. Phys. B</i> 11, L421 (1978) Soviet Union
1496	A03 $He + Kr$	E	150-1100 keV	Worley, P. H.; Fortner, R. J.; Borna, S.; Mooghamer, T. P.; Davis, F. J. Enhanced K-L vacancy-sharing ratios observed in low-velocity, He-Kr collisions. <i>J. Phys. B</i> 11, L425 (1978) The Netherlands
1497	F01 Be Seq	T		Glass, R.; Hibbert, A. The use of the Breit interaction: the $^2P, ^2S$ intercombination line in beryllium-like systems. <i>J. Phys. B</i> 11, 2413 (1978) United Kingdom

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1498	M06 He + He	T	Undef	Stewart, A. L. The photoionization of helium using perturbation theory. <i>J. Phys. B</i> 11, 2445 (1978) United Kingdom
1499	M06 He + He M04 He + He	T	Undef	Luke, T. M. Low-energy singly and doubly excited resonances in neon: behaviour of the complex photoionization amplitudes at the resonances. <i>J. Phys. B</i> 11, 2457 (1978) Canada
1500	M06 He + Cd	T	Undef	Carter, S. L.; Kelig, M. P. Photoionization cross section for the 4d ¹⁰ subshell of cadmium I. <i>J. Phys. B</i> 11, 2467 (1978) United States
1501	A11 He ⁺ + H ₂	E	Undef	Barrat-Sambucan, M.; Kucal, M. Isoelectronic collisions between H ₂ molecules and He atoms in the d ³ P ₂ state. <i>J. Phys. B</i> 11, 2491 (1978) France
1502	A07 He ⁺ + Ag; He ²⁺ + Pb A10 He ⁺ + Ag; He ²⁺ + Pb	T	10-25 MeV	Pauli, W.; Beaul, F.; Trautmann, D. Electronic relativistic effects in the semiclassical theory of K-shell ionization. <i>J. Phys. B</i> 11, 2511 (1978) Switzerland
1503	A03 Xe + Ag	E	1-10 MeV	Lutz, M. O.; McMurray, W. B.; Pretorius, E.; Horovic, T.; Fricke, B.; Sepp, V. B.; van Noorden, I. J. Threshold behaviour of L _α -ray excitation in Xe-Ag collisions. <i>J. Phys. B</i> 11, 2527 (1978) South Africa
1504	E02 e + H E10 e + H	T	Undef	Byron, F. W., Jr.; Joachain, C. J. Exchange amplitude and forward dispersion relations for electron-atomic hydrogen scattering. <i>J. Phys. B</i> 11, 2533 (1978) United States
1505	E13 e + N ⁻	T	1.5-1000 eV	Bell, K. L.; Kingston, A. E.; Madden, P. J. Ionization of N ⁻ by electron impact. <i>J. Phys. B</i> 11, 2547 (1978) United Kingdom
1506	E12 e ⁺ + [He + Ar]	E	Undef	Grover, P. S. Computer-aided study of slow positron annihilation in He + Ar mixtures. <i>J. Phys. B</i> 11, 2565 (1978) India
1507	F01 He ⁺ M06 He + He ⁺	T	M06 1-29 eV	Stewart, A. L. A calculation on the photoionization of the 1s2s ³ S metastable state of helium using perturbation theory. <i>J. Phys. B</i> 11, L431 (1978) United Kingdom
1508	M06 He + Ar; He + Xe	T	Undef	Cherepkov, N. A. Spin polarization of electron ejected from unpolarized atom by unpolarized and linearly polarized light. <i>J. Phys. B</i> 11, L435 (1978) Soviet Union
1509	M06 2He + Cs; 4He + Cs	T	Undef	Gentier, Y.; Trehin, R. Temporal effects on the amplitude of the resonance peaks in multiphoton ionization. <i>J. Phys. B</i> 11, L441 (1978) France
1510	A0C He ⁺ + H; He ⁺ + He A18 He ⁺ + H; He ⁺ + He	T	10-80 MeV/amu	Shahenashvili, R.; Spruch, L. Possibility of observing the second Born contribution to electron capture at high impact velocities. <i>J. Phys. B</i> 11, L457 (1978) United States
1511	E05 e + H; e + He ⁺ ; e + Li ²⁺	T	Undef	van de Venter, W.; Kots, F. B.; Beaton, L. G. J.; Nelissen, M. G. H. Angular momentum exchange between escaping electrons in the case of electron impact ionization of hydrogenic targets. <i>J. Phys. B</i> 11, L465 (1978) The Netherlands
1512	E72 e ⁺ + H	T	Undef	Armour, E. A. G.; Schrader, D. N. Low-energy S-wave phase shifts for positron-hydrogen elastic scattering using an adiabatic approximation. <i>J. Phys. B</i> 11, L469 (1978) United Kingdom
1513	A02 He ⁺ + Cs A03 He ⁺ + Cs A06 He ⁺ + Cs A18 He ⁺ + Cs	E	13.4-24.2 eV	Schmidt, H.; Spiess, G.; Valenou, A.; Pradel, P. Determination of He ⁺ + Cs(6s) potential from differential cross section measurements at energies 13.4-24.2 eV. <i>J. Phys. B</i> 11, 2481 (1978) France

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1514	A02 $H^+ + Cu$ A03 $H^+ + Cu$ A06 $H^+ + Cu$ A18 $H^+ + Cu$	T	0.05-4 keV	Sidla, V.; Kueck, C. Theoretical study of the elastic and charge exchange processes in $H^+ + Cu$ collisions. <i>J. Phys. B</i> 11, 2687 (1978) France
1515	B12 $H^+ + Al$	T	450 keV	Ward, T. R.; Byrnes, R. A. On the transstrahlung continuum generated by proton bombardment. <i>J. Phys. B</i> 11, 2705 (1978) United Kingdom
1516	A06 $He^{2+} + Hg$ A07 $He^{2+} + Hg$ A18 $He^{2+} + Hg$	E	5-20 eV	Niehues, A.; Ruff, M. W. An experimental study of autoionization processes in $He^{2+}-Hg$ collisions. II. Electron and ion angular distributions formed at 5-20 eV collision energies. <i>J. Phys. B</i> 11, 2719 (1978) West Germany
1517	E02 $e + H; e + Ar$ E12 $e^+ + H; e^+ + Ar$ E17 $e + H; e + Ar$	T	100-500 eV	Roy, A. C.; Sill, N. C. Elastic scattering of electrons and positrons from H and Ar in the second-order eikonal approximation. <i>J. Phys. B</i> 11, 2729 (1978) India
1518	A02 $He^+ + D_2$ A18 $He^+ + D_2$	E ?	1.5-3.5 keV	Anderson, N.; Vaddar, N.; Ruesch, J.; Pollock, E. Experimental test of a scaling law from ion-molecule collisions: $He^+ + D_2$, 1.5-3.5 keV. <i>J. Phys. B</i> 11, 1493 (1978) United States
1519	F01 $H Seq$	T		Kiersfeld, S. Asymptotic expansions for dipole transitions in hydrogenic atoms. <i>J. Phys. B</i> 11, 2793 (1978) France
1520	E12 $e^+ + H$ F01 H	T	E12 Under	Arnour, E. A. G. Justification of the absence of a positronium-hydrogen-atom bound state. <i>J. Phys. B</i> 11, 2803 (1978) United Kingdom
1521	F01 $Ba; B^+; C^{2+}$	T		Mukherjee, P. K.; Raitra, R. L. Coupled Hartree-Fock calculation of the dynamic polarizabilities of the beryllium sequence. <i>J. Phys. B</i> 11, 2813 (1978) India
1522	B03 H^+	T		Banks, D.; Leopold, J. G. Ionization of highly excited atoms by electric fields. II. Classical theory of the Stark effect. <i>J. Phys. B</i> 11, 2833 (1978) United Kingdom
1523	B06 $He + K^{2+}$	T	Under	Combet Farnoux, F.; Lamouroux, M.; Taylor, K. T. Photoionization of K^{2+} using R-matrix theory. <i>J. Phys. B</i> 11, 2865 (1978) France
1524	A03 $K + He$ A18 $K + He$	E	93 eV	Zehle, L.; Clemens, E.; Martin, P. J.; Scheubel, b.; Kempter, V. Photon-scattered-atom coincidence study: a K-He with vector polarization analysis. <i>J. Phys. B</i> 11, 2866 (1978) West Germany
1525	A07 $H^+ + Ag; H^+ + Cd; H^+ + Vb; H^+ + Yb;$ $H^+ + Au; H^+ + Pb; H^+ + Th$	E	7-15 MeV	Borindo, A.; Beberth, C.; Baum, I.; Protop, C.; Sciniel, M.; Zorn, V.; Best, R.; Bohl, S. Relativistic effect in K-shell ionization by 7-15 MeV proton bombardment on heavy elements. <i>J. Phys. B</i> 11, 2875 (1978) Romania
1526	A02 $He^{2+} + He$ A06 $He^{2+} + He$ A18 $He^{2+} + He$	T	5-100 keV	Lopez, V.; Nolasco, A.; Piacentini, R. B.; Sierra, A.; Yanez, N. Molecular treatment of elastic and double charge-exchange $He^{2+}-He$ collisions. <i>J. Phys. B</i> 11, 2889 (1978) Spain
1527	A03 $Hg^{11+} + Hg^{12+}$ E03 $e + Hg^{11+}$	T	100-600 eV	Shebelov, I. V.; Vinogradov, A. V. Coulomb-Born and uniterized Coulomb-Born cross sections and rates of inelastic transitions in ion-ion collisions. <i>J. Phys. B</i> 11, 2899 (1978) Soviet Union

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1528	E82 $e + \text{Ne}; e + \text{Ne}; e + \text{Ar}$	T	2-38 eV	Yan, A. U.; McEachern, R. F.; Stauffer, A. B. Electron scattering from noble gases. <i>J. Phys. B</i> 11, 2987 (1978) Canada
1529	E83 $e + \text{Rn Seq}$	T	22-300 eV	Tully, J. A. Total cross sections for electron impact excitation of the 1^2P-2^1S transition in Rn-like ions. <i>J. Phys. B</i> 11, 2923 (1978) France
1530	E83 $e + \text{Ne}; e + \text{Ar}$	T	25-2000 eV	Milne, V. R.; Sofka, V. I.; Strahovec, S. I. The excitation of heavy atoms by electrons in multiple-collision diffraction theory. <i>J. Phys. B</i> 11, 2941 (1978) Soviet Union
1531	E84 $e + \text{I}_2$ E89 $e + \text{I}_2$	E	290-450 K	Birtwistle, B. T.; Redfern, A. Dissociative attachment in I_2 . <i>J. Phys. B</i> 11, 2949 (1978) United Kingdom
1532	F01 $\text{Cu}; \text{Au}$	T		Nigamish, J.; Haglin, W. K. Influence of atomic core polarization on oscillator strengths for $^{45}\text{Sc}^{2+} 3d^2 4s^2$ and $^{47}\text{Ti}^{2+} 3d^2 4s^2$ transitions in Cu I, Ag I and Au I spectra. <i>J. Phys. B</i> 11, L497 (1978) Canada
1533	F01 Ne^{22+}	E		Dolko, V. A.; Pihus, S. A.; Safrenov, A. S.; Fomov, A. V. X-ray spectra of V XXII and Ne XXIV ions from laser-produced plasmas. <i>J. Phys. B</i> 11, L663 (1978) Soviet Union
1534	H04 $\text{He} + \text{C}$	T	Undef	Chang, E. S.; Taylor, K. V. Angular distribution of photoelectrons ejected from the 2s shell of carbon. <i>J. Phys. B</i> 11, L507 (1978) United Kingdom
1535	H06 Undef	T	Undef	McCann, W. A.; Shain, S. Theory of N-photon ionization with short laser pulses. <i>J. Phys. B</i> 11, L515 (1978) United Kingdom
1536	E93 $e + \text{H}$ E12 $e^+ + \text{H}$ E17 $e + \text{H}$	T	64.4-200 eV	Capti, C. P.; Mather, K. C. Differential cross section for the excitation of the 2s state of atomic hydrogen by electron and positron impact at intermediate energies. <i>J. Phys. B</i> 11, L521 (1978) India
1537	F01 $\text{C}; \text{N}; \text{O}; \text{B}$	T		Eggarter, E.; Eggarter, T. P. Atomic correlation energies III: second-order corrections to the Hartree-Fock ground state of B, C, N, O and F. <i>J. Phys. B</i> 11, 2965 (1978) France
1538	F01 $\text{Cu}; \text{Au}$	T		Mufner, P.; Schwarz, V. M. E. Atomic transition probabilities from the relativistic pseudopotential approach. <i>J. Phys. B</i> 11, 2975 (1978) West Germany
1539	H01 Undef	T	Undef	Lee, M. V.; Stehle, P. Interaction of an atom with a laser pulse. <i>J. Phys. B</i> 11, 3015 (1978) United States
1540	H04 $2\text{He} + \text{He}$	E	Undef	Mars, B. R.; Allen, L. The wavelength dependence of the polarization selection rules of the $3s-3s$ two-photon transition in atomic sodium. <i>J. Phys. B</i> 11, 3023 (1978) United Kingdom
1541	A03 $\text{He}^+ + \text{H}$ A15 $\text{He}^+ + \text{H}$	T	0.001-1 eV	Falcon, C.; Opradico, L.; Piccattini, N. S. Unpolarized and spin-change collisions between He^+ and H at low energies. <i>J. Phys. B</i> 11, 3033 (1978) Argentina

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1552	E83 $\alpha + SO_2$ E89 $\alpha + SO_2$	E	2.6-4 eV	Sison, B.; Azria, R.; Yvanc, M. Interferences in the resonant vibrational excitation of SO_2 . <i>J. Phys. B</i> 11, L861 (1978) France
1553	E12 $\alpha^+ + He$	T	8-14 eV	Comptoux, R. E.; Dubau, J. Positron-neon elastic scattering. <i>J. Phys. B</i> 11, L867 (1978) Romania
1554	F01 H_n^+	T		Bishop, D. R.; Cheung, L. P. Recost functions (including static dipole polarizabilities) and radiative corrections for H_n^+ . <i>J. Phys. B</i> 11, 3133 (1978) Canada
1555	A11 Undef	T	Undef	Siro, E. G.; Kohlmeier, G. R.; Neveh, E. A classical trajectory study of T-V energy transfer of a highly vibrationally excited Morse oscillator in collision with an atom. I. De-excitation processes. <i>J. Phys. B</i> 11, 3145 (1978) West Germany
1556	A03 Undef A04 Undef	T	Undef	Siro, E. G.; Kohlmeier, G. R.; Neveh, E. A classical trajectory study of T-V energy transfer of a highly vibrationally excited Morse oscillator in collision with an atom. II. Excitation and dissociation processes. <i>J. Phys. B</i> 11, 3168 (1978) West Germany
1557	A07 $Li + He$	E	1-100 keV	Nielson, E. E.; Anderson, R.; Andersen, T.; Olson, J. G.; Dabler, J. Z. Direct excitation of $Li\ 1\ (n\ell)$ levels in keV $Li-He$ collisions. <i>J. Phys. B</i> 11, 3187 (1978) Denmark
1558	A07 $He + Pb; He + Au; He + Ag; He + Mo; He + Cu$	T	0.7-35 MeV	Amundson, P. A. On the role of dipole transitions in the semiclassical approximation for K-shell ionization. <i>J. Phys. B</i> 11, 3197 (1978) Norway
1559	E06 Undef	E	Undef	Golden, L. R.; Sampson, D. R.; Delcroix, R. Ionization from the 3s sub-level of highly charged ions. <i>J. Phys. B</i> 11, 3235 (1978) United States
1560	E04 $\alpha + SF_6$ E05 $\alpha + SF_6$	E	150-230 eV	Nitchamk, A. P.; Brion, C. E.; van der Ziel, R. J. Ionic fragmentation of SF_6 ionized in the sulphur 2p shell. <i>J. Phys. B</i> 11, 3245 (1978) Canada
1561	G04 $O_2^+ + O_2; N_2^+ + N_2; He^+ + He; C_2H_2^+ + CD$	E	Thermal	Alger, S. R.; Stefansson, T.; Nees, J. A. Measurements of the lateral diffusion of O_2^+ ions in oxygen, N_2^+ , and He^+ ions in nitrogen, and CO^+ ions in carbon monoxide. <i>J. Phys. B</i> 11, 3285 (1978) United Kingdom
1562	H07 $He + He^+$	E	Undef	Frey, P.; Bruger, F.; Rotop, N. High resolution photoelectron spectroscopy from the retarding negative ion around the $He(2P_{3/2})$ threshold. <i>J. Phys. B</i> 11, L869 (1978) West Germany
1563	A06 $He^+ + Si$	T	0.4-2.4 MeV/amu	Lin, C. B. Quasi-molecular binding corrections to the two-state atomic expansion method for electron capture at low energies. <i>J. Phys. B</i> 11, L856 (1978) United States
1564	E06 $\alpha + Ar$ H06 $He + Ar$	T	Undef	McCarthy, I. E.; Uylings, P.; Paspa, R. Comparison of $(\alpha, 2\alpha)$, photoelectron and conventional spectroscopies for the Ar II ion. <i>J. Phys. B</i> 11, 3299 (1978) The Netherlands
1565	F02 H^+	T		Simola, J.; Virtanen, J. Energy levels of hydrogen atoms in a strong magnetic field. <i>J. Phys. B</i> 11, 3309 (1978) Finland
1566	A03 Undef	T		Galtman, S. Ionization dynamics of a model atom in an electrostatic field. <i>J. Phys. B</i> 11, 3323 (1978) United States
1567	H06 Undef	T	Undef	Goldberg, A.; Shore, B. V. Modelling laser ionization. <i>J. Phys. B</i> 11, 3339 (1978) United States

REF. NO.	REACTIONS	EXP OR THEORY	ENERGY RANGE	REFERENCE
1568	NO6 $\text{He} + \text{He}^+$	T	undef	Saha, S.; Dutta, K. K.; Barua, A. K. Photodissociation of He^+ by both electronic and vibrational transitions. <i>J. Phys. B</i> 11, 3349 (1978) India
1569	Al6 $\text{H}^+ + \text{H}; \text{H}^+ + \text{He}$	T	5-100 keV	Bell, K. L.; Kingston, A. E.; Redden, P. J. One-electron detachment from H^+ in collisions with atomic hydrogen and helium. <i>J. Phys. B</i> 11, 3367 (1978) United Kingdom
1570	NO6 $\text{O}_2^+ + \text{H}_2; \text{O}_2^+ + \text{O}_2; \text{O}_2^+ + \text{H}_2; \text{O}_2^+ + \text{O}_2$ $\text{NO}; \text{O}_2^+ + \text{CH}_4; \text{O}_2^+ + \text{CD}_4; \text{O}_2^+ + \text{Ar};$ $\text{NO}^+ + \text{H}_2; \text{NO}^+ + \text{O}_2; \text{NO}^+ + \text{H}_2; \text{NO}^+ + \text{O}_2$ $\text{NO}; \text{NO}^+ + \text{CH}_4; \text{NO}^+ + \text{CD}_4; \text{NO}^+ + \text{Ar};$ $\text{O}^+ + \text{H}_2; \text{O}^+ + \text{O}_2; \text{O}^+ + \text{H}_2; \text{O}^+ + \text{O}_2$ $\text{O}^+ + \text{CH}_4; \text{O}^+ + \text{CD}_4; \text{O}^+ + \text{Ar}$ Al1 $\text{O}_2^+ + \text{H}_2; \text{O}_2^+ + \text{O}_2; \text{O}_2^+ + \text{H}_2; \text{O}_2^+ + \text{O}_2$ $\text{NO}; \text{O}_2^+ + \text{CH}_4; \text{O}_2^+ + \text{CD}_4; \text{O}_2^+ + \text{Ar};$ $\text{NO}^+ + \text{H}_2; \text{NO}^+ + \text{O}_2; \text{NO}^+ + \text{H}_2; \text{NO}^+ + \text{O}_2$ $\text{NO}; \text{NO}^+ + \text{CH}_4; \text{NO}^+ + \text{CD}_4; \text{NO}^+ + \text{Ar};$ $\text{O}^+ + \text{H}_2; \text{O}^+ + \text{O}_2; \text{O}^+ + \text{H}_2; \text{O}^+ + \text{O}_2$ $\text{O}^+ + \text{CH}_4; \text{O}^+ + \text{CD}_4; \text{O}^+ + \text{Ar}$ Al3 $\text{O}_2^+ + \text{H}_2; \text{O}_2^+ + \text{O}_2; \text{O}_2^+ + \text{H}_2; \text{O}_2^+ + \text{O}_2$ $\text{NO}; \text{O}_2^+ + \text{CH}_4; \text{O}_2^+ + \text{CD}_4; \text{O}_2^+ + \text{Ar};$ $\text{NO}^+ + \text{H}_2; \text{NO}^+ + \text{O}_2; \text{NO}^+ + \text{H}_2; \text{NO}^+ + \text{O}_2$ $\text{NO}; \text{NO}^+ + \text{CH}_4; \text{NO}^+ + \text{CD}_4; \text{NO}^+ + \text{Ar};$ $\text{O}^+ + \text{H}_2; \text{O}^+ + \text{O}_2; \text{O}^+ + \text{H}_2; \text{O}^+ + \text{O}_2$ $\text{O}^+ + \text{CH}_4; \text{O}^+ + \text{CD}_4; \text{O}^+ + \text{Ar}$	E	Thermal	Clough, J.; Ruskitt, A. D.; Tully, M. D.; Adams, R. C.; Smith, D. Measurement of the rates of reaction of the ground and metastable excited states of O_2^+ , NO^+ and O^+ with atmospheric gases at thermal energy. <i>J. Phys. B</i> 11, 3365 (1978) United Kingdom
1571	EO3 $e + \text{He}; e + \text{H}_2$ E17 $e + \text{He}; e + \text{H}_2$	E	1.5-12.5 e.v.	Barlas, A. D.; Buchner, W. H. E.; Ballenstein, H. F. A critical evaluation of high energy electron impact spectroscopy of measured Compton profiles. <i>J. Phys. B</i> 11, 3381 (1978) United States
1572	EO2 $e + \text{H}$ E17 $e + \text{H}$	T	50-600 eV	Gupta, G. P.; Rother, K. C. Differential cross sections for the elastic scattering of electrons by hydrogen atoms at intermediate energies. <i>J. Phys. B</i> 11, 3401 (1978) India
1573	EO3 $e + \text{H}; e + \text{He}^+$	T	1.2-4 a.u.	Bransden, B. H.; Crocher, N.; McCarthy, I. E.; McDowell, M. R. C.; Morgan, L. A. Effective exchange potentials for inelastic scattering. <i>J. Phys. B</i> 11, 3411 (1978) United Kingdom
1574	EO3 $e + \text{He}$	T	20-100 eV	Bransden, B. H.; Dawan, D. Partial-wave analysis of the 2 1S and 2 3S excitation cross sections of helium by electron impact. <i>J. Phys. B</i> 11, 3425 (1978) United Kingdom
1575	EO3 $e + \text{Kr}$ EO5 $e + \text{Kr}$ E17 $e + \text{Kr}$	E	21-29 eV	Srivastava, S. K.; Trajmar, S. Electron impact excitation of autoionizing states of krypton. <i>J. Phys. B</i> 11, 3433 (1978) United States
1576	FO1 $\text{H}_2; \text{CO}$	T		Kendrick, J. Ab initio calculations of the derivative of the static polarizability of H_2 and CO . <i>J. Phys. B</i> 11, L601 (1978) United Kingdom
1577	NO4 Under NO7 Under	T	NO4 Under	Eberly, J. N. Application of extended two-level model theory to Doppler-, laser- and collision-broadened bound-bound multiphoton absorption. <i>J. Phys. B</i> 11, L611 (1978) United States
1578	AO3 $\text{Fe}^+ + \text{He}$ AO6 $\text{Fe}^+ + \text{He}$	E	7.5-36 MeV	Towers, N.; Richard, P.; Jamison, R. A.; Gray, T. J. Experimental differentiation between electron excitation and electron capture by one electron (Fe^+) ions in He . <i>J. Phys. B</i> 11, L615 (1978) United States
1579	AO6 $\text{H}^+ + \text{H}$	T	15 MeV/cm	Shohasht, R.; Spruch, L. Continuous electron capture at high impact velocities. <i>J. Phys. B</i> 11, L621 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1500	E12 $e^+ + He$	E	1.0-5.5 eV	Wilson, R. G. Scattering of low-energy positrons from helium atoms. <i>J. Phys. B</i> 11, L625 (1978) West Germany
1501	E12 $e^+ + He$	E	1-20 eV	Griffith, T. C.; Hayland, G. R.; Lines, R. S.; Henry, T. R. A reappraisal of the experimental cross sections for low-energy positron-helium scattering. <i>J. Phys. B</i> 11, L626 (1978) United Kingdom
1502	E83 $e + He$	E	2-500 eV	Stumpf, R.; Becker, R.; Schulz, G. Electron impact excitation of the spectral resolved He-B lines. <i>J. Phys. B</i> 11, L630 (1978) West Germany
1503	F01 Cr; Fe; Ni	T		Abbott, R. C. The structure and transition probabilities of ionized Cr, Fe and Ni. <i>J. Phys. B</i> 11, 3499 (1978) United States
1504	A83 $H^+ + H_2; Ar + TiF$	T	3.7 eV	Dickinson, A. D.; Richards, S. On an R-conserving approximation in time-dependent theories of rotational excitation in atom-molecule collisions. <i>J. Phys. B</i> 11, 3643 (1978) United Kingdom
1505	A87 $H^+ + H$	T	25-200 keV	Bellic, B. A quantum theory of ionization in fast collisions between ions and atomic systems. <i>J. Phys. B</i> 11, 3629 (1978) Yugoslavia
1506	A17 $He^{2+} + He; Kr^+ + Kr$	T	Under	Nikulin, V. K.; Gushina, B. A. Diabatic correlation diagrams for the quasi-molecular description of ion-atom collisions. <i>J. Phys. B</i> 11, 3663 (1978) Soviet Union
1507	A86 $H^{3+} + H; C^{6+} + H; N^{7+} + H; O^{8+} + H; He^{10+} + H; Si^{14+} + H$	T	Under	Greenland, P. T. Highly stripped ions on hydrogen atoms: the adiabatic approach. I. Energy gap and couplings of pseudocrossings. <i>J. Phys. B</i> 11, 3663 (1978) United Kingdom
1508	A86 $He^{2+} + F$	T	3-1000 keV	Greenland, P. T. Highly stripped ions on hydrogen atoms: the adiabatic approach II. Energy gap and couplings of pseudocrossings. <i>J. Phys. B</i> 11, 3673 (1978) United Kingdom
1509	H86 Under	T	Under	Seliver, T. V.; Pavlitchukov, A. V.; Levin, V. G.; Rudachenko, V. G. A study of the two-electron Fourier coefficients of atomic and molecular wave functions using the (y, 2x) and (x, 2y) processes at high energies. <i>J. Phys. B</i> 11, 3687 (1978) Soviet Union
1500	D87 $e + He$ E11 $He^+ + He$	E	R11 510-400 nm	Langendon, P. J. A.; van der Vlist, R. J. Fine structure of the near 16.6-16.7 eV resonances resolved by means of resonant free-free radiative absorptions. <i>J. Phys. B</i> 11, 3673 (1978) The Netherlands
1501	E84 $e + H_2^+; e + H_2^+$ E86 $e + H_2^+; e + H_2^+$	E	0.3-1.6 eV	Nath, D.; Chen, S. U.; Hasted, J. B. Dissociation recombination in low-energy $e-H_2^+$ collisions. <i>J. Phys. B</i> 11, 3616 (1978) United Kingdom
1502	E83 $e + HCl; e + HF$	T	0-5 eV	Fabrikant, I. I. The influence of long-range interaction on the vibrational excitation of polar molecules by electrons. <i>J. Phys. E</i> 11, 3621 (1978) Soviet Union
1503	F01 Under			Picart, J.; Edwards, A. R.; Tran Minh, H. Extrapolation to high principal quantum numbers of radial integrals in the Coulomb approximation. <i>J. Phys. B</i> 11, L661 (1978) France
1504	A86 $He^+ + H^+$	T	0.1-1000 keV	Crathorn, D. S. F.; Todd, R. R. Response to Ritchie and Ramthun: total cross sections for proton- He^+ charge transfer. <i>J. Phys. B</i> 11, L663 (1978) United Kingdom
1505	A86 $He^{2+} + He^+$	E	13-1700 eV	Jegou, A.; Brault, F.; Saut, L. Charge exchange in low energy He^+-He^{2+} collisions. <i>J. Phys. B</i> 11, L669 (1978) Belgium

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1595	A13 $H^+ + H^-$	E	0.001-3.0 eV	Poulart, C.; Breuille, F.; Cloupe, R.; McMan, J. R.; van Haesebroeck, G. H_2^+ formation in low energy H^+-H^- collisions. <i>J. Phys. B</i> 11, L671 (1978) Belgium
1597	E92 $e + H_2^+$	T	0.2-1.0 Ry	Yokagi, H.; Nakamura, H. Elastic scattering of electrons from H_2^+ : two-centre variational calculation of s-wave phase shift. <i>J. Phys. B</i> 11, L679 (1978) Japan
1598	E95 $e + C^{2+}$	E	30-1000 eV	Woodruff, P. R.; Hubert, M.-C.; Harrison, M. F. A.; Bruch, E. A measurement of the cross section for electron impact ionization of C^{2+} . <i>J. Phys. B</i> 11, L679 (1978) United Kingdom
1599	F01 $He; B; C$	T		Eggarter, T. P.; Eggarter, E. Atomic correlation energies IV: perturbations and near degeneracy. <i>J. Phys. B</i> 11, 3635 (1978) France
1600	E92 $e + H_2$	T	11-11.75 eV	Firdley, J. R.; Cohen, J. S. Variational calculations of resonant states of H_2^+ . <i>J. Phys. B</i> 11, 3645 (1978) United States
1601	H02 $He + SF_6$	E	vuv	Kaneko, H.; Ishiguro, K.; Kume, R.; Sawabe, Y.; Nakamura, H. Absorption structures of SF_6 in the vuv region. <i>J. Phys. B</i> 11, 3655 (1978) Japan
1602	E92 $e + H$ E12 $e^+ + H$	T	0.01-0.7 a.u.	Abdel-Malek, H. A.; Delcroix, D. Least-squares calculations for e^+-H elastic scattering. <i>J. Phys. B</i> 11, 3677 (1978) West Germany
1603	E95 $e + He$	E	24-30 eV	Pichon, F.; Huels, A.; Jagan, G.; Landon, R. Near threshold ionization of helium by electron impact. <i>J. Phys. B</i> 11, 3683 (1978) France
1604	H05 $He + CO$	E	undef	Wilde, D. G.; Nicks, P. J.; Cooper, J.; Volpertshofer, A. Excited-electron spectroscopy of autoionizing states of CO using an electron-electron coincidence technique. <i>J. Phys. B</i> 11, 3683 (1978) United Kingdom
1605	E95 $e + CH_4; e + C_2H_4$ E93 $e + CH_4; e + C_2H_4$	E	18-22 eV	Barnett, P.; Blottie, L. Excited states of CH_4 and C_2H_4 between 18 and 22 eV. <i>J. Phys. B</i> 11, 3707 (1978) Canada
1606	E95 $e + Cl_2$ E99 $e + Cl_2$	E	0-100 eV	Korups, H. V.; Dulic, D. S. Electron-chlorine molecule total ionization and electron attachment cross sections. <i>J. Phys. B</i> 11, 3715 (1978) Yugoslavia
1607	G00 $e + Xe$	E	$304-412 \times 10^{-17}$ V/cm ²	Nakabe, Y.; Mori, T. Experimental and theoretical analysis of the electron energy distribution functions in Townsend discharges in xenon. <i>J. Phys. B</i> 11, 3785 (1978) Japan
1608	H02 $He + Li$	E	230-172 Å	Rohlf, G.; Edler, D. L.; Schaefer, E. S.; Cooper, J. R. The K-edge photoabsorption cross section of lithium vapour. <i>J. Phys. B</i> 11, L689 (1978) United States
1609	A19 $Kr + Kr; Kr + Xe$	T	230-2900 eV	Fortner, R. J.; Ueberall, P.; Savin, F. V. Production of krypton L vacancies in Kr-Kr and Kr-Xe collisions. <i>J. Phys. B</i> 11, L697 (1978) United States
1610	A05 $He^+ + F_2$	E	undef	Johnston, S.; Litzen, U. Observations of charge transfer reactions through measurement of spectral lines. <i>J. Phys. B</i> 11, L703 (1978) Sweden
1611	E95 $e + O$	T	530 eV	Burnett, T.; Rowntree, S. P. Triple-differential cross sections for electron impact ionization of atomic oxygen. <i>J. Phys. B</i> 11, L707 (1978) United States

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
1612	292 $\alpha + \text{Hg}$	E	5-2 eV	Middle, D. V. D. The 5-2 eV resonance in electron-neutron scattering. J. Phys. B 11, L711 (1978) United Kingdom
1613	A12 $\text{K} + \text{Ar}; \text{K} + \text{Kr}; \text{K} + \text{Xe}; \text{K} + \text{Rn}; \text{K} + \text{Ne}; \text{K} + \text{He}$	E	Thermal	Lain, R.; McCarty, D. C. Collision broadening of the potassium resonance lines by noble gases. J. Phys. B 11, 3601 (1978) United Kingdom
1614	H97 $\text{He} + \text{H}^+$	T	0.001-0.7 Ry	Stewart, A. L. A perturbation-theory study of photoattachment from H^+ . J. Phys. B 11, 3601 (1978) United Kingdom
1615	A11 $\text{He}^+ + \text{He}; \text{He}^+ + \text{Ne}$	T	Under	Barnard, J.; Lombard, R. Theoretical cross sections for collisional angular momentum transfer in atomic hydrogen states. J. Phys. B 11, 3675 (1978) West Germany
1616	H96 $\text{He}^{2+} + \text{H}^+$	T	170-6000 eV	Bayard, R. E.; Hearn, J. C. Electron capture from H^+ by fast alpha particles. J. Phys. B 11, 3689 (1978) United Kingdom
1617	H95 $\text{He}^+ + \text{Ne}; \text{H}^+ + \text{Ar}$	T	200-6000 eV	Ballic, D.; Kella, A. Differential cross sections for charge exchange at high energies. J. Phys. B 11, 3695 (1978) Yugoslavia
1618	E93 $\alpha + \text{O}_2$	E	20-600 eV	Uchiye, K. Differential and integral cross sections for the electron impact excitation of O_2 I. Optically allowed transitions from the ground state. J. Phys. B 11, 3613 (1978) Japan
1619	E93 $\alpha + \text{O}_2$	E	4.5-7.1 eV	Uchiye, K. Differential and integral cross sections for the electron impact excitation of O_2 II. Optically forbidden transitions from the ground state. J. Phys. B 11, 3631 (1978) Japan
1620	G94 $\text{He}_2^+ + \text{He}; \text{He}_2^+ + \text{Ne}; \text{Ar}_2^+ + \text{Ar}; \text{Kr}_2^+ + \text{Kr}$	E	77-295 K	Hain, R.; Elford, R. T. Mobilities and reactions of diatomic rare-gas ions in their parent gases, helium, neon, argon and krypton. J. Phys. B 11, 3639 (1978) Australia
1621	H94 $\text{He} + \text{O}$	T	Under	Proctor, A. K. Photoionization cross section of atomic oxygen. J. Phys. B 11, L729 (1978) United Kingdom
1622	H93 $\text{He} + \text{Pb}$	E	Under	Locket, J. Microscence induite par laser de la molecule Pb_2 . J. Phys. B 11, L732 (1978) France
1623	H97 $\text{Xe} + \text{Pb}$	E	640 keV	Amundsen, P. A. Impact-parameter dependence of K-shell vacancy production in the heavy partner in ion-atom collisions. J. Phys. B 11, L737 (1978) Norway
1624	H97 $\text{He}^+ + \text{Ar}; \text{Ne} + \text{Ar}; \text{Li}^+ + \text{Ar}; \text{Li} + \text{Ar}; \text{He}^+ + \text{Ar}; \text{Ne} + \text{Ar}; \text{He}^+ + \text{Ar}; \text{Ne} + \text{Ar}; \text{K}^+ + \text{Ar}; \text{K} + \text{Ar}; \text{Ar}^+ + \text{Ne}$	E	1-15 keV	Jorgensen, K.; Andersen, H.; Olsen, J. B. Autoionizing levels in argon excited by low-energy heavy-ion impact. J. Phys. B 11, 3661 (1978) Denmark
1625	H93 $\text{He} + \text{Pb}; \text{He} + \text{Te}; \text{He} + \text{Sn}; \text{He} + \text{Zr}$	E	145 keV	Prasad, R. S.; Raju, G. K.; Narasimha Murthy, K.; Narasimha Murthy, V. A.; Lakshminarayana, V. Elastic scattering of 145 keV gamma rays. J. Phys. B 11, 3669 (1978) India
1626	A16 $\text{He} + \text{H}^+$	T	1.1-1000 eV	Bell, K. L.; Kingston, A. E.; Madden, P. J. Electron detachment from H^+ ions by proton impact. J. Phys. B 11, 3677 (1978) United Kingdom
1627	A99 $\text{H} + \text{He}; \text{H} + \text{Ne}; \text{H} + \text{Ar}; \text{H} + \text{Kr}; \text{H} + \text{Xe}; \text{He} + \text{He}; \text{He} + \text{Ne}; \text{He} + \text{Ar}; \text{He} + \text{Kr}; \text{He} + \text{Xe}; \text{Ne} + \text{He}; \text{Ne} + \text{Ne}; \text{Ne} + \text{Ar}; \text{Ne} + \text{Kr}; \text{Ne} + \text{Xe}; \text{Ar} + \text{He}; \text{Ar} + \text{Ne}; \text{Ar} + \text{Ar}; \text{Ar} + \text{Kr}; \text{Ar} + \text{Xe}; \text{Kr} + \text{He}; \text{Kr} + \text{Ne}; \text{Kr} + \text{Ar}; \text{Kr} + \text{Kr}; \text{Kr} + \text{Xe}; \text{Xe} + \text{He}; \text{Xe} + \text{Ne}; \text{Xe} + \text{Ar}; \text{Xe} + \text{Kr}; \text{Xe} + \text{Xe}; \text{He} + \text{He}; \text{He} + \text{Ne}; \text{He} + \text{Ar}; \text{He} + \text{Kr}; \text{He} + \text{Xe}; \text{Ne} + \text{He}; \text{Ne} + \text{Ne}; \text{Ne} + \text{Ar}; \text{Ne} + \text{Kr}; \text{Ne} + \text{Xe}; \text{Ar} + \text{He}; \text{Ar} + \text{Ne}; \text{Ar} + \text{Ar}; \text{Ar} + \text{Kr}; \text{Ar} + \text{Xe}; \text{Kr} + \text{He}; \text{Kr} + \text{Ne}; \text{Kr} + \text{Ar}; \text{Kr} + \text{Kr}; \text{Kr} + \text{Xe}; \text{Xe} + \text{He}; \text{Xe} + \text{Ne}; \text{Xe} + \text{Ar}; \text{Xe} + \text{Kr}; \text{Xe} + \text{Xe}; \text{He} + \text{He}; \text{He} + \text{Ne}; \text{He} + \text{Ar}; \text{He} + \text{Kr}; \text{He} + \text{Xe}; \text{Ne} + \text{He}; \text{Ne} + \text{Ne}; \text{Ne} + \text{Ar}; \text{Ne} + \text{Kr}; \text{Ne} + \text{Xe}; \text{Ar} + \text{He}; \text{Ar} + \text{Ne}; \text{Ar} + \text{Ar}; \text{Ar} + \text{Kr}; \text{Ar} + \text{Xe}; \text{Kr} + \text{He}; \text{Kr} + \text{Ne}; \text{Kr} + \text{Ar}; \text{Kr} + \text{Kr}; \text{Kr} + \text{Xe}; \text{Xe} + \text{He}; \text{Xe} + \text{Ne}; \text{Xe} + \text{Ar}; \text{Xe} + \text{Kr}; \text{Xe} + \text{Xe}; \text{He} + \text{He}; \text{He} + \text{Ne}; \text{He} + \text{Ar}; \text{He} + \text{Kr}; \text{He} + \text{Xe}; \text{Ne} + \text{He}; \text{Ne} + \text{Ne}; \text{Ne} + \text{Ar}; \text{Ne} + \text{Kr}; \text{Ne} + \text{Xe}; \text{Ar} + \text{He}; \text{Ar} + \text{Ne}; \text{Ar} + \text{Ar}; \text{Ar} + \text{Kr}; \text{Ar} + \text{Xe}; \text{Kr} + \text{He}; \text{Kr} + \text{Ne}; \text{Kr} + \text{Ar}; \text{Kr} + \text{Kr}; \text{Kr} + \text{Xe}; \text{Xe} + \text{He}; \text{Xe} + \text{Ne}; \text{Xe} + \text{Ar}; \text{Xe} + \text{Kr}; \text{Xe} + \text{Xe}; \text{He} + \text{He}; \text{He} + \text{Ne}; \text{He} + \text{Ar}; \text{He} + \text{Kr}; \text{He} + \text{Xe}; \text{Ne} + \text{He}; \text{Ne} + \text{Ne}; \text{Ne} + \text{Ar}; \text{Ne} + \text{Kr}; \text{Ne} + \text{Xe}; \text{Ar} + \text{He}; \text{Ar} + \text{Ne}; \text{Ar} + \text{Ar}; \text{Ar} + \text{Kr}; \text{Ar} + \text{Xe}; \text{Kr} + \text{He}; \text{Kr} + \text{Ne}; \text{Kr} + \text{Ar}; \text{Kr} + \text{Kr}; \text{Kr} + \text{Xe}; \text{Xe} + \text{He}; \text{Xe} + \text{Ne}; \text{Xe} + \text{Ar}; \text{Xe} + \text{Kr}; \text{Xe} + \text{Xe}; \text{He} + \text{He}; \text{He} + \text{Ne}; \text{He} + \text{Ar}; \text{He} + \text{Kr}; \text{He} + \text{Xe}; \text{Ne} + \text{He}; \text{Ne} + \text{Ne}; \text{Ne} + \text{Ar}; \text{Ne} + \text{Kr}; \text{Ne} + \text{Xe}; \text{Ar} + \text{He}; \text{Ar} + \text{Ne}; \text{Ar} + \text{Ar}; \text{Ar} + \text{Kr}; \text{Ar} + \text{Xe}; \text{Kr} + \text{He}; \text{Kr} + \text{Ne}; \text{Kr} + \text{Ar}; \text{Kr} + \text{Kr}; \text{Kr} + \text{Xe}; \text{Xe} + \text{He}; \text{Xe} + \text{Ne}; \text{Xe} + \text{Ar}; \text{Xe} + \text{Kr}; \text{Xe} + \text{Xe}; \text{He} + \text{He}; \text{He} + \text{Ne}; \text{He} + \text{Ar}; \text{He} + \text{Kr}; \text{He} + \text{Xe}; \text{Ne} + \text{He}; \text{Ne} + \text{Ne}; \text{Ne} + \text{Ar}; \text{Ne} + \text{Kr}; \text{Ne} + \text{Xe}; \text{Ar} + \text{He}; \text{Ar} + \text{Ne}; \text{Ar} + \text{Ar}; \text{Ar} + \text{Kr}; \text{Ar} + \text{Xe}; \text{Kr} + \text{He}; \text{Kr} + \text{Ne}; \text{Kr} + \text{Ar}; \text{Kr} + \text{Kr}; \text{Kr} + \text{Xe}; \text{Xe} + \text{He}; \text{Xe} + \text{Ne}; \text{Xe} + \text{Ar}; \text{Xe} + \text{Kr}; \text{Xe} + \text{Xe}; \text{He} + \text{He}; \text{He} + \text{Ne}; \text{He} + \text{Ar}; \text{He} + \text{Kr}; \text{He} + \text{Xe}; \text{Ne} +$			

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
1628	A93 $\text{He}^+ + \text{He}$	T	10-300 keV	Fritsch, W.; Wille, M. Coupled-state calculations in a molecular basis: 2s vacancy production in slow $\text{He}^+ + \text{He}$ collisions. <i>J. Phys. B</i> 11, 4615 (1978) West Germany
1629	A97 $\text{He}^+ + \text{He}$	T	0.4-3.0 keV	Briggs, J. S.; Drapper, F. Asymptotic form of the cross section for electron loss into the forward direction. <i>J. Phys. B</i> 11, 4633 (1978) United Kingdom
1630	A95 $\text{He}^+ + \text{He}_2^-$ A13 $\text{He}^+ + \text{He}_2^-$	E	300 K	Smith, D.; Adams, R. G.; Church, N. J. On the emission of radiation from the neutralization reaction $\text{He}^+ + \text{He}_2^-$. <i>J. Phys. B</i> 11, 4641 (1978) United Kingdom
1631	E93 $e + \text{He}$	E	57-68 eV	Roy, R.; Balaga, A.; Corvetti, J.-D. Influence of the He ⁺ resonance in the post-collision interaction process. <i>J. Phys. B</i> 11, 4669 (1978) France
1632	E91 Undef	T	Undef	Sutton, R. J. Quantum defect theory: XI. Clarification of some aspects of the theory. <i>J. Phys. B</i> 11, 4667 (1978) United Kingdom
1633	E91 $e + \text{He}^+$	T	Undef	Dobek, J. Quantum defect theory: XII. Complex quantum defects for the $\text{He}^+ + e^-$ system. <i>J. Phys. B</i> 11, 4655 (1978) France
1634	E92 $e + \text{H}_2\text{S}$ E93 $e + \text{H}_2\text{S}$ E17 $e + \text{H}_2\text{S}$	E	0.2-10 eV	Bohr, K. Differential scattering experiments for e-H ₂ S collisions in the low-energy range. <i>J. Phys. B</i> 11, 4189 (1978) West Germany
1635	E98 $e + \text{Ar}^+$	E	Undef	Chiang, W. Y.; Griem, R. R. Observations of line-continuum interference effect in the wings of argon ion lines. <i>J. Phys. B</i> 11, 1761 (1978) United Kingdom
1636	H96 $\text{He} + \text{Xe}$	T	70-100 eV	Johnson, W. B.; Radajovic, V. Photoelectron branching ratio in the 4d subshell of neon. <i>J. Phys. B</i> 11, 1773 (1978) United States
1637	E92 $e + \text{H}_2$; $e + \text{H}_2$	T	0.01-1 Ry	Collins, L. A.; Robb, W. D.; Morrison, R. A. Low-energy electron scattering by H ₂ and H ₂ ⁺ : an iterative static-exchange calculation. <i>J. Phys. B</i> 11, 1777 (1978) United States
1638	F91 H^+ ; He ; He^+ ; H^+	T		Connolly, N. J.; Lipky, L. Widths and configuration mixings of two-electron systems below the n=2 threshold. <i>J. Phys. B</i> 11, 4136 (1978) Ireland
1639	H96 $\text{He} + \text{Li}$; $\text{He} + \text{He}$	T	1-14 eV	Schwarz, C. V.; Kulander, K. C. Coupler-coordinate study of photoionization of Li and He using one-electron pseudo-potentials. <i>J. Phys. B</i> 11, 4155 (1978) United Kingdom
1640	H96 $\text{He} + \text{He}^+$	T	Undef	Glean, T.; Lambropoulos, P.; Whalley, S. L.; Rowntree, S. P. Theory of three-photon ionization of 2S metastable helium. <i>J. Phys. B</i> 11, 4167 (1978) United States
1641	A93 $\text{He}^{2+} + \text{He}$	T	0.3-30 keV	Koike, F.; Nakamura, N.; Kawa, S.; Itohara, Y.; Matsuzawa, R.; Sato, M.; Shimamura, I. Theoretical study of two-electron excitation in $\text{He}^{2+} + \text{He}$ collisions. <i>J. Phys. B</i> 11, 4193 (1978) Japan
1642	A92 $\text{He}^+ + \text{He}$; $\text{He}^{2+} + \text{He}$; $\text{He}^{3+} + \text{He}$; $\text{He}^{4+} + \text{He}$; $\text{He}^{5+} + \text{He}$; $\text{He}^{6+} + \text{He}$; $\text{He}^{7+} + \text{He}$; $\text{He}^{8+} + \text{He}$; $\text{He}^{9+} + \text{He}$; $\text{He}^{10+} + \text{He}$	E	25-600 keV	Blaeden, E.; Winter, H.; de Haer, F. J.; Fortner, R.; Salop, A. Outer s-subshell vacancy production in collisions of multiply charged neon and argon ions with neon and argon. <i>J. Phys. B</i> 11, 4207 (1978) The Netherlands

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
1643	A03 Na ²⁺ + Au A07 Na ²⁺ + Au A10 Na ²⁺ + Au	E	15-29 MeV	Bauer, K. G.; Farly, Q.; Hammen, L.; Scherbo, P. L. Small ionization probability of gold by alpha particles of 12-29 MeV. <i>J. Phys. B</i> 11, 4227 (1978) West Germany
1644	A13 Na ²⁺ + H ₂ O; H ⁺ + O ₂ ; C ⁺ + O ₂ ; C ⁺ + O ₂ ; C ⁺ + CO ₂ ; H ₂ N ⁺ + CO ₂	E	100-300 K	Makshut, A. B.; Stock, M. R. P.; Worsing, R. P.; Tully, M. B. Some ion-molecule reaction rate coefficient measurements at 300 and 100 K in a temperature-variable flowing-afterglow apparatus. <i>J. Phys. B</i> 11, 4237 (1978) United Kingdom
1645	A06 H ⁺ + H; H ⁺ + Na ²⁺ ; H ⁺ + Li ²⁺ ; H ⁺ + Ba ²⁺ ; H ⁺ + Sr ²⁺ ; H ⁺ + Cs ⁺ ; H ⁺ + Na ⁺ ; H ⁺ + Li ⁺ ; H ⁺ + Fe ²⁺ A18 H ⁺ + H; H ⁺ + Na ²⁺ ; H ⁺ + Li ²⁺ ; H ⁺ + Ba ²⁺ ; H ⁺ + Sr ²⁺ ; H ⁺ + Cs ⁺ ; H ⁺ + Na ⁺ ; H ⁺ + Li ⁺ ; H ⁺ + Fe ²⁺	T	23-100000 eV	Lai, H.; Tripathi, A. N.; Srivastava, M. K. Charge-transfer cross sections for protons colliding with hydrogenic ions I. <i>J. Phys. B</i> 11, 4249 (1978) India
1646	F01 Na	T		Winkler, P.; Yarin, R. Electron scattering resonances using dilatation transformations: III. Variational study of the stability of resonance eigenvalues. <i>J. Phys. B</i> 11, 4257 (1978) West Germany
1647	E02 e + Hg ²⁺ ; e + Ca ²⁺ ; e + Sr ²⁺ ; e + Ba ²⁺ E03 e + Hg ²⁺ ; e + Ca ²⁺ ; e + Sr ²⁺ ; e + Ba ²⁺	T	Under	Burgess, A.; Tully, J. A. On the Bethe approximation. <i>J. Phys. B</i> 11, 4271 (1978) United Kingdom
1648	E03 e + Se; e + Na; e + Er; e + Bi	E	300-600 keV	Ricz, S.; Schlenk, B.; Beranyi, B.; Vaisch, A.; Koch, G.; Self et al. H ₂ , S. A. H ₂ x-ray production cross section for Se, Na, Er and Bi at several hundred keV electron impact. <i>J. Phys. B</i> 11, 4283 (1978) Hungary
1649	F01 H Seq; Na Seq; Li Seq; Ba Seq; Na Seq; Co Seq; Fe ²⁺ ; Fe ³⁺ ; Fe ⁴⁺ ; Fe ⁵⁺ ; Fe ⁶⁺ ; Fe ⁷⁺ ; Fe ⁸⁺ ; Fe ⁹⁺ ; Fe ¹⁰⁺ ; Fe ¹¹⁺ ; Fe ¹²⁺ ; Fe ¹³⁺ ; Fe ¹⁴⁺ ; Fe ¹⁵⁺ ; Fe ¹⁶⁺ ; Fe ¹⁷⁺ ; Fe ¹⁸⁺ ; Fe ¹⁹⁺ ; Fe ²⁰⁺	E		Balke, V. A.; Fomov, A. Y.; Pikhov, S. A. X-ray spectroscopy of multiply-charged ions from laser plasmas. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 19, 11 (1978) Soviet Union
1650	A12 H ₂ + Na W02 hν + H ₂ ; hν + [H ₂ + Na]	E	A12 339 K W02 20-900 cm ⁻¹	Birnbaum, G. Far-infrared absorption in H ₂ and H ₂ -H ₂ mixtures. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 19, 51 (1978) United States
1651	W02 hν + O ₂ A12 O ₂ + O ₂	T	W02 9-60 GHz A12 307 K	Nizeshian, R. Pressure-induced absorption of microwave radiation by the oxygen molecule. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 19, 63 (1978) United States
1652	F01 N	E		Abdelish, M. N.; Hermet, J. M. The behavior of nitrogen excited in an inductively coupled argon plasma. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 19, 83 (1978) France
1653	W06 hν + Fe ²⁺ ; hν + Fe ³⁺ ; hν + Fe ⁴⁺ ; hν + Fe ⁵⁺ ; hν + Fe ⁶⁺ ; hν + Fe ⁷⁺	T	0.1-10.0 keV	Nachner, U. F.; Argo, M. F.; Olson, L. B. Photoelectric cross sections for ions cooled from their neutral atoms. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 19, 93 (1978) United States
1654	E01 e + N	T	0-1.4 eV	John, T. L.; Williams, R. J. Bremsstrahlung by neutral atomic nitrogen. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 19, 95 (1978) United Kingdom
1655	E03 e + Co ²⁺ ; e + Fe ²⁺ ; e + Zn ²⁺ ; e + Kr ²⁺ ; e + Na ²⁺	T	0.04-20.0 keV	Blahe, M.; Dwyer, J. Electron impact excitation of highly charged cadmium-like ions. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 19, 227 (1978) United States
1656	A12 Li ²⁺ + Ar; Li ²⁺ + Na A17 Li ²⁺ + Ar; Li ²⁺ + Na	E	400-1100 K	Ebby, M.; Moniger, S. Broadening and shift of lines of the principal series of neutral lithium atom produced by collision with helium and argon. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 19, 247 (1978) France

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1657	NO2 hv + CH ₄	E	4350-10600 Å	Giver, L. P. Intensity measurements of the CH ₄ bands in the region 4350 Å to 10,600 Å. J. Quant. Spectrosc. Radiat. Transfer 19, 311 (1978) United States
1658	NO2 hv + SO ₂ A12 SO ₂ ⁺ + SO ₂ ; SO ₂ ⁺ + H ₂ ; SO ₂ ⁺ + H ₂ O	E	NO2 91.5-95.5 GHz A12 295 K	Meier, D. Linewidth and intensity measurements of SO ₂ lines at 94 GHz with self-broadening and broadening by H ₂ O and H ₂ . J. Quant. Spectrosc. Radiat. Transfer 19, 323 (1978) Switzerland
1659	NO4 hv + Na; hv + Na; hv + Ar; hv + Kr; hv + Xe NO2 hv + Na; hv + Na; hv + Ar; hv + Kr; hv + Xe	T	18000-300 Å	Hofmann, D. Emission continua of rare gas plasmas. J. Quant. Spectrosc. Radiat. Transfer 19, 339 (1978) West Germany
1660	NO2 Undef	T	330 K	Berard, M.; Lallemand, P. Influence of the use of approximate trajectories for binary collision calculations. J. Quant. Spectrosc. Radiat. Transfer 19, 367 (1978) France
1661	NO1 N F02 N	T		Dimitrijevic, N. S.; Grcic, P. Long-range potentials and Stark broadening of neutral lines. J. Quant. Spectrosc. Radiat. Transfer 16, 467 (1978) Yugoslavia
1662	A12 Co ⁺ + Ar	T	300 K	Postan, A.; Ben-Aryeh, Y. A translational heat bath model for foreign gas broadening of spectral lines—III. U. K. D. approximation for satellite bands. J. Quant. Spectrosc. Radiat. Transfer 19, 431 (1978) Israel
1663	A17 Al + O	T	Undef	Murthy, M. S.; Bagaro, S. P.; Murthy, B. N. Dissociation energy for the ground state of AlO from true potential energy curve. J. Quant. Spectrosc. Radiat. Transfer 19, 485 (1978) India
1664	NO2 hv + N ₂ ; hv + O ₂ ; hv + NO; hv + H ₂ O; hv + C; hv + N; hv + O; hv + F; hv + Cl	E	50-340 Å	Cole, B. E.; Dexter, R. W. Empirical photoabsorption cross sections for C, N, O, F and Cl obtained from molecular measurements between 50 and 340 Å. J. Quant. Spectrosc. Radiat. Transfer 19, 467 (1978) United States
1665	N13 hv + hv	T	Undef	Elmeri, D. Photon-photon scattering in effective-photon theory. J. Quant. Spectrosc. Radiat. Transfer 19, 473 (1978) United States
1666	F02 Al	E		Bach, T. Stark broadening of the J1 resonance lines. J. Quant. Spectrosc. Radiat. Transfer 19, 483 (1978) France
1667	A12 CO ₂ ⁺ + Ar; CO ₂ ⁺ + H ₂ ; CO ₂ ⁺ + CO ₂	E	197-294 K	Valero, F. P. J.; Saez, C. B. Measurement at different temperatures of absolute intensities, line half-widths, and broadening by Ar and H ₂ for the 2000 ₁₂₁ (left arrow) 0000 band of CO ₂ . J. Quant. Spectrosc. Radiat. Transfer 19, 575 (1978) United States
1668	F02 Undef A12 Undef	T	A12 Undef	Rozonyal, B. Y. Spectrum profiles in the presence of Stark, Lorentz and Doppler broadening. J. Quant. Spectrosc. Radiat. Transfer 19, 641 (1978) United States
1669	A12 Co ⁺ + Xe A17 Co ⁺ + Xe	E	298 K	Erton, R. J.; Snow, V. L. Line shapes (absorption coefficients) for satellites and inversion of the data to obtain interaction potentials. J. Quant. Spectrosc. Radiat. Transfer 20, 1 (1978) United States
1670	A12 HCl + HCl; HCl + HF; HF + HCl; HF + HF	E	298 K	Guelachvili, G.; Smith, M. A. M. Measurements of pressure-induced shifts in the 1-0 and 2-0 bands of H ¹⁹ F and in the 2-0 bands of H ³⁵ Cl and H ³⁷ Cl. J. Quant. Spectrosc. Radiat. Transfer 20, 31 (1978) France
1671	NO4 2hv + Na	E	1800 K	van Dijk, C. A.; Zoegers, P. J. T.; Nienhuis, G.; Alkenede, C. T. J. Two-photon excitation of Na atoms in a flame by broad-band laser irradiation. J. Quant. Spectrosc. Radiat. Transfer 20, 81 (1978) The Netherlands

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1672	F01 Co; Au	T		Nigamish, J. Relativistic oscillator strengths for some transitions in Cu(I), Ag(I) and Au(I). J. Quant. Spectrosc. Radiat. Transfer 20, 61 (1978) Poland
1673	A12 $H_2O^+ + H_2 \rightarrow H_2O^+ + H_2$	T	300 K	Davies, R. V.; Gill, B. A. Theoretical calculations of H_2O line widths and pressure shifts: comparison of the Anderson theory with quantum many-body theory for H_2 and air-broadened lines. J. Quant. Spectrosc. Radiat. Transfer 20, 95 (1978) United States
1674	A12 $NO_2^+ + NO_2$ NO2 $h\nu \rightarrow NO_2$	E	A12 300 K NO2 93 GHz	Meier, D. Pressure broadening of the NO_2 hyperfine multiplet at 93 GHz. J. Quant. Spectrosc. Radiat. Transfer 20, 129 (1978) Switzerland
1675	A12 $CH_4 + CH_4$ NO2 $h\nu \rightarrow CH_4$	E	A12 300-2400 K NO2 3.39 μ m	Ballard, W. C.; Gardiner, W. C., Jr. Absorption of the 3.39 μ m CH_4 laser line by methane from 300 to 2400 K. J. Phys. Chem. 20, 136 (1978) United States
1676	F02 N	E		Callmann, E.; Labuhn, F. Stark broadening of nitrogen (I) vacuum-u.v. lines using a well-stabilized arc. J. Quant. Spectrosc. Radiat. Transfer 20, 205 (1978) West Germany
1677	A12 Ca + Ar; Rb + Ar; Co + Kr; Rb + Kr; Ca + Xe; Rb + Xe	T	300-563 K	Wu, C. Y. B.; Stuelley, V. C. Calculated pressure effects on spectral lines for long-range interatomic potentials: Rb and Co with heavy rare gases. J. Quant. Spectrosc. Radiat. Transfer 20, 211 (1978) United States
1678	NO4 $h\nu \rightarrow CaXe$; $h\nu \rightarrow Ca_2$	E	450-475 K	Exton, R. J.; Snow, W. L.; Hiliard, H. E. Laser excited fluorescence in the cesium-xenon excimer and the cesium dimer. J. Quant. Spectrosc. Radiat. Transfer 20, 235 (1978) United States
1679	NO2 $h\nu \rightarrow [O_2 + N_2]$ A12 $O_2^+ + N_2$	E	NO2 2500-2850 A ⁰ A12 230-354 K	Shardand Temperature effect on nitrogen-induced absorption of oxygen in the Herzberg continuum. J. Quant. Spectrosc. Radiat. Transfer 20, 265 (1978) United States
1680	A12 $NH_3^+ + Na$; $NH_3^+ + Ar$	T	300 K	Yamamoto, Y.; Cattani, N. Pressure broadening of the ammonia inversion spectrum by inert gases (Ne, Ar). J. Quant. Spectrosc. Radiat. Transfer 20, 271 (1978) Brazil
1681	A12 Under	T	Under	Nienhuis, G. Effects of the radiator motion in the classical and quantum-mechanical theories of collisional spectral-line broadening. J. Quant. Spectrosc. Radiat. Transfer 20, 275 (1978) The Netherlands
1682	F01 C	T		Cohen, M.; McEachern, R. P. Theoretical ionization energies and oscillator strengths for carbon. J. Quant. Spectrosc. Radiat. Transfer 20, 281 (1978) Canada
1683	F02 H	T		Sutton, K. Approximate line shapes for hydrogen. J. Quant. Spectrosc. Radiat. Transfer 20, 333 (1978) United States
1684	A12 Under	T	Under	Boulet, C.; Robert, P.; Coligny, L. On calculation of the molecular line shape in the wings. J. Quant. Spectrosc. Radiat. Transfer 20, 371 (1978) France
1686	NO2 $h\nu \rightarrow O_2$ F02 O_2	T	NO2 7620 A ⁰	Karp, A. H. Efficient computation spectral line shapes. J. Quant. Spectrosc. Radiat. Transfer 20, 379 (1978) United States
1686	E08 Under	T	Under	May, J. D. On the variation of spectral line widths within Stark-broadened multiplets. J. Quant. Spectrosc. Radiat. Transfer 20, 403 (1978) South Africa
1687	F02 C ⁺	E		Platin, M.; Popovic, M.; Konjovic, N. Experimental Stark widths of C(II) u.v. lines. J. Quant. Spectrosc. Radiat. Transfer 20, 477 (1978) Yugoslavia

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1688	E93 $e + Ar^+$ E97 $e + Ar^+$	E	2.6-3 eV	Jelly, J. Determination of the rate coefficients for the collisional excitation and de-excitation of the upper laser levels of Ar^+ . <i>J. Quant. Spectrosc. Radiat. Transfer</i> 20, 583 (1978) United States
1689	A12 $CO_2^+ + CO_2$	E	280-300 K	Pisquet, W. G.; Yettner, C. L.; Sacil, J. S. Temperature dependence of intensities and widths of N_2 -broadened lines in the 15 μm CO_2 band from tunable laser measurements. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 20, 547 (1978) United States
1690	F92 N^+	T		Ray, J. B.; Blaha, R. Stark broadening of nitrogen ion lines from states of high orbital angular momentum. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 20, 557 (1978) United States
1691	F91 Li Seq	T		Ali, R. A. Hartree-Fock energies of $^2D(sup o)$ and $^2P^o$ doubly excited states of the lithium isoelectronic sequence. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 20, 565 (1978) United States
1692	A12 $Na^+ + Na$	E	1660-2270 K	Jongerius, R. J.; Hollander, T.; Alkemade, C. T. J. Wing profile measurements of the Na doublet lines in $C_2H_2/O_2/N_2$, $H_2/O_2/N_2$, and N_2/O_2 at 1 atm. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 20, 559 (1978) The Netherlands
1693	H93 $Na + Na$	E	5890 Å	Jongerius, R. J.; van der Bij, J. J.; Hollander, T.; Alkemade, C. T. J. Rayleigh scattering by sodium vapour in flames. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 20, 609 (1978) The Netherlands
1694	E96 $e + Ar^+$	E	28000 K	Bohringer, K.; Thoms, P. Electron impact widths of some $Ar(II)u.v.$ -multiplets. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 20, 615 (1978) West Germany
1695	F91 $H^+; He^+$ E92 $e + H; e + He$	T	E92 20 eV	Junker, B. R.; Huang, C. L. Complex-coordinate method. Structure of the wave function. <i>Phys. Rev. A</i> 18, 313 (1978) United States
1696	F91 He	T		Madehra, J. W.; Spruch, L.; Shakeshaft, R. Application of an extremum principle to the variational determination of the generalized oscillator strengths of helium. <i>Phys. Rev. A</i> 18, 344 (1978) United States
1697	A97 $B^+ + P; B^+ + K; B^+ + Co; B^+ + Se;$ $B^+ + Ti; B^+ + V; B^+ + Mn; B^+ + Fe;$ $B^+ + Co; B^+ + Ni$	E	4-38 MeV	Amigold, G.; McDoniel, F. B.; Duggan, J. L.; Rice, R.; Telen, A.; Mants, R.; Miller, P. D. K-shell ionization of elements $_{25}Mn$ to $_{28}Ni$ for 0.4 to 3.8 MeV/sec ^{10}B -ion bombardment. <i>Phys. Rev. A</i> 18, 386 (1978) United States
1698	A97 $He^+ + H$ A17 $He^+ + H; He^+ + H^+$	T	A17 0.05 eV A17 0-0.32 hartree	Bienisch, R. J. Complex potential and electron spectrum in atomic collisions involving fast electronic transitions: Penning and associative ionization. <i>Phys. Rev. A</i> 18, 392 (1978) United States
1699	A97 $Kr + Xe$	T	42 MeV	Meyerhof, W. E. Ionization of the 3d I molecular orbital in heavy-ion collisions. <i>Phys. Rev. A</i> 18, 414 (1978) United States
1700	C92 $H^+ + Ge; H^+ + Se; H^+ + Pd; H^+ + Ag;$ $H^+ + Sb; H^+ + Bi; He^+ + Ge; He^+ + Se;$ $He^+ + Pd; He^+ + Ag; He^+ + Sb; He^+ + Bi$ C95 $H^+ + Ge; H^+ + Se; H^+ + Pd; H^+ + Ag;$ $H^+ + Sb; H^+ + Bi; He^+ + Ge; He^+ + Se;$ $He^+ + Pd; He^+ + Ag; He^+ + Sb;$ $He^+ + Bi$	E	20-260 keV	Eckardt, J. C. Energy loss and straggling of protons and helium ions traversing some thin solid foils. <i>Phys. Rev. A</i> 18, 425 (1978) Argentina
1701	A93 $He^+ + Hg; He^+ + Zn; He^+ + Hg; He^+ + Zn$	E	2-888 eV	Pyers, G. D.; Leventhal, J. J. Inelastic collisions of 2-888-eV He^+ and He^+ and Hg and Zr atoms. <i>Phys. Rev. A</i> 18, 434 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1702	E83 $e + Ar^+; e + Kr^+$	T	3-100 eV	Myman, M. A. Electron-impact excitation of metastable argon and krypton. <i>Phys. Rev. A</i> 10, 441 (1978) United States
1703	D66 $H^+ + He; H^+ + Ne; H_2^+ + He; H_2^+ + Ne$	E	0.2-10.0 keV	Lewy, S. Y.; Tolk, R. M.; Holland, W.; Tolly, J. C.; Kraus, J. S.; Hill, P. Optical radiation from low-energy hydrogen atomic and molecular ion-surface collisions. <i>Phys. Rev. A</i> 10, 447 (1978) United States
1704	E83 $e + H$ Seq; $e + He^+$	T	40-1000 eV	Thomas, E. K. Applications of the Coulomb-modified Glauber approximation to n=2 and n=3 excitation of hydrogenlike ions by incident electrons. II. <i>Phys. Rev. A</i> 10, 452 (1978) United States
1705	E82 $e + CaF; e + KI; e + LiF; e + NaF;$ $e + NaCl; e + LiCl$ E17 $e + CaF; e + KI; e + LiF; e + NaF;$ $e + NaCl; e + LiCl$ G89 $e + CaF; e + KI; e + LiF; e + NaF;$ $e + NaCl; e + LiCl$	T	E32; E17 0.13-20.0 eV G89 1.0 eV	Collins, L. A.; Norcross, D. U. Electron collisions with highly polar molecules: Comparison of model, static, and static-exchange calculations for alkali-metal halides. <i>Phys. Rev. A</i> 10, 467 (1978) United States
1706	A86 $H^+ + He; H^+ + Ar; H^+ + N$ A17 $H^+ + He; H^+ + Ar; H^+ + N$	T	120-6000 keV	Lin, C. B.; Seong, S. C. Differential cross sections for electron capture in fast proton-multielectron-atom collisions. <i>Phys. Rev. A</i> 10, 459 (1978) United States
1707	A07 $H + N_2; H + O_2$ A18 $H + N_2; H + O_2$	E	50-3000 eV	van Zyle, B.; Neumann, M.; Le, T. C.; Anne, R. C. $H + N_2$ and $H + O_2$ collisions: experimental charge-production cross sections and differential scattering calculation. <i>Phys. Rev. A</i> 10, 506 (1978) United States
1708	B07 $h\nu + e$	T		Jain, N.; Izser, N. Compton scattering in the presence of coherent electromagnetic radiation. <i>Phys. Rev. A</i> 10, 538 (1978) United States
1709	H03 $h\nu + He; h\nu + Ar; h\nu + Kr$	T	Under	Tong, B. Y.; Lee, L. Compton profiles of He, Ar, and Kr. <i>Phys. Rev. A</i> 10, 552 (1978) Canada
1710	F01 He	E		Rhayalich, G. A.; Smith, S. J. Radiative lifetime measurement of the $3^1S, 3^1D, 4^1S, 4^1F,$ and 5^1S excited states of helium. <i>Phys. Rev. A</i> 10, 569 (1978) United States
1711	H06 $h\nu + O; h\nu + N$	E	90-76 nm	Kohl, J. L.; Lefyotis, G. P.; Palenik, M. P.; Parkinson, U. W. Absolute cross section for photoionization of atomic oxygen. <i>Phys. Rev. A</i> 10, 571 (1978) United States
1712	F01 He	E		Fleurbaey, C.; Coulaud, G.; Chopelle, J. Observation of an ion effect in the profile of the $4471-A^0$ line of He I. <i>Phys. Rev. A</i> 10, 576 (1978) France
1713	H04 $h\nu + Fe; h\nu + Fe^{2+}; h\nu + Fe^{3+}; h\nu + Fe^{4+};$ $h\nu + Fe^{5+}; h\nu + Fe^{6+}; h\nu + Fe^{7+}; h\nu + Fe^{8+};$ $h\nu + Fe^{9+}; h\nu + Fe^{10+}; h\nu + Fe^{11+}$	T	0.8-11 keV	Bette, D. J.; McEnnen, J.; Pratt, S. M. Analytic description of photoeffect from atomic ions. <i>Phys. Rev. A</i> 10, 580 (1978) United States
1714	H06 Under	T	H06 Under	Georgas, A. T.; Lambropoulos, P. σ Stark splitting in doubly resonant three-photon ionization with nonresonant fields. <i>Phys. Rev. A</i> 10, 587 (1978) United States
1715	A11 $Rb^+ + He; Rb^+ + Ne; Rb^+ + Ar; Cs^+ +$ $Ar; Cs^+ + Ne; Cs^+ + He; Cs^+ + N_2$	E	330 K	Frank, F. A.; Volk, C. Spin relaxation in Rb-He and Rb-Ne via modification of the Rb hyperfine interaction in Van der Waals molecules. <i>Phys. Rev. A</i> 10, 599 (1978) United States
1716	H08 Under	T	Under	Alhara, M. Transient polarization characteristics associated with resonant light scattering by a degenerate two-level system. <i>Phys. Rev. A</i> 10, 606 (1978) Japan

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
1717	H86 $\text{He} + \text{He}$	E	10000 Å	Niyazali, N.; Kashiwagi, M. Multiphoton ionization of He atoms in third-harmonic generation by a mode-locked Nd: YAG laser. <i>Phys. Rev. A</i> 18, 435 (1978) Japan
1718	D87 Undef	T		Hittelman, M. M. Electron scattering from atoms in the presence of a laser field: IV. <i>Phys. Rev. A</i> 18, 485 (1978) United States
1719	E96 $e + \text{Fe}^{10+}; e + \text{Fe}^{9+}; e + \text{Fe}^{8+}; e + \text{Fe}^{7+}; e + \text{Fe}^{6+}; e + \text{Fe}^{5+}; e + \text{Fe}^{4+}$	T	10-1000 eV	Jacobs, W. L.; Davis, J. Effects of collisions on level populations and dielectronic recombination rates of multiply charged ions. <i>Phys. Rev. A</i> 18, 687 (1978) United States
1720	G86 $e + \text{Ne}; e + \text{N}_2; e + \text{N}_2; e + \text{Ar}$ G89 $e + \text{Ne}; e + \text{N}_2; e + \text{N}_2; e + \text{Ar}$	T	330 K	Draglin, G. L.; Bellacasse, V. Theory of the density dependence of electron drift velocity in gases. <i>Phys. Rev. A</i> 18, 771 (1978) Italy
1721	F81 $\text{Ne}^{20+}; \text{Ne}^{21+}; \text{Ne}^{22+}; \text{Ne}^{23+}$	E		Barkhalter, P. G.; Schneider, R.; Lenz, C. R.; Cohen, R. D. Spectra of Ne XXXI-XXXIV from exploded-ne-wire plasmas. <i>Phys. Rev. A</i> 18, 714 (1978) United States
1722	A19 $\text{Xe} + \text{Xe}$	E	0.3-1.2 MeV	Spicuzza, R. A.; Antor, A. A.; Kennel, C. C. Inelastic-energy-loss measurements of multiple M- and N-shell excitations in 0.3- to 1.2-MeV Xe^+-Xe collisions. <i>Phys. Rev. A</i> 18, 776 (1978) United States
1723	E83 Undef E85 Undef	T	Undef	Oh, S. D.; Macok, J. Relativistic effect on electron excitation and ionization of atoms. <i>Phys. Rev. A</i> 18, 781 (1978) United States
1724	F81 $\text{Ne}; \text{N}^-; \text{Ne}^+$	T		Lie, S. G.; Noguel, Y.; Preston, M. A. Three-body problem of two-electron atoms. <i>Phys. Rev. A</i> 18, 787 (1978) Canada
1725	E83 $e + \text{Ne}$	T	Undef	Tennin, A.; Bhatta, A. K. Inelastic-resonance quasiprojection operators. <i>Phys. Rev. A</i> 18, 792 (1978) United States
1726	F82 N Seq	T		Dexter, D. L. Energy and polarizability of atoms in a weak magnetic field: hydrogenic atoms. <i>Phys. Rev. A</i> 18, 862 (1978) United States
1727	F81 Ne	T		Lewis, M. L.; Serafino, P. M. Second-order contributions to the fine structure of helium from all intermediate states. <i>Phys. Rev. A</i> 18, 867 (1978) United States
1728	E85 $e + \text{Ne}; e + \text{N}_2; e + \text{N}_2; e + \text{N}_2; e + \text{N}_2; e + \text{Ne}$	E	20-40 keV	Rueckner, W. M. C.; Barlow, A. D.; Vollenstein, M. F. Electron Compton defect observed in Ne, N ₂ , O ₂ , N ₂ , and Ne profiles. <i>Phys. Rev. A</i> 18, 891 (1978) United States
1729	E12 $e^+ + \text{H}$	T	0-42 eV	Vinick, J. R.; Reinhardt, W. P. Moment T-matrix approach to $e^+-\text{H}$ scattering: I. Angular distribution and total cross section for energies below the pickup threshold. <i>Phys. Rev. A</i> 18, 918 (1978) United States
1730	E12 $e^+ + \text{H}$	T	7-34 eV	Vinick, J. R.; Reinhardt, W. P. Moment T-matrix approach to $e^+-\text{H}$ scattering: II. Elastic scattering and total cross section at intermediate energies. <i>Phys. Rev. A</i> 18, 926 (1978) United States
1731	A86 $\text{C}^+ + \text{N}_2; \text{C}^+ + \text{N}_2; \text{N}^+ + \text{N}_2; \text{N}^+ + \text{N}_2; \text{O}^+ + \text{N}_2; \text{O}^+ + \text{N}_2$	E	5-100 keV	Lockwood, G. J.; Miller, G. M.; Hoffman, J. R. Charge transfer of C ⁺ , N ⁺ , and O ⁺ in N ₂ and N ₂ . <i>Phys. Rev. A</i> 18, 935 (1978) United States
1732	A19 $\text{Cl}^{19+} + \text{Ca}; \text{Cl}^{18+} + \text{Se}; \text{Cl}^{17+} + \text{Ti}$	E	33 MeV	Richard, P.; Hall, J. M.; Schriedenhop, C.; Janssen, A. A. Double-K-vacancy sharing in near-symmetry collisions. <i>Phys. Rev. A</i> 18, 948 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1733	A16 Cl ⁻ + He; Cl ⁻ + Ar; Cl ⁻ + Kr; Cl ⁻ + Xe; Br ⁻ + He; Br ⁻ + Ar; Br ⁻ + Kr; Br ⁻ + Xe	E	7-100 eV	Smith, B. T.; Edwards, W. R., III; Soverapiko, L. B.; Champion, R. L. Total electron-detachment cross sections for collisions of negative halogen ions and rare gases for energies around threshold. <i>Phys. Rev. A</i> 10, 945 (1978) United States
1734	E01 Undef	T	Undef	Neubert, R. K. Variational methods for multichannel scattering: II. New variant of optimized anomaly-free method and restricted interpolated anomaly-free method. <i>Phys. Rev. A</i> 10, 955 (1978) United States
1735	E05 e + Ar; e + Ni; e + V; e + Ag; e + Ba; e + Na; e + Au; e + Bi; e + U	T	5x10 ⁻¹⁰ -10 ⁴ eV	Scofield, J. H. K-and L-shell ionization of atoms by relativistic electrons. <i>Phys. Rev. A</i> 10, 963 (1978) United States
1736	C01 Undef C02 Undef C03 Undef	T	Undef	Ree, A. R. P.; Inokuti, M.; Bouthat, D. A. Variational treatment of electron degradation and yields of initial molecular species. <i>Phys. Rev. A</i> 10, 971 (1978) United States
1737	G06 He ²⁺ + He; He ²⁺ + Ne; Ar ²⁺ + Ar; Kr ²⁺ + Kr; Xe ²⁺ + Xe	E	339 K	Johnson, B.; Biendi, N. A. Mobilities of doubly charged rare-gas ions in their parent gases. <i>Phys. Rev. A</i> 10, 989 (1978) United States
1738	A06 He ²⁺ + He; He ²⁺ + Ne; Ar ²⁺ + Ar; Kr ²⁺ + Kr; Xe ²⁺ + Xe; He ²⁺ + [He + He]; He ²⁺ + [He + Ne]; Ar ²⁺ + [Ar + Ar]; Kr ²⁺ + [Kr + Kr]; Xe ²⁺ + [Xe + Xe]	E	300 K	Johnson, B.; Biendi, N. A. Measurements of radiation charge-transfer reactions of doubly and singly charged rare-gas ions with rare-gas atoms at thermal energies. <i>Phys. Rev. A</i> 10, 996 (1978) United States
1739	A06 He ²⁺ + He A17 He ²⁺ + He ²⁺ ; He ²⁺ + He F01 He ₂ ²⁺	T	A06; A17 0.001-10 eV	Cohen, J. S.; Bardsley, J. N. Calculation of radiative single-charge-transfer cross sections for collisions of He ²⁺ with He at low energy. <i>Phys. Rev. A</i> 10, 1004 (1978) United States
1740	G06 He ²⁺ + He G09 He ²⁺ + He	T	G06 00-2000 K G09 2-60 meV	Udehara, J. W.; Cohen, J. S.; Bardsley, J. N. Mobility of a particle in helium. <i>Phys. Rev. A</i> 10, 1009 (1978) United States
1741	E03 e + Fe; e + Fe ²⁺ ; e + Fe ³⁺ ; e + Fe ⁴⁺ ; e + Fe ⁵⁺ ; e + Fe ⁶⁺ ; e + Fe ⁷⁺ ; e + Fe ⁸⁺ E05 e + Fe; e + Fe ²⁺ ; e + Fe ³⁺ ; e + Fe ⁴⁺ ; e + Fe ⁵⁺ ; e + Fe ⁶⁺ ; e + Fe ⁷⁺ ; e + Fe ⁸⁺	T	4-36 keV	Hahn, Y. Distorted-wave theory of electron-ion collisions: II. Auger ionization and excitation fluorescence. <i>Phys. Rev. A</i> 10, 1020 (1978) United States
1742	A17 LiF + He; LiF + Ne; LiF + Ar; LiF + Kr; LiF + Xe	E T	1300 K	Monetti, F. R.; Bedding, D.; Horan, T. L. Measurement of the anisotropy of the interaction between LiF and the inert gases. <i>Phys. Rev. A</i> 10, 1030 (1978) United States
1743	E02 e + H ₂	T	Undef	Filiflet, A. W.; McKay, V. Variationally corrected discrete-basis-set calculation for electron-molecule scattering in the static-exchange approximation. <i>Phys. Rev. A</i> 10, 1040 (1978) United States
1744	F01 Na ²⁺ ; Y ²⁺	T		Shorer, P. Effects of 3d subshells on resonance oscillator strengths for the zinc isoelectronic sequence. <i>Phys. Rev. A</i> 10, 1060 (1978) United States
1745	A12 H + H; H + He; H + Ne; H + Ar; H + Kr; H + Xe; Li + H; Li + He; Li + Ne; Li + Ar; Li + Kr; Li + Xe; Na + H; Na + He; Na + Ne; Na + Ar; Na + Kr; Na + Xe; K + H; K + He; K + Ne; K + Ar; K + Kr; K + Xe; Rb + H; Rb + He; Rb + Ne; Rb + Ar; Rb + Kr; Rb + Xe; Cs + H; Cs + He; Cs + Ne; Cs + Ar; Cs + Kr; Cs + Xe	T	300 K	Wu, C. Y. R.; Stuehley, W. C. Calculated pressure broadening and shift for alkali-metal atoms perturbed by rare gases: two-photon S-S transitions. <i>Phys. Rev. A</i> 10, 1066 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1761	A83 $\text{Xe}^+ + \text{H}_2\text{O}; \text{Xe}^+ + \text{SO}_2$ A11 $\text{Xe}^+ + \text{H}_2\text{O}; \text{Xe}^+ + \text{SO}_2$	E	30° K	Matsuzawa, H. 1-changing collision of a high-Syberg atom with a polar molecule. <i>Phys. Rev. A</i> 10, 1394 (1978) Japan
1762	A84 $\text{H}_2^+ + \text{Ar}$	E	43° keV	Dir, A.; Weinberg, A.; Mann, A.; Haron, M.; Gordon, S. Angular distributions in dissociative collisions of H_2^+ ions at 400 keV and effects of the vibrational states. <i>Phys. Rev. A</i> 10, 1399 (1978) Israel
1763	E83 $\alpha + \text{He}^+$ E17 $\alpha + \text{He}^+$	E	19.9-22.4 eV	Zajonc, A. G.; Bolarsich, G.; Psori, J. C.; Zorn, J. C. Differential cross section for electron impact excitation of metastable helium. <i>Phys. Rev. A</i> 10, 1408 (1978) United States
1764	D87 Undef	T		Brandl, H. S.; Kollner, B.; Lima de Barros, M. G. P.; Miranda, L. C. M. Charged-particles scattering in the presence of a homogeneous magnetic field. <i>Phys. Rev. A</i> 10, 1416 (1978) Brazil
1765	E83 Undef W4 Undef	T	Undef	Kelsey, E. J. Effects of long-range forces in excitations of simple atomic and molecular systems. <i>Phys. Rev. A</i> 10, 1420 (1978) United States
1766	E12 $\alpha^+ + \text{N}_2$	E	77-282 K	Sharma, S. C.; McHett, J. D. Positron annihilation in gaseous nitrogen and nitrogen-oxygen mixtures at 77 K. <i>Phys. Rev. A</i> 10, 1426 (1978) United States
1767	A87 $\text{He}^+ + \text{Ar}$ J17 $\text{He}^+ + \text{Ar}$	T	0-165 eV	Bellus, J. C.; Micha, B. A. Coupling of discrete and continuous electronic states in atom-atom collisions: a coupled-channel investigation of forming ionization in $\text{He}^+ (\text{1s}^2s, ^3S) + \text{Ar}$. <i>Phys. Rev. A</i> 10, 1435 (1978) United States
1768	M86 $\text{He} + \text{Ar}$	T	33-70 eV	Chang, Y. B. Quantitative assessment of the many-body interactions in the M-shell photoionization of argon. <i>Phys. Rev. A</i> 10, 1440 (1978) United States
1769	C87 $\text{He}^+ + \text{C}$	E	35° keV	Brooks, R. L.; Pinnington, E. M. Polarization measurements of He I singlet transitions following beam-tilted-fall excitation. <i>Phys. Rev. A</i> 10, 1484 (1978) Canada
1770	F82 He	E		Neumann, G. C.; Zegorski, B. R.; Miller, T. A.; Rosenbluh, M.; Panoch, R.; Lee, E. Notional-Stark-effect-induced anticrossings. <i>Phys. Rev. A</i> 10, 1464 (1978) United States
1771	M88 $\text{He} + \text{H}_2$	E	12 eV	Schwarzenzer, H.; Zitz, R. Observation of selectively excited continuous vacuum ultraviolet emission in molecular hydrogen. <i>Phys. Rev. A</i> 10, 1472 (1978) West Germany
1772	M86 $\text{He} + \text{SF}_6$	E	25-54 eV	Gustafsson, T. Partial photoionization cross sections of SF_6 between 20 and 54 eV: an interpretation of the photoelectron spectrum. <i>Phys. Rev. A</i> 10, 1481 (1978) United States
1773	C87 Undef	T	Undef	DeVries, P. L.; George, T. P. Is photon angular momentum important in molecular collision processes occurring in a laser field. <i>Phys. Rev. A</i> 10, 1781 (1978) United States
1774	E82 $\alpha + \text{N}$	T	6° eV	Srivastava, M. K.; Tripathi, A. K. Comments on the fixed-scatterer approximation to α -N scattering. <i>Phys. Rev. A</i> 10, 1786 (1978) India
1775	E83 $\alpha + \text{H Seq}$	T	80-5000 eV	Mitra, C.; Sii, M. C. Excitation of hydrogenlike ions by electron impact: II. <i>Phys. Rev. A</i> 10, 1788 (1978) India
1776	A87 $\text{Cl}^+ + \text{Sn}; \text{Cl}^+ + \text{Sb}; \text{Cl}^+ + \text{Xe}; \text{Ar}^+ + \text{Sn}; \text{Ar}^+ + \text{Sb}; \text{Ar}^+ + \text{Xe}$	E	1-16 MeV	Riddiworth, E. R., Jr.; Donahue, D. J.; McIntyre, L. C., Jr.; Bernstein, E. M. Sharing of vacancies between closely matched K and L shells. <i>Phys. Rev. A</i> 10, 1788 (1978) United States

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1777	F01 Si	T		Tatemaki, N. Electronic structure of silicon Rydberg series I. The (3pnd) $^1D^o$, $^3P^o$, $^1F^o$, and $^3F^o$ series. Phys. Rev. A 18, 1626 (1978) Japan
1778	F01 Si	T		Tatemaki, N.; Sasaki, F. Electronic structure of silicon Rydberg series II. The (3pnd) $^1P^o$, $^3P^o$ and (3pnd) $^1D^o$, $^3D^o$ series. Phys. Rev. A 18, 1637 (1978) Japan
1779	F01 H_2	T		Bishop, B. N.; Cheung, L. N. Rigorous theoretical investigation of the ground state of H_2 . Phys. Rev. A 18, 1846 (1978) Canada
1780	F02 H	T		Silverstone, H. J. Perturbation theory of the Stark effect in hydrogen to arbitrary high order. Phys. Rev. A 18, 1853 (1978) United States
1781	E02 $e + H_2$ E03 $e + H_2$ E17 $e + H_2$ G09 $e + H_2$	T	23-200 eV	Bhatnagar, P. K.; Goussard, K. E.; Ghosh, A. S. Elastic and pure rotational excitation of the hydrogen molecule by intermediate-energy electrons. Phys. Rev. A 18, 1865 (1978) India
1782	A19 $HI + HI$; $HI + Hb$	E	12-67 MeV	Vincent, P.; Davis, C. K.; Greenberg, J. S. Doppler-shift analysis of continuous α radiation from quasispherical systems. Phys. Rev. A 18, 1878 (1978) United States
1783	A07 $H^+ + Ar$; $C^+ + Ar$; $N^+ + Ar$; $O^+ + Ar$; $F^+ + Ar$; $Si^+ + Ar$; $Cl^+ + Ar$	E	1-28 MeV	Schmalzhaus, C.; Doyle, B. L.; Gray, T. J.; Gardner, R. K.; Jamison, K. A.; Richard, F. Projectile dependence of single-K multiple-L shell vacancy production in argon: a universal scaling of (1). Phys. Rev. A 18, 1892 (1978) United States
1784	E03 $e + H$ E05 $e + H$ E17 $e + H$	T	1-30 eV	Coulter, P. W.; Garrett, W. R. Electron-hydrogen scattering by complex-optical-potential methods. Phys. Rev. A 18, 1902 (1978) United States
1785	E01 Under	T	Under	Coulter, P. W. Calculation of inelastic cross sections from microscopic-optical-model potentials. Phys. Rev. A 18, 1908 (1978) United States
1786	E05 $e + C^{3+}$; $e + N^{4+}$	E	60-630 eV	Crandall, B. W.; Phaneuf, R. A.; Taylor, P. D. Electron-impact ionization of C^{3+} and N^{4+} . Phys. Rev. A 18, 1911 (1978) United States
1787	A06 $Na^+ + Na^+$	E	0.1-500 eV	Tang, S. Y.; Waymber, R. H. Charge transfer between helium ions and metastable neon. Phys. Rev. A 18, 1925 (1978) United States
1788	A03 $H^+ + H$ A06 $H^+ + H$ A07 $H^+ + H$ A16 $H^+ + H$	T	18-260 keV	Shakeshaft, R. Coupled-state calculations of proton-hydrogen-atom scattering using a scaled hydrogenic basis set. Phys. Rev. A 18, 1930 (1978) United States
1789	E02 $e + Li$ E10 $e + Li$ E17 $e + Li$	T	9-13.6 eV	Bhatia, A. K.; Toshin, A.; Silver, A.; Sullivan, E. C. Modification of the method of polarized orbitals for electron-alkali-metal scattering: application to $e-Li$. Phys. Rev. A 18, 1936 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1790	AC7 $S^+ + Ar; Cl^+ + Ar; Ar^+ + Ar; Rn^+ + Ar;$ $Ca^+ + Ar; Hf^+ + Kr; Cu^+ + Kr;$ $Ge^+ + Kr; As^+ + Kr; Se^+ + Kr; Br^+ + Kr;$ $I^+ + Kr; Br^+ + Xe; I^+ + Xe$ A19 $S^+ + Ar; Cl^+ + Ar; Ar^+ + Ar; Rn^+ + Ar;$ $Ca^+ + Ar; Hf^+ + Kr; Cu^+ + Kr;$ $Ge^+ + Kr; As^+ + Kr; Se^+ + Kr; Br^+ + Kr;$ $I^+ + Kr; Br^+ + Xe; I^+ + Xe$	E	0.4-225 MeV	Leonard, W. R.; Mitchell, I. V.; Foster, J. S. Universal scaling law for K-vacancy production in heavy ion-atom single collisions. <i>Phys. Rev. A</i> 18, 1945 (1978) Canada
1791	A06 $Na^{2+} + Li$ A07 $Na^{2+} + Li$ A03 $Na^{2+} + Li$ A17 $Na^{2+} + Li; Na^+ + Li^+; Na + Li^{2+}$	T	0.1-1000 keV	Shipsey, E. J.; Rodam, L. Y.; Browne, J. C.; Glano, R. E. Electron-capture and ionization cross sections for collisions of Na^{2+} with Li: production of $Na^+(Si)$ at low velocities. <i>Phys. Rev. A</i> 12, 1961 (1978) United States
1792	AC7 $H \text{ Seq} + He; H \text{ Seq} + H; H \text{ Seq} + Ar$ A03 $H \text{ Seq} + He; H \text{ Seq} + H; H \text{ Seq} + Ar$ A02 $H \text{ Seq} + He; H \text{ Seq} + H; H \text{ Seq} + Ar$	T	Under	Gillespie, G. M. Excitation and ionization contributions to sum-rule Born cross sections for collisions of one-electron ions with atoms. <i>Phys. Rev. A</i> 16, 1967 (1978) United States
1793	A06 $O^{++} + H; Na^{2+} + H; H^+ + H$	T	0.025-1600 keV	Ryufuku, H.; Watanabe, T. Charge transfer in collisions of atomic hydrogen with O^{++} , Na^{2+} , and He^+ . <i>Phys. Rev. A</i> 18, 2005 (1978) Japan
1794	A06 Under	T	Under	Spruch, L. High-impact-velocity forward charge transfer from high-Rydberg states as a classical process. <i>Phys. Rev. A</i> 18, 2016 (1978) United States
1795	C02 $H^+ + Li; H^+ + Be; H^+ + B; H^+ + C;$ $H^+ + He; H^+ + Al; H^+ + Si; H^+ + Ar;$ $H^+ + Ca; D^+ + Li; D^+ + Be; E^+ + B;$ $D^+ + C; D^+ + He; D^+ + Al; E^+ + Si;$ $D^+ + Ar; D^+ + Ca$	T	20-10 ⁴ keV	Gertner, I.; Moron, N.; Rosner, E. Electronic energy loss of ions in solids in the energy range 10-10 ⁴ keV/nucleon. <i>Phys. Rev. A</i> 18, 2022 (1978) Israel
1796	E12 $e^+ + H; e^+ + He$	T	Under	Jann, Y.-C.; Schrader, D. N. Second-order nonadiabatic polarization potentials for positron-hydrogen and positron-helium elastic scattering. <i>Phys. Rev. A</i> 18, 2030 (1978) United States
1797	C06 $H^+ + C; C^+ + C; W^+ + C; D^+ + C; Na^+ + C;$ $Na^+ + C; S^+ + C; Kr^+ + C$ C07 $H^+ + C; C^+ + C; H^+ + C; D^+ + C; Na^+ + C;$ $Na^+ + C; S^+ + C; Kr^+ + C$	E	100-490 keV	Christensen, B.; Vaja, E.; Hvelplund, P. Experimental study of charge-state distributions and photon emissions from beam-tilted-foil interactions. <i>Phys. Rev. A</i> 18, 2042 (1978) Denmark
1799	E17 $e + H$ E02 $e + H$	T	0.5-1.0 keV	Shukesh, R. Electron exchange scattering from a hydrogenlike atom at high impact velocities. <i>Phys. Rev. A</i> 18, 2047 (1978) United States
1799	A06 $H^+ + H$ A10 $H^+ + H$	T	25 keV	Malvern, A. M. Variationally consistent approximation scheme for charge transfer. <i>Phys. Rev. A</i> 18, 2058 (1978) United States
1800	AC7 $He^+ + H$	E	3.015-0.10 eV	Fort, J.; Louagne, J. J.; Pannelle, A.; Uteit, G. Velocity dependence of the cross sections for Penning and associative ionization of H and D atoms by $He(2^3S)$ metastable atoms. <i>Phys. Rev. A</i> 18, 2065 (1978) France
1801	A07 $He^+ + H_2; He^+ + D_2$	E	3.4-0.2 eV	Fort, J.; Boixinger, Y.; Corne, L.; Edding, T.; Pannelle, A. Velocity dependence of the cross sections for Penning, rearrangement, and total ionization of H_2 and D_2 molecules by $He(2^3S)$ and $He(2^1S)$ metastable atoms. <i>Phys. Rev. A</i> 18, 2075 (1978) France
1802	A03 $He^+ + He$ A11 $He^+ + He$	E	2.8-4.7 eV	Burrell, C. F.; Runzo, H.-J. Collisional transfer rates between excited levels in helium. <i>Phys. Rev. A</i> 18, 2081 (1978) United States

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
1003	A01 Under	T	Under	Dushov, Y. M.; Gutsevskii, V. N.; Salov'sev, E. A. Two-state approximation in the adiabatic one sudden-perturbation limits. Phys. Rev. A 18, 2885 (1978) Soviet Union
1004	A01 Under	T	Under	Dushov, Y. M.; Kuznetz, L. V.; Gutsevskii, V. N. Unified-state approximation in the problem of I-II transitions during close atomic collisions. Phys. Rev. A 18, 2897 (1978) Soviet Union
1005	E02 $\alpha + N_2$	T	Under	Vilijet, A. W.; McKoy, W. Discrete-basis-set method for electron-molecule continuous wave functions. Phys. Rev. A 18, 2107 (1978) United States
1006	NE6 $h\nu + Fe; h\nu + Fe^0; h\nu + Fe^{1+}; h\nu + Fe^{2+}; h\nu + Fe^{3+}; h\nu + Fe^{4+}; h\nu + Fe^{5+}; h\nu + Fe^{6+}; h\nu + Fe^{7+}; h\nu + Fe^{8+}; h\nu + Fe^{9+}; h\nu + Fe^{10+}; h\nu + Fe^{11+}; h\nu + Fe^{12+}; h\nu + Fe^{13+}; h\nu + Fe^{14+}; h\nu + Fe^{15+}; h\nu + Fe^{16+}; h\nu + Fe^{17+}; h\nu + Fe^{18+}; h\nu + Fe^{19+}; h\nu + Fe^{20+}$	T	0-700 Ry	Bellman, R. F.; Mason, S. T. Photoionization of positive ions: II. Iron. Phys. Rev. A 18, 2124 (1978) United States
1007	NE6 $h\nu + Fe$	E	0-05 eV	Lombardi, G. C.; Smith, P. L.; Parlinson, V. H. Measurement of the photoionization cross section of neutral iron. Phys. Rev. A 18, 2131 (1978) United States
1008	A11 $Ba^0 + Ba$	E	331 K	Kelly, F. M.; Mathur, N. S. $4p^2P$ levels of ionized barium: lifetimes and depolarization cross sections. Phys. Rev. A 18, 2135 (1978) Canada
1009	F02 H	E		Gutzwiller, K.; Wende, D. Stark broadening of the hydrogen resonance line $L(\alpha_0 \beta)$ in a dense equilibrium plasma. Phys. Rev. A 18, 2140 (1978) West Germany
1010	H02 $h\nu + Al; h\nu + Fe; h\nu + Ru; h\nu + Ag; h\nu + V; h\nu + Pt$	E	52-85 keV	Prasad, R. Total photon-absorption cross-section measurements at 52.4, 68, 72.2, and 84.4 keV in Al, Fe, Ru, Ag, V, and Pt: photoelectric cross sections deduced. Phys. Rev. A 18, 2147 (1978) India
1011	NE6 $2h\nu + He^0$	T	5345-5042 A ⁰	Mathur, K. C. Laser-induced gas breakdown: multiple interference in the two-photon ionization of metastable helium. Phys. Rev. A 18, 2176 (1978) India
1012	A12 $Ca^0 + He; Ca^0 + He$ A11 $Ca^0 + He; Ca^0 + He$	E	3C3 K	Chen, C. J. Measurement of induced-quench cross section and line broadening of copper laser lines $4p^2P_{3/2}-4s^2D_{5/2}$ and $4p^2P_{1/2}-4s^2D_{3/2}$. Phys. Rev. A 18, 2192 (1978) United States
1013	C02 $Ne^0 + Be; Ne^0 + C; Ne^0 + Al; Ne^0 + Ti; Ne^0 + Ni; Ne^0 + Ge; Ne^0 + Zr; Ne^0 + Ag; Ne^0 + Eu; Ne^0 + Ta; Be^0 + Be; Be^0 + C; Be^0 + Al; Be^0 + Ti; Be^0 + Ni; Be^0 + Ge; Be^0 + Zr; Be^0 + Ag; Be^0 + Eu; Be^0 + Ta; C^0 + Be; C^0 + C; C^0 + Al; C^0 + Ti; C^0 + Ni; C^0 + Ge; C^0 + Zr; C^0 + Ag; C^0 + Eu; C^0 + Ta; Al^0 + Be; Al^0 + C; Al^0 + Al; Al^0 + Ti; Al^0 + Ni; Al^0 + Ge; Al^0 + Zr; Al^0 + Ag; Al^0 + Eu; Al^0 + Ta; Ti^0 + Be; Ti^0 + C; Ti^0 + Al; Ti^0 + Ni; Ti^0 + Ge; Ti^0 + Zr; Ti^0 + Ag; Ti^0 + Eu; Ti^0 + Ta; Ni^0 + Be; Ni^0 + C; Ni^0 + Al; Ni^0 + Ti; Ni^0 + Ge; Ni^0 + Zr; Ni^0 + Ag; Ni^0 + Eu; Ni^0 + Ta; PERT + PERT; PERT + PERT$	T	Under	Cruz, S. A.; Cisneros, C.; Alvarez, I. Addendum to individual orbital contribution to the electronic stopping cross section in the low-velocity region. Phys. Rev. A 18, 2349 (1978) Mexico
1014	A06 $H^0 + N; H^0 + N; He^0 + N$	T	110-800 keV	Golden, J. E.; McGuire, J. N.; Oelver, R. Electron capture from atomic hydrogen into excited n, l levels of projectiles with Z greater than or equal to 1. Phys. Rev. A 18, 2373 (1978) United States

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1015	E92 $e + H_2$ E17 $e + H_2$ E10 $e + H_2$	T	30-200 eV	Seisenova, N. N.; Tripetel, A. B.; Lal, R. Exchange effects in the independent-atom model of electron-molecule scattering. <i>Phys. Rev. A</i> 10, 2377 (1970) India
1016	A07 $H^+ + He$	T	305 K	Sheshadri, R. Comment on the first-order Feshbach approximation for ionization of atoms by ion impact. <i>Phys. Rev. A</i> 10, 2348 (1970) United States
1017	A01 Undef E01 Undef	T	300 keV	Sar, S. K.; Mukherjee, K. C.; Shi, B. C. Comment on the Glauber scattering amplitude for helium targets. <i>Phys. Rev. A</i> 10, 2346 (1970) India
1019	A12 $He^+ + Ar$ A03 $He^+ + Ar$ A11 $He^+ + Ar$	E	370 K	Grybory, G.; Birken, F.; Salans, H.; Cognec, B. Comment on collision-processes involved in two-photon near-resonance light scattering from an atomic level. <i>Phys. Rev. A</i> 10, 2347 (1970) France
1019	E03 $e + H$ E17 $e + H$	T	50-100 eV	Singh, S. N.; Kumar, S.; Seisenova, N. N. Electron-impact excitation of hydrogen atom in the two-potential channel approximation. <i>Phys. Rev. A</i> 10, 2301 (1970) India
1020	E02 $e + He$ F01 He^+	T	E22 Undef	Junker, B. R. Complex-coordinate method. II. Resonance calculations with correlated target-state wave functions. <i>Phys. Rev. A</i> 10, 2627 (1970) United States
1021	B04 $Ar^+ + U; Ar^{2+} + U; Kr^+ + U; Kr^{2+} + U; Xe^+ + U; Xe^{2+} + U; Kr^{3+} + U; Ar^{3+} + U; He^{3+} + U; Kr^{4+} + U; Kr^{5+} + U; Xe^{4+} + U; Xe^{5+} + U$	E	11° eV	Vergo, P.; Winter, H. Determination of metastable fractions in noble-gas-ion beams. <i>Phys. Rev. A</i> 10, 2453 (1970) Austria
1022	A00 $[Xe^+ + Xe; I^{3+} + Ar; I^{3+} + Ne; Cl^{3+} + Xe; Cl^{3+} + Ar; Cl^{3+} + Ne]$	E	25 MeV	Scott, M. A.; Bridwell, L. O.; Meach, C. O.; Aiton, G. B.; Jones, C. R.; Miller, P. D.; Seyer, R. O.; Russell, G. C.; Antor, A. Electron-ion cross sections for 20-MeV Cl^{3+} and I^{3+} ions incident on thin gaseous targets: experimental measurements and potential-model data analysis. <i>Phys. Rev. A</i> 10, 2450 (1970) United States
1023	A06 $He^+ + He; He^{2+} + He; Li^{2+} + He; Be^{2+} + He; B^{2+} + He; C^{2+} + He; N^{2+} + He; O^{2+} + He$ A07 $He^+ + He; He^{2+} + He; Li^{2+} + He; Be^{2+} + He; B^{2+} + He; C^{2+} + He; N^{2+} + He; O^{2+} + He$	T	150-8000 keV	Dixon, G. E. Electron-capture and impact-ionization cross sections for multiply charged ions colliding with helium. <i>Phys. Rev. A</i> 10, 2454 (1970) United States
1024	C05 $O^+ + He; O^+ + Xe; O^+ + N_2; C^+ + O_2; O^+ + CO; O^+ + CO_2; O^+ + H_2O; Xe^+ + He; Xe^+ + Xe; Xe^+ + N_2; Xe^+ + O_2; Xe^+ + CO; Xe^+ + CO_2; Xe^+ + H_2O; Pb^+ + He; Pb^+ + Xe; Pb^+ + N_2; Pb^+ + O_2; Pb^+ + CO; Pb^+ + CO_2; Pb^+ + H_2O$	E T	55 keV	Buenbacher, F.; Reinemeyer, J.; Hvelplund, P.; Knudsen, M. Influence of spatial correlation between target atoms on the scattering of energetic ions; multiple scattering in molecular gases. <i>Phys. Rev. A</i> 10, 2470 (1970) Denmark
1025	A07 $Cl^+ + Cl; Cl^+ + Ti; Cl^+ + Ni$	E	35 MeV	Tsarrn, I.; Schmidt-Böcking, H.; Schuch, R. K-shell ionization probability in energetic nearly symmetric heavy-ion collisions. <i>Phys. Rev. P</i> 10, 2402 (1970) Israel
1026	A12 $He^+ + He^+$ C00 $e + He^+$	T	Undef	Bassalo, J. R.; Cottoni, M. Electron-impact widths and shifts of neutral helium lines in a plasma. <i>Phys. Rev. A</i> 10, 2400 (1970) Brazil
1027	E03 $e + CH^+$	T	3.503-5.0 eV	Mathur, K. C. Rotational excitation of CH^+ by electron impact. <i>Phys. Rev. A</i> 10, 2403 (1970) India

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1828	A02 Ca ⁺ + Ca A06 Ca ⁺ + Ca A07 Ca ⁺ + Ca A14 Ca ⁺ + Ca A17 Ca ⁺ + Ca	I	13-10000 eV	Liu, B.; Olson, R. E. Potential energies for Ca ⁺ ; cross sections for collisions of Ca ⁺ and Rydberg Ca ⁺ with Ca. Phys. Rev. A 18, 2498 (1978) United States
1829	E11 Underf	I	Underf	Olson, R. A.; Maximon, L. C. High-frequency limit of bremsstrahlung. Phys. Rev. A 18, 2517 (1978) United States
1830	F01 Be ⁺ ; B ²⁺ ; C ³⁺	I		Whitie, A. K. Autoionization states of Li, Be ⁺ , B ²⁺ , and C ³⁺ . Phys. Rev. A 18, 2523 (1978) United States
1831	A10 Ar ⁺ + N ₂ A11 Ar ⁺ + N ₂ F01 N ₂ ⁺ ; N ₂ ²⁺	E	A10; A11 663 K	Bennett, W. R., Jr.; Flint, J. Pr(²⁰ Ar)-N ₂ (C ²⁺ sub u) excitation transfer cross section and radiative lifetimes of the nitrogen-molecular-laser transitions. Phys. Rev. A 18, 2527 (1978) United States
1832	B01 Underf	I		Cook, R. J.; Bernhardt, A. F. Deflection of atoms by a resonant standing electromagnetic wave. Phys. Rev. A 18, 2633 (1978) United States
1833	H01 Underf	I	Underf	Rosenberg, L. Continuum level-shift effects in the theory of multiphoton transitions. Phys. Rev. A 18, 2557 (1978) United States
1834	H04 Underf	I	Underf	Beer, T. Spherical-tensor treatment of coherent transitions. Phys. Rev. A 18, 2576 (1978) United States
1835	H02 Kr + Sr H08 Kr + Sr	E T	1920 Å	Scheingraber, M.; Puell, H.; Vidal, C. R. Quantitative analysis of resonant third harmonic generation in strontium. Phys. Rev. A 18, 2585 (1978) West Germany
1836	A06 B + Mg; Sb + Mg; C + Mg; O + Mg; Cl + Mg; B ⁺ + Mg; Sb ⁺ + Mg; C ⁺ + Mg; O ⁺ + Mg; Cl ⁺ + Mg A16 B ⁺ + Mg; Sb ⁺ + Mg; C ⁺ + Mg; O ⁺ + Mg; Cl ⁺ + Mg C05 PERT + N; PERT + Li; PERT + Mg; PERT + Na; PERT + K; PERT + Ca; PERT + Au C06 Ba ⁺ + Mg; B ⁺ + Mg; C ⁺ + Mg; O ⁺ + Mg; Al ⁺ + Mg; Cl ⁺ + Mg; In ⁺ + Mg; Sb ⁺ + Mg; Te ⁺ + Mg; I ⁺ + Mg; Fe ⁺ + Mg; Au ⁺ + Mg	E T	15-90 keV	Heinemann, J.; Wenzel, P. Production of 15-90 keV negative heavy ions by charge exchange with Mg vapour. Nucl. Instrum. Methods 148, 65 (1978) Denmark
1837	D14 B ⁺ + Cu	E	230 keV	Johnson, P. B.; Armstrong, T. A. In-situ detection of radiation blistering and dynamic deuterium depth profiling during B ⁺ bombardment of solids. Nucl. Instrum. Methods 148, 85 (1978) New Zealand
1838	C02 Na ²⁺ + Si; Na ²⁺ + Ni; Na ²⁺ + Ge; Na ²⁺ + T; Na ²⁺ + Ag; Na ²⁺ + Au C03 Na ²⁺ + Si; Na ²⁺ + Ni; Na ²⁺ + Ge; Na ²⁺ + T; Na ²⁺ + Ag; Na ²⁺ + Au	E T	1-20 MeV	Porter, L. E. Mean excitation energies of Si, Ni, Ge, T, Ag and Au based on alpha particle stopping power measurements. Nucl. Instrum. Methods 148, 119 (1978) United States
1839	C06 H ⁺ + Si; B ⁺ + Si; Na ⁺ + Si	E	6.6-24 MeV	Vincour, J.; Sop, P. Multiple scattering of fast charged particles in silicon. Nucl. Instrum. Methods 148, 399 (1978) Czechoslovakia
1840	C06 Li ⁺ + Na; Be ⁺ + Na; B ⁺ + Na; C ⁺ + Na; O ⁺ + Na; Na ⁺ + Na; Mg ⁺ + Na; Al ⁺ + Na; Cl ⁺ + Na; Ca ⁺ + Na; Fe ⁺ + Na; Au ⁺ + Na	E	15-80 keV	Heinemann, J.; Wenzel, P. Production of 15-80 keV negative heavy ions by charge exchange in Na vapour. Nucl. Instrum. Methods 148, 425 (1978) Denmark

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1841	Hg ⁺ He ⁺ + Au	E	16-50 keV	Cheng, C.-M.; Su, W.-H. The relative photoionization cross section measurement by x-ray detection. Nucl. Instrum. Methods 149, 561 (1978) Taiwan
1842	D16 He ⁺ + ErB ₂ ; He ⁺ + ErT ₂	E T	25-140 keV	Blower, R. S. Using the proton backscattering method of light element profiling to achieve tailored low Z impurity distributions in solids. Nucl. Instrum. Methods 149, 47 (1978) United States
1843	D14 He ⁺ + Nb D16 He ⁺ + W	E	30-50 keV	Roth, J.; Scherzer, B. H. U.; Bahrisch, R.; Bergmann, P. The replacement of ⁹⁰ Mo implanted in Nb by subsequent ⁹⁰ Mo bombardment and vice versa. Nucl. Instrum. Methods 149, 53 (1978) United States
1844	D16 D ⁺ + SS	E	7 keV	Altstetter, C. J.; Bahrisch, R.; Bettiger, J.; Fuhl, F.; Scherzer, B. H. U. Depth profiling of deuterium implanted into stainless steel at room temperature. Nucl. Instrum. Methods 149, 69 (1978) West Germany
1845	CO ₂ Li ⁺ + PERT; Li ⁺ + HCl; Li ⁺ + LiCl; Li ⁺ + NaCl; Li ⁺ + Na ₂ Cl; Li ⁺ + KCl; Li ⁺ + RbCl; Li ⁺ + LiCl; Li ⁺ + ZnCl ₂ ; Li ⁺ + TiB ₂ ; Li ⁺ + TaB; Li ⁺ + TaB ₂ ; Li ⁺ + LiBH ₄ ; Li ⁺ + NaBH ₄ ; Li ⁺ + KBN ₄	E T	75 keV	Mauwirth, W.; Pletsch, W.; Krentz, D. Chemical influences on the stopping power. Nucl. Instrum. Methods 149, 105 (1978) West Germany
1846	CO ₂ He ⁺ + Ar; He ⁺ + O ₂ ; He ⁺ + CO ₂	E	0.5-2.0 MeV	Chu, L. K.; Braun, M.; Davies, J. A.; Rotureau, M.; Thompson, D. A. Energy loss of He ions in solidified gases. Nucl. Instrum. Methods 145, 115 (1978) Canada
1847	CO ₂ Li ⁺ + H ₂ ; Li ⁺ + He; Li ⁺ + CO ₂ ; Li ⁺ + N ₂ ; Li ⁺ + O ₂ ; Li ⁺ + Ne; Li ⁺ + Ar; Li ⁺ + Kr; Li ⁺ + Xe CO ₅ Li ⁺ + H ₂ ; Li ⁺ + He; Li ⁺ + CO ₂ ; Li ⁺ + N ₂ ; Li ⁺ + O ₂ ; Li ⁺ + Ne; Li ⁺ + Ar; Li ⁺ + Kr; Li ⁺ + Xe	E	55-500 keV	Andersen, M. M.; Bessenbacher, F.; Knudsen, N. Stopping power and straggling of 65-500 keV lithium ions H ₂ , He, CO ₂ , N ₂ , O ₂ , Ne, Ar, Kr, and Xe. Nucl. Instrum. Methods 149, 121 (1978) Denmark
1848	CO ₂ He ⁺ + PERT; He ⁺ + PERT	E T	10-4x10 ⁴ keV	Ziegler, J. F. The calculation of low energy He ion stopping powers. Nucl. Instrum. Methods 149, 129 (1978) United States
1849	CO ₂ He ⁺ + Cu; He ⁺ + Ag; He ⁺ + La; He ⁺ + Cu; He ⁺ + Ag	E	200-2000 keV	Andersen, M. M.; Knudsen, N.; Martini, V. An improved method for measuring relative stopping powers of light ions in solids. Nucl. Instrum. Methods 149, 137 (1978) Denmark
1850	CO ₂ He ⁺ + C; He ⁺ + C; He ⁺ + C; He ⁺ + Ag	T	0-3.3 MeV	Brennan, J. G.; Land, D. J.; Braun, M. D.; Simons, D. G. Theoretical interpretations of the energy dependence of electronic stopping power. Nucl. Instrum. Methods 149, 143 (1978) United States

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1851	C02 H ⁺ + C; H ⁺ + Ni; H ⁺ + Co; H ⁺ + Nb; He ⁺ + C; He ⁺ + Ni; He ⁺ + Co; He ⁺ + Nb; Li ⁺ + C; Li ⁺ + Ni; Li ⁺ + Co; Li ⁺ + Nb; Be ⁺ + C; Be ⁺ + Ni; Be ⁺ + Co; Be ⁺ + Nb; B ⁺ + C; B ⁺ + Ni; B ⁺ + Co; B ⁺ + Nb; C ⁺ + C; C ⁺ + Ni; C ⁺ + Co; C ⁺ + Nb; N ⁺ + C; N ⁺ + Ni; N ⁺ + Co; N ⁺ + Nb; O ⁺ + C; O ⁺ + Ni; O ⁺ + Co; O ⁺ + Nb; F ⁺ + C; F ⁺ + Ni; F ⁺ + Co; F ⁺ + Nb; Ne ⁺ + C; Ne ⁺ + Ni; Ne ⁺ + Co; Ne ⁺ + Nb; Na ⁺ + Al; Na ⁺ + Cu; Na ⁺ + Ag; Na ⁺ + Au; Na ⁺ + Zn; Na ⁺ + Ti; Na ⁺ + Si; Na ⁺ + Fe; Na ⁺ + Al; Na ⁺ + Cu; O ⁺ + Ag; O ⁺ + Au; O ⁺ + Zn; O ⁺ + Ti; O ⁺ + Si; O ⁺ + Fe; O ⁺ + Al; O ⁺ + Cu; F ⁺ + Ag; F ⁺ + Au; F ⁺ + Zn; F ⁺ + Ti; F ⁺ + Si; F ⁺ + Fe; F ⁺ + Al; F ⁺ + Cu; Cu; Ne ⁺ + Ag; Ne ⁺ + Au; Ne ⁺ + Zn; Ne ⁺ + Ti; Ne ⁺ + Si; Ne ⁺ + Fe; Ne ⁺ + Al; Ne ⁺ + Cu; Ne ⁺ + Ag; Ne ⁺ + Au; Ne ⁺ + Zn; Ne ⁺ + Ti; Ne ⁺ + Si; Ne ⁺ + Fe D02 Ne ⁺ + Cu	E	0.2-0.3 MeV	Mortens, P. Energy loss of light 200 keV ions in thin metal foils. Nucl. Instrum. Methods 145, 149 (1978) West Germany
1852	C02 D ⁺ + Ni	E	83-280 keV	Lurie, A.; Ziegler, J. F.; Cuomo, J. J. A new method for the determination of low-energy stopping powers of hydrogen and helium. Nucl. Instrum. Methods 149, 155 (1978) United States
1853	C02 H ⁺ + Au	E	350-650 keV	Sonrad, D.; Bauer, P. Stopping cross sections for protons of 350-650 keV in Au, by a new method. Nucl. Instrum. Methods 149, 159 (1978) Austria
1854	C02 He ⁺ + Au	E	0.5-2.1 MeV	Matteson, S.; Morris, J. M.; Pretorius, R.; Nicolet, M.-A. Precision stopping cross section measurement of gold for He. Nucl. Instrum. Methods 149, 163 (1978) United States
1855	C02 Li ⁺ + Al; Li ⁺ + Al ₂ O ₃ ; He ⁺ + Al ₂ O ₃	E	0.3-3.5 MeV	Thomas, J. P.; Fallavier, M. Lithium ion production and use for backscattering analysis in aluminum and aluminum oxide media. Nucl. Instrum. Methods 149, 169 (1978) France
1856	C05 H ⁺ + Au; H ⁺ + Ag	E	0.35-1.75 MeV	Moller, V.; Hocken, U. The energy straggling of protons in thin metal foils at 0.35, 1.0, and 1.75 MeV. Nucl. Instrum. Methods 149, 177 (1978) West Germany
1857	C05 H ⁺ + C	E	1.7 MeV	Brice, D. K.; Langley, R. A. Analysis of straggling measurements by the backscattering technique. Nucl. Instrum. Methods 149, 191 (1978) United States
1858	C05 H ⁺ + C	E	25-2100 keV	Langley, R. A.; Brice, D. K. Energy straggling of protons in carbon. Nucl. Instrum. Methods 149, 195 (1978) United States
1859	C02 He ⁺ + C; Ar ⁺ + C	E	40-240 keV	Beauchemin, G.; Drouin, R. Study of energy loss & E(Theta) as function of emergence angle for neon and argon ions on carbon foils. Nucl. Instrum. Methods 149, 199 (1978) Canada
1860	D10 He ⁺ + Cu; Li ⁺ + Cu; Cl ⁺ + Cu	E	25 keV	L'Ecuuyer, J.; Brassard, C.; Cardinal, C.; Terrault, B. The use of ⁶ Li and ³⁵ Cl ion beams in surface analysis. Nucl. Instrum. Methods 149, 271 (1978) Canada
1861	C08 H ⁺ + Si; H ⁺ + Bi	T	3-5 MeV	Ohtsuki, Y. M.; Osura, T.; Tanaka, M.; Kitagawa, M. Dechanneling theory for axial and planar conditions. Nucl. Instrum. Methods 149, 361 (1978) Japan
1862	D15 He ⁺ + V; H ⁺ + V; He ⁺ + Mo; C ⁺ + Mo	E	50-320 keV	Linker, G. Channeling analysis of radiation disorder in ion implanted vanadium and molybdenum single crystals. Nucl. Instrum. Methods 149, 366 (1978) West Germany

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1863	C88 $D^+ + V_2Si$; $He^+ + V_2Si$	E	1.7-2.0 MeV	Meyer, U. Channeling effect studies in V_2Si single crystals. Nucl. Instrum. Methods 149, 377 (1978) West Germany
1864	C88 $He^+ + Si$	E	2.8 MeV	Fott, G.; Casprigi, L.; Kennedy, E. F.; Roper, J. W.; Fromke, P. F.; Rechtin, R. B. The effect of twins on dechanneling a charged particle beam. Nucl. Instrum. Methods 149, 381 (1978) United States
1865	C89 $He^+ + Si$	E	0.25-2.0 MeV	Lurie, A.; Keller, J.; Chu, W. K. Channeling dips for Si K and L x-ray yield. Nucl. Instrum. Methods 145, 387 (1978) United States
1866	D16 $Ti^+ + Be$; $Pb^+ + Be$; $Bi^+ + Be$; $Ca^+ + Be$; $U^+ + Be$; $Os^+ + Be$	E	100-200 keV	Wiedem, R.; Kaufmann, E. R. Deeply lattice location results for implanted impurities in beryllium metal. Nucl. Instrum. Methods 149, 393 (1978) United States
1867	C88 $H^+ + Si$; $He^+ + Si$	E	1.5-2.0 MeV	Wiggers, L. W.; Soria, F. W. Displacement of group III, IV, V, and VI impurities in Si by the analyzing beam. Nucl. Instrum. Methods 149, 395 (1978) The Netherlands
1868	C88 $D_2^+ + VSi$; $D_2^+ + VOD$	E	2 MeV	Ozawa, K.; Yamaguchi, S.; Fujino, Y.; Yoshinari, G.; Kato, K.; Hirobayashi, M. Channeling studies on the trapping of deuterium in vanadium by oxygen interstitials. Nucl. Instrum. Methods 145, 405 (1978) Japan
1869	C88 $He^+ + NiCr_2O_4$	E	1.5 MeV	Kelleys, D.; Gibson, M. M. Application of particle channeling to the study of a cooperative Jahn-Teller phase transition in nickel chromite. Nucl. Instrum. Methods 149, 411 (1978) United States
1870	C88 $He^+ + NiSi_2$	E	1.0-1.5 MeV	Ishizawa, M.; Nagatomo, M.; Furukawa, S. A structure modeling of metal-silicide layers by using axial and planar channeling techniques. Nucl. Instrum. Methods 149, 417 (1978) Japan
1871	D16 $Cu^+ + Cu$	E	235 keV	Agrawal, M. K.; Sood, D. K. On the determination of the nature of defect clusters in irradiated metals by Rutherford backscattering. Nucl. Instrum. Methods 145, 425 (1978) India
1872	C88 Under	T	Under	Ellison, J. A.; Piaroux, S. T. Statistical equilibrium spatial density in planar channeling. Nucl. Instrum. Methods 149, 429 (1978) United States
1873	C78 Under	T	Under	Matsunami, N.; Goto, T.; Itoh, N. Energy and temperature dependences of dechanneling by displaced atoms. Nucl. Instrum. Methods 145, 430 (1978) Japan
1874	A03 $He^+ + Pb$; $He^+ + Te$ D12 $He^+ + Pb$; $He^+ + Te$	E	0.5-2.0 MeV	Baeri, P.; Compisano, S. U.; Imme, G.; Minini, E.; Della Maa, G. Thin sample analysis by ion induced α -rays. Nucl. Instrum. Methods 145, 430 (1978) Italy

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
1075	A03 $H^+ + Ti; H^+ + Fe; H^+ + Cu; H^+ + Se;$ $H^+ + Y; H^+ + Sn; H^+ + Co; H^+ + Ce;$ $H^+ + Sm; H^+ + Mo; H^+ + U; H^+ + Au;$ $He^{2+} + Ti; He^{2+} + Fe; He^{2+} + Cu;$ $He^{2+} + Se; He^{2+} + Y; He^{2+} + Sn;$ $He^{2+} + Co; He^{2+} + Ce; He^{2+} + Sm;$ $He^{2+} + Mo; He^{2+} + U; He^{2+} + Au$ A07 $H^+ + Ti; H^+ + Fe; H^+ + Cu; H^+ + Se;$ $H^+ + Y; H^+ + Sn; H^+ + Co; H^+ + Ce;$ $H^+ + Sm; H^+ + Mo; H^+ + U; H^+ + Au;$ $He^{2+} + Ti; He^{2+} + Fe; He^{2+} + Cu;$ $He^{2+} + Se; He^{2+} + Y; He^{2+} + Sn;$ $He^{2+} + Co; He^{2+} + Ce; He^{2+} + Sm;$ $He^{2+} + Mo; He^{2+} + U; He^{2+} + Au$ D12 $H^+ + Ti; H^+ + Fe; H^+ + Cu; H^+ + Se;$ $H^+ + Y; H^+ + Sn; H^+ + Co; H^+ + Ce;$ $H^+ + Sm; H^+ + Mo; H^+ + U; H^+ + Au;$ $He^{2+} + Ti; He^{2+} + Fe; He^{2+} + Cu;$ $He^{2+} + Se; He^{2+} + Y; He^{2+} + Sn;$ $He^{2+} + Co; He^{2+} + Ce; He^{2+} + Sm;$ $He^{2+} + Mo; He^{2+} + U; He^{2+} + Au$	E	4-30 MeV	Poncet, N.; Engelmann, C. Study of the x-ray emission induced by 4 to 30 MeV protons or alpha particles, with a view to analytical application. Nucl. Instrum. Methods 149, 461 (1978) France
1076	A03 $H^+ + C; C^+ + C; H^+ + C; O^+ + C$ A07 $H^+ + C; C^+ + C; H^+ + C; O^+ + C$ D12 $H^+ + C; C^+ + C; H^+ + C; O^+ + C$	E	3.001-32 MeV	Martin, F. W. Advantages of heavy ions for high-resolution microscopy. Nucl. Instrum. Methods 149, 475 (1978) United States
1077	D03 Review	E	1-100 keV	White, C. W. Ion induced optical emission for surface and depth profile analysis. Nucl. Instrum. Methods 149, 497 (1978) United States
1078	D03 $Ar^+ + Al; Ar^+ + Ni; Ar^+ + Cu; Ar^+ + Zn;$ $Ar^+ + Au; Ar^+ + SiC; Ar^+ + GaP;$ $Ar^+ + GaAs; Ar^+ + InAs; Ar^+ + InSb$	E	57-400 keV	Raudsch, A. R.; Nagel, D. J.; Comas, J.; Hill, K. V. Ion-excited UV lines useful for materials analysis. Nucl. Instrum. Methods 149, 507 (1978) United States
1079	D08 $H^+ + Mo; H^+ + [O + Mo]$	E	23 keV	Rausch, E. O.; Thomas, E. W. Backscattering of excited hydrogen from Mo in the presence of oxygen. Nucl. Instrum. Methods 149, 511 (1978) United States
1080	D08 $He^+ + C; He^+ + C; Ar^+ + C$	E	0.25-3.0 MeV	Berry, M. G.; Gabrielse, G.; Livingston, A. E. Orientation of fast ions excited in surface collisions. Nucl. Instrum. Methods 149, 517 (1978) United States
1081	C04 $H^+ + Si; H_2^+ + Si$ C05 $H^+ + Si; H_2^+ + Si$ D16 $H^+ + Si; H_2^+ + Si$	E	37-160 keV	Hagen, C. W.; Wu, C. P. Hydrogen ion implantation profiles as determined by SIMS. Nucl. Instrum. Methods 149, 529 (1978) United States
1082	D03 $Ar^+ + K; Ar^+ + Al; Ar^+ + Ti; O_2^+ + Ti$	E	0.5-2.8 keV	Krauss, A. R.; Gruen, D. M. Energy analyzed secondary ion mass spectroscopy and simultaneous Auger and XPS measurements of ion bombarded surfaces. Nucl. Instrum. Methods 149, 547 (1978) United States
1083	D02 Review D17 Review	T	Undef	Kelly, R. An attempt to understand preferential sputtering. Nucl. Instrum. Methods 149, 563 (1978) Canada
1084	D03 $He^+ + [N + U]; He^+ + [O + U]; He^+ + [D + U]$	E	0.5 keV	Yu, M. L. Isotope effect in the study of N-14(100) and O-16(100) chemisorption systems using SIMS. Nucl. Instrum. Methods 149, 569 (1978) United States
1085	D03 $Kr^+ + Ba; Kr^+ + BaO; Kr^+ + Al; Kr^+ + Al_2O_3;$ $Kr^+ + Si; Kr^+ + GaAs; Kr^+ + Y;$ $Kr^+ + In; Kr^+ + Ti$	E, T	12 keV	Kelly, R.; Good-Zanin, C. J.; Shehata, M. T.; Squires, J. B. An attempt to understand secondary photon emission. Nucl. Instrum. Methods 149, 565 (1978) Canada
1086	D08 $H^+ + Au; H^+ + Si; H^+ + Al; H^+ + Bi;$ $He^+ + Au; He^+ + Si; He^+ + Al; He^+ + Bi;$ $Bi; He^+ + Zr; He^+ + Ca; He^+ + Ni$	E	1-2 keV	Brongersma, H. M.; Buck, T. M. Low-energy ion scattering (LEIS) for composition and structure analysis of the outer surface. Nucl. Instrum. Methods 149, 569 (1978) The Netherlands

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
1087	C06 H ⁺ + Si D08 H ⁺ + Si	E T	20-140 keV	Ichinohara, T.; Kawamura, T.; Nakamura, H.; Fujimoto, F.; Kuroki, K. Angular variations of backscattering yield with 20 keV proton bombardment. Nucl. Instrum. Methods 149, 577 (1978) Japan
1088	D08 He ⁺ + Pt; He ⁺ + Bi; He ⁺ + Bi ₂ O ₃ ; He ⁺ + PbCl ₂ ; He ⁺ + Pb(NO ₃) ₂	E	155-2500 eV	Christensen, B. L.; Mossotti, V. G.; Busch, T. W.; Erickson, R. L. Oscillatory scattered ion yields from nonconductive materials. Nucl. Instrum. Methods 149, 587 (1978) United States
1089	D08 He ⁺ + Au; He ⁺ + Si	E	Undef	Busch, T. W.; Wheatley, G. W.; Miller, G. L.; Robinson, D. A. M.; Chen, T.-S. Comparison of a time-of-flight system with an electrostatic analyzer in low-energy ion scattering. Nucl. Instrum. Methods 149, 591 (1978) United States
1090	D08 H ⁺ + Si; He ⁺ + Si; H ⁺ + Si; H ⁺ + [Ag + Si]; He ⁺ + [Ag + Si]; H ⁺ + [Ag + Si]	E	5-20 keV	Agamy, S. A.; Robinson, J. E. Surface analysis using medium energy ion and neutral scattering. Nucl. Instrum. Methods 149, 595 (1978) Canada
1091	D08 He ⁺ + Ni; He ⁺ + Ni	E	1.5-15 keV	Eckstein, W.; Melchakov, V. A.; Verboek, R. The charge state of He and He backscattering from Ni in the energy range of 1.5-15 keV. Nucl. Instrum. Methods 149, 599 (1978) West Germany
1092	D13 He ⁺ + [CO + Ni]; He ⁺ + [N ₂ + Ni]; He ⁺ + [CO + Ni]; He ⁺ + [S + Ni]	E	0.2-2.0 keV	Tagliauer, E.; Beitler, U.; Helland, U. Investigation of ion impact desorption of atoms and molecules by low energy ion scattering (ISS). Nucl. Instrum. Methods 149, 605 (1978) West Germany
1093	C08 H ⁺ + LiF	E	13 ⁺ keV	Golecki, I.; Jaccard, C. An apparatus for channeling experiments at Torr pressures. Nucl. Instrum. Methods 149, 609 (1978) Switzerland
1094	C02 He ⁺ + Fe; He ⁺ + Ni	E	0.3-2.6 MeV	Baglin, J. E. E.; Chu, W. K. Stopping power of 0.3-2.6 MeV He ions in Fe and Ni. Nucl. Instrum. Methods 149, 605 (1978) United States
1095	C05 Ar ⁺ + Xe	E T	50 keV	Sigmund, P.; Meinert, J.; Boserup, F.; Hvelplund, P.; Knudsen, M. Small-angle multiple scattering of ions in the screened-Coulomb region. III. Combined angular and lateral spread. Nucl. Instrum. Methods 150, 221 (1978) Denmark
1096	A19 H ⁺ + Cr; H ⁺ + Cu C02 H ⁺ + Se; H ⁺ + Ni; H ⁺ + Cu; H ⁺ + Ge	E	A19 80-140 keV C02 100 keV	Marshall, R. E.; El Fiqi, A. R.; Kilius, J. E. Measurement of stopping powers using ion-induced x-ray emission. Nucl. Instrum. Methods 150, 241 (1978) United States
1097	A05 He ⁺ + Ar	E	Undef	Kanno, S.; Takahashi, T. Recombination luminescence in the scintillation of high pressure argon gas induced by alpha particles. Nucl. Instrum. Methods 150, 517 (1978) Japan
1098	C06 I ⁺ + N ₂ ; I ⁺ + Ar; I ⁺ + Kr; I ⁺ + Xe	E	20 MeV	Moak, C. D.; Bridwell, L. B.; Sutt, N. A.; Altan, G. D.; Jones, C. H.; Miller, P. D.; Snyder, R. O.; Kossel, Q. C.; Anter, A. Absolute charge state yields of 20 MeV I ⁺ ions emerging from a gas stripper. Nucl. Instrum. Methods 150, 529 (1978) United States
1099	C02 H ⁺ + C; H ⁺ + Al; H ⁺ + Cu; H ⁺ + Ge; H ⁺ + Ag; H ⁺ + Sn; H ⁺ + Bi	E	6.5 MeV	Rud, N.; Bettiger, J.; Jensen, P. E. Measurements of energy-loss distributions for 6.5 MeV H ⁺ ions in solids. Nucl. Instrum. Methods 151, 247 (1978) Denmark
1099	C02 He ⁺ + N ₂ ; He ⁺ + He; He ⁺ + N ₂ ; He ⁺ + C ₂ ; He ⁺ + Na; He ⁺ + Kr; He ⁺ + Xe	E	1-4.5 MeV	Hansen, C.; Laurson, J. Stopping cross sections for a particles from 1.7 to 4.5 MeV in N ₂ , He, Ar, Kr, Xe, R ₂ , and Kr. Nucl. Instrum. Methods 151, 253 (1978) Denmark
1091	D12 e + Ni; H ⁺ + Ni	T	3.713-1000 GeV	Zrelov, V. P.; Ruzicka, J. Some peculiarities of the optical transition radiation from high-energy particles at inclined incidence (III). Nucl. Instrum. Methods 151, 395 (1978) Soviet Union

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1902	C05 $e + Ar; e + CO_2; e + CH_4$	E	0-10 eV	Schultz, G.; Gresser, J. A study of transport coefficients of electron in some gases used in proportional and drift chambers. Nucl. Instrum. Methods 151, 411 (1978) France
1903	D04 $H^+ + C; He^+ + C; H^+ + C$	E	1-2 MeV	Schader, J.; Kolb, B.; Sevier, K. G.; Grossmied, R. G. Electron ejection from beam-tilted-fell experiments. Nucl. Instrum. Methods 151, 563 (1978) West Germany
1904	C06 $U^+ + N_2; U^+ + Ne; U^+ + He; U^+ + Ar;$ $U^+ + Kr; U^+ + Xe; U^+ + N_2; U^+ + O_2;$ $U^+ + CO_2; U^+ + CO; U^+ + CH_4; U^+ +$ $C_2H_2; U^+ + Mg; U^+ + Na$	E	23-60 keV	Holmquist, J.; Muelplund, P.; Rasmussen, P. S. Formation of an energetic neutral uranium beam by charge exchange in gas and metal-vapour targets. Nucl. Instrum. Methods 153, 277 (1978) Denmark
1905	A19 $H^+ + LiF; He^+ + LiF$	E	1.5-1.75 MeV	Marita, R.; Nara, H.; Nishikawa, Y. Life time of inner-shell vacancies of projectile and recoiled ions in solids. Nucl. Instrum. Methods 153, 309 (1978) Japan
1906	C02 $Na^+ + CH_4; C^+ + Si$	T	Undef	Sagiyama, N. Nuclear stopping power and interatomic potentials. Nucl. Instrum. Methods 153, 425 (1978) Japan
1907	C07 $Fe^+ + C; Cu^+ + C$ F02 $Fe^{10+}; Fe^{11+}; Fe^{12+}; Fe^{13+}; Fe^{14+};$ $Fe^{15+}; Cu^{10+}; Cu^{11+}; Cu^{12+}; Cu^{13+}$	E	C07 16-110 MeV	Bashkin, S.; Leavitt, J. A.; Pionce, D. J.; Jones, K. V.; Griffin, P. M.; Pegg, D. J.; Seilin, I. A.; Kruse, Y. M. A survey of problems in beam-fall spectroscopy of iron and copper at energies from 16 to 110 MeV. Nucl. Instrum. Methods 154, 169 (1978) United States
1908	C03 $e + N_2; e + O_2$ C04 $e + N_2; e + O_2$ E02 $e + N_2; e + O_2$ E03 $e + N_2; e + O_2$ E05 $e + N_2; e + O_2$	T	13-5000 keV	Grossmied, B.; Walbel, E. Transport of ion energy electrons in nitrogen and air. Nucl. Instrum. Methods 155, 145 (1978) West Germany
1909	C06 Undef	T	Undef	Nir, D.; Gershon, S.; Mann, A. Systematic features in equilibrium negative-charge states fractions. Nucl. Instrum. Methods 155, 143 (1978) Israel
1910	D16 $He^+ + Ni; He^+ + Nb$	E	33 keV	Scherzer, B. H. U.; Bay, H. L.; Eberlich, R.; Bergesen, P.; Roth, J. Depth profiling of helium in Ni and Nb; comparison of different methods. Nucl. Instrum. Methods 157, 75 (1978) West Germany
1911	C05 $He^+ + C; He^+ + Al; He^+ + Cu$	E	1-2 MeV	Moller, U.; Williams, J. S. The lateral spread of FeV helium ions in carbon, aluminum, and copper. Nucl. Instrum. Methods 157, 205 (1978) Denmark
1912	C02 $He^{20+} + Al; He^{20+} + Ni; He^{20+} + Se;$ $He^{20+} + Ag; He^{20+} + Au$	T	1-9 MeV	Porter, L. E. Mean excitation energies of Al, Ni, Se, Ag and Au extracted from alpha particle stopping power measurements. Nucl. Instrum. Methods 157, 333 (1978) United States
1913	D02 Undef	T	Undef	Webb, R.; Carter, G.; Collins, R. The influence of preferential enhanced diffusion on composition changes in sputtered binary solids. Radiat. Eff. 39, 129 (1978) United Kingdom
1914	D16 $Te^+ + Ni; Sn^+ + Ni; Er^+ + Ni; La^+ + Ni$	E	233-300 keV	Sood, D. K.; Desreuloy, G. Ion implanted surface alloys in nickel. Radiat. Eff. 35, 187 (1978) United Kingdom
1915	D15 $n + Mg$	E	131 keV	Welfanden, A.; Herschbach, K.; Muller, K.; Steber, T. Neutron irradiation damage in magnesium single crystals. Radiat. Eff. 39, 177 (1978) West Germany
1916	C08 Undef	T	Undef	Reynaud, P. Separation of the Schrodinger equation in the dynamical theory of electron diffraction, in the case of systematic reflections. Radiat. Eff. 39, 181 (1978) France

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1917	C14 Al ⁺ + Ti; Al ⁺ + Ni; Al ⁺ + Cu; Al ⁺ + Mo; Al ⁺ + Ag; Al ⁺ + Ta; Al ⁺ + V; Al ⁺ + Au; Al ⁺ + Pb	E	23-100 keV	Kaimonen, J.; Moutala, M.; Lutomajervi, M.; Anttila, A.; Bister, M. Ranges of ²⁷ Al ⁺ ions in alloy metals measured by (p, γ) resonance broadening. Radiat. Eff. 39, 189 (1978) Finland
1918	D15 Underf	T	Underf	Lucasson, P.; Lucasson, A. Multiple atom displacements in irradiated metals. Radiat. Eff. 39, 155 (1978) France
1919	C18 He ⁺ + GaAs	E	1.5-3.5 MeV	Price, P. B.; Goddard, L. L.; Pat, M.-B.; Luan, C. T. X-ray and Rutherford backscattering yields from channelled helium ions in GaAs. Radiat. Eff. 39, 285 (1978) Canada
1920	C13 N ⁺ + CH ₄ ; N ⁺ + CD ₄ ; N ⁺ + N ₂	E	13-60 keV	Sidenius, G. The total ionization of low energy ions in a tissue equivalent gas and its component gases: absolute measurements. Radiat. Eff. 39, 213 (1978) Denmark
1921	D12 Am ⁺ + Au D15 Ar ⁺ + Cu; Ar ⁺ + Au	T	15-1000 keV	Yamamura, Y.; Kitazoe, Y. Computer simulation of cascade developments in amorphous targets. Radiat. Eff. 39, 221 (1978) Japan
1922	E18 e + Ba ⁺	T	16000 K	Gorchakov, L. V.; Bushin, V. P. Stark halfwidths and shifts of ionic spectral lines. Sov. Phys. J. 21, 502 (1978) Soviet Union
1923	C18 Underf	T	Underf	Zimin, N. I.; Vorob'ev, S. A. The possibility of induced radiation from a channelled electron. Sov. Phys. J. 21, 513 (1978) Soviet Union
1924	D12 He ⁺ + Mo; He ⁺ + Cu; He ⁺ + V; He ⁺ + Ti; Ar ⁺ + Ni; Ar ⁺ + Cu; Ar ⁺ + V; Ar ⁺ + Ti	E	35 keV	Buzhin, A. I.; Kozel', V. V.; Latkin, V. G.; Ryzhov, V. N.; Stupak, V. A. Optical radiation above the surface of metals during bombardment with inert-gas ions. Sov. Phys. J. 21, 547 (1978) Soviet Union
1925	E11 Underf	T	Underf	Nazarenishvili, A. S. Effect of coherent synchrotron oscillations on the spectrum of microwave radiation of electrons in storage ring. Sov. Phys. J. 21, 561 (1978) Soviet Union
1926	A10 H ₂ ⁺ + H ₂ O	E	520-1500 K	Znev, A. P.; Tschankov, D. K. Determination of relaxation times of H ₂ (v=1) level in presence of water vapor. Sov. Phys. J. 21, 785 (1978) Soviet Union
1927	A05 Underf	E	Underf	Zhelezov, V. A.; Silov, V. A.; Murzhanov, N. D. Chemical excitation of organic phosphors by active gases. Sov. Phys. J. 21, 838 (1978) Soviet Union
1928	A1C Underf	T	Underf	Sorov, V. V.; Mirzov, B. Y. On the theory of the electronic energy redistribution during a collision of molecules. Sov. Phys. J. 21, 833 (1978) Soviet Union
1929	C18 Underf	E	Underf	Plotnikov, S. V.; Khelilov, S. K. Experimental investigations of conditions of capture of electrons with energies of 0.2-2.5 MeV in the channeling mode. Sov. Phys. J. 21, 837 (1978) Soviet Union
1930	C18 e + KCl; e + KBr	T	1 MeV	Vorob'ev, A. A.; Kaplin, V. V.; Vorob'ev, S. A.; Popov, D. E. Temperature dependence of anomalous Rutherford scattering of fast electrons in crystals. Sov. Phys. J. 21, 848 (1978) Soviet Union
1931	D16 e + Al; e + Cu; e + Pb	E	337 keV	Tevonov, E. G.; Nominov, V. L. Measurement of integrated reflection coefficients of metals for high-current electron beams. Sov. Phys. J. 21, 970 (1978) Soviet Union
1932	D12 Ar ⁺ + Cu	E	Underf	Lobzin, V. G.; Porostat, V. I.; Filippov, E. I. Features of energy spectra in the case of bombardment of copper target at glancing angles. Sov. Phys. J. 21, 981 (1978) Soviet Union

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1933	E05 $e + \text{Xe}$ F91 Xe	E	E35 3 keV	Ogurtsov, G. M.; Nikushkin, V. M.; Flaks, I. P. Center-Kronig transitions in the M shell of xenon. Sov. Tech. Phys. Lett. 4, 5 (1978) Soviet Union
1934	C02 $e + \text{KCl}$; $e + \text{NaCl}$	E	1-2 MeV	Vorob'ev, S. A.; Plotnikov, S. V.; Rozov, L. I. Distribution of the energy absorbed from an electron beam in a crystal. Sov. Tech. Phys. Lett. 4, 7 (1978) Soviet Union
1935	E16 $e + \text{NaCl}$	E	333 keV	Dychkov, Y. I.; Karlov, M. V.; Losov, V. F.; Maygats, G. A.; Frolov, A. M.; Tarasenko, V. F. NaCl laser with electron-beam-excited discharge. Sov. Tech. Phys. Lett. 4, 34 (1978) Soviet Union
1936	D16 $\text{WF}_6 + \text{Si}$; $\text{e} + \text{Si}$	E	13 keV/nm	Tyagol, V. A.; Lyusko, V. S.; Krasibo, A. B.; Evstigneev, A. M.; Lokshin, M. M. Anisotropic-electro-reflectance determination of surface lattice defects in ion implantation. Sov. Tech. Phys. Lett. 4, 39 (1978) Soviet Union
1937	D17 $\text{Ar}^+ + \text{VC}_2$	E	43 keV	Lanokaya, T. G.; Severov, A. V.; Tereshov, L. I. Effect of ion bombardment on the metal-dielectric phase transition in VC_2 . Sov. Tech. Phys. Lett. 4, 45 (1978) Soviet Union
1938	H18 $\text{Br} + [\text{Br} + \text{Ar}]$	T	12700 Å	Antipenko, B. M.; Bagtyarov, Y. L.; Nibolov, V. D.; Tarasenko, V. V. Photoinduced recombination of atomic bromine. Sov. Tech. Phys. Lett. 4, 65 (1978) Soviet Union
1939	H04 $2\text{Br} + \text{Rb}$ H08 $\text{Br} + \text{Rb}$	E	1.76 μ	Arkhipkin, V. G.; Popov, A. A.; Tischoff, V. P. Conversion of $\lambda = 1.06 \mu$ light into the 420-nm range in rubidium vapor. Sov. Tech. Phys. Lett. 4, 75 (1978) Soviet Union
1940	C04 $e + \text{NaCl}$	E	21-50 keV	Grachev, B. D.; Godevshina, V. A.; Korobechko, Y. S.; Minayev, V. I.; Petrochenko, A. F.; Kozlovskii, S. S. Precise measurements of the average electron range in a dielectric. Sov. Tech. Phys. Lett. 4, 83 (1978) Soviet Union
1941	H06 $2\text{Br} + \text{Li}$	T	6000 Å	Belova, N. B.; Zon, B. A.; Federov, N. V. Polarization of nuclei in resonant atomic ionization. Sov. Tech. Phys. Lett. 4, 94 (1978) Soviet Union
1942	D09 $\text{CO}^+ + \text{Pyrex}$	E	1 eV	Ionikh, Y. Z.; Kuranov, A. L.; Penkin, M. P.; Sharov, V. F. Relaxation of vibrationally excited CO at a glass surface in a discharge. Sov. Tech. Phys. Lett. 4, 131 (1978) Soviet Union
1943	A11 $\text{CO}^+ + \text{CC}$	E	Thermal	Ionikh, Y. Z.; Kuranov, A. L.; Penkin, M. P.; Sharov, V. F. Rate constant for the $d^4\pi$ state in $\text{CO}-\text{CO}$ collisions. Sov. Tech. Phys. Lett. 4, 102 (1978) Soviet Union
1944	H06 $\text{Br} + \text{He}$	E	53.4-52.2 nm	Belik, V. P.; Bobashev, S. V.; Shosenok, L. A. Resonance absorption of the emission from a laser-produced plasma. Sov. Tech. Phys. Lett. 4, 108 (1978) Soviet Union
1945	D06 $e + \text{Cu}$	E	95.6 eV	Grachev, B. D.; Kozlovskii, S. S.; Korobechko, Y. S.; Minayev, V. I.; Petrochenko, A. F. Angular distribution of fast electrons scattered inelastically in copper. Sov. Tech. Phys. Lett. 4, 110 (1978) Soviet Union
1945	D06 $\text{Br} + \text{Si}$	E	3.4-5.2 eV	Gritsenko, V. A.; Mogil'nikov, A. F. Features in the photoemission of electrons due to the band structure of silicon. Sov. Tech. Phys. Lett. 4, 122 (1978) Soviet Union
1947	H04 $\text{Br} + \text{Ti}$; $\text{Br} + \text{V}$; $\text{Br} + \text{Si}$; $\text{Br} + \text{Co}$	T	12700-5000 Å	Loshakov, V. F.; Ulyakov, P. I. Spectral-line absorption in the laser evaporation of materials. Sov. Tech. Phys. Lett. 4, 136 (1978) Soviet Union

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1948	CP4 $\alpha + \text{Gas}$	E	200 keV	Bidenko, A. M.; Puk, V. S.; Usov, I. P.; Izvetkov, V. I.; Shatunov, A. A.; Shataev, M. E. Transport of a high-current microsecond electron beam in a gas. <i>Sov. Tech. Phys. Lett.</i> 4, 167 (1978) Soviet Union
1949	B17 $\text{W}^+ + \text{VO}_2$; $\text{Ar}^+ + \text{VO}_2$	E	32 keV	Abroyan, I. A.; Velichko, V. Y.; Gavrilyuk, A. I.; Zakharchenko, S. P.; Chudakovskii, I. A. Effect of ion bombardment on the optical characteristics of the phase transition in VO_2 films. <i>Sov. Tech. Phys. Lett.</i> 4, 225 (1978) Soviet Union
1952	B17 $\text{W}^+ + \text{Si}$	E	13 ⁺ keV	Gerasimenko, M. M.; Pan'kin, V. G.; Svitashev, K. A.; Tsilitin, G. N. Formation of a waveguide layer in the bombardment of silicon dioxide by boron ions. <i>Sov. Tech. Phys. Lett.</i> 4, 232 (1978) Soviet Union
1951	A07 $\text{He}^+ + \text{H}_2$	E	77-300 K	Zhitnikov, R. A.; Kartashkin, V. A.; Klement'ev, G. V. Isotopic effects in the interaction of molecular hydrogen with atomic helium in the 2^2S_1 state. <i>Sov. Tech. Phys. Lett.</i> 4, 272 (1978) Soviet Union
1952	CB2 $\alpha + \text{Plasma}$	E	2 MeV	Barozin, A. K.; Grishnev, I. A.; Zeldits, V. P.; Kisselov, V. A.; Sefronov, V. G.; Feinberg, Y. S.; Fursov, G. L. Interaction of a highly relativistic monoenergetic electron beam with a dense plasma. <i>Sov. Tech. Phys. Lett.</i> 4, 255 (1978) Soviet Union
1953	A17 $\text{Xe} + \text{Xe}$; $\text{Xe} + \text{Xe}^+$; $\text{Xe} + \text{Xe}^+$	T	Undef	Erdler, W. C.; Lee, Y. S.; Pitzer, K. S.; Winter, h. W. Ab initio effective core potentials including relativistic effects: II. Potential energy curves for Xe_2 , Xe_2^+ , and Xe_2^+ . <i>J. Chem. Phys.</i> 69, 976 (1978) United States
1954	A17 $\text{Au} + \text{H}$; $\text{Au} + \text{Cl}$; $\text{Hg} + \text{H}$; $\text{Hg} + \text{Cl}_2$	T	Undef	Hay, F. J.; Vadt, W. R.; Rahn, L. S.; Babrowicz, F. b. Ab initio studies of AuH , AuCl , HgH and HgCl_2 using relativistic effective core potentials. <i>J. Chem. Phys.</i> 69, 986 (1978) United States
1955	EP3 $\alpha + \text{O}_2$ CB2 $\text{O}_2^+ + \text{O}_2$ A11 $\text{O}_2^+ + \text{O}_2$	E	3.75-6.0 eV	Louton, S. A.; Phelps, A. V. Excitation of the b $^1\Sigma$ (sub g) ⁺ state of O_2 by low energy electrons. <i>J. Chem. Phys.</i> 69, 1055 (1978) United States
1955	B07 $\text{H}_2^+ + \text{He}$	T		Brandi, M. S.; Kollmer, B.; Lien de Barros, M. G. P.; Miranda, L. C. P. Inert gas atom-molecule collisions in a laser field: vibrational excitations in homopolar molecular ions. <i>J. Chem. Phys.</i> 65, 1096 (1978) Brazil
1957	A14 $\text{Sn} + \text{N}_2\text{C}$	E	320-950 K	Felder, W.; Fontijn, A. HTFR kinetic studies of $\text{Sn}/\text{N}_2\text{C}$, a highly efficient chemiluminescent reaction. <i>J. Chem. Phys.</i> 69, 1112 (1978) United States
1958	A17 $\text{He} + \text{He}$; $\text{He} + \text{He}$; $\text{He} + \text{Ar}$; $\text{He} + \text{Kr}$; $\text{Kr} + \text{Kr}$; $\text{He} + \text{He}$; $\text{He} + \text{Ar}$; $\text{He} + \text{Kr}$; $\text{Ar} + \text{Ar}$; $\text{Ar} + \text{Kr}$	T	Undef	Brual, G., Jr.; Rothstein, S. M. Rare gas interactions using an improved statistical method. <i>J. Chem. Phys.</i> 69, 1177 (1978) Canada
1959	A04 $\text{SF}_6 + \text{CuCl}$; $\text{SF}_6 + \text{Cu}_2\text{Cl}_2$	E	0-11 eV	Parke, E. K.; Sheen, S. M.; Mosier, S. Threshold behavior for collision-induced dissociation of CuCl and Cu_2Cl_2 by SF_6 molecules. <i>J. Chem. Phys.</i> 69, 1190 (1978) United States
1960	M05 $\text{nhv} + \text{SF}_6\text{Cl}$	E	5.1 eV	Karl, R. R., Jr.; Lyman, J. L. Investigation of the multiple-photon dissociation of SF_6Cl with a real time chlorine-atom diagnostic. <i>J. Chem. Phys.</i> 69, 1196 (1978) United States
1961	M04 $\text{nhv} + \text{SF}_6$	E	5.1 eV	Acherhalt, J. R.; Galbraith, M. W. Collisionless multiple photon excitation of SF_6 : a comparison of anharmonic oscillators with and without octahedral splitting in the presence of rotational effects. <i>J. Chem. Phys.</i> 69, 1200 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1962	A11 $O^+ + Ar; O^+ + Kr; O^+ + Xe$	E	110-330 K	Davidson, J. A.; Schiff, M. I.; Brown, T. J.; Strutt, C. E.; Howard, C. J. Rate constants for the deactivation of $O(^1D)$ by Xe, Kr, and Ar over the range 110-330 K. <i>J. Chem. Phys.</i> 69, 1213 (1978) United States
1963	A11 $O^+ + CO$	E	113-333 K	Davidson, J. A.; Schiff, M. I.; Brown, T. J.; Howard, C. J. Temperature dependence of the deactivation of $O(^1D)$ by CO from 113-333 K. <i>J. Chem. Phys.</i> 68, 1216 (1978) United States
1964	A14 $H + N_2; F + N_2$	T	0.1-0.5 eV	Pollak, E.; Pechukas, P. Translative states, trapped trajectories, and classical bound states embedded in the continuum. <i>J. Chem. Phys.</i> 69, 1218 (1978) United States
1965	A02 $He + ND$ A03 $He + ND$	T	330 K	Sharma, R. D.; Hart, R. R. Comparison of distorted wave and close-coupling results for scattering of He by ND at thermal energies. <i>J. Chem. Phys.</i> 69, 1233 (1978) United States
1966	A10 $N_2O^+ + H_2O$	E	230-400 K	Shin, H. K. Vibrational relaxation of water molecules near room temperature. <i>J. Chem. Phys.</i> 65, 1240 (1978) United States
1967	H10 Undef	T	Undef	Jauch, R. Theory of unimolecular reactions induced by monochromatic infrared radiation. <i>J. Chem. Phys.</i> 65, 1262 (1978) United States
1968	H04 $2h\nu + CC$	E	603.80-603.65 nm	Bernheim, R. A.; Kittrell, C.; Weiss, D. K. Doppler-free two-photon laser excitation of the vacuum ultraviolet absorption spectrum of CO. <i>J. Chem. Phys.</i> 69, 1360 (1978) United States
1969	A06 $He^+ + N_2; He^+ + N_2$	E	Undef	Covers, T. R. Comments on the use of time resolved $h\nu$ ($3 + 1$) emission as a probe of charge-transfer processes in $He-N_2$ and $He-H_2$ mixtures. <i>J. Chem. Phys.</i> 69, 1323 (1978) France
1970	E02 $e + N_2$ E03 $e + N_2$ E17 $e + N_2$ C09 $e + N_2$	T	30-50 eV	Onda, K.; Truhlar, D. G. Model potentials for electron scattering: converged close coupling calculations for the differential cross section for $e-N_2$ at 30-50 eV. <i>J. Chem. Phys.</i> 69, 1361 (1978) United States
1971	A06 $O^+ + Ar; O^+ + N_2; O^+ + O_2; O^+ + N_2;$ $O^+ + CO; O^+ + NO; O^+ + CO_2$	E	0.6-3.0 keV	Moran, T. F.; Wilson, J. B. Charge transfer reactions of ground $O(^4S)$ and excited $O(^2D)$ state ions with neutral molecules. <i>J. Chem. Phys.</i> 69, 1367 (1978) United States
1972	D03 $Ar^+ + Cu$	T	530 eV	Garrison, B. J.; Vinograd, N.; Harrison, B. E., Jr. Formation of small metal clusters by ion bombardment of single crystal surfaces. <i>J. Chem. Phys.</i> 69, 1446 (1978) United States
1973	A03 $H^+ + H_2O; H_2^+ + H_2O$ A07 $H^+ + H_2O; H_2^+ + H_2O$ E03 $e + H_2O$ E05 $e + H_2O$ E09 $e + H_2O$	E	A13; A07 500-1000 eV E03; E05; E09 10-20 eV	Edwards, B. A.; Lee, J. S.; Beerling, J. P. Inelastic scattering of positive ions and electrons from water: the 4-6 eV energy loss region. <i>J. Chem. Phys.</i> 69, 1445 (1978) United States
1974	A11 $NO_2^+ + NO_2$ F01 NO_2^+	E	A11 300 K	Donnelly, V. W.; Kaufman, F. Fluorescence lifetime studies of NO_2^+ : II. Dependence of the perturbed 2D_2 state lifetimes on excitation energy. <i>J. Chem. Phys.</i> 69, 1466 (1978) United States
1975	E02 $e + MCH$	E	3-51 eV	Srinivasa, S. K.; Yanaka, N.; Chutjian, A. Elastic scattering of intermediate energy electrons by MCH. <i>J. Chem. Phys.</i> 69, 1493 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
1975	M86 $h\nu + I_2$	E	600-360 nm	Lehmans, E. K.; Smierch, J.; Goodman, L. Boltzmann resonance ionization bands in I_2 . <i>J. Chem. Phys.</i> 65, 1549 (1976) United States
1977	A14 $H + O_2$	E	90-100 K	Kennedy, J. P.; Del Greco, F. P.; Calodrea, C. E.; Green, B. B. Nitric oxide chemiluminescence occurring in the reaction between metastable nitrogen atoms and oxygen molecules. <i>J. Chem. Phys.</i> 69, 1076 (1978) United States
1978	A83 $Ar^+ + H_2$	E	0-4.0 eV	Parr, T. P.; Martin, R. M. Velocity dependence of the sensitized fluorescence of nitrogen by metastable argon. <i>J. Chem. Phys.</i> 69, 1613 (1978) United States
1979	A85 $He^+ + [Ar + F_2]$ A11 $ArF^+ + F_2$; $Ar_2F^+ + F_2$; $ArF^+ + 2Ar$	E	A75 2 MeV A11 300 K	Chen, C. H.; Payne, R. G.; Judish, J. P. Kinetic studies of ArF^+ and Ar_2F^+ in proton-excited $Ar-F_2$ mixtures. <i>J. Chem. Phys.</i> 69, 1626 (1978) United States
1983	E89 $e + CO_2$; $e + N_2J$	E	0-6 eV	Klets, C. E.; Crompton, R. N. Electron attachment to van der Waals polymers of carbon dioxide and nitrous oxide. <i>J. Chem. Phys.</i> 69, 1638 (1978) United States
1981	E89 $e + H_2O$ E85 $e + H_2O$	E	E75 0-20 eV E29 0-10 eV	Klets, C. E.; Crompton, R. N. Electron attachment to van der Waals polymers of water. <i>J. Chem. Phys.</i> 69, 1644 (1978) United States
1982	A17 $Li + 2Li$	T	Under	Gerber, W. H.; Schumacher, E. The dynamic Jahn-Teller effect in the electronic ground state of Li_3 . An ab initio calculation of the SC hypersurface and the lowest vibrational states of Li_3 . <i>J. Chem. Phys.</i> 69, 1662 (1978) Switzerland
1983	A85 $Sr^+ + H_2O$ A14 $Sr^+ + H_2C$	E	330 K	Wilcox, B. E.; Bogdolan, P. J. Visible chemiluminescence from the reaction of metastable Sr with H_2O : absolute cross section and photon yield. <i>J. Chem. Phys.</i> 69, 1779 (1978) United States
1984	A87 $He^+ + Ar$ B87 $He^+ + Ar$	E	A37 330 K	Bellus, J. C.; Lam, K.-S.; George, T. F. Penning ionization of Ar by He^+ ($1s2s, ^3S$) in the presence of intense laser radiation: pronounced laser-modified collisional effects in the excited-electron energy spectrum. <i>J. Chem. Phys.</i> 69, 1781 (1978) United States
1985	A14 $H + F_2$	E	331 K	Jakubetz, V. On experimental vibrational product distributions in the $H + F_2$ reaction. <i>J. Chem. Phys.</i> 69, 1783 (1978) Austria
1985	A11 $ClF^+ + Ar$; $ClF^+ + ClF$	E	510-1100 K	Santoro, R. J.; Stebbins, G. J. Velocity gradient measurements of vibrational relaxation in $Ar-ClF$ mixtures behind shock waves. <i>J. Chem. Phys.</i> 65, 1787 (1978) United States
1987	A11 $I^+ + Br_2$; $I^+ + H_2$; $I^+ + CH_3I$	E	295 K	Wiesenfeld, J. R.; Volk, G. L. Kinetics of the deactivation of $I(5^2P_{1/2})$ by Br_2 I. Quenching of excited iodine atoms. <i>J. Chem. Phys.</i> 69, 1797 (1978) United States
1988	A14 $I^+ + Br_2$	E	295 K	Wiesenfeld, J. R.; Volk, G. L. Kinetics of the deactivation of $I(5^2P_{1/2})$ by Br_2 II. Production of electronically excited bromine atoms, $Br(4^2P_{1/2})$, by chemical reaction. <i>J. Chem. Phys.</i> 69, 1805 (1978) United States
1989	M87 $h\nu + CH_3O^-$; $h\nu + CD_3O^-$; $h\nu + CH_3S^-$	E	456 nm	Engelking, P. C.; Ellison, G. B.; Linberger, W. C. Laser photodetachment electron spectroscopy of methoxide, deuteromethoxide, and thiomethoxide: electron affinities and vibrational structure of CH_3O^- , CD_3O^- , and CH_3S^- . <i>J. Chem. Phys.</i> 65, 1826 (1978) United States
1993	M14 $h\nu + SO_2$	E	3600-2000 Å	Morvin, D. C.; Reiss, H. Cloud chamber study of the gas phase photooxidation of sulfur dioxide. <i>J. Chem. Phys.</i> 69, 1897 (1978) United States

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
1991	A11 $\text{CD}^+ + \text{O}$	E	255-300 K	Lewin, R. E.; Davis, C. C.; McFarlane, H. A. Vibrational deactivation of $\text{CD}(v=1)$ by oxygen atoms. <i>J. Chem. Phys.</i> 69, 1952 (1978) United States
1992	A04 $\text{H}^+ + \text{CH}_4; \text{He}^+ + \text{CH}_4; \text{O}^+ + \text{CH}_4$ A07 $\text{H}^+ + \text{CH}_4; \text{He}^+ + \text{CH}_4; \text{O}^+ + \text{CH}_4$	E	1 MeV	Edwards, A. E.; Graves, J. E.; Head, R. N.; Steiner, P. F. Dissociation of CH_4 by 1 MeV H^+ , He^+ , and O^+ projectiles. <i>J. Chem. Phys.</i> 69, 1508 (1978) United States
1993	A11 $\text{XeF}^+ + \text{He}; \text{XeF}^+ + \text{Ne}; \text{XeF}^+ + \text{Xe};$ $\text{XeF}^+ + \text{F}_2; \text{XeF}^+ + \text{HF}_2$	E	339 K	Fisher, C. R.; Center, R. E. Radiative lifetime and collisional quenching kinetics for the $\text{XeF}(31/2)$ state. <i>J. Chem. Phys.</i> 69, 2911 (1978) United States
1994	B14 $2\text{He} + \text{H}_2^+$	E	0-3 eV	Bethune, D. S.; Lenhard, J. R.; Zareba, P. P. Studies of the metastable ϵ $^2\sigma$ (sub σ) state of H_2^+ : towards a two-photon amplifier. <i>J. Chem. Phys.</i> 69, 2876 (1978) United States
1995	B06 $\text{He} + \text{H}_2$	E	5-62 eV	Pantman, W. B.; Gatchev, B.; Gortler, P.; Koch, E. E.; Sella, V. Transition probabilities at threshold for the photoionization of molecular nitrogen. <i>J. Chem. Phys.</i> 69, 2989 (1978) United States
1996	B06 $\text{He} + \text{H}_2$	T	15-70 eV	O'Sell, S. V.; Reinhardt, W. P. Photoionization of molecular hydrogen. <i>J. Chem. Phys.</i> 69, 2126 (1978) United States
1997	A06 $\text{U} + \text{O}_2; \text{Th} + \text{O}_2$ A07 $\text{U} + \text{O}_2; \text{Th} + \text{O}_2$ A14 $\text{U} + \text{O}_2; \text{Th} + \text{O}_2$	E	7.2-18° eV/a	Patternson, T. A.; Siegel, R. V.; Fite, W. L. Associative ionization of uranium and thorium in collisions with oxygen. <i>J. Chem. Phys.</i> 69, 2163 (1978) United States
1998	B08 $\text{He} + \text{WF}_6$ B10 $\text{He} + \text{WF}_6$	E	480-340 nm	Gildenberg, R. C.; Rice, S. B.; Vengler, F. D. Laser-induced fluorescence of gaseous WF_6 in the A-1 1100 band. <i>J. Chem. Phys.</i> 69, 2191 (1978) United States
1999	A17 $\text{Xe} + \text{F}; \text{Xe} + \text{Cl}; \text{Xe} + \text{Br}; \text{Xe} + \text{I}$	T	Under	Roy, P. J.; Dunning, T. H., Jr. The covalent and ionic states of the xenon halides. <i>J. Chem. Phys.</i> 69, 2209 (1978) United States
2000	B06 $\text{He} + \text{TlBr}$	E	2560 Å°	White, J. C.; Zdanich, G. A. Branching ratios for TlBr photodissociation with 2560 Å° radiation. <i>J. Chem. Phys.</i> 69, 2256 (1978) United States
2001	A11 $\text{H}_2^+ + \text{H}_2; \text{H}_2^+ + \text{Ar}; \text{H}_2^+ + \text{H}_2$	E	330 K	Levron, D.; Phelps, A. V. Quenching of $\text{H}_2(A^2\Sigma^+)$ by H_2 , Ar, and H_2 . <i>J. Chem. Phys.</i> 69, 2260 (1978) United States
2002	A17 $\text{He} + \text{HeH}^+$	T	Under	Wetche, R. L.; Pettitt, B. N.; Meier, P. F.; Pondergast, P. Potential energy surface for the collinear reaction of He and HeH^+ . <i>J. Chem. Phys.</i> 69, 2264 (1978) United States
2003	A05 $\text{Cu} + \text{F}_2; \text{Cu} + \text{WF}_6; \text{Cu} + \text{SF}_6$ B08 $\text{He} + \text{CuF}$	E	1300-600 nm	Stedje, R. E.; Iroide, M. P. Chemiluminescence and photoluminescence of CuF . <i>J. Chem. Phys.</i> 69, 2306 (1978) United States
2004	A10 $\text{I}^+ + \text{H}_2\text{O}; \text{I}^+ + \text{H}_2\text{O}; \text{I}^+ + \text{D}_2\text{O}; \text{H}_2\text{O}^+$ $+ \text{H}_2\text{O}; \text{D}_2\text{O}^+ + \text{D}_2\text{O}$	E	332 K	Grinley, A. J.; Houston, P. L. Electronic to vibrational energy transfer from $[\text{I}(^2P_{3/2})]^+ \text{H}_2\text{O}$, H_2O , and D_2O . <i>J. Chem. Phys.</i> 69, 2339 (1978) United States
2005	A03 $\text{He} + \text{NH}_3$	T	50-1000 1/cm	Davis, S. L.; Boggs, J. E. Rate constants for rotational excitation in NH_3 -He collisions. <i>J. Chem. Phys.</i> 69, 2355 (1978) United States
2006	A02 $\text{F} + \text{Xe}$ A17 $\text{F} + \text{Xe}$	E	1.1-13.9 keV/cm	Becher, C. N.; Casavochia, P.; Lee, Y. I. Crossed molecular beam studies on the interaction potential for $\text{F}(^2P) + \text{Xe}(^1S)$. <i>J. Chem. Phys.</i> 69, 2377 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2007	A17 He + He; He + He; He + Ar; He + Ne; He + Ar; Ar + Ar	T	Under	Leychen, R.; Coulson, P.; Leharbarker, R. B. V. Dispersion forces between noble gas atoms. <i>J. Chem. Phys.</i> 69, 2424 (1978) Belgium
2008	H5 hv + H ₂ ⁺	E	3-32 eV	Kolander, K. C.; Miller, E. J. Time dependent formulation of polyatomic photofragmentation: application to H ₂ ⁺ . <i>J. Chem. Phys.</i> 69, 2439 (1978) United States
2009	H4 H ₂ ⁺ + H ₂	E	13 keV	Vogler, R.; Heierjohann, B. H ₂ -H fragmentation resulting from collisions of 10 keV H ₂ ⁺ on H ₂ . <i>J. Chem. Phys.</i> 69, 2456 (1978) West Germany
2010	E75 e + CO ₂	E	13-100 eV	Nark, T. D.; Hille, E. Cross section for single and double ionization of carbon dioxide by electron impact from threshold up to 100 eV. <i>J. Chem. Phys.</i> 69, 2452 (1978) Austria
2011	H6 hv + HF ₂	E	6.9-19.7 eV	Batten, C. F.; Taylor, J. A.; Tsai, B. P.; Nichols, G. C. Photoionization processes at threshold I. Threshold photoelectron, photoionization, and coincidence ion-threshold photoelectron spectra of HF ₂ . <i>J. Chem. Phys.</i> 69, 2547 (1978) United States
2012	H7 Co + WF ₆ A14 Co + WF ₆	E	3.2-1.3 eV	Annis, B. K.; Batz, S. Ion pair formation and atom abstraction in collisions of Co and WF ₆ . <i>J. Chem. Phys.</i> 69, 2553 (1978) United States
2013	H7 Under	T		Lee, H. W.; DeVries, P. L.; George, T. F. Molecular collisions in a laser field: effect of the laser linewidth. <i>J. Chem. Phys.</i> 69, 2556 (1978) United States
2014	A11 NO ⁺ + H ₂ H2 hv + NO ⁺	E	A11 297 K H2 1350-1125 Å	Bien, F. Measurements of the nitric oxide ion vibrational absorption coefficient and vibrational transfer to H ₂ ⁺ . <i>J. Chem. Phys.</i> 69, 2631 (1978) United States
2015	A17 Ge + Kr; In + Kr; Tl + Kr	T	Under	Berning, T. M., Jr.; Valley, R.; Taylor, R. S. Theoretical studies of the low-lying electronic states of GeKr, including extrapolation to InKr and TlKr. <i>J. Chem. Phys.</i> 69, 2672 (1978) United States
2016	A13 O ⁺ + H ₂ ; O ⁺ + O ₂	E	30°-900 K	Chen, A.; Johnson, R.; Biondi, R. P. Measurements of the O ⁺ + H ₂ and O ⁺ + O ₂ reaction rates from 300 to 540 K. <i>J. Chem. Phys.</i> 69, 2688 (1978) United States
2017	A11 H ₂ ⁺ + He	T	50-2000 K	Raczowski, A. V.; Lester, V. A., Jr.; Miller, W. R. Vibrational relaxation in the para-H ₂ ⁺ -He system: comparison of coupled-channel, scattered-states, and effective potential methods. <i>J. Chem. Phys.</i> 69, 2682 (1978) United States
2018	H5 hv + I ₂ Me	E	0-0.35 1/cm	Johnson, E. E.; Wharton, L.; Levy, D. N. The photodissociation lifetime of the van der Waals molecule I ₂ Me. <i>J. Chem. Phys.</i> 69, 2719 (1978) United States
2019	A13 H ⁺ + H ₂	E	4.7-6.0 eV	Schmidt, M.; Hermann, V.; Linder, F. Crossed beam measurements of rotational quantum transitions in low-energy H ⁺ + H ₂ . <i>J. Chem. Phys.</i> 69, 2734 (1978) West Germany
2020	H5 hv + O ₂ ⁻	E	5000-5000 Å	Cooby, P. C.; Macleay, J. Y.; Peterson, J. R.; Ling, J. H. Photodissociation spectroscopy of O ₂ ⁻ . <i>J. Chem. Phys.</i> 69, 2771 (1978) United States
2021	H5 hv + [O ₂ ⁻ + H ₂ O]; hv + [O ₂ ⁻ + 2H ₂ O] H7 hv + [O ₂ ⁻ + H ₂ O]; hv + [O ₂ ⁻ + 2H ₂ O]	E	5000-5000 Å	Cooby, P. C.; Smith, G. P.; Macleay, J. Y. Photodissociation and photodetachment of molecular negative ions: IV. Hydrates of O ₂ ⁻ . <i>J. Chem. Phys.</i> 69, 2779 (1978) United States

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2022	A03 Na + Na; Na + Na; Na + Ar; Na + Kr; Na + Xe	T	30° K	Pascale, J. Sodium 4 ² D fine structure transition in collisions with rare gas atoms. <i>J. Chem. Phys.</i> 65, 2766 (1978) France
2023	A11 CO ₂ ⁺ + Na; CO ₂ ⁺ + Ar	T	300 K	Preston, R. K.; Pech, R. T. Mechanism and rates of rotational relaxation of CO ₂ (001) in Na and Ar. <i>J. Chem. Phys.</i> 69, 2823 (1978) United States
2024	A02 Na ⁺ + Ar; Na ⁺ + Kr; Na ⁺ + Xe A17 Na ⁺ + Ar; Na ⁺ + Kr; Na ⁺ + Xe	E	0.4-2.8 kcal/mol	Martin, D. W.; Grager, R. V.; Jordan, R. A.; Sisko, P. E. Differential elastic scattering of Na ⁺ (2 ¹ S) by Ar, Kr, and Xe: repulsive rainbows and optical potentials. <i>J. Chem. Phys.</i> 65, 2832 (1978) United States
2025	A14 CH + ND	E	332 K	Lee, L.; Bugan, C. H.; Sadowki, C. M. The gas phase reactions of CH and ND. <i>J. Chem. Phys.</i> 69, 2877 (1978) Canada
2026	A14 N + N ₂	T	0.4-1.0 eV	Volker, R. B.; Stoehel, E. B.; Light, J. C. Accurate N ₂ dynamics on an accurate N ₂ potential surface. <i>J. Chem. Phys.</i> 69, 2922 (1978) United States
2027	A14 ND ₂ + ClO	E	334 K	Reinman, B.; Kaufman, F. Rate constant of the reaction ND ₂ + ClO → NDCl + O ₂ . <i>J. Chem. Phys.</i> 65, 2925 (1978) United States
2028	A11 Ar ⁺ + N ₂ ; Ar ⁺ + Ar	E	296 K	Firestone, R. F.; Chen, M.-C. Bimolecular and three-body quenching of resonance state argon atoms by nitrogen at argon pressures in the 200-700 torr region. <i>J. Chem. Phys.</i> 69, 2943 (1978) United States
2029	A07 Na ⁺ + Ar; Na ⁺ + Kr; Na ⁺ + Xe	E	1-3 km/s	Woodard, M. R.; Sharp, R. C.; Sealy, N.; Muecheltz, E. L., Jr. Velocity dependence of the absolute cross sections for the chemi-ionization of Ar, Kr, and Xe on impact of 2 ¹ S and 2 ³ S helium atoms. <i>J. Chem. Phys.</i> 69, 2578 (1978) United States
2030	M04 hv + CO M06 hv + CO	T	10-1000 eV	Padiel, N.; Csencsek, G.; McKay, D. V.; Langhoff, P. b. Photoabsorption in carbon monoxide: Stieltjes-Tchabychoff calculations in the separated-channel static-exchange approximation. <i>J. Chem. Phys.</i> 69, 2992 (1978) Brazil
2031	B07 Undef	T		Copeland, D. A. Semiclassical theory of near-adiabatic photon-assisted molecular collisions. <i>J. Chem. Phys.</i> 69, 3665 (1978) United States
2032	A14 N + ND	E	196-400 K	Lee, J. H.; Michael, J. V.; Payne, W. A.; Stief, L. J. Absolute rate of the reaction of N(⁴ S) with ND from 196-400 K with SF-NF and FP-NF techniques. <i>J. Chem. Phys.</i> 69, 3669 (1978) United States
2033	A06 Na ⁺ + Ar; Na ⁺ + Na; Na ⁺ + Ar; Na ⁺ + Na; Na ⁺ + Ar; Ar ⁺ + Na; Ar ⁺ + Kr; Ar ⁺ + Xe; Kr ⁺ + Ar; Kr ⁺ + Xe	E	0.4-120 eV	Maier, W. B., II. Electron transfer in collisions between atomic ions and rare-gas atoms for primary-ion energies below 200 eV II. <i>J. Chem. Phys.</i> 65, 3677 (1978) United States
2034	A17 F + Na ₂ ; F + Ar ₂ ; F + Kr ₂ ; Cl + Kr ₂	T	Undef	Huestis, D. L.; Schlotter, M. E. Diatomic-in-molecules potential surfaces for the triatomic rare gas halides: Na ₂ X. <i>J. Chem. Phys.</i> 65, 3188 (1978) United States
2035	A10 N ₂ + CD ₄ ; N ₂ + HCl	T	278-3466 K	Eberhardt, W. B.; Stettler, J. D.; Vitriol, M. H.; Song, C. C. Distorted-wave Born calculations of v-v energy transfer. <i>J. Chem. Phys.</i> 69, 3112 (1978) United States
2036	A14 O + I ₂ ; O + CS ₂ ; O + OCS	E	8-30 kJ/mol	Cleugh, P. N.; O'Neill, G. M.; Geddes, J. Crossed-beam investigation of translational energy effects in oxygen atom reactions. <i>J. Chem. Phys.</i> 69, 3128 (1978) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2037	A10 $\text{NO}^+ + \text{N}_2$	T	254 K	Roderman, R. A.; Foley, M. P. Quenching on NO^+ vibrational radiation by N_2 in the upper atmosphere. <i>J. Chem. Phys.</i> 69, 3214 (1978) United States
2038	A02 $\text{Na} + \text{NCl}$ A03 $\text{Na} + \text{NCl}$	T	0-1 eV	Menchick, L.; Kouri, D. J. Magnetic transitions in the initial-/ labeled interpretation of the CS approximation. Computations for $\text{Na} + \text{NCl}$. <i>J. Chem. Phys.</i> 69, 3262 (1978) United States
2039	A17 $\text{CO} + \text{Ne}$; $\text{CO} + \text{Ne}$; $\text{CO} + \text{Ar}$; $\text{CO} + \text{Kr}$; $\text{CO} + \text{Xe}$	T	Undef	Parler, G. A.; Pech, R. T. Intermolecular potential energy surfaces from electron gas methods III. Angle, distance, and vibrational dependence of the Ar-CO interaction. <i>J. Chem. Phys.</i> 69, 2268 (1978) United States
2040	A11 $\text{S}_2^+ + \text{S}_2$; $\text{S}_2^+ + \text{N}_2$; $\text{S}_2^+ + \text{N}_2$; $\text{S}_2^+ + \text{Na}$; $\text{S}_2^+ + \text{Ne}$; $\text{S}_2^+ + \text{Ar}$; $\text{S}_2^+ + \text{Kr}$; $\text{S}_2^+ + \text{Xe}$	E	330 K	Caughy, T. A.; Cresley, D. R. Collision-induced energy transfer in the $\text{S}^+ \text{I}(\text{sub } u)$ state of diatomic sulfur. <i>J. Chem. Phys.</i> 69, 3378 (1978) United States
2041	A13 $\text{N}_2^+ + \text{N}_2$	E	0-38 eV	Tanaka, K.; Koyama, I. Threshold electron-secondary ion coincidence technique for the study of internal energy dependence of ion-molecule reactions. <i>J. Chem. Phys.</i> 69, 3422 (1978) Japan
2042	M06 $\text{nhv} + \text{I}_2$	E	530-366 nm	Zandee, L.; Bernstein, R. B.; Lichtin, D. A. Vibronic/mass spectroscopy via multiphoton ionization of a molecular beam: the I_2 molecule. <i>J. Chem. Phys.</i> 69, 3427 (1978) United States
2043	A11 $\text{O}_2^+ + \text{NCl}$	E	173-419 K	Gordon, R. J.; Brutto, P.; Roy, J. Vibrational relaxation of $\text{O}_2(001)$ by NCl . <i>J. Chem. Phys.</i> 69, 3439 (1978) United States
2044	D07 Undef	T	Undef	Brady, J. W., Jr.; Doll, J. D.; Thompson, D. L. Velocity dependence of angular distributions in gas/solid-surface collisions: relationship to the interaction potential. <i>J. Chem. Phys.</i> 69, 3458 (1978) United States
2045	A17 $\text{Li} + \text{O}_2$; $\text{Na} + \text{O}_2$	T	Undef	Alexander, M. M. Semiempirical potential surfaces and dynamical considerations for collisions between alkali metals and molecular oxygen: $\text{Li} + \text{O}_2$ and $\text{Na} + \text{O}_2$. <i>J. Chem. Phys.</i> 69, 3502 (1978) United States
2045	A03 Undef	T	Undef	Stechel, E. S.; Walker, R. B.; Light, J. C. M-matrix solution of coupled equations for inelastic scattering. <i>J. Chem. Phys.</i> 69, 3510 (1978) United States
2047	A04 Undef A14 Undef	T	Undef	Snider, W. Classical and near classical rates for bimolecular dissociation and exchange. <i>J. Chem. Phys.</i> 69, 3540 (1978) Canada
2048	E01 $e + \text{N}_2$; $e + \text{CO}$	T	Undef	Truhlar, D. G.; van-Catledge, F. A. Adiabatic polarization potentials for electron scattering by N_2 and CO . <i>J. Chem. Phys.</i> 69, 3576 (1978) United States
2049	A11 $\text{CO}^+ + \text{He}$	E	350 K	Bondybey, V. E.; Miller, T. A. Facilitative and radiationless vibronic deactivation rates in selectively excited CO^+ . <i>J. Chem. Phys.</i> 69, 3597 (1978) United States
2050	A02 $\text{Hg} + \text{H}$; $\text{H} + \text{H}$	T	0-2 eV	Le Roy, R. J.; Liu, V.-K. Energies and widths of quasi-bound levels (orbiting resonances) for spherical potentials. <i>J. Chem. Phys.</i> 69, 3622 (1978) Canada
2051	M05 $\text{hv} + \text{O}_3$	E	600-270 nm	Fairchild, C. K.; Stone, E. J.; Lawrence, G. R. Photofragment spectroscopy of ozone in the uv region 270-310 nm and at 670 nm. <i>J. Chem. Phys.</i> 69, 3632 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2052	A10 $\text{Br}^0 + \text{CO}_2$	E	296-600 K	Reisler, N.; Wittig, C. Temperature dependence of electronic to vibrational energy transfer from $\text{Br}(^4P_{1/2})$ to $^{12}\text{CO}_2$ and $^{13}\text{CO}_2$. J. Chem. Phys. 69, 3725 (1978) United States
2053	H04 $\text{h}\nu + \text{H}_2\text{C}$ H05 $\text{h}\nu + \text{H}_2\text{O}$	E	813-500 Å	Mentall, J. E.; Mohlmann, G. R.; Guyon, P. M. H Lyman- α emission from photodissociation of H_2O . J. Chem. Phys. 69, 3735 (1978) United States
2054	A14 $\text{F} + \text{H}_2$	T	0-0.5 eV	Lathan, S. L.; McNutt, J. F.; Byatt, R. E.; Redmon, R. J. Quantum dynamics of the $\text{F} + \text{H}_2$ reaction: resonance models, and energy and flux distributions in the transition state. J. Chem. Phys. 69, 3746 (1978) United States
2055	A02 $\text{Li} + \text{H}_2$ A03 $\text{Li} + \text{H}_2$ A17 $\text{Li} + \text{H}_2$ G07 $\text{Li} + \text{H}_2$	T	6-40 kcal/mol	Wagner, A. F.; Vahl, A. C.; Kero, J. M.; Krajci, R. Classical inelastic scattering in $\text{Li} + \text{H}_2$: a comparison of different potential energy surfaces. J. Chem. Phys. 69, 3756 (1978) United States
2056	A14 $\text{Be} + \text{HF}$ A17 $\text{Be} + \text{HF}$	T	15-40 kcal/mol	Schor, M.; Chapman, S.; Green, S.; Zare, R. N. Theoretical study of collinear $\text{de} + \text{FM}(\text{v}_1) + \text{BeF}(\text{v}_2) + \text{H}$. J. Chem. Phys. 69, 3790 (1978) United States
2057	A11 $\text{I}^0 + \text{HgI}_2$ H05 $\text{h}\nu + \text{HgI}_2$	E	320-265 nm	Mofmann, M.; Leone, S. R. Tunable laser photodissociation of HgI_2 : quantum yield for formation of excited $\text{I}(^5P_{1/2})$ atoms. J. Chem. Phys. 69, 3819 (1978) United States
2058	A14 $\text{F} + \text{HI}$; $\text{F} + \text{HBr}$; $\text{F} + \text{H}_2\text{S}$; $\text{F} + \text{H}_2\text{CO}$; $\text{F} + \text{SiH}_4$; $\text{F} + \text{GeH}_4$	E	300 K	Sung, J. P.; Setzer, D. W. Observation of high rotational levels of HF formed by chemical reaction in one torr of argon buffer gas. J. Chem. Phys. 69, 3868 (1978) United States
2059	G04 $\text{Rb}^0 + \text{Kr}$; $\text{Rb}^0 + \text{Xe}$; $\text{K}^0 + \text{Kr}$; $\text{K}^0 + \text{Xe}$	E	0-6 eV	Pope, W. M.; Elstein, F. L.; Thackston, M. G.; McDaniel, E. W. Longitudinal diffusion coefficients and test of the generalized Einstein relation for $\text{Rb}^0\text{-Kr}$, $\text{Rb}^0\text{-Xe}$, $\text{K}^0\text{-Kr}$, and $\text{K}^0\text{-Xe}$. J. Chem. Phys. 69, 3874 (1978) United States
2060	A11 $\text{Ar}^0 + \text{Ar}$	E	330 K	Chang, R. S. F.; Setzer, D. W. Radiative lifetimes and two-body deactivation rate constants for $\text{Ar}(3p^5, 4p)$ and $\text{Ar}(3p^5, 1p^1)$. J. Chem. Phys. 69, 3885 (1978) United States
2061	E03 $e + \text{CS}_2$; $e + \text{OCS}$; $e + \text{SO}_2$	E	25-70 eV	Flicher, W. H.; Mosher, D. A.; Kuppermann, A. Electron-impact excitation of low-lying electronic states in CS_2 , OCS , and SO_2 . J. Chem. Phys. 69, 3910 (1978) United States
2062	A17 $\text{He} + \text{Ar}$	T	Undef	Keil, M.; Kuppermann, A. Scattering of thermal He beams by crossed atomic and molecular beams. I. Sensitivity of the elastic differential cross section to the interatomic potential. J. Chem. Phys. 69, 3917 (1978) United States
2063	H06 $\text{h}\nu + \text{N}_2$	E	17-24 eV	Mintz, D. M.; Kuppermann, A. Energy dependence of the differential photoelectron cross sections of molecular nitrogen. J. Chem. Phys. 69, 3552 (1978) United States
2064	A11 $\text{O}^0 + \text{O}_2$; $\text{O}_2^0 + \text{O}_2$	E	330 K	Lee, L. C.; Slanger, T. G. Observations on $\text{O}(^1D + ^2P)$ and $\text{O}_2(^1\Sigma \text{ sub } g^+ + ^1\Sigma \text{ sub } g^-)$ following O_2 photodissociation. J. Chem. Phys. 69, 4003 (1978) United States
2066	A03 $\text{CsI} + \text{Ar}$; $\text{CsI} + \text{Xe}$; $\text{CsI} + \text{Ar}$; $\text{CsI} + \text{Xe}$; $\text{KBr} + \text{Ar}$; $\text{KBr} + \text{Xe}$	E	0-4 eV	McGinnis, R. P.; Greene, E. F. The inelastic scattering of alkali halides by rare gases. J. Chem. Phys. 69, 4073 (1978) United States

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2966	A11 OCS + He; OCS + Ar	T	33° K	Green, S. On the amount of information in rotational relaxation experiments with application to microwave transient T_1 and T_2 rates. <i>J. Chem. Phys.</i> 69, 4876 (1978) United States
2967	A14 F + H ₂	T	333 K	Faist, M. B.; Neckerman, J. T.; Schubert, F. E. Importance sampling and histogrammic representations of reactivity functions and product distributions in Monte Carlo quasistochastic trajectory calculations. <i>J. Chem. Phys.</i> 69, 4987 (1978) United States
2968	A14 Undef	T	Undef	Augustin, S. D.; Rabitz, M. The classical path approximation in time-dependent quantum collision theory. <i>J. Chem. Phys.</i> 69, 4192 (1978) United States
2969	A17 H + H; E + D	T	Undef	Silvers, I. F.; Goldman, V. V. The isotropic intermolecular potentials for H ₂ and D ₂ in the solid and gas phases. <i>J. Chem. Phys.</i> 65, 4269 (1978) The Netherlands
2970	A17 Tl + H; Tl + He; Tl + Ne; Tl + Ar; Tl + Kr; Tl + Xe	T	Undef	Wu, C. Y. R.; Stuelley, W. C.; Proctor, T. R. Long-range interactions of the thallium 7 ² S _{1/2} state and broadening and shift of the thallium violet and green lines by rare gases. <i>J. Chem. Phys.</i> 69, 4238 (1978) United States
2971	D11 CO + Ir D13 CO + Ir	E	30-1300 K	Taylor, J. L.; Ibbotson, D. E.; Bainsburg, W. H. The chemisorption of CO on clean and oxidized Ir(110). <i>J. Chem. Phys.</i> 69, 4298 (1978) United States
2972	A14 H + Br ₂ ; D + Br ₂	E	0-10 kcal/mol	Hepburn, J. W.; Klimek, D.; Liu, K.; Polanyi, J. C.; Wallace, S. C. Reactive cross section as a function of collision energy. I. H(D) + Br ₂ → HBr(Br) + Br. <i>J. Chem. Phys.</i> 69, 4311 (1978) Canada
2973	A94 Kr* + H ₂ O H05 hv + H ₂ C	E	A24 3:0 K H05 124 nm	Vikis, A. C. The OH (A ² X*) internal energy distribution produced by the Kr(² P _{1/2}) sensitized decomposition of H ₂ O. <i>J. Chem. Phys.</i> 69, 4314 (1978) Canada
2974	H04 hv + NO H04 hv + NO	T	0-10 eV	Cremaschi, P.; Johnson, P. R.; Whitten, J. L. Multiphoton ionization spectroscopy: a theoretical analysis of the NO spectrum. <i>J. Chem. Phys.</i> 69, 4341 (1978) United States
2975	A11 Ar* + Xe; Ar* + Kr; Ar* + Hg; Ar* + H ₂ ; Ar* + D ₂ ; Ar* + CO; Ar* + N ₂ ; Ar* + NO; Ar* + H ₂ O; Ar* + O ₂ ; Ar* + SO ₂ ; Ar* + CO ₂ ; Ar* + COS; Ar* + HCl; Ar* + HBr; Ar* + HI; Ar* + F ₂ ; Ar* + Cl ₂ ; Ar* + Br ₂ ; Ar* + ICl; Ar* + IBr; Ar* + ClF; Ar* + OF ₂ ; Kr* + Xe; Kr* + Kr; Kr* + Hg; Kr* + H ₂ ; Kr* + D ₂ ; Kr* + CO; Kr* + N ₂ ; Kr* + NO; Kr* + H ₂ O; Kr* + O ₂ ; Kr* + SO ₂ ; Kr* + CO ₂ ; Kr* + COS; Kr* + HCl; Kr* + HBr; Kr* + HI; Kr* + F ₂ ; Kr* + Cl ₂ ; Kr* + Br ₂ ; Kr* + ICl; Kr* + IBr; Kr* + ClF; Kr* + OF ₂ ; Xe* + Xe; Xe* + Kr; Xe* + Hg; Xe* + H ₂ ; Xe* + D ₂ ; Xe* + CO; Xe* + N ₂ ; Xe* + NO; Xe* + H ₂ O; Xe* + C ₂ ; Xe* + SO ₂ ; Xe* + CO ₂ ; Xe* + COS; Xe* + HCl; Xe* + HBr; Xe* + HI; Xe* + F ₂ ; Xe* + Cl ₂ ; Xe* + Br ₂ ; Xe* + ICl; Xe* + IBr; Xe* + ClF; Xe* + OF ₂ ; Xe* + SeF ₆ ; Xe* + CS ₂ ; Xe* + H ₂ C; Xe* + H ₂ S; Xe* + NH ₃ ; Xe* + HCN; Xe* + BrCN; Kr* + SeF ₆ ; Kr* + C ₂ ; Kr* + H ₂ O; Kr* + H ₂ S; Kr* + NH ₃ ; Kr* + HCN; Kr* + BrCN; Ar* + SeF ₆ ; Ar* + CS ₂ ; Ar* + H ₂ O; Ar* + H ₂ S; Ar* + NH ₃ ; Ar* + HCN; Ar* + BrCN	E	350 K	Velazco, J. E.; Kolts, J. H.; Sasser, D. W. Rate constants and quenching mechanisms for the metastable states of argon, krypton, and xenon. <i>J. Chem. Phys.</i> 69, 4357 (1978) United States

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2876	A11 $\text{OH}^+ + \text{H}_2\text{O}$ F01 OH^+	E	A11 292 K	Quichendon, T. I.; Irvin, J. A.; Sangster, D. F. Time resolved emission from $\text{OH}(\text{C}^2 \Sigma^+)$ produced by the pulse radiolysis of water vapor. <i>J. Chem. Phys.</i> 69, 4395 (1978) Australia
2877	A04 $\text{H}^+ + \text{CO}; \text{H}^+ + \text{NO}; \text{He}^+ + \text{CO}; \text{He}^+ + \text{NO}; \text{O}^+ + \text{CO}; \text{O}^+ + \text{NO}$	E	1 MeV	Wood, B. N.; Steamer, R. F.; Edwards, A. K. Dissociation of CO and NO by fast H^+ , He^+ , and O^+ projectiles. <i>J. Chem. Phys.</i> 69, 4487 (1978) United States
2878	A03 $\text{He} + \text{H}_2$	T	0.1-4.2 eV	Cross, R. J., Jr. Semiclassical approximations for low-energy inelastic scattering. <i>J. Chem. Phys.</i> 65, 4495 (1978) United States
2879	E05 $\text{e} + \text{CO}$	E	10-100 eV	Millie, E.; Mark, T. D. Cross section for single and double ionization of carbon monoxide by electron impact from threshold up to 100 eV. <i>J. Chem. Phys.</i> 69, 4600 (1978) Austria
2880	A17 $\text{HCl} + \text{Ar}; \text{HCl} + \text{Kr}$	T	Under	Kircz, J. G.; van der Pyl, G. J. C.; van der Elshen, J.; Frankel, D. Determination of potential energy surfaces for Ar-HCl and Kr-HCl from rotational linebroadening data. <i>J. Chem. Phys.</i> 69, 4606 (1978) The Netherlands
2881	A02 $\text{Na}^+ + \text{He}$ A10 $\text{Na}^+ + \text{He}$ A17 $\text{Na}^+ + \text{He}$	T	Under	Jordan, R. N.; Sieke, P. E. Classical and semiclassical theory of symmetric exchange collisions: an inversion procedure for low-energy $\text{Na}^+(2^3S, 2^3P) + \text{He}$ differential scattering. <i>J. Chem. Phys.</i> 69, 4634 (1978) United States
2882	M05 $2\text{He} + \text{OCS}$	E	193 nm	Kligler, D. J.; Pummer, M.; Bischof, U. K.; Rhodes, C. K. Photolytic production of $\text{S}(^1\text{D})$ from OCS by two-quantum and vibrationally dependent mechanisms. <i>J. Chem. Phys.</i> 69, 4652 (1978) United States
2883	A17 $\text{Ar} + \text{HF}; \text{He} + \text{HF}; \text{He} + \text{CO}; \text{Li}^+ + \text{CO}; \text{Li}^+ + \text{H}_2; \text{Li}^+ + \text{H}_2$	T	Under	Ewing, T. F.; Detrich, J.; Conn, R. W. Analytic fits to several diatomic ab initio potential hyper-surfaces. <i>J. Chem. Phys.</i> 69, 4662 (1978) United States
2884	G06 $\text{Cl}^- + \text{O}_2; \text{Cl}^- + \text{H}_2; \text{Cl}_2^- + \text{O}_2; \text{Cl}_2^- + \text{H}_2; \text{CO}_2^- + \text{O}_2$	E	Under	Ellis, M. V.; Elmore, F. L.; McDaniel, E. V. Temperature dependent mobilities of negative ions in H_2 and O_2 . <i>J. Chem. Phys.</i> 69, 4716 (1978) United States
2885	E09 $\text{e} + [\text{H}_2\text{O} + \text{CO}_2]$	E	29A K	Shimomori, H.; Fessenden, R. W. Mechanism of thermal electron attachment in $\text{H}_2\text{O}-\text{CO}_2$ mixtures in the gas phase. <i>J. Chem. Phys.</i> 69, 4732 (1978) United States
2886	M02 $\text{He} + \text{CaHe}$	E	6050-6250 $\text{\AA}^0$	Tan, A. C. Absorption bands in a CaHe system associated with forbidden Ca atomic transitions. <i>J. Chem. Phys.</i> 69, 4753 (1978) United States
2887	A07 $\text{He}^+ + \text{D}$	E	0.01-10 eV	Neymeyer, R. H.; Tang, S. Y. Penning and associative ionization in the metastable helium-atomic deuterium system. <i>J. Chem. Phys.</i> 69, 4851 (1978) United States
2888	D03 $\text{Ar}^+ + \text{NaF}; \text{Ar}^+ + \text{NaCl}; \text{Ar}^+ + \text{NaBr}; \text{Ar}^+ + \text{NaI}; \text{Ar}^+ + \text{CuF}; \text{Ar}^+ + \text{CoI}; \text{Ar}^+ + \text{CoClO}_4$	E	3 keV	Nonda, F.; Lancaster, G. H.; Fukuda, Y.; Rabalais, J. V. SIMS study of the mechanism of cluster formation during ion bombardment of alkali halides. <i>J. Chem. Phys.</i> 69, 4931 (1978) United States
2889	A06 $\text{K} + \text{Br}_2; \text{K} + \text{Cl}_2$ A07 $\text{K} + \text{Br}_2; \text{K} + \text{Cl}_2$ A10 $\text{K} + \text{Br}_2; \text{K} + \text{Cl}_2$	E	4-37 eV	Kimura, H.; Lacombe, K. Energy and angular differential cross sections for electron transfer in the systems $\text{K} + \text{Br}_2$ and $\text{K} + \text{Cl}_2$. <i>J. Chem. Phys.</i> 65, 4938 (1978) West Germany
2890	A11 $\text{NH}_3^+ + \text{NH}_3; \text{NH}_3^+ + \text{Ne}; \text{NH}_3^+ + \text{Ar}; \text{NH}_3^+ + \text{H}_2; \text{NH}_3^+ + \text{O}_2$	E	293 K	Novis, F. E.; Moore, C. B. Vibrational relaxation of NH_3^+ (ν_2). <i>J. Chem. Phys.</i> 69, 4547 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2091	A17 Rb ⁺ + Ar; Rb ⁺ + Kr; Rb ⁺ + Xe C66 Rb ⁺ + Ar; Rb ⁺ + Kr; Rb ⁺ + Xe	E	300 K	Gottland, I. B.; Lenn, D. R.; Thackston, R. G.; Page, W. N.; Eiselo, F. L.; Ellis, N. W.; McDaniel, E. U. Repulsion and interaction potentials for Rb ⁺ -Ar, Rb ⁺ -Kr, and Rb ⁺ -Xe. <i>J. Chem. Phys.</i> 69, 4951 (1978) United States
2092	A03 H + H ₂ A04 H + H ₂ A14 H + H ₂	T	3-12 eV	Kalender, K. C. Collision induced dissociation in collinear H + H ₂ : quantum mechanical probabilities using the time-dependent wavepacket approach. <i>J. Chem. Phys.</i> 69, 5064 (1978) United Kingdom
2093	A17 Kr ⁺ + Ar; Xe ⁺ + Ar; Ar ⁺ + Ne; Ar ⁺ + Ar; Ar ⁺ + Kr; Ar ⁺ + Xe; Ne ⁺ + Ar	T	Undef	Vallee, G.; Glasser, J.; Rassen, P.; Chapelle, J. The interactions between excited and ground state rare gas atoms. <i>J. Chem. Phys.</i> 69, 5051 (1978) France
2094	A10 Ne ⁺ + [Ne + Xe + NF ₃]; F ⁺ + [Ne + Xe + NF ₃]; F ₂ ⁺ + [Ne + Xe + NF ₃]; Ne ⁺ + [Ne + Xe + F ₂]; F ⁺ + [Ne + Xe + F ₂]; F ₂ ⁺ + [Ne + Xe + F ₂]	E	330 K	Neustein, D. L.; Hill, R. M.; Mohanc, M. M.; Lorente, D. C. Quenching of Ne ⁺ , F ⁺ , and F ₂ ⁺ in Ne/Xe/NF ₃ and Ne/Xe/F ₂ mixtures. <i>J. Chem. Phys.</i> 69, 5133 (1978) United States
2095	A10 NF ⁺ + D ₁	E	333 K	Capelle, G. A.; Sutton, D. G.; Steinfeld, J. I. Near-resonant electronic energy transfer from NF(Δ ¹ Δ) to D ₁ . <i>J. Chem. Phys.</i> 69, 5140 (1978) United States
2096	M02 hv + ScCl; hv + YCl; hv + LaCl	E	637-360 nm	Schenck, P. K.; Mallard, V. G.; Travis, J. C.; Smyth, K. F. Absorption spectra of metal oxides using optogalvanic spectroscopy. <i>J. Chem. Phys.</i> 69, 5147 (1978) United States
2097	A17 Ne ⁺ + Ne; Ar ⁺ + Ar; Kr ⁺ + Kr; Xe ⁺ + Xe	T	Undef	Nichols, M. N.; Hobbs, R. M.; Wright, L. A. Electronic structure of the noble gas dimer ions. I. Potential energy curves and spectroscopic constants. <i>J. Chem. Phys.</i> 69, 5151 (1978) United States
2098	A11 H ₂ O ⁺ + H ₂ O; H ₂ O ⁺ + Ne; H ₂ O ⁺ + H ₂ ; H ₂ O ⁺ + H ₂ ; H ₂ O ⁺ + CD	E	333 K	Kanaga, T.; Kuze, M.; Shinizu, T. Determinations of relaxation rate constants on the 2 ₁ GHz rotational transition of H ₂ O by coherent transient spectroscopy. <i>J. Chem. Phys.</i> 69, 5195 (1978) Japan
2099	A14 Sr + NF	E	800 K	Kerny, Z.; Estler, R. C.; Zaro, B. H. Effect of reagent orientation and rotation upon product state distribution in the reaction Sr + NF (v=1, J). SrF(v', J) + H. <i>J. Chem. Phys.</i> 69, 5199 (1978) United States
2100	E02 e + SF ₆	T	0-40 eV	Bohrer, J. L.; Siegel, J.; Dill, D. Shape resonances in e-SF ₆ scattering. <i>J. Chem. Phys.</i> 69, 5205 (1978) United States
2101	A02 Li ⁺ + H ₂ ; H ⁺ + H ₂ A03 Li ⁺ + H ₂ ; H ⁺ + H ₂ A10 Li ⁺ + H ₂ ; H ⁺ + H ₂	T	0.6-3.7 eV	McCann, K. J.; Flannery, M. M. Elastic scattering and rotational excitation in ion-molecule collisions. II. Li ⁺ -H ₂ and H ⁺ -H ₂ collisions. <i>J. Chem. Phys.</i> 69, 5275 (1978) United States
2102	A17 Mg + H	T	Undef	Saxon, R. P.; Kirby, K.; Liu, B. <i>Ab initio</i> configuration interaction study of the low-lying electronic states of MgH. <i>J. Chem. Phys.</i> 69, 5301 (1978) United States
2103	A10 HCl + HCl; HBr + HBr; DCl + DCl; CBr + CBr	E	30° K	Morwitz, A. B.; Leone, S. R. Laser-excited resonant isotopic V + V energy transfer: ³⁵ Cl- ³⁷ Cl, ⁷⁹ Br- ⁸¹ Br, ³⁵ Cl- ³⁷ Cl, and ⁷⁹ Br- ⁸¹ Br. <i>J. Chem. Phys.</i> 69, 5319 (1978) United States
2104	E02 e + C ₂ E17 e + CO G09 e + CO	E	3-100 eV	Yanaka, H.; Srivastava, S. R.; Chutjian, A. Absolute elastic differential electron scattering cross sections in the intermediate energy region I V. CO. <i>J. Chem. Phys.</i> 69, 5329 (1978) United States

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
2105	A11 HCl + CO ₂ ; HCl + H ₂ O	E	305-900 K	Boymontte, L.; Adel, F. A.; Chabrec, A.; Margottin-Macieu, M.; Henry, L. Vibrational relaxation in HCl-CO ₂ and HCl-H ₂ O mixtures studied by the laser-induced fluorescence method. J. Chem. Phys. 69, 5334 (1978) France
2106	H05 hv + O ₂ ⁺ ; hv + [NO ⁺ + NO]; hv + [CO ₂ ⁺ + CO ₂]; hv + H ₂ ⁺ ; hv + CO ₂ ⁺ ; hv + [O ₂ ⁺ + H ₂ O]; hv + [O ₂ ⁺ + 2H ₂ O]	E	8500-3500 Å ⁰	Smith, G. P.; Lee, L. C. Photodissociation of atmospheric positive ions: II. 3208-8600 Å ⁰ . J. Chem. Phys. 69, 5393 (1978) United States
2107	A14 H + NO ₂ ; H + ClO ₂	E	305 K	Mariella, P. P., Jr.; Lantzsch, B.; Messer, V. T.; Lenz, A. C. Molecular beam-laser induced fluorescence studies on the chemical reactions H + NO ₂ → OH + NO and H + ClO ₂ → OH + ClO. J. Chem. Phys. 69, 5411 (1978) United States
2108	A10 F ⁺ + H ₂	T	0-2.4 kcal/mol	Thomas, L. B.; Lester, W. A., Jr.; Rebentrost, F. Classical path study of nonadiabatic transitions in atom-molecule scattering: quenching of F(2P _{1/2}) by H ₂ . J. Chem. Phys. 69, 5489 (1978) United States
2109	F01 H ₂ ⁺	E		Day, E. L.; Anderson, R. J.; Skerpton, F. A. Radiative decay constants of the H ₂ Fulcher bands. J. Chem. Phys. 69, 5510 (1978) United States
2110	A13 H ₂ ⁺ + He	T	33 eV	Gaba, M.; Rai Dastidar, I. K. Angular distribution of product ions in the ion-molecule reaction H ₂ ⁺ (He, h) H ₂ ⁺ by quantum mechanical impulse approximation. J. Chem. Phys. 69, 5560 (1978) India
2111	A03 He ⁺ + He	E	13 keV	Bobeshov, S. V.; Kharchenko, V. A. Population inversion of 3s states in neon in low-energy collisions with sodium ions. Sov. Tech. Phys. Lett. 3, 542 (1977) Soviet Union
2112	H07 hv + H ⁻ D07 hv + H ⁻	E	H07 13.9 eV	Grass, P. A. M.; Pratt, J. C.; Yates-Williams, M. A.; Bryant, M. C.; Sonahue, J.; Sharifian, M.; Tsutsunichi, M. Effect of an electric field upon resonances in the H ⁻ ion. Phys. Rev. Lett. 40, 167 (1978) United States
2113	H06 Undef	T	Undef	Dixit, S. N.; Lambropoulos, P. Resonance-correlation effects in near-resonant multiphoton ionization. Phys. Rev. Lett. 40, 111 (1978) United States
2114	H05 nhv + SF ₆	T	Undef	Grant, E. R.; Schulz, P. A.; Sudbo, A. S.; Shen, Y. T.; Lee, Y. T. Is multiphoton dissociation of molecules a statistical thermal process. Phys. Rev. Lett. 40, 115 (1978) United States
2115	D03 Sr	E		Freeman, R. R.; Bjorklund, G. C. Effects of electric fields upon autoionizing states of Sr. Phys. Rev. Lett. 40, 118 (1978) United States
2116	C02 H ₂ ⁺ + C; HeH ⁺ + C C06 H ₂ ⁺ + C; HeH ⁺ + C D09 H ₂ ⁺ + C; HeH ⁺ + C	E	75-300 keV	Leubert, R.; Chen, F. K. Experimental method for testing the potential of moving ions in solids. Phys. Rev. Lett. 40, 174 (1978) United States
2117	H02 hv + H ₂	E	850-805 Å ⁰	Glass-Maujean, M.; Braton, J.; Guyon, P. P. Accidental predissociation of the Apr 1v (sub u) ⁰ state of H ₂ . Phys. Rev. Lett. 40, 181 (1978) France
2118	D07 He + LiF	T	Undef	Harvie, C. E.; Sears, J. M. Theoretical analysis of bound-state resonance data in He-LiF scattering. Phys. Rev. Lett. 40, 187 (1978) United States
2119	A11 H ₂ ⁺ + H ₂ ; H ₂ ⁺ + He H04 2hv + H ₂	E	A11 337 K H04 1930 Å ⁰	Kilgus, D. J.; Rhodes, C. K. Observation of two-photon excitation of the H ₂ L ₁ F 1Σ (sub g) ⁰ state. Phys. Rev. Lett. 40, 309 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2120	A63 He ⁺ + He; Li ⁺ + He; Ba ⁺ + He; B ⁺ + He; C ⁺ + He; N ⁺ + He; O ⁺ + He; F ⁺ + He; Ne ⁺ + He; Ne ⁺ + He; Mg ⁺ + He; Al ⁺ + He; Si ⁺ + He; P ⁺ + He; S ⁺ + He; Cl ⁺ + He; Ar ⁺ + He; K ⁺ + He	E	13 ⁺ keV	Dovine, E. G.; Sorenson, G. Z oscillations in the excitation of 2s vacancies in He III measured by the radiative decay. Phys. Rev. Lett. 40, 315 (1978) Denmark
2121	H03 He + Ta; He + Zn; He + Sn; He + Au; He + Pb	T	0.01-10 MeV	Kissel, L.; Pratt, R. M. New predictions for Rayleigh scattering: 10 keV-10 MeV. Phys. Rev. Lett. 40, 327 (1978) United States
2122	A10 HD + HD	E	330 K	Patel, C. K. N. Use of vibrational energy transfer for excited-state opto-acoustic spectroscopy of molecules. Phys. Rev. Lett. 40, 535 (1978) United States
2123	H02 Zn ⁺ + H	T	Undef	Kobe, D. H. Question of gauge: nonresonant two-photon absorption. Phys. Rev. Lett. 40, 538 (1978) United States
2124	D02 He ⁺ + He	E	150-3500 eV	Ye, H. L. Work-function dependence of negative-ion production during sputtering. Phys. Rev. Lett. 40, 574 (1978) United States
2125	A07 He ⁺ + He	E	2 keV	Kessel, Q. C.; Horgenstern, R.; Muller, B.; Niehaus, A.; Thielmann, U. Ion-electron coincidence measurements of the azimuthal dependence of electrons from autoionizing He atoms excited in 2000-eV He ⁺ -He collisions. Phys. Rev. Lett. 40, 645 (1978) West Germany
2126	C06 B ⁺ + Au; B ⁺ + Ag; C ⁺ + Au; C ⁺ + Ag; N ⁺ + Au; N ⁺ + Ag; O ⁺ + Au; O ⁺ + Ag; F ⁺ + Au; F ⁺ + Ag; F ⁺ + Au; F ⁺ + Ag C07 B ⁺ + Au; B ⁺ + Ag; C ⁺ + Au; C ⁺ + Ag; N ⁺ + Au; N ⁺ + Ag; O ⁺ + Au; O ⁺ + Ag; F ⁺ + Au; F ⁺ + Ag; F ⁺ + Au; F ⁺ + Ag C08 B ⁺ + Au; B ⁺ + Ag; C ⁺ + Au; C ⁺ + Ag; N ⁺ + Au; N ⁺ + Ag; O ⁺ + Au; O ⁺ + Ag; F ⁺ + Au; F ⁺ + Ag; F ⁺ + Au; F ⁺ + Ag	E	10-35 MeV	Datz, S.; Neuh, C. D.; Crawford, D. H.; Kruuse, H. F.; Dittner, P. F.; Gomez del Campo, J.; Biggerstaff, J. A.; Miller, P. E.; Nuytens, P.; Knudsen, N. Resonant coherent excitation of channelled ions. Phys. Rev. Lett. 40, 843 (1978) United States
2127	D11 Undef	T	Undef	Kneiss, T. R.; Suhl, H. *Erratum Sticking coefficient of atoms on solid surfaces at low temperatures. Phys. Rev. Lett. 40, 911 (1978) United States
2128	D13 e + TiO ₂ ; e + V ₂ O ₅ ; e + WO ₃ ; e + Cr ₂ O ₃ ; e + NiO	E	4-50 eV	Kaestli, H. L.; Feibelman, P. J. Ion desorption by core-hole Auger decay. Phys. Rev. Lett. 40, 964 (1978) United States
2129	A06 C ⁺ + Ar; O ⁺ + Ar; C ⁺ + Ar; O ⁺ + Ar; O ⁺ + Ar; O ⁺ + Ar	E	1.6-2.8 MeV/amu	Vane, C. R.; Seilin, I. A.; Suter, P.; Alton, G. D.; Eistan, S. W.; Griffin, P. M.; Thoa, R. S. Z, velocity, and charge dependence of zero-degree electron ecpis from charge transfer to continuum states of bare and highly ionized projectiles. Phys. Rev. Lett. 40, 1020 (1978) United States
2130	D02 H ⁺ + H ₂ O; Na ⁺ + H ₂ O; C ⁺ + H ₂ O; O ⁺ + H ₂ O; e + H ₂ C	E	0.5-1.6 MeV	Brown, W. L.; Longorotti, L. J.; Penta, J. R.; Augustyniak, U. N. Sputtering of ice by MeV light ions. Phys. Rev. Lett. 40, 1027 (1978) United States
2131	A10 Eu + [Sr + hv]	E	820-1000 °C	Cahoon, P.; Teschek, P. E. Observation of light-induced collisional energy transfer. Phys. Rev. Lett. 40, 1087 (1978) West Germany
2132	A19 Ar + Ar	E	2.5-8 MeV	Lutz, H. O.; McMurray, U. R.; Proterius, R.; van Reenen, R. J.; van Heerden, I. J. Impact-parameter dependence of Ar K x-ray excitation in slow Ar-Ar collisions. Phys. Rev. Lett. 40, 1103 (1978) South Africa

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2133	A06 hv + Xe	T	5-100 eV	Johnson, W. R.; Cheng, K. Y. Relativistic effects on low-energy Sd + spion p photoionization for xenon. Phys. Rev. Lett. 40, 1167 (1978) United States
2134	A06 Cl ⁺ + Cu	E	20-80 MeV	Tanis, J. A.; Shafroth, S. R. Target-thickness dependence of radiative electron capture in heavy-ion collisions. Phys. Rev. Lett. 40, 1174 (1978) United States
2135	A06 H + Co	E	43 keV	Hennies, D.; Raymond, R. S.; Anderson, L. W.; Hammaril, W.; Glavish, W. F. Production of polarized H ⁺ or D ⁺ ions by a colliding-beam method. Phys. Rev. Lett. 40, 1234 (1978) United States
2136	A02 Na ⁺ + Pb B07 Na ⁺ + Pb B08 Na ⁺ + Pb	E	230-2000 eV	Zartner, A.; Taglauer, E.; Holland, W. Oscillator, ion yields of Na ⁺ scattered from atomic and solid Pb targets. Phys. Rev. Lett. 40, 1259 (1978) West Germany
2137	E03 e + H E17 e + H	E	70-100 eV	Dixon, A. J.; Hood, S. T.; Veigold, E. Electron-photon coincidence measurements in electron scattering from atomic hydrogen. Phys. Rev. Lett. 40, 1262 (1978) Australia
2138	B07 hv + S ⁻ B04 hv + S ⁻	E	B07 597 nm	Sluoberg, W. A. R.; Jopson, R. R.; Larson, B. J. Precision laser photodetachment spectroscopy in magnetic fields. Phys. Rev. Lett. 40, 1320 (1978) United States
2139	A07 H ⁺ + N ₂ S; H ⁺ + SO ₂ ; H ⁺ + SF ₆ ; H ⁺ + CH ₄ ; H ⁺ + CCl ₄ ; H ⁺ + CF ₄	E	1.5 MeV	Matthews, D. L.; Hopkins, F. Anomalous spectral and yield features of Auger emission from symmetric molecules. Phys. Rev. Lett. 40, 1326 (1978) United States
2140	A10 Xe + NH ₃	E	335 K	Smith, K. A.; Kellert, T. G.; Ruedel, R. E.; Dunning, F. B.; Stobbing, R. F. Discrete energy transfer in collisions of Xe(nf) Rydberg atoms with NH ₃ molecules. Phys. Rev. Lett. 40, 1362 (1978) United States
2141	B06 2hv + Sr; 2hv + Ba	E	41970-42040 1/cm	Fench, R. J.; Tracy, D. W.; Wright, D. C.; Tomino, F. S. Atomic diamagnetism: quasi-Landau spectrum near the ionization threshold. Phys. Rev. Lett. 40, 1366 (1978) United States
2142	B07 Li ⁺ + [Li ⁺ + hv]	E		Welford, A. V.; Coddick, J.; Weiner, J. Observation of laser-induced Penning and associative ionization in Li-Li collisions. Phys. Rev. Lett. 40, 1369 (1978) United States
2143	A03 Na ₂ + Ne; Na ₂ + Ne A18 Na ₂ + Ne; Na ₂ + Ne	E	90-190 eV	Bergmann, R.; Engelhardt, B.; Hefter, U.; Hering, P.; Witt, J. State-resolved differential cross sections for rotational transitions in Na ₂ + Ne (Ne) collisions. Phys. Rev. Lett. 40, 1446 (1978) West Germany
2144	A16 H ⁺ + Ar	E	0.5 MeV	Monodax, M. G.; Duncan, M. R. Collisional electron detachment of H ⁺ : a complete Auger distribution. Phys. Rev. Lett. 40, 1642 (1978) United States
2145	A03 H ⁺ + H	E	25-100 keV	Parh, J. T.; Aldag, J. E.; Pascher, J. L.; George, J. H. Angular differential cross sections for excitation of atomic hydrogen by 25-, 50-, and 100-keV protons. Phys. Rev. Lett. 40, 1646 (1978) United States
2146	A06 Kr ²⁺ + Kr; Xe ²⁺ + Xe; Kr ²⁺ + Ne; Xe ²⁺ + Ne	E	0.04-20 eV	Okuno, K.; Koizumi, T.; Kaneko, Y. Spectroscopic resonance double charge transfer in Kr ²⁺ + Kr and Xe ²⁺ + Ne systems. Phys. Rev. Lett. 40, 1768 (1978) Japan
2147	A06 Review	E	60-132 keV/euv	Kim, H. J.; Hvelplund, F.; Mayer, F. W.; Phanoof, R. A.; Steinen, P. N.; Bottcher, C. Observation of oscillations in the charge dependence of total electron-capture cross sections. Phys. Rev. Lett. 40, 1835 (1978) United States

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2148	B07 Ne + LiF	E	Undef	Frankl, D. L.; Isenor, B.; Krishnaswamy, S. V.; Berry, G.; O'Gorman, T. Selective-adsorption-induced intensity maxima in $^{20}\text{Ne}/\text{LiF}$ scattering. <i>Phys. Rev. Lett.</i> 41, 60 (1978) United States
2149	B01 H ⁺	E F		Koch, P. R. Resonant states in the nonperturbative regime: the hydrogen atom in an intense electric field. <i>Phys. Rev. Lett.</i> 41, 99 (1978) United States
2150	B03 Li ⁺	E F		Littman, R. G.; Kash, M. M.; Klappner, B. Field-ionization processes in excited atoms. <i>Phys. Rev. Lett.</i> 41, 103 (1978) United States
2151	E05 e + Fe ²⁰⁺ ; e + Fe ²¹⁺ ; e + Fe ²²⁺ E06 e + Fe ²⁰⁺ ; e + Fe ²¹⁺ ; e + Fe ²²⁺	E	55-200 eV	Brooks, R. L.; Batia, R. U.; Griem, R. R. Measurement of dielectronic recombination rates for the iron ions Fe IX-XI. <i>Phys. Rev. Lett.</i> 41, 167 (1978) United States
2152	E05 e + Mo ²⁰⁺ ; e + Mo ²¹⁺ E06 e + Mo ²⁰⁺ ; e + Mo ²¹⁺	E	1.6-2.2 keV	Breton, C.; de Michelis, C.; Fladesthal, N.; Mattioli, P. Ionization and recombination rate coefficients of highly ionized molybdenum ions from spectroscopy of tokamak plasmas. <i>Phys. Rev. Lett.</i> 41, 110 (1978) France
2153	H06 hv + Kr; hv + Xe	E	64-118 eV	Eberhardt, W.; Kalkhoff, G.; Rupp, C. Measurement of the Auger decay after resonance excitation of Xe 4s and Kr 3d resonance lines. <i>Phys. Rev. Lett.</i> 41, 156 (1978) West Germany
2154	CC1 N ₂ ⁺ + C; N ₂ ⁺ + C CF5 N ₂ ⁺ + C; N ₂ ⁺ + C C06 N ₂ ⁺ + C; N ₂ ⁺ + C C07 N ₂ ⁺ + C; N ₂ ⁺ + C	E	2.2-2.4 MeV	Gaillard, M. J.; Polzat, J. C.; Gouilleux, J. Observation of MeV dissociative N ₂ ⁺ ions emerging from very thin foils. <i>Phys. Rev. Lett.</i> 41, 159 (1978) France
2155	A08 K + PERT	F	50-5000 keV/amu	Dixon, R. E.; Berkner, K. M.; Graham, W. G.; Pyle, R. V.; Schlachter, A. S.; Stearns, J. W. Charge-state dependence of electron loss from K by collisions with heavy, highly stripped ions. <i>Phys. Rev. Lett.</i> 41, 163 (1978) United States
2156	H06 3hv + Na	E	Undef	Nogon, P. B.; Smith, S. J.; Georges, A. T.; Leobros, P. on Stark splitting in resonant multi-photon ionization with broadband lasers. <i>Phys. Rev. Lett.</i> 41, 229 (1978) United States
2157	A03 Ne + Ne A17 Ne + Ne A18 Ne + Ne	E F	0.064 eV	Gerber, R. B.; Shapiro, M.; Much, L.; Schleusener, J. Quantum-mechanical inversion of the differential cross section; determination of the Ne-Ne potential. <i>Phys. Rev. Lett.</i> 41, 236 (1978) Israel
2158	G05 e + Ne	E	Undef	Schwarz, K. W. Anomalous electron mobilities in dense helium gas. <i>Phys. Rev. Lett.</i> 41, 239 (1978) United States
2159	H04 hv + [Co + Ar] H06 hv + [Co + Ar]	E	4550 Å	Nayfeh, M. M.; Hurst, G. S.; Payne, R. G.; Young, J. P. Observation of new satellites in the Co-Ar system using resonance ionization spectroscopy. <i>Phys. Rev. Lett.</i> 41, 302 (1978) United States
2160	A17 Ne + Ne E02 e + NeNe	F	A17 Undef E02 3-13.6 eV	Neonau-Sedoux, F.; Philippe, M.; Valiron, P. Model-potential calculations on the molecular system NeNe. <i>Phys. Rev. Lett.</i> 41, 368 (1978) France
2161	AC8 O ²⁰⁺ + Ar; O ²⁰⁺ + Ne; O ²⁰⁺ + Ar; O ²⁰⁺ + Ne; Ne; O ²⁰⁺ + Ar; O ²⁰⁺ + Ne; O ²⁰⁺ + Ar; O ²⁰⁺ + Ne; Si ¹⁰⁺ + Ar; Si ¹⁰⁺ + Ne; Si ¹¹⁺ + Ar; Si ¹¹⁺ + Ne; Si ¹²⁺ + Ar; Si ¹²⁺ + Ne; Si ¹³⁺ + Ar; Si ¹³⁺ + Ne; Si ¹⁴⁺ + Ar; Si ¹⁴⁺ + Ne	E	1.6-3.9 MeV/amu	Sater, M.; Vane, C. R.; Sellin, I. A.; Eiston, S. B.; Alton, G. D.; Thoe, R. S.; Leubert, R. Observation of oscillatory (interference) structure in the forward peak from fast-projectile electron loss. <i>Phys. Rev. Lett.</i> 41, 399 (1978) United States

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2162	A06 $\text{N}^0 + \text{Kr}$	E	35-126 keV	Mird, B.; All, S. P. Existence of the negative ion of atomic nitrogen. <i>Phys. Rev. Lett.</i> 41, 346 (1978) Canada
2163	M10 $h\nu + [\text{K} + \text{Xe}]$	E	4357 Å	Yabuzaki, T.; Tan, A. C.; Curry, S. M.; Mopper, W. Visible emission bands of Xe^0 (sub a) polyatomic exciplexes. <i>Phys. Rev. Lett.</i> 41, 343 (1978) United States
2164	D04 $\text{N}^0 + \text{C}; \text{N}^0 + \text{Al}; \text{N}^0 + \text{Ag}; \text{N}^0 + \text{Au};$ $\text{O}^0 + \text{C}; \text{O}^0 + \text{Al}; \text{O}^0 + \text{Ag}; \text{O}^0 + \text{Au};$ $\text{Si}^0 + \text{C}; \text{Si}^0 + \text{Al}; \text{Si}^0 + \text{Ag}; \text{Si}^0 +$ $\text{Au}; \text{Ni}^0 + \text{C}; \text{Ni}^0 + \text{Al}; \text{Ni}^0 + \text{Ag};$ $\text{Ni}^0 + \text{Au}$	E	1-4 MeV/amu	Leubert, R.; Seilin, I. A.; Vase, C. B.; Suter, M.; Elston, S. B.; Alton, G. B.; Thoe, B. v. Z, velocity, and target-material dependence of convey electrons from solids. <i>Phys. Rev. Lett.</i> 41, 712 (1978) United States
2165	E03 $e + \text{Ba}^0$ E07 $e + \text{Ba}^0$	E	33-100 eV	Register, B. F.; Trajner, S.; Jepsen, S. W.; Poe, B. T. Electron scattering by laser-excited barium atoms. <i>Phys. Rev. Lett.</i> 41, 749 (1978) United States
2166	A18 $\text{Na}_2^0 + \text{Xe}$	E	33° K	Brunner, T. A.; Driver, R. B.; Smith, R.; Pritchard, D. E. Simple scaling law for rotational-energy transfer in $\text{Na}_2^0\text{-Xe}$ collisions. <i>Phys. Rev. Lett.</i> 41, 856 (1978) United States
2167	A19 $\text{S}^{2+} + \text{Ar}; \text{S}^{2+} + \text{Ar}; \text{S}^{2+} + \text{Ar}; \text{S}^{2+} + \text{Ar};$ $\text{S}^{2+} + \text{Ar}; \text{S}^{2+} + \text{Ar}; \text{S}^{2+} + \text{Ar}; \text{S}^{2+} + \text{Ar};$ $\text{Ar}; \text{Cl}^{11+} + \text{NaCl}$	E	32 MeV	Scheidt-Boehling, H.; Schuch, R.; Tserruya, I.; Volpp, J.; Lichtenberg, W. Charge-state dependence of molecular K-x-ray production in nearly symmetrical ion-atom collisions. <i>Phys. Rev. Lett.</i> 41, 859 (1978) West Germany
2168	A03 $\text{Na}^0 + \text{Ar}$ A10 $\text{Na}^0 + \text{Ar}$	E	3.12-6.14 eV	Phillips, V. B.; Serri, J. A.; Ely, S. J.; Pritchard, D. E.; Way, K. B.; Kinsey, J. L. Angular scattering distribution by Doppler spectroscopy: $\text{Na}(3P_{3/2}) + \text{Ar} \rightarrow \text{Na}(3P_{3/2}) + \text{Ar}$. <i>Phys. Rev. Lett.</i> 41, 937 (1978) United States
2169	M04 $h\nu + \text{H}^0$ M06 $h\nu + \text{H}^0$	T	3.9 GHz	Leopold, J. G.; Percival, I. C. Microwave ionization and excitation of Rydberg atoms. <i>Phys. Rev. Lett.</i> 41, 544 (1978) United Kingdom
2170	M02 $h\nu + \text{Li}$	E	43250-43500 1/cm	Lu, K. T.; Tomkins, F. S.; Crosswhite, M. M.; Crosswhite, M. Absorption spectra of atomic lithium in high magnetic fields. <i>Phys. Rev. Lett.</i> 41, 1834 (1978) United States
2171	A06 $\text{C}^{0+} + \text{H}$ A07 $\text{C}^{0+} + \text{H}$	T	24 MeV	Shaneshaft, R.; Spruch, L. Asymmetry in the cusp of the cross section for electron capture to the continuum for a fast bare ion on a hydrogenlike atom. <i>Phys. Rev. Lett.</i> 41, 1837 (1978) United States
2172	D02 $\text{Ar}^0 + [\text{Cu} + \text{O}]$	T	63° eV	Vinograd, R.; Garrison, B. J.; Harrison, C. E., Jr. Angular distributions of ejected particles from ion-bombarded clean and reacted single-crystal surfaces. <i>Phys. Rev. Lett.</i> 41, 1120 (1978) United States
2173	M06 $h\nu + \text{Na}$	E	625-275 nm	Boorman, G. H.; Lavanthal, J. J. Ionization and energy pooling in laser-excited Na vapor. <i>Phys. Rev. Lett.</i> 41, 1227 (1978) United States
2174	M06 $h\nu + \text{N}_2; h\nu + \text{CO}$	E	Under	Dill, D.; Wallace, S.; Singel, J.; Dehaer, J. L. Molecular-photoelectron angular distributions as a probe of dynamic symmetry breaking. <i>Phys. Rev. Lett.</i> 41, 1230 (1978) United States
2175	A06 $\text{H} + \text{O}^{2+}; \text{H} + \text{O}^{2+}; \text{H} + \text{O}^{2+}; \text{H} + \text{O}^{2+};$ $\text{H} + \text{O}^{2+}$	T	0.1-1 keV	Isler, R. C.; Cruce, E. C. Charge-transfer excitation of impurity ions in tokamaks. <i>Phys. Rev. Lett.</i> 41, 1296 (1978) United States
2176	D05 $h\nu + \text{Al}$	E	11-30 eV	Peterson, M.; Hagstrom, S. B. M. Optical excitation of the surface photoelectric effect of metals using synchrotron radiation. <i>Phys. Rev. Lett.</i> 41, 1314 (1978) United States

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2177	H06 $h\nu + Rb$ H06 $h\nu + Rb$	E	H06 3005-2960 Å	Freeman, R. B.; Economou, M. P.; Sørensen, C. C.; Lu, K. Y. Observation of electric-field-induced resonance above the ionization limit in a one-electron atom. <i>Phys. Rev. Lett.</i> 41, 1463 (1978) United States
2178	A06 $Rg^+ + Rg; Rg^{2+} + Rg$	E	1.2-1000 eV	Pedersen, E. M.; Nishikawa, J. V.; Veeben, J.; Taulbjerg, K. Interference effect in resonant double-charge transfer. <i>Phys. Rev. Lett.</i> 41, 1501 (1978) Denmark
2179	H06 $Th + U$	E	4555 Å	Cooke, V. E.; Gallagher, T. F. Observation of pair splittings in the autoionization spectrum of Th. <i>Phys. Rev. Lett.</i> 41, 1648 (1978) United States
2180	D08 $H^+ + Pb; H^+ + Pb; H_2^+ + Pb; H_2^+ + Pb$	E	6.6-10 keV/nucleon	Tsai, H. H.; Tully, J. C.; Kraus, J. S.; Holland, G.; Hoff, S. M. Elliptic polarization of Balmer radiation from low-energy grazing-incidence collisions of hydrogen ions on surfaces. <i>Phys. Rev. Lett.</i> 41, 643 (1978) United States
2181	A11 $Ba^+ + Ba^+$	E	1/25 eV	White, J. C.; Zdzien, G. A.; Young, J. F.; Harris, S. E. Observation of radiative collisional fluorescence. <i>Phys. Rev. Lett.</i> 41, 1709 (1978) United States
2182	A03 $H^+ + H$	E	3.15 MeV	Blair, J. S.; Dyer, P.; Snover, K. A.; Trainor, T. A. Nuclear time delay and n-ray-proton coincidences near a nuclear scattering resonance. <i>Phys. Rev. Lett.</i> 41, 1712 (1978) United States
2183	E09 $e + H_2; e + D_2$	E	1-5 eV	Allan, M.; Wong, S. F. Effect of vibrational and rotational excitation on dissociative attachment in hydrogen. <i>Phys. Rev. Lett.</i> 41, 1791 (1978) United States
2184	E09 $e + H_2$	T	3.1-4 eV	bedchru, J. M.; Bardsley, J. N. Vibrational-and rotational-state dependence of dissociative attachment in e-H ₂ collisions. <i>Phys. Rev. Lett.</i> 41, 1796 (1978) United States
2185	G02 $Xe^+ + Ar$ A11 $Xe^+ + Ar$	E	337 Å	Chenevier, R.; Sadeghi, M.; Pothier-Pagroua, J. C. Relaxation processes of Xe ⁺ (^{4p}) metastable atoms in argon-xenon mixtures. <i>J. Phys. Lett. (Paris)</i> 39, L106 (1978) France
2186	A03 $Na^+ + Na$ A10 $Na^+ + Na$ H08 $Th + Na$	E	270 °C	Biraben, F.; Baroff, K.; Giacobino, E.; Grynberg, G. Relaxation of the 4D _{3/2} and 4D _{5/2} levels of sodium atom perturbed by noble gases. <i>J. Phys. Lett. (Paris)</i> 39, L108 (1978) France
2187	A02 $Kr^+ + He$	E	Thermal	Brochignac, C.; Vetter, R.; Berman, P. R. Persistence of velocity following elastic collisions. <i>J. Phys. Lett. (Paris)</i> 39, L231 (1978) France
2188	A07 $Me^{2+} + Ar$	E	4 MeV	Pointu, A. M.; Vitale, M. Method for the measurement of the mean ionizing cross-section of fast particles and of the corresponding charge produced. <i>J. Phys. Lett. (Paris)</i> 39, L253 (1978) France
2189	H02 $h\nu + Th; h\nu + U$	E	57-150 eV	Cukier, M.; Dhaz, P.; Gauthier, B.; Jaegle, P.; Vollenhe, C. L.; Combet Farnoux, F. Photoabsorption of Th and U by direct measurement and fast electron energy loss spectra near the 5d thresholds. <i>J. Phys. Lett. (Paris)</i> 39, L316 (1978) France
2190	D03 Na^+	E		Vialle, J.-L. Sensitive detection of multiple thresholds for electric field ionization of sodium Rydberg states. <i>J. Phys. Lett. (Paris)</i> 39, L366 (1978) France

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2191	A18 Hg ⁰ + Zn; Hg ⁰ + Cd	E	Thermal	Cromer, C.; Cheron, B. Etude des transferts d'orientation et d'alignement dues à fluorescence sensibilisée mercure-cadmium et mercure-zinc. <i>J. Phys. Lett. (Paris)</i> 39, L419 (1978) France
2192	886 Review	T	18-200 eV	Kelly, M. P. Electron correlations in photoionization and vacancy decay processes. <i>J. Phys. (Paris)</i> 39, C4-16 (1978) United States
2193	886 Review E91 Review E93 Review E99 Review	T	0-1000 eV	Burke, P. C. R-matrix method—advantages and applications. <i>J. Phys. (Paris)</i> 39, C4-27 (1978) United Kingdom
2194	886 Review	E	2300-10 Å	Shirley, D. A. Correlation effects in photoelectron spectroscopy of atoms. <i>J. Phys. (Paris)</i> 39, C4-35 (1978) United States
2195	886 Review	E T	0-200 eV	Behmer, J. L. Angular distributions of photoelectrons and non-thermal photoions from atoms and molecules. <i>J. Phys. (Paris)</i> 39, C4-42 (1978) United States
2196	F91 Review	E		Tramer, A. Decay of excited molecular states. <i>J. Phys. (Paris)</i> 39, C4-51 (1978) France
2197	F91 Review	E		TFB Group Vacuum ultra-violet spectroscopy on T.F.B. tokamak plasmas. <i>J. Phys. (Paris)</i> 39, C4-66 (1978) France
2198	907 Undef	T	Undef	Dion, D. R.; Bell, J. D. Semiclassical theory of atom/solid surface collisions: solution of Steel's model. <i>Surface Sci.</i> 58, 415 (1976) United States
2199	886 hv + Se; hv + C; hv + Al; hv + Si; hv + Ti; hv + V; hv + Cr; hv + Mn; hv + Fe; hv + Co; hv + Ni; hv + Cu; hv + Zn; hv + Ga; hv + Y; hv + Zr; hv + Nb; hv + Mo; hv + Pd; hv + Ag; hv + Cd; hv + In; hv + Sn; hv + Te; hv + Hf; hv + Ta; hv + U; hv + Pt; hv + Au; hv + Pb; hv + LiCl; hv + NH ₃ ; hv + MgO; hv + LiF; hv + CaF ₂ ; hv + H ₂ O; hv + COCl ₂ ; hv + KI; hv + CdSe; hv + BaCl ₂ ; hv + ThO ₂	E	1.2 keV	Brillson, L. J.; Caesar, G. P. X-ray photoionization cross sections for quantitative analysis. <i>Surface Sci.</i> 58, 457 (1976) United States
2200	905 hv + NI; hv + [N + NI]	E	21-27 eV	Conrad, H.; Ertl, G.; Koppers, J.; Latta, L. E. Ultraviolet photoelectron spectra from hydrogen adsorbed on Ni(111) and Pd(111) surfaces. <i>Surface Sci.</i> 58, 578 (1976) West Germany
2201	904 Ne ⁰ + Mg; Ne ⁰ + Al; Ar ⁰ + Mg; Ar ⁰ + Al; Kr ⁰ + Mg; Kr ⁰ + Al; Xe ⁰ + Mg; Xe ⁰ + Al	E	3.0-3.6 keV	Farrante, J.; Pepper, S. V. Production of Mg and Al Auger electrons by noble gas ion bombardment of Mg and Al surfaces. <i>Surface Sci.</i> 58, 613 (1978) United States
2202	C84 Na ⁰ + W D16 W ⁰ + Pt	E	0.3-30 keV	Soldner, D. N. The study of radiation damage in metals with the field-ion and atom-probe microscopes. <i>Surface Sci.</i> 70, 632 (1978) United States
2203	907 He + W	T	1300-2200 K	Goodman, F. O. Theory of scattering of He by a W(112) surface. <i>Surface Sci.</i> 70, 678 (1978) Canada
2204	907 Review	E T	300-3000 K	Cole, M. V.; Frankl, D. R. Atomic and molecular beam scattering from crystal surfaces in the quantum regime. <i>Surface Sci.</i> 70, 685 (1978) United States
2205	905 Undef	T	Undef	Delangey, F.; Lucas, A.; Mahon, G. B. Inelastic scattering of electrons by vibrational motion of molecules adsorbed at metal surfaces. <i>Surface Sci.</i> 70, 629 (1978) Belgium

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2206	D04 $e + [Al + Mg]; e + Al_2O_3; e + MgO$	E	0-800 eV	Goldstein, B.; Browner, J. Growth of MgO films with high secondary electron emission on Al-Mg alloys. Surface Sci. 71, 15 (1978) United States
2207	C06 $He^+ + Ni$ D06 $He^+ + Ni$	E	195 keV	Wareless, C.; Sizman, N. Light emission by swift he ⁺ ions after focusing and channeling interactions on a monocrystalline nickel surface. Surface Sci. 71, 61 (1978) United States
2208	D03 $He^+ + [C + W]$	E	530 eV	Yu, N. L. The SIRS spectrum of the O-W(100) chemisorption system. Surface Sci. 71, 121 (1978) United States
2209	D07 Undef	T	Undef	Garcia, M. Threshold and Lennard-Jones resonances and elastic diffractions in the scattering of atoms from crystalline surfaces. Surface Sci. 71, 220 (1978) Spain
2210	D03 $Ar^+ + [CO + Mo]$ D13 $e + [CO + Mo]$	E	D03 537 eV D13 220 eV	Benson, P. R. The adsorption of CO on molybdenum studied by low energy SIRS and EID. Surface Sci. 71, 247 (1978) Canada
2211	D04 $e + Si$	T	Undef	D'Andrea, A.; Dei Sola, R. Theory of (e,Ze) reaction near solid surfaces: application to Si. Surface Sci. 71, 306 (1978) Italy
2212	D12 $e + Th$	E	3 keV	Bastasz, R.; Colonna, C. A.; Sauerbrey, G. A. Electron induced luminescence as a technique for studying the adsorption of oxygen and the oxidation of thorium. Surface Sci. 71, 307 (1978) United States
2213	D07 Undef	T	Undef	Lagos, M. Scattering of low-energy atoms by metallic surfaces. Surface Sci. 71, 414 (1978) Chile
2214	D12 $O_2 + MgO$	E	337 K	Roscoe, R. F.; Offergeld, G. Light emission during adsorption and desorption of oxygen on magnesium oxide. Surface Sci. 71, 462 (1978) Belgium
2215	D02 $Ar^+ + [Cu + Ni]$ D17 $Ar^+ + [Cu + Ni]$	E	557 eV	Sachi, M.; Shimizu, R. Thickness and in-depth composition profile of altered layer caused on Cu-Ni alloy surface due to preferential sputtering. Surface Sci. 71, 479 (1978) Japan
2216	D03 $Ar^+ + [Cu + BeO]; Ar^+ + [Cu + Al_2O_3]$ D17 $Ar^+ + [Cu + BeO]; Ar^+ + [Cu + Al_2O_3]$	E	6.2 keV	Blaise, G.; Lyon, D.; Requies-Correa, C. Sputtering and secondary ion emission of a two-phase system composed of small oxide precipitates dispersed in a copper matrix. Surface Sci. 71, 630 (1978) France
2217	D04 $e + Ni; e + [S + Ni]$	E	2 keV	Matouduira, T.; Onchi, M. Angular distributions of Auger electron emission; clean and gas-adsorbed polycrystalline Ni surfaces. Surface Sci. 72, 63 (1978) Japan
2218	D04 $e + Si; e + Cu$	E	Undef	White, S. J.; Woodruff, D. P.; McDonnell, L. Angular dependence of Auger electron emission from Si and Cu(100) surfaces in the presence of overlayers. Surface Sci. 72, 77 (1978) United Kingdom
2219	D02 Undef D17 Undef	T	Undef	Mo, P. S. Effects of enhanced diffusion on preferred sputtering of homogeneous alloy surfaces. Surface Sci. 72, 253 (1978) United States
2220	D08 Undef	T	Undef	Bloss, W.; Hone, D. Theory of charge exchange scattering from surfaces. Surface Sci. 72, 277 (1978) United States
2221	D12 $e + GaAs; e + CdS$	E T	1-50 keV	Doltruh, N. L.; Litovskiy, V. G.; Tolst, G. M. The effect of the surface space charge region on the cathodoluminescence of semiconductors. Surface Sci. 72, 321 (1978) Soviet Union

REF. NO.	REACTANTS	EXP OR TMEOR	ENERGY RANGE	REFERENCE
2222	D07 He ⁺ + Cu; He ⁺ + Fe; He ⁺ + Bi; He ⁺ + Ta; He ⁺ + Ag; He ⁺ + Pd; He ⁺ + Rh; He ⁺ + Y; He ⁺ + Pb; He ⁺ + In; He ⁺ + Sn; He ⁺ + Zr; He ⁺ + Cr; He ⁺ + Nb	E	3.1-2.5 keV	Baum, V. L. Multiple scattering features in neon ion scattering spectra (ISS) from polycrystalline materials. Surface Sci. 72, 231 (1978) United States
2223	D13 e + [CO + Ir]	E	9.69-2.5 keV	Shek, M.-L.; Withrow, S. P.; Vainsberg, V. M. Electron beam induced desorption and dissociation of CO chemisorbed on Ir(111). Surface Sci. 72, 678 (1978) United States
2224	D03 Ar ⁺ + LiF; Ar ⁺ + NaF; Ar ⁺ + KF; Ar ⁺ + NaHF ₂ ; Ar ⁺ + KPF ₆	E	0-3.0 keV	Taylor, J. A.; Sabalala, J. V. Molecular rearrangement and cluster formation in the secondary ion mass spectra (SIMS) of fluoride salts. Surface Sci. 74, 229 (1978) United States
2225	D07 Undef	T	Undef	Barker, J. A.; Steele, V. A. Resonance functions for crystals and surfaces, with applications to surface scattering. Surface Sci. 74, 556 (1978) United States
2226	D06 e + C; e + Al; e + Ti; e + Cu; e + Si; e + Co; e + NiPd; e + AlCu; e + CrFe; e + CuNi	T	Undef	Jablonski, A. Estimation of backscattering factor for low atomic number elements and their alloys. Surface Sci. 74, 621 (1978) Poland
2227	D04 H ₂ ⁺ + Si; O ₂ ⁺ + Si; He ⁺ + Si	E	6 keV	Sonza, V. Surface analysis by ion-electron spectroscopy; silicon target. Surface Sci. 74, 636 (1978) Poland
2228	D10 H + LiF; He + LiF; D + LiF; H + NaF; He + NaF; D + NaF	T	0-2.2x10 ⁻³ eV	Schwartz, C.; Cole, M. V.; Pliwa, J. Semiempirical determination of the atom-surface interaction. Surface Sci. 75, 1 (1978) United States
2229	D03 Ar ⁺ + GaAs	E	6 keV	Brodzowska-Warczak, B.; Gabis, L.; Pedrys, R.; Szymanski, M.; Barczak, A. Secondary-ion-induced photon emission from GaAs as a function of target temperature. Surface Sci. 75, 61 (1978) Poland
2230	D07 He ⁺ + Al; He ⁺ + TiO ₂ ; He ⁺ + Ta; He ⁺ + Ag; He ⁺ + Ta ₂ O ₅ ; Ar ⁺ + Al; Ar ⁺ + TiO ₂ ; Ar ⁺ + Ta; Ar ⁺ + Ag; Ar ⁺ + Ta ₂ O ₅	E	3.1-2.5 keV	Baum, V. L. Multiple scattering features in argon and helium ion scattering spectra (ISS) from polycrystalline materials. Surface Sci. 75, 141 (1978) United States
2231	D03 Ar ⁺ + Si; Ar ⁺ + Invar	E	54 keV	MacDonald, R. J.; Garratt, R. F.; Partin, P. J. Photon emission from sputtered atoms—the observation of apparent local thermodynamic equilibrium in the excitation. Surface Sci. 75, L151 (1978) Australia
2232	D03 Ar ⁺ + Si; Ar ⁺ + Invar	E	54 keV	Isong, I. S. T. Reply to Photon emission from sputtered atoms—the observation of apparent local thermodynamic equilibrium in the excitation by R. J. MacDonald, R. F. Garratt and P. J. Partin. Surface Sci. 75, L159 (1978) United States
2233	C06 e + Au; e + Ag; e + Mg	E	0-160 eV	Norman, D.; Woodruff, D. P. Energy dependence of electron inelastic scattering mean-free-path using synchrotron radiation photoelectron spectroscopy. Surface Sci. 75, 179 (1978) United Kingdom
2234	D09 H ₂ + Cu D10 H ₂ + Cu	T	6-11 kcal/mol	Gold, A.; Cardillo, M. J. Classical trajectory calculations of the dissociation of hydrogen on copper. III. The effect of surface roughness. Surface Sci. 76, 199 (1978) Mexico
2235	D04 e + BaO	E	3-40 eV	Thomas, R. E.; Shih, A.; Haas, G. A. Electron energy loss and secondary emission mechanisms in BaO. Surface Sci. 76, 239 (1978) United States
2236	C06 Undef	T	Undef	Fitting, M. J.; Glasfok, M.; Wild, W. Attenuation length and escape depth of excited electrons in solids. Surface Sci. 75, 267 (1978) East Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2237	D05 Undef	T	Undef	Fenchuang, T. E.; Cutler, P. M.; Schmit, J. A review of the theoretical and experimental analyses of electron spin polarization in ferromagnetic transition metals: I. Field emission, photoemission, magneto-optic Kerr effect and tunneling. <i>Surface Sci.</i> 75, 481 (1978) United States
2238	D05 Undef	T	Undef	Fenchuang, T. E.; Cutler, P. M.; Nagy, B. A review of the theoretical and experimental analyses of electron spin polarization in ferromagnetic transition metals: II. New theoretical results for the analyses of ESP in field emission, photoemission, and tunneling. <i>Surface Sci.</i> 75, 498 (1978) United States
2239	D07 Undef	T	Undef	Greene, E. F.; Mason, E. A. Cut-offs and shadows in classical scattering of atoms from surfaces. <i>Surface Sci.</i> 75, 549 (1978) United States
2240	D07 He + LiF	T	0.053 eV	Hill, R. M.; Celli, V. Multiple hits in atom-surface diffraction. <i>Surface Sci.</i> 75, 577 (1978) United States
2241	D13 e + [O + V]	E	151 eV	Prigge, S.; Melhus, M.; Bauer, E. Electron stimulated desorption ion energy distribution (ESDIED) and surface structure: O on W(100). <i>Surface Sci.</i> 75, 435 (1978) West Germany
2242	D02 H ⁺ + [S + Ni]	E	0.2-1.0 keV	Windawi, M.; Ketzor, J. R. H ₂ ⁺ ion induced desorption of sulfur adsorbed on polycrystalline Ni surfaces. <i>Surface Sci.</i> 75, L761 (1978) United States
2243	D13 e + [H ₂ + V]	T	Undef	Janow, R.; Tzour, M. Calculations of energy spectra for ESD of H ⁺ from H ₂ adsorbed on tungsten. <i>Surface Sci.</i> 75, L766 (1978) United States
2244	D07 He + Cu; He + Cu	E	20 K	Mason, E. F.; Williams, B. R. Scattering of He and He atoms from (001) Cu at 20 K. <i>Surface Sci.</i> 75, L786 (1978) Canada
2245	D08 H ₂ ⁺ + Ag; H ₂ ⁺ + Pd; He ⁺ + Ag; He ⁺ + Pd	E	0.3-2.6 keV	Adelmann, P. J.; Melbig, M. F.; Czanderna, A. V. Yields of H ⁺ and He ⁺ at the energy for elastic scattering from H ₂ ⁺ + He ⁺ incident on Ag and Pd. <i>Surface Sci.</i> 76, 102 (1978) United States
2246	D02 Ar ⁺ + Cu	T	0.6 keV	Harrison, B. E., Jr.; Kelly, P. W.; Garrison, B. J.; Vinograd, M. Low energy ion impact phenomena on single crystal surfaces. <i>Surface Sci.</i> 76, 311 (1978) United States
2247	D02 Ar ⁺ + Ta ₂ O ₅ D03 Ar ⁺ + Ta ₂ O ₅	E	87-900 eV	Dachsner, M.; Schoof, M.; Stange, E. Sputtering of Ta ₂ O ₅ by Ar ⁺ ions at energies below 1 keV. <i>Surface Sci.</i> 76, 343 (1978) West Germany
2248	D03 Ar ⁺ + Mg; Ar ⁺ + Al; Ar ⁺ + Si; Ar ⁺ + Cr; Ar ⁺ + Cu; Ar ⁺ + Ag; Ar ⁺ + Au D09 Ar ⁺ + Mg; Ar ⁺ + Al; Ar ⁺ + Cr; Ar ⁺ + Si; Ar ⁺ + Ag; Ar ⁺ + Au; Ar ⁺ + Cu	T	Undef	Prival, M. G. A model of the ion sputtering process. <i>Surface Sci.</i> 76, 443 (1978) United States
2249	D07 Ar ⁺ + Cu	T	10-30 keV	Beisikova, L. L.; Meshova, E. S.; Polichenov, V. A. Argon ion double scattering from polycrystalline copper. <i>Surface Sci.</i> 76, L598 (1978) Soviet Union
2250	A03 H ₂ + CO; H ₂ + SiO; H ₂ + CS	T	10-100 K	Varsholevich, D. A.; Khersonskii, V. K. One mechanism for the creation of a population inversion in the levels of linear molecules. <i>Sov. Astron.-AJ</i> 22, 152 (1978) Soviet Union
2251	B07 Undef	T		Pavlov, G. G.; Shibanov, Y. A. Thermal emission of an optically thick plasma containing a strong magnetic field. <i>Sov. Astron.-AJ</i> 22, 214 (1978) Soviet Union

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2252	D17 $\text{Ar}^+ + \text{CoFe}_2\text{C}_6$	E	1 kV	Chuang, T. J.; Brundie, C. R.; Wauson, K. An x-ray photoelectron spectroscopy study of the chemical changes in oxide and hydroxide surfaces induced by Ar^+ ion bombardment. <i>Thin Solid Films</i> 53, 15 (1978) United States
2253	D16 Review	E	Undef	Deernaley, G.; Hartley, M. E. b. Ion implantation into metals and carbides. <i>Thin Solid Films</i> 54, 215 (1978) United Kingdom
2254	D16 $\text{Cr}^+ + \text{Fe}$; $\text{Ni}^+ + \text{Fe}$	E	25 keV	Sartwell, B. D. Formation of corrosion-resistant surface alloys by metal ion implantation. <i>Thin Solid Films</i> 54, 233 (1978) United States
2255	C88 Undef	T	Undef	Akhiezer, A. I.; Boldyshev, V. F.; Shul'ga, M. F. Theory of the radiation of relativistic channeled particles. <i>Sov. Phys.-Doklady</i> 22, 569 (1977) Soviet Union
2256	C88 Undef	T	Undef	Beloshitskii, V. V.; Kamakhov, M. A. Effect of amplification of induced emission on a beam of channeled relativistic particles. <i>Sov. Phys.-Doklady</i> 22, 645 (1977) Soviet Union
2257	H05 $\text{hv} + \text{H}_2$	E T	440-490 nm	Papernov, S. M.; Shiyapnikov, G. V.; Yanson, M. L. Photodissociation of vibrationally excited molecules. <i>Sov. Phys.-Doklady</i> 23, 58 (1978) Soviet Union
2258	H02 $\text{hv} + \text{H}_2\text{O}$ B07 $\text{hv} + [\text{H}_2\text{O} + \text{H}_2\text{O}]$	E	H02 694.4 nm	Znev, V. E.; Lopasov, V. P.; Ponomarev, Y. N. Narrowing of the collision shape of the molecular absorption line of atmospheric water vapor in a strong light field. <i>Sov. Phys.-Doklady</i> 23, 261 (1978) Soviet Union
2259	A17 $\text{H}_2 + \text{H}_2$	E	630 eV	Loonas, V. B.; Khromov, V. M. Experimental investigation of short-range intermolecular forces in hydrogen. <i>Sov. Phys.-Doklady</i> 23, 330 (1978) Soviet Union
2260	A07 Undef	T	Undef	Davdariani, A. Z.; Ostrovskii, V. A.; Sebyshin, Y. A. Electron spectra from the autolocalization of quasisolutes. <i>Sov. Phys.-JETP</i> 46, 215 (1977) Soviet Union
2261	H05 Undef	T	Undef	Kuz'min, M. V.; Sazonov, V. M. Theory of excitation of a quantum nonlinear oscillator by a harmonic force. <i>Sov. Phys.-JETP</i> 46, 220 (1977) Soviet Union
2262	E03 $e + \text{H}_2$; $e + \text{H}_2$	T	1.6-4 eV	Golubkov, G. V.; Dalidchik, F. I.; Ivanov, G. K. Vibrational excitation of molecules during resonance scattering of electrons. <i>Sov. Phys.-JETP</i> 46, 238 (1977) Soviet Union
2263	E03 $e + \text{CH}_2\text{Br}_2$; $e + \text{CMBr}_3$; $e + \text{CH}_2\text{I}_2$; $e + \text{CH}_2\text{I}_2$ E04 $e + \text{CH}_2\text{Br}_2$; $e + \text{CMBr}_3$; $e + \text{CH}_2\text{I}_2$; $e + \text{CH}_2\text{I}_2$	E	0.4-6 keV	Danilevskii, M. P.; Koppe, V. T.; Sovai, A. G.; Khovanskii, M. A. Formation of excited fragments in the dissociation of halogenated ethane compounds by electron impact. <i>Sov. Phys.-JETP</i> 46, 236 (1977) Soviet Union
2264	E03 Undef	T	Undef	Smirnov, B. M.; Firsov, O. B. Cross section of excitation of molecular vibrational levels by electron impact. <i>Sov. Phys.-JETP</i> 46, 238 (1977) Soviet Union
2265	B07 Undef	T		Alekseev, A. L.; Evseev, I. V.; Erashenko, V. M. Feasibility of investigating atomic collisions by the photon-echo technique. <i>Sov. Phys.-JETP</i> 46, 246 (1977) Soviet Union
2266	A04 $\text{H}_2\text{S}^+ + \text{Kr}$; $\text{CS}_2^+ + \text{Kr}$; $\text{CH}_3\text{I}^+ + \text{Kr}$; $\text{CF}_3\text{I}^+ + \text{Kr}$	E	2.7 keV	Manvelyan, R. V.; Kupriyanov, S. E.; Perov, A. A.; Potapov, V. K. Impact dissociation of molecular ions produced by photoionization of various molecules. <i>Sov. Phys.-JETP</i> 46, 443 (1977) Soviet Union
2267	F03 Undef	T	Undef	Danilov, Y. M.; Ostrovskii, V. M. Exchange excitation of an atom by electrons with high angular moments. <i>Sov. Phys.-JETP</i> 46, 446 (1977) Soviet Union

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2278	C82 $e + \text{BaTiO}_3; e + \text{TiO}_2; e + \text{SiO}_2; e + \text{C}$	E	33 keV	Geiger, J.; Katterwa, M. Electron energy loss study of titanium dioxide, barium titanate and silica in the range between 0.32 and 2 eV. <i>Z. Phys. B</i> 29, 113 (1978) West Germany
2279	C82 $e + \text{Si}$	E	53 keV	Stiebling, J. Optical properties of monocrystalline silicon by electron energy loss measurements. <i>Z. Phys. B</i> 31, 355 (1978) West Germany
2280	H82 $\text{He} + \text{He}$	E	Under	Dressler, L.; Behmenburg, b.; Lhiesbusch, J. Determination of total absorption of He 3S - n P transitions for λ less than or equal to λ less than or equal to 28. <i>Z. Naturforsch. A</i> 32, 432 (1978) West Germany
2281	D82 Under	E	Under	Krueger, F. R.; Wien, K. High energy sputtering from cleaned metal falls. <i>Z. Naturforsch. A</i> 33, 638 (1978) West Germany
2282	E82 $e + \text{Al}; e + \text{C}; e + \text{Cu}$ E17 $e + \text{Al}; e + \text{C}; e + \text{Cu}$	T	20-60 keV	Lehmann, M. Electron backscattering rates of light elements in Motters approximation. <i>Z. Naturforsch. A</i> 33, 955 (1978) West Germany
2283	A14 $\text{O} + \text{O}$	E	8000-9400 K	Hoffmann, H.; Meiger, M. Spectroscopic observation radiative recombination of ground state oxygen atoms. <i>Z. Naturforsch. A</i> 33, 1099 (1978) West Germany
2284	A85 $\text{Li} + \text{Cl}_2; \text{Li} + \text{SF}_6; \text{Li} + \text{CF}_3\text{Cl}_2$	E	Thermal	Rieder, M.; Fricks, U.; Bauer, H. Excitation of Li-atoms by chemiluminescence reactions of Li with Cl_2 , SF_6 , and CF_3Cl_2 . <i>Z. Naturforsch. A</i> 33, 1163 (1978) West Germany
2285	E85 $e + \text{Ne}; e + \text{Ne}; e + \text{Ar}; e + \text{Kr}; e + \text{Xe}$	E	50-150 eV	Egger, F.; Mark, T. D. Cross section ratios for the electron impact production of singly and multiply ionized rare gas ions. <i>Z. Naturforsch. A</i> 33, 1111 (1978) Austria
2286	D16 $\text{H}_2^+ + \text{Fe}$	E	190 keV	Longworth, G.; Hartley, M. E. b. Passbauer effect study of nitrogen-implanted iron foils. <i>Thin Solid Films</i> 48, 95 (1978) United Kingdom
2287	D16 Review	E	33-80 keV	Stephens, K. G.; Wilson, I. H. Properties and applications of ion-implanted films. <i>Thin Solid Films</i> 50, 325 (1978) United Kingdom
2288	C82 $e + \text{H}_2$	T	100-150 keV	Evdokimov, O. B.; Ryzhov, V. V.; Yslavets, A. P. Spatial distribution of the energy of an electron beam in a gas. <i>Sov. Phys.-Tech. Phys.</i> 22, 1460 (1977) Soviet Union
2289	D13 $e + [\text{O} + \text{Nb}]$	E	Under	Ageev, V. N.; Dzhalilov, S. T. Interaction of oxygen with niobium by electron-stimulated desorption. <i>Sov. Phys.-Tech. Phys.</i> 22, 1473 (1977) Soviet Union
2290	C84 $e + \text{MgO}; e + \text{Al}_2\text{O}_3$	E	1-100 eV	Kal'nitskii, A. P.; Feinshstein, A. I. Absorption of low-energy electrons in thin oxide films. <i>Sov. Phys.-Tech. Phys.</i> 22, 1516 (1977) Soviet Union
2291	A87 $\text{He} + \text{H}_2$	E	33° K	Zhitnikov, P. A.; Kartoshkin, V. A.; Kliment'ev, G. V. Investigation of the interaction of 2^3S metastable He atoms with H_2 molecules by the method of optical orientation of the atoms. <i>Sov. Phys.-JETP Lett.</i> 26, 456 (1977) Soviet Union
2292	A83 $\text{Ar}^{20+} + \text{He}; \text{Ar}^{20+} + \text{He}; \text{Ar}^{20+} + \text{He};$ $\text{Ar}^{20+} + \text{He}; \text{Ar}^{20+} + \text{He}$ A86 $\text{Ar}^{20+} + \text{He}; \text{Ar}^{20+} + \text{He}; \text{Ar}^{20+} + \text{He};$ $\text{Ar}^{20+} + \text{He}; \text{Ar}^{20+} + \text{He}$	E	4-20 keV	Afrosimov, V. V.; Beselov, A. A.; Panov, M. N.; Leiko, G. A. Electron capture in different electronic states by multiply charged $\text{Ar}^{(n+2)}$ ions in He atoms. <i>Sov. Phys.-JETP Lett.</i> 26, 537 (1977) Soviet Union

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2293	A06 $O^{+} + H$	T	Undef	Abramov, V. A.; Boryshakov, F. F.; Lisitsa, V. J. Change of intensity of spectral lines of multiply charged ions as a result of charge exchange with atomic hydrogen. <i>Sov. Phys.-JETP Lett.</i> 27, 466 (1978) Soviet Union
2294	J07 Undef	T		Zukova, N. I.; Kazantsev, A. P. Cooling and heating of atoms colliding in an optical field. <i>Sov. Phys.-JETP Lett.</i> 27, 601 (1978) Soviet Union
2295	J01 Review	E	23-35 km	Johnston, H. S.; Podolske, J. Interpretation of stratospheric photochemistry. <i>Rev. Geophys. Space Phys.</i> 16, 491 (1978) United States
2296	F01 He Seq	E		Belko, V. A.; Pliuz, S. A.; Safrenova, B. I.; Fomov, A. Y. Satellites to the He-like ion $1s^2 2s^2-1s2p^1F_2$ lines with Z=12-19 in laser plasmas. <i>Mon. Not. Roy. Astron. Soc.</i> 185, 789 (1978) Soviet Union
2297	D17 $He^{2+} + PMF_3$; $He^{2+} + CaF_2$	E	2-5 MeV	Pistre, J. B.; Banto, Y.; Selardene, J.; Sebaya, B.; Chauvin, J. F. Comparative observation of ionic migration of PMF_3 and CaF_2 thin films by Rutherford scattering. <i>Rev. Phys. Appl. (Paris)</i> 13, 213 (1978) France
2298	D12 $e + [GaAs + Zn]$	E	2-30 keV	Boulier, M.; Jacob, G.; Bois, D. Cathodoluminescence study of Zn doped GaAs. <i>Rev. Phys. Appl. (Paris)</i> 13, 555 (1978) France
2299	D07 $He^+ + [Mo + O_2]$	E	3-5 eV	Boixieu, C.; Nuvoletta, R.; Foucaud, J. Reflection of metastable helium atoms on a molybdenum (110) surface: effect of oxygen adsorption. <i>Rev. Phys. Appl. (Paris)</i> 13, 571 (1978) France
2300	C02 $H^+ + H_2C$; $He^+ + H_2O$; $O^+ + H_2O$; $Ar^+ + H_2O$; $Fe^+ + H_2O$ C03 $H^+ + H_2C$; $He^+ + H_2O$; $O^+ + H_2O$; $Ar^+ + H_2O$; $Fe^+ + H_2O$ E05 $e + H_2O$	T	C02; C03 3-1-5600 MeV E05 10-10 ⁵ eV	Paratzke, H. G. On primary damage and secondary electron damage in heavy ion tracks in plastics. <i>Radiat. Eff.</i> 34, 3 (1977) West Germany
2301	C08 $He^+ + Si$; $He^+ + GaP$; $He^+ + GaAs$ D15 $H^+ + Si$; $H^+ + GaP$; $H^+ + GaAs$; $He^+ + Si$; $He^+ + GaP$; $He^+ + GaAs$	T	C08 1 MeV D15 40-60 keV	Walker, R. S.; Thompson, D. A.; Pochman, S. W. A semiempirical method of applying the dechanneling correction in the extraction of disorder distribution. <i>Radiat. Eff.</i> 34, 157 (1977) Canada
2302	D08 $He^+ + Cu$	E	2-10 keV	Verheij, L. K.; Poulsen, B.; Boers, A. L. Neutralization and ionization of low energy helium ions scattering from a copper surface. <i>Radiat. Eff.</i> 34, 163 (1977) The Netherlands
2303	D03 $Ar^+ + Se$; $Ar^+ + Ti$; $Ar^+ + V$; $Ar^+ + Cr$; $Ar^+ + Fe$; $Ar^+ + Ni$; $Ar^+ + Co$; $Ar^+ + Zn$; $Ar^+ + Zr$; $Ar^+ + Al$; $Ar^+ + Si$; $Ar^+ + SiO_2$; $Ar^+ + Al_2O_3$; $Ar^+ + NaCl$; $Ar^+ + KCl$	E	43 keV	Bayly, A. R.; MacDonald, R. J. The energy spectra of secondary ions emitted during ion bombardment. <i>Radiat. Eff.</i> 34, 169 (1977) Australia
2304	D15 $He^+ + C$	E	2 MeV	Veprek, S.; Portmann, A.; Webb, A. P.; Stuessi, H. Surface morphology changes of graphite irradiated with energetic helium ions. <i>Radiat. Eff.</i> 34, 183 (1977) Switzerland
2305	D15 $e + Mo$	T	3.5-3.0 MeV	Nishida, Y.; Izui, K.; Furuno, S. Localization of electron current density and its effect on damage production in a molybdenum crystal. <i>Radiat. Eff.</i> 34, 217 (1977) Japan
2306	C09 $H^+ + Si$	T	1 MeV	Boeri, P.; Cornaro, A.; Dessio, A.; Rosa, R. Focusing-in and blocking phenomena explained in terms of a simple diffusion model. <i>Radiat. Eff.</i> 34, 223 (1977) Italy

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2307	D10 PERT + PERT	T	Undef	O'Connor, D. J.; MacDonald, R. J. A correction factor to the interatomic potential screening function for use in computer simulations. <i>Radiat. Eff.</i> 34, 247 (1977) Australia
2308	B01 Undef	T		Andreev, S. P.; Lisitsa, V. S. Resonance broadening in a strong light field. <i>Sov. Phys.-JETP</i> 45, 38 (1977) Soviet Union
2309	H04 Undef H05 Undef	T	Undef	Akulov, V. M.; Alimov, S. S.; Barlov, M. V.; Sartakov, B. G. Excitation of high vibrational states and dissociation of polyatomic molecules in a laser field. <i>Sov. Phys.-JETP</i> 45, 47 (1977) Soviet Union
2310	H01 Undef B07 Undef	T	H01 Undef	Pusep, A. Y.; Bekturov, A. S.; Barshtein, A. I. Effect of coherent radiation on the translational motion of atoms. <i>Sov. Phys.-JETP</i> 45, 52 (1977) Soviet Union
2311	E02 Undef	T	Undef	Brukarov, G. F.; Ob'edkov, V. B. Polarization effects in inelastic electron-atom collisions accompanied by a change in the atomic spin. <i>Sov. Phys.-JETP</i> 45, 686 (1977) Soviet Union
2312	H01 Undef B07 Undef	T	H01 Undef	Letchkov, V. S.; Minogin, V. G.; Pavlin, B. G. Cooling and capture of atoms and molecules by a resonant light field. <i>Sov. Phys.-JETP</i> 45, 658 (1977) Soviet Union
2313	A03 Ca + Ne; Ca + Ar; Ca + Kr; Ba + Ne; Ba + Ar; Sr + Ar; Sr + Kr A06 Sr + Kr; Sr + Ar; Ca + Kr; Ba + Ar	E	0.1-2 keV	Ovchinnikov, V. L.; Kherchenko, V. A.; Volovich, P. M.; Shpenik, O. B. Manifestation of the interference of quasimolecular states in radiative polarization when Ca ⁺ , Sr ⁺ , and Ba ⁺ ions collide with inert-gas atoms. <i>Sov. Phys.-JETP</i> 45, 709 (1977) Soviet Union
2314	H01 Undef	T	Undef	Kechenov, V. P.; Neutlan, S. G.; Shalagin, A. M. Broadening of nonlinear resonances by velocity-changing collisions. <i>Sov. Phys.-JETP</i> 45, 714 (1977) Soviet Union
2315	E04 e + H ₂ ⁺ E06 e + H ₂ ⁺	T	270-500 K	Saifinov, B. M. Recombination of an electron and a complex ion. <i>Sov. Phys.-JETP</i> 45, 731 (1977) Soviet Union
2316	A03 CH ₃ F + CH ₃ A10 CH ₃ F + CH ₃	E	300 K	Chernokov, E. M.; Panfilov, V. M. Application of the double-resonance method to the study of vibrational energy transfer between CH ₃ F and CH ₃ molecules. <i>Sov. Phys.-JETP</i> 45, 888 (1977) Soviet Union
2317	H13 Undef	T	Undef	Anikin, V. I.; Drabovich, K. M.; Dubovik, A. M. Coherence effects in optical-frequency excitation under two-photon resonance conditions. <i>Sov. Phys.-JETP</i> 45, 906 (1977) Soviet Union
2318	A05 Ca + Ca ⁺ B07 Rb + [Ca + Ca]; Rb + [Rb + Rb]	E	A05 Undef	Bonch-Bruyevich, A. M.; Prizibel'skii, S. G.; Khramov, V. V. Inelastic processes of light scattering in alkali-metal vapor. Molecular fluorescence. <i>Sov. Phys.-JETP</i> 45, 912 (1977) Soviet Union
2319	H04 Undef	T	Undef	Makarov, A. A. Coherent excitation of equidistant multilevel systems in a resonant incoherent field. <i>Sov. Phys.-JETP</i> 45, 918 (1977) Soviet Union
2320	H04 Undef	T	Undef	Shalagin, A. M. Undisplaced resonant scattering line of strong quasimonochromatic field. <i>Sov. Phys.-JETP</i> 45, 921 (1977) Soviet Union
2321	F02 H	T		Beryshnikov, F. F.; Lisitsa, V. S. Classical and quantum treatment of the Stark broadening of hydrogen lines. <i>Sov. Phys.-JETP</i> 45, 943 (1977) Soviet Union

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2322	E11 Undef E12 Undef	T	Undef	Baryshevskii, V. G.; Grubich, A. O.; Nyan, M. B. Angular, spectral, and polarization properties of radiation emitted by high-energy electrons passing through a layer of matter. <i>Sov. Phys.-JETP</i> 45, 1068 (1977) Soviet Union
2323	E13 $e + H^-$	T	4-20 eV	Solev'ov, E. A. Classical approximation for the ionization of a negative ion by electron impact near the threshold. <i>Sov. Phys.-JETP</i> 45, 1069 (1977) Soviet Union
2324	E03 Undef	T	Undef	Ostrovskii, V. N. Excitation of autoionization states by electrons near the threshold. <i>Sov. Phys.-JETP</i> 45, 1092 (1977) Soviet Union
2325	A10 Undef	T	Undef	Boross, V. D.; Bruce, A. S.; Mokslov, L. A.; Nikolov, B. I. Properties of rotational transitions during collisions between molecules. <i>Sov. Phys.-JETP</i> 45, 1103 (1977) Soviet Union
2325	A04 $D_2^+ + Xe$; $D_2^+ + Ne$; $D_2^+ + He$; $D_2^+ + Ar$; $D_2^+ + Kr$; $D_2^+ + D_2$	E	1-40 eV	Prokof'ev, A. A.; Zherkin, E. S.; Evseeva, L. V.; Tuntshii, N. N. Decay of D_2^+ ions in collisions with inert-gas atoms at kinetic energies 1-40 eV. <i>Sov. J. Plasma Phys.</i> 4, 525 (1978) Soviet Union
2327	EE2 $e + CO$	E	0.15-6.0 eV	Gus'kov, Y. K.; Savov, R. V.; Stobdanyuk, V. A. Scattering of low-energy electrons by CO molecules. <i>Sov. J. Plasma Phys.</i> 4, 527 (1978) Soviet Union
2328	A06 $H^+ + PERT$	T	1.7-19 eV	Duman, E. L.; Seirnov, B. M. Charge exchange of hydrogen atoms with multiply charged ions. <i>Sov. J. Plasma Phys.</i> 4, 650 (1978) Soviet Union
2329	E03 $e + H^+$	T	Undef	Baryshevskii, V. G.; Lisitsa, V. I. Electron and ion scattering by excited hydrogen atoms. <i>Sov. J. Plasma Phys.</i> 4, 660 (1978) Soviet Union
2330	A17 $Li^+ + He$; $K + Ar$	T	Undef	Bychkov, V. L.; Radtsig, A. A.; Seirnov, B. M. Reconstruction of potential of interaction of ion with atoms and molecules from data on ion mobility in gases. <i>High Temp.</i> 16, 613 (1978) Soviet Union
2331	E09 $e + [O_2 + O_2]$; $e + [CO_2 + CC_2]$; $e + [CN + CO]$; $e + [N_2 + N_2]$	E	77-300 K	Aleksandrov, N. L. Three-body electron attachment to oxygen molecules in a gas discharge. <i>High Temp.</i> 16, 617 (1978) Soviet Union
2332	A16 $NO^- + H_2$; $NO^- + CO_2$	T	200-500 K	Aleksandrov, N. L. Destruction of NO^- ions during collision with excited molecules. <i>High Temp.</i> 16, 628 (1978) Soviet Union
2333	A10 $Br_2^+ + Ar$	T	330-900 K	Antipenko, B. K.; Seirnov, V. A.; Tarasenko, V. V. Effect of molecular rotation on the dynamics and kinetics of vibrational-translational energy transfer. <i>High Temp.</i> 16, 933 (1978) Soviet Union
2334	A17 $Li + F$; $Li + Cl$; $Li + Br$; $Li + I$; $Na + F$; $Na + Cl$; $Na + Br$; $Na + I$; $K + F$; $K + Cl$; $K + Br$; $K + I$; $Rb + F$; $Rb + Cl$; $Rb + Br$; $Rb + I$; $Cs + F$; $Cs + Cl$; $Cs + Br$; $Cs + I$	T	0.66-203 cm^{-1}	Mohamed, S. M. An interaction potential for alkali halide molecules. <i>Indian J. Pure Appl. Phys.</i> 16, 646 (1978) India
2335	E03 $e + H_2O$ E09 $e + H_2O$	T	0.25 eV	Maru, M. P.; Dasal, M. E. Capture of slow electron and rotational excitation of polar molecules. <i>Indian J. Pure Appl. Phys.</i> 16, 705 (1978) India
2336	A12 $OCs^+ + He$; $CCs^+ + Ar$	T	63-220 K	Mahotra, S. C.; Jhori, G. K.; Srivastava, S. L. Collision broadening of rotational lines of OCs^+ by noble gases. <i>Indian J. Pure Appl. Phys.</i> 16, 747 (1978) India

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2337	A17 H + H; H + H; H + F; O + H; O + O; I + I; C + O; N + O; Si + F; Na + Na; Zn + H; P + H; K + K	T	0.0004-6 eV	Mohammed, S. M. On the generalization of the Lippert potential. Indian J. Pure Appl. Phys. 16, 752 (1978) India
2338	A16 OCS* + CCS	T	1 eV	Johri, G. K.; Gupta, S. Comparison of interpolation scheme in the treatment of collisional transfer of rotational energy. Indian J. Pure Appl. Phys. 16, 790 (1978) India
2339	M12 hv + Pt	E	279 keV	Swamy, S. T. P. V. J. Atomic Compton cross-sections due to platinum. Indian J. Pure Appl. Phys. 16, 88C (1978) India
2340	M63 hv + Te; hv + Sn; hv + Zr; hv + [Hg + Pb]	E	279 keV	Satyendra Prasad, M.; Kuna Raju, G.; Narasimha Murthy, K.; Narasimha Murthy, V. A.; Lih 'minarayana, V. Elastic scattering of 275 keV gamma rays. Indian J. Pure Appl. Phys. 16, 836 (1978) India
2341	F81 Ti ³⁺ ; Fe ³⁺ ; Ni ²⁺ ; Cu ²⁺ ; Cr ³⁺ ; Fe ²⁺ ; Ni ³⁺ ; Cu ³⁺	E		Kastner, S. G.; Swartz, P.; Whittle, A. K.; Lapides, J. Observation of n=3 to n=4 transitions in the Mg I and Si I sequences for elements chromium through zinc. J. Opt. Soc. Am. 68, 1550 (1978) United States
2342	E83 e + H ₂ O E84 e + H ₂ O	T	23-500 eV	Fujita, T.; Inui, T.; Ogura, K.; Watanabe, S.; Watanabe, Y. Dissociative excitation of water molecule by electron impacts: III. Core potential correction. J. Phys. Soc., Jap. 44, 286 (1978) Japan
2343	M65 hv + H ₂ C	T	Undef	Akamatsu, R.; Uchida, K. Semiclassical approach to the abnormal rotation of OH(A ² Σ ⁺) resulting from H ₂ O photodissociation. J. Phys. Soc., Jap. 44, 505 (1978) Japan
2344	C82 e + Al	E	2-10.9 keV	Ishiguro, H.; Mori, C.; Watanabe, T. Electron stopping power in aluminum in the energy region from 2 to 10.6 keV. J. Phys. Soc., Jap. 44, 173 (1978) Japan
2345	A66 H* + C	T	3.1-4 MeV	Wol, C.-C. Electron capture from carbon by protons. J. Phys. Soc., Jap. 44, 973 (1978) Taiwan
2346	E83 e + Hg	T	50-500 eV	Yamazaki, Y.; Shimizu, R.; Ueda, K.; Hashimoto, H. Spin-polarization and differential cross section of electron-mercury inelastic scattering. J. Phys. Soc., Jap. 44, 1337 (1978) Japan
2347	E83 e + He Seq	T	0.38-2.0 keV	Nakazaki, S. Electron-impact excitation cross-sections for helium-like ions: C V, N VI, O VII and Ne IX. J. Phys. Soc., Jap. 44, 1384 (1978) Japan
2348	A85 Ar* + H ₂ S; Ar* + SO ₂	E	2 keV	Fukutome, M.; Tsuji, M.; Nishizawa, Y. Emission spectra of hydrogen sulfide and sulfur dioxide by Ar ⁺ ion impact. J. Phys. Soc., Jap. 44, 1401 (1978) Japan
2349	A86 H* + N ₂	E	120-150 keV	Itah, A.; Amari, M.; Fukuzawa, F. Spatial distribution of excited molecules induced by proton beam in nitrogen gas. J. Phys. Soc., Jap. 44, 1274 (1978) Japan
2350	E12 e* + Na; e* + Ne; e* + Ar; e* + Xe; e* + O ₂	E	Undef	Shizuma, K.; Nishi, M.; Fujita, T.; Yoshizawa, Y. Doppler broadening measurement of positron annihilation in rare gas. J. Phys. Soc., Jap. 44, 1787 (1978) Japan
2351	B87 e + PERT	T		Onda, K. Electron scattering from a center of force in strong magnetic fields. J. Phys. Soc., Jap. 46, 21C (1978) Japan
2352	E83 e + H Seq	T	1-30 E/ΔE	Nakazaki, S. Evaluation of the radial integrals in the Coulomb-Born approximation. J. Phys. Soc., Jap. 44, 225 (1978) Japan

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2353	F01 He ⁺	E		Ishii, K.; Taniita, M. Lifetime measurement of doubly excited states in helium atom by beam-foil technique. J. Phys. Soc., Jap. 45, 230 (1978) Japan
2354	H06 2He + Ca ⁺	E	6543 Å	Ohno, T.; Ohno, T.; Yamada, J. Two-photon ionization of excited calcium atoms by ruby laser light. J. Phys. Soc., Jap. 45, 244 (1978) Japan
2355	E02 e + Hg E03 e + Hg E17 e + Hg	E	310-1000 eV	Shinizu, R.; Ueda, K.; Hashimoto, H. Electron impact spectra in mercury in intermediate energies. J. Phys. Soc., Jap. 45, 604 (1978) Japan
2356	A03 Li ⁺ + CO; Li ⁺ + CO ₂ ; Li ⁺ + H ₂ O	E	70-1500 eV	Kobayashi, M.; Itoh, Y.; Kaneko, Y. Vibrational excitation of CO, CO ₂ , and H ₂ O by Li ⁺ impact in the energy range from 70 eV to 1500 eV. J. Phys. Soc., Jap. 45, 617 (1978) Japan
2357	A03 H ⁺ + CH	T	Undef	Takaymagi, K. Low-energy ion-polar molecule collision—the perturbed rotational state approach. J. Phys. Soc., Jap. 45, 976 (1978) Japan
2358	A06 Undef	T	Undef	Fujiwara, K. Erratum ^o Coulomb Born calculation of charge transfer cross sections of high γ-ionized atoms. J. Phys. Soc., Jap. 45, 1053 (1978) Japan
2359	A07 H ⁺ + Ti	E	15 ⁺ keV	Moriya, Y.; Miyagawa, S. Impact-parameter dependence of K-shell ionization probabilities for 150 keV protons on a titanium target. J. Phys. Soc., Jap. 45, 1657 (1978) Japan
2360	F02 H ₂ ⁺	T		Mural, Y.; Takatsu, H. Numerical two-center calculations of the polarizabilities of H ₂ ⁺ . J. Phys. Soc., Jap. 45, 1704 (1978) Japan
2361	F01 Fe ¹¹⁺ ; Fe ¹²⁺	T		Bromage, G. E.; Cowan, R. D.; Fawcett, B. C. Atomic structure calculations involving optimization of radial integrals: energy levels and oscillator strengths for Fe XII and Fe XIII 3p-3d and 3s-2p transitions. Mon. Not. Roy. Astron. Soc. 183, 15 (1978) United Kingdom
2362	H02 hv + Si ⁻ H07 hv + Si ⁻ H11 hv + Si ⁻	T	0.5-3 eV	John, T. J.; Williams, R. J. Si ⁻ opacity. Mon. Not. Roy. Astron. Soc. 183, 257 (1978) United Kingdom
2363	E03 e + H Seq; e + H ⁺ E05 e + H; e + He ⁺	T	1-1000 eV	Parcival, I. C.; Richards, D. Cross-sections and rates for electron excitation of excited positively-charged hydrogen and hydrogenic ions. Mon. Not. Roy. Astron. Soc. 183, 329 (1978) United Kingdom
2364	A06 Undef	T	13 ⁺ K	Weisheit, J. C.; Upham, R. J., Jr. Electron transfer in ion-dust grain collisions. Mon. Not. Roy. Astron. Soc. 184, 227 (1978) United States
2365	F01 Si ¹⁰⁺ ; Si ¹¹⁺	T		Mason, M. E.; Bhatia, A. K. Theoretical intensity ratios for the UV lines of Mg VII, Si IX and S XI. Mon. Not. Roy. Astron. Soc. 184, 423 (1978) United Kingdom
2366	E06 e + He ⁺	T	10 ⁻² -2x10 ⁺ K	Seaton, M. J. Calculated intensities of He II recombination lines in the ultraviolet. Mon. Not. Roy. Astron. Soc. 185, 6P (1978) United Kingdom
2367	F01 He Seq; Be Seq	E T		Bolko, V. A.; Chugunov, A. Y.; Iuvrova, T. G.; Fomcev, A. V.; Molin, I. V.; Pikuz, S. A.; Urnov, A. M.; Vainshtain, L. A.; Safronova, U. I. He-like resonance-line satellites radiated from Be-like ions. Mon. Not. Roy. Astron. Soc. 185, 305 (1978) Soviet Union

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2368	D15 n + Cu	E	3.1 MeV	Jackson, P. J.; Kohn, K.; Nevins, J.; Spalding, D. The precipitation of point defects near grain-in dislocations during neutron irradiation. Radiat. Eff. 35, 1 (1978) South Africa
2369	D14 He ⁺ + Ag D15 He ⁺ + Ag D16 He ⁺ + Ag	E	7-10 keV	Tishchenko, L. P.; Gerasimova, L. P.; Fogel, Y. M.; Gusev, V. A. Study of processes at helium ion bombardment of thin silver films. Radiat. Eff. 35, 7 (1978) Soviet Union
2370	D15 Cu ⁺ + W; Cu ⁺ + Cu; Cu ⁺ + Ag; Cu ⁺ + Pt; Cu ⁺ + Au; Au ²⁺ + Au	E	33 keV	Schindler, R. Unterscheidung zwischen modellen der strahlenschädigung mit hilfe elektronenmikroskopischer untersuchungen von ionenschaden in metallen. Radiat. Eff. 35, 17 (1978) West Germany
2371	D15 O ⁺ + Pb	E	25 MeV	Klaunmeyer, S.; Ischenko, G.; Neumüller, H. Study of damage rate decrease of lead irradiated with 25 MeV oxygen ions at 7.2 K. Radiat. Eff. 35, 45 (1978) West Germany
2372	C08 H ⁺ + Si	T	339 keV	Treacy, P. B. Diffraction in heavy-particle channeling as a probe for correlated lattice vibrations. Radiat. Eff. 35, 61 (1978) Australia
2373	D15 n + Co; e + Co	E	2.9 MeV	Mansel, W.; Meyer, M.; Vogl, G. Interstitial atom clustering at ⁵⁷ Co impurity atoms in aluminium after electron and neutron irradiation. Radiat. Eff. 35, 69 (1978) West Germany
2374	D15 e + Al	E	1-3 MeV	Dworschak, F.; Schläpfer, B.; Hollenberger, H. Di-interstitial formation within small defect cascades in aluminium. Radiat. Eff. 35, 82 (1978) West Germany
2375	D02 H ⁺ + Au; Ar ⁺ + Au	E	76 keV	Lebedev, S. Y.; Lysova, G. V. Analysis of angular distributions of sputtered material by means of autoradiograph technique. Radiat. Eff. 35, 105 (1978) Soviet Union
2376	D15 Ni ⁺ + [Ni + Al]	E	1 MeV	Potter, D. I. Radiation-induced precipitate redistribution in thin foils. Radiat. Eff. 35, 115 (1978) United States
2377	C04 He ⁺ + Ge	E T	0.01-10 MeV	More, R. M.; Venskytis, F. J. Comparison of range and straggles calculations. Radiat. Eff. 35, 129 (1978) United States
2378	D03 Kr ⁺ + Al; Kr ⁺ + Al ₂ O ₃ ; Kr ⁺ + GeAs; Kr ⁺ + In; Kr ⁺ + Ti; Kr ⁺ + Se; Kr ⁺ + BaO; Kr ⁺ + Sc; Kr ⁺ + Y	E T	4-16 keV	Good-Zeein, C. J.; Shehata, M. T.; Squires, D. B.; Kelly, R. On the problem of whether excited states amongst sputtered particles are of thermal origin. Radiat. Eff. 35, 139 (1978) Canada
2379	C07 He ⁺ + C	E	0.3-0.7 MeV	Gardiner, R. B. Non-dependence on foil temperature of light intensity from a beam-foil source. Radiat. Eff. 35, 151 (1978) United States
2380	D02 Review D03 Review	T	Under	Carter, G.; Armour, D. G.; Snowden, R. J. Cascade and quasi thermal processes in excited atom sputtering. Radiat. Eff. 35, 175 (1978) United Kingdom
2381	D15 e + Cu	E	0.5 MeV	Wienhold, P.; Sonnenberg, K.; Antesberger, G. Additional recovery of copper irradiated 200 K after 0.5 MeV electron irradiation. Radiat. Eff. 35, 189 (1978) West Germany
2382	C08 He ⁺ + Al ₂ O ₃	E	0.6-1.9 MeV	Carnera, A.; Della Msa, G.; Drigo, A. V.; Lo Russo, S.; Mazzoldi, P.; Mertley, M. L. V. Channeling in dielectric crystals: He ions in α-Al ₂ O ₃ . Radiat. Eff. 35, 201 (1978) Italy

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2313	C02 H ⁺ + Si; H ⁺ + Ge C08 H ⁺ + Si; H ⁺ + Ge	T	4 MeV	Beloshitsky, V. V.; Kuznetsov, N. A. A theory of energy loss of channelled protons. Radiat. Eff. 35, 209 (1978) Soviet Union
2384	D15 e + Cu	E	3 MeV	Senneberg, R.; Nienhold, P. Evidence for vacancy migration in stage III for copper. Radiat. Eff. 36, 217 (1978) West Germany
2385	C08 He ⁺ + [Hg + Bi] D15 He ⁺ + [Pb + Al]	E	1 MeV	Moss, L. N.; Swenson, M. L.; Quenneville, A. F. A channeling investigation of the interaction between solute atoms and irradiation-produced defects in magnesium. Radiat. Eff. 35, 227 (1978) Canada
2386	D02 H ⁺ + U; He ⁺ + U; Ar ⁺ + U	E	15-120 keV	Cragg, R.; Tombrille, T. A. Sputtering of uranium. Radiat. Eff. 35, 243 (1978) United States
2387	D15 Undef	T	Undef	Carter, G.; Arceur, D. G.; Donnelly, S. E.; Hobbs, R. Energy uplake generation and quenching processes in ion bombardment induced amorphization of solids. Radiat. Eff. 36, 1 (1978) United Kingdom
2388	D14 He ⁺ + Mo; Ni ²⁺ + Mo D15 He ⁺ + Mo; Ni ²⁺ + Mo	E	3.2-5.0 MeV	Menager, C. M., Jr.; Brimhall, J. L.; Sisson, E. P. The damage profile in Mo bombarded with Ni ²⁺ and Ni ³⁺ + He ions. Radiat. Eff. 36, 49 (1978) United States
2389	D03 e + LiF; e + RbCl; e + RbBr; e + KBr; e + RbI; e + CsBr; e + NaI; e + KI; e + RbI; e + CuI; e + ZnBr ₂ ; e + AgBr; e + CuI ₂ ; e + PbI ₂	E	540 eV	Overlinder, M.; Szymanski, M.; Hering, A.; de Vries, A. E. Energy distributions of atoms sputtered from alkali halides by 540 eV electrons. Radiat. Eff. 36, 63 (1978) The Netherlands
2393	C08 D ⁺ + NbC	E	1-2 MeV	Loebard, J. M.; Meyer, O. Channeling studies in carbon implanted NbC-single crystals. Radiat. Eff. 36, 82 (1978) West Germany
2391	C02 H ⁺ + C C05 H ⁺ + C	E	25-100 keV	Kalz, D.; Kraych, G.; Muller-Jabrele, U. Energy loss straggling of low-energy protons in carbon. Radiat. Eff. 36, 119 (1978) West Germany
2392	C08 D ⁺ + [Pd + Au + D]; D ⁺ + [Ta + D]	E	320-400 keV	Takahashi, J.; Yamaguchi, S.; Kawai, M.; Fujino, Y.; Yoshinari, O.; Hirabayashi, M. Lattice location studies of deuterium in Pd ₃ Au ₇ and Ta crystals by ion channeling. Radiat. Eff. 36, 135 (1978) Japan
2393	C04 Ce ⁺ + Al; La ⁺ + Al; Pr ⁺ + Al; Eu ⁺ + Al; Tb ⁺ + Al; Dy ⁺ + Al; Ho ⁺ + Al; Er ⁺ + Al; Lu ⁺ + Al; Hf ⁺ + Al; Pt ⁺ + Al; Au ⁺ + Al; Ti ⁺ + Al; Pb ⁺ + Al; Bi ⁺ + Al; Se ⁺ + Si; Eu ⁺ + Si; Gd ⁺ + Si; Tb ⁺ + Si; Dy ⁺ + Si C05 Ce ⁺ + Al; La ⁺ + Al; Pr ⁺ + Al; Eu ⁺ + Al; Tb ⁺ + Al; Dy ⁺ + Al; Ho ⁺ + Al; Er ⁺ + Al; Lu ⁺ + Al; Hf ⁺ + Al; Pt ⁺ + Al; Au ⁺ + Al; Ti ⁺ + Al; Pb ⁺ + Al; Bi ⁺ + Al; Se ⁺ + Si; Eu ⁺ + Si; Gd ⁺ + Si; Tb ⁺ + Si; Dy ⁺ + Si	E T	25-250 keV	Combeson, J. L.; Farmery, B. W.; McCulloch, B.; Neilson, G. W.; Thompson, M. W. Heavy ion ranges in aluminium and silicon. Radiat. Eff. 36, 149 (1978) United Kingdom
2394	C03 Xe ⁺ + AgBr; Xe ⁺ + AgF; Xe ⁺ + CdI ₂ ; Xe ⁺ + PbI ₂	E	6 keV	Szymanski, M.; Overlinder, M.; de Vries, A. E. The sputtering processes during 6 keV Xe ion beam bombardment of halides. Radiat. Eff. 36, 188 (1978) The Netherlands
2395	C05 He ²⁺ + Si	E	167 MeV	Jarvis, D. N.; Sherwood, A. C.; Whitehead, C.; Lucas, M. W. The ionization energy for 160 MeV alpha-particles channelled in silicon. Radiat. Eff. 36, 215 (1978) United Kingdom
2396	D15 n + [Cu + Al]	E	Undef	Papathanasopoulos, C.; Papatriantafyllou, C.; Rocoyle, E.; Theophilou, A. Neutron damage rate of copper alloyed aluminum. Radiat. Eff. 36, 249 (1978) Greece

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2397	C01 Sb ⁺ + SiO ₂ C02 Sb ⁺ + SiO ₂	T	53 keV	Williams, M. R. P. Path length distribution function in a heterogeneous medium. Radiat. Eff. 37, 131 (1978) United Kingdom
2398	D15 n + Ni ₂ Cr	E	Under	Riviere, J. P.; Eymery, J. F. Production et restauration de défauts dans L alliage Ni ₂ Cr irradié aux neutrons à la température de l'hydrogène liquide. Radiat. Eff. 37, 155 (1978) France
2399	D16 e + Mg	E	239 keV	Wolffenden, A. In situ observations of electron irradiation damage in magnesium. Radiat. Eff. 37, 193 (1978) West Germany
2400	D02 Xe ⁺ + RbCl; Xe ⁺ + RbBr; Xe ⁺ + RbI; Xe ⁺ + NaI D03 Xe ⁺ + RbCl; Xe ⁺ + RbBr; Xe ⁺ + RbI; Xe ⁺ + NaI	E	6 keV	Overeijnder, M.; Haring, A.; de Vries, A. E. The sputtering processes of alkali halides during 6 keV Xe ion bombardment. Radiat. Eff. 37, 205 (1978) The Netherlands
2401	C02 He ⁺ + Ti; He ⁺ + Mn; He ⁺ + Ni; He ⁺ + Zn	E	0.5-2.0 MeV	Luomaajarvi, M. Stopping powers of Ti, Mn, Ni, and Zn for 0.5-2.0 MeV He ions relative to those of Al and Cu. Radiat. Eff. 37, 223 (1978) Finland
2402	C04 Fr ⁺ + N ₂ ; Fr ⁺ + Ar; Ca ⁺ + N ₂ ; Ca ⁺ + Ar; Rb ⁺ + N ₂ ; Rb ⁺ + Ar	E	23-120 keV	Sidenius, G. Systematic range measurements with low-energy heavy particles in gases. Radiat. Eff. 38, 3 (1978) Switzerland
2403	D02 e + KBr; e + RbBr; e + KI; e + RbI	E	135-540 eV	Overeijnder, M.; Szymanski, M.; Haring, A.; de Vries, A. E. Electron sputtering of alkali halides. A study of its dependence on the beam energy and target temperature. Radiat. Eff. 38, 21 (1978) The Netherlands
2404	D16 Au ⁺ + Si	T	Under	Fischer, G.; Carter, G.; Webb, R. Recoil implantation from a thick film source. Radiat. Eff. 38, 41 (1978) United Kingdom
2405	D03 He ⁺ + Mg	E	13 keV	Kerkdijk, C. B.; Kelly, R. Oxygen-dependent photon emission from He ⁺ bombarded Mg. Radiat. Eff. 38, 73 (1978) The Netherlands
2406	C02 U ⁺ + UO ₂ ; O ⁺ + UO ₂ C04 U ⁺ + UO ₂ ; O ⁺ + UO ₂	T	10 ⁻² -10 ⁴ MeV	Souillard, J.; Leteurire, J.; Gentien, J. P.; Cance, R. Etude du ralentissement des ions lourds dans une cible diatomique I. Calcul de la distance parcourue et du nombre d'atomes primaires créés. Radiat. Eff. 38, 119 (1978) France
2407	C08 Under	T	Under	Ques, Y. About the backchanneling due to dislocation loops. Radiat. Eff. 38, 131 (1978) France
2408	D15 O + UO ₂ ; U + UO ₂	T	10 ² -10 ⁴ eV	Souillard, J.; Alamo, A. Etude du ralentissement des ions dans une cible diatomique II. Calcul du nombre d'atomes déplacés. Radiat. Eff. 38, 133 (1978) France
2409	D03 Review	E T	13-100 keV	Snoddon, K. J. A comparison of experimental secondary ion energy spectra of polycrystalline metals with theory. Radiat. Eff. 38, 141 (1978) United Kingdom
2410	D07 He ⁺ + V; He ⁺ + Ni	T	0.6 keV	Preuss, E. Computer simulation of the angular dependence of backscattering of low energy noble gas ions from single crystal surfaces. Radiat. Eff. 38, 151 (1978) West Germany
2411	C08 e + Si	T	10 ² -1000 MeV	Wedell, R. Theory of relativistic positron and electron bremsstrahlung under channeling conditions. Radiat. Eff. 38, 165 (1978) East Germany
2412	C02 Ar + Cu; Xe + Cu; Au + Au; Na + Au	T	0.2-5.0 keV	Sanders, J. B.; Roosendaal, M. L.; Vitalis, F. A modified treatment of low energy elastic stopping power in dense structureless media. Radiat. Eff. 38, 201 (1978) The Netherlands

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2413	D15 n + Nb	E	0.1 MeV	Chen, C. W.; Chang, C. P.; Elen, J. D.; Mastenbrook, A. Transmission electron microscopy observation of interstitial clusters in neutron-irradiated niobium. Radiat. Eff. 38, 211 (1978) United States
2414	D02 Cu ⁺ + Cu	E	45 keV	van Uyck, G. B.; Smith, M. J. Ion bombardment induced preferential orientation in polycrystalline Cu targets. Radiat. Eff. 38, 245 (1978) South Africa
2415	C04 B ⁺ + Si; Ar ⁺ + Cu	T	63-100 keV	Yanagawa, T.; Inuma, M. Sonine expansion of range and damage distributions. Radiat. Eff. 38, 251 (1978) Japan
2415	D16 Undef	T	Undef	Odours, J.; Coussment, R.; Pattyn, M. Model for the site populations of heavy ions implanted in metals in the case where all defects are lamellar. Radiat. Eff. 39, 11 (1978) Belgium
2417	D08 Ar ⁺ + Cu	E	12-35 keV	Balashova, L. L.; Borisov, A. P.; Pashkova, E. S.; Molchanov, V. A. Energy distributions of fast ionized recoils. Radiat. Eff. 39, 19 (1978) Soviet Union
2418	D16 Undef	T	Undef	Winterbon, K. B. Ion-implantation distributions in non-uniform targets: projected range. Radiat. Eff. 39, 31 (1978) Canada
2419	D16 Undef	T	Undef	Winterbon, K. B.; Sanders, J. E. Analytical calculation of some ion-implantation depth distributions. Radiat. Eff. 39, 25 (1978) Canada
2420	D15 e + Bi	E	3.4-1.2 MeV	Queillard, G.; Durai, J.; Ardouneau, J.; Lussier, D. Energie seuil de déplacement dans le bismuth. Radiat. Eff. 39, 45 (1978) France
2421	D15 e + SS; n + SS	T	1 MeV	Ghoniem, M. M.; Kulcinski, G. L. A rate theory approach to the time dependent microstructural development during irradiation. Radiat. Eff. 39, 47 (1978) United States
2422	D07 H ⁺ + Al; H ⁺ + Au; H ⁺ + SS	E	300-500 keV	Barragan, A.; Garcia Santibanez, F. Surface roughness effects on the energy dispersion of backscattered protons. Radiat. Eff. 39, 61 (1978) Mexico
2423	C02 B ⁺ + Si	E	750 keV	Marcovich, A.; Bahir, G.; Bernstein, T.; Kalish, M. A method for measuring stopping powers of channelled ions: boron in Si. Radiat. Eff. 39, 65 (1978) Israel
2424	D07 H ⁺ + Ni; D ⁺ + Ni; He ⁺ + Ni; Ne ⁺ + Ni	E	1.5-20 keV	Hou, M.; Eckstein, U.; Verbeek, H. Small angle backscattering of hydrogen, deuterium, helium and neon from single and polycrystalline nickel. Radiat. Eff. 39, 167 (1978) West Germany
2425	D15 e + Cu	T	0.5-3.0 MeV	Tenenbaum, A. Formation of Frankel pairs in electron irradiated copper. Radiat. Eff. 39, 119 (1978) Italy
2426	C02 Undef	T	Undef	Edvabnyl, I. V.; Yalovets, A. P. Ionization losses of fast charged particles in an anisotropic medium. Sov. Phys. J. 21, 7 (1978) Soviet Union
2427	H06 Undef	T	Undef	Andryushin, A. I.; Fodorov, M. V. Resonant interaction between intense electromagnetic waves during ionization of an atom. Sov. Phys. J. 21, 49 (1978) Soviet Union
2428	C04 e + Si D10 e + Si	T	1-5 MeV	Vorob'ev, A. A.; Popov, D. E.; Vorob'ev, S. A.; Kaplan, V. V. Band structure of transverse-energy eigenvalues and strong electron scattering by atomic planes in single crystals. Sov. Phys. J. 21, 94 (1978) Soviet Union

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2429	C82 e + Cu; e + Al E11 e + Cu; e + Al D12 e + Cu; e + Al	E	6-30 MeV	Lisai, V. A.; Yunda, M. T. An investigation of electron-photon fluxes after two-layer barriers irradiated by a beam of fast nonrelativistic electrons. Sov. Phys. J. 21, 240 (1978) Soviet Union
2430	A12 Undef	T	Undef	Cherkasov, M. R. Impact theory of broadening of spectral lines: I. Method of calculating relaxation parameters. Sov. Phys. J. 21, 264 (1978) Soviet Union
2431	A12 NH ₃ ⁺ + NH ₃	T	Undef	Cherkasov, M. R. Impact theory of broadening of spectral lines: II. Self-broadening of inversion lines of the NH ₃ molecule and rotational lines of the CH ₃ molecule. Sov. Phys. J. 21, 265 (1978) Soviet Union
2432	B01 Undef H01 Undef	T	H11 Undef	Anasov, M. D. Interaction of an atom with strong classical radiation. Sov. Phys. J. 21, 301 (1978) Soviet Union
2433	F01 Si; Si ⁺	T		Pavlov, A. M.; Vedralshii, R. V.; Brivitskii, V. V. Greens function method for the calculation of the properties of atoms with two inner holes: I. Absolute ionization energies. Sov. Phys. J. 21, 304 (1978) Soviet Union
2434	F01 Si ⁺ ; Si ²⁺	T		Pavlov, A. M.; Vedralshii, R. V.; Brivitskii, V. V. Greens function method for the calculation of the properties of atoms with two inner holes: II. Chemical shifts of x-ray lines. Sov. Phys. J. 21, 308 (1978) Soviet Union
2435	H02 Undef	T	Undef	Averbukh, I. S.; Kovarskii, V. A.; Perel'man, M. F. Effects of the Landau-Zener type in the optical spectra of molecules. Sov. Phys.-JETP 47, 645 (1978) Soviet Union
2436	B01 Undef H01 Undef	T	H11 Undef	Letokhov, V. S.; Minogin, V. G. Quantum motion of atoms in the resonant field of a standing light wave. Sov. Phys.-JETP 47, 690 (1978) Soviet Union
2437	H06 Undef	T	Undef	Fedorov, M. V. Polarization of electrons produced as a result of the resonance ionization of atoms by high-intensity electromagnetic radiation. Sov. Phys.-JETP 47, 702 (1978) Soviet Union
2438	D03 He ⁺ + PERT; He ⁺ + PERT; Ar ⁺ + PERT D12 He ⁺ + PERT; He ⁺ + PERT; Ar ⁺ + PERT	E	33 keV	Klyan, T. S.; Gritynina, V. V.; Fogel, Y. N. On the continuous spectra emitted by particles knocked out by ion beams from metal targets. Sov. Phys.-JETP 47, 736 (1978) Soviet Union
2439	B06 Undef H04 Undef	T	H14 Undef	Neveskii, M. E. Two-level system in a sinusoidal electric field. Sov. Phys.-JETP 47, 815 (1978) Soviet Union
2440	B07 Undef	T		Vartanyan, T. A.; Prazibai'skii, S. G. Optical excitation of colliding atoms to a state of quasibound motion. Sov. Phys.-JETP 47, 824 (1978) Soviet Union
2441	A06 He ²⁺ + He	E	2-60 keV	Afrosimov, V. V.; Basilev, A. A.; Leiko, G. A.; Panov, M. M. Formation of He ⁺ ions in various electronic states in He ²⁺ + He collisions. Sov. Phys.-JETP 47, 837 (1978) Soviet Union
2442	E04 e + H ₂ ; e + HD; e + D ₂ E09 e + H ₂ ; e + HD; e + D ₂	T	3-5 eV	Druzhnev, G. F.; Pozdnev, S. A. Application of the Faddeev equations to calculations of dissociative attachment cross sections. Sov. Phys.-JETP 47, 1645 (1978) Soviet Union
2443	A03 Li ⁺ + Li; Ca ⁺ + Ca A10 Li ⁺ + Li; Ca ⁺ + C	T	Undef	Chibisov, M. I. Contribution of the theory of excitation transfer in slow collisions of like atoms. Sov. Phys.-JETP 48, 22 (1978) Soviet Union

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2444	BC3 Under MC6 Under	T	MC6 Under	Delone, N. B.; Zon, B. A.; Krainov, V. P. Diffusion mechanism of ionization of highly excited atoms in an alternating electromagnetic field. <i>Sov. Phys.-JETP</i> 48, 223 (1978) Soviet Union
2445	A13 COB ⁺ + D ₂ ; COB ⁺ + He; D ₂ ⁺ + CO	E	0.1-0.5 eV	Zhurkin, E. S.; Sargsyan, G. N.; Melikbasyan, R. Y.; Yanitskii, M. M. Study of the forward and back secondary ion-molecule reactions CIE ⁺ + E ₂ going to or coming from D ₂ ⁺ + CO. <i>High Energy Chem.</i> 12, 62 (1978) Soviet Union
2446	A13 N ₂ ⁺ + He; N ₂ ⁺ + Kr; D ₂ ⁺ + He; D ₂ ⁺ + Kr	E	1-12 eV	Sargsyan, G. N.; Zhurkin, E. S.; Melikbasyan, R. Y. Cross sections of secondary ion-molecule reactions of D ₂ ⁺ (N ₂ ⁺) ions with inert gases. <i>High Energy Chem.</i> 12, 62 (1978) Soviet Union
2447	H04 He + H ₂	T	Thermal	Oravskii, A. M.; Suchkov, A. F.; Shebeko, Y. M. Possible preparation of chemically active nitrogen in v-v exchange processes in a nonequilibrium medium of vibrationally excited molecules. <i>High Energy Chem.</i> 12, 125 (1978) Soviet Union
2448	E03 e + N ₂ ; e + D ₂ O E04 e + N ₂ O; e + D ₂ O	E	90-1000 eV	Polyakova, G. M.; Ranyan, A. I.; Erko, V. F.; Pavlichenko, G. S. Formation of hot excited hydrogen atoms by electron impact on water molecules. <i>High Energy Chem.</i> 12, 167 (1978) Soviet Union
2449	A14 N ₂ ⁺ + O ₂ E05 e + [1 ₂ + O ₂]	E	2-10 eV	Basov, N. G.; Danilychev, V. A.; Pestolev, V. I.; Popovich, V. I.; Ragul'skii, V. V.; Suchkov, A. F.; Faizullov, F. S.; Shebeko, Y. M.; Gerasimkin, E. V.; Kerenkov, V. V. Electrolization synthesis of nitrogen oxides. <i>High Energy Chem.</i> 12, 224 (1978) Soviet Union
2450	A14 H + [1 + H]	T	2300-5000 K	Levitskii, A. A.; Polak, L. S. Study of the recombination reaction H + h + H → H ₂ + H by the classical trajectories method. <i>High Energy Chem.</i> 12, 245 (1978) Soviet Union
2451	A13 Ar ⁺ + H ₂ O	E	12 keV	Mikhalev, E. M.; Tontsyrev, G. L. Formation of thermodynamically unfavorable (H ₂ O) _n sub n ⁺ clusters with n = 1-20. <i>High Energy Chem.</i> 12, 252 (1978) Soviet Union
2452	A13 Ar ⁺ + H ₂ C; Xe ⁺ + H ₂ O	T	Under	Arifov, U. A.; Pomharov, S. L. Mechanism of the formation of H ⁺ (H ₂ O) sub n-OH clusters. <i>High Energy Chem.</i> 12, 327 (1978) Soviet Union
2453	A13 Ar ⁺ + H ₂ O	T	Under	Arifov, U. A.; Pomharov, S. L. Initial stages of clustering reactions in water vapor. <i>High Energy Chem.</i> 12, 331 (1978) Soviet Union
2454	A11 SF ₆ ⁺ + SF ₆	E	625-802 K	Vasilenko, L. S.; Popova, T. Y.; Rubtsova, M. M.; Savoritsov, M. M. Investigation of molecular relaxation in SF ₆ by the amplitude-modulated wave method. <i>Sov. J. Quantum Electron.</i> 8, 27 (1978) Soviet Union
2455	H01 Under	T	Under	Bekasov, E. V.; Dubetskii, B. Y. Two-photon absorption resonance in the presence of transit effects. <i>Sov. J. Quantum Electron.</i> 8, 81 (1978) Soviet Union
2456	B07 Under	T		Yakovlenko, S. I. Laser-induced radiative collisions (review). <i>Sov. J. Quantum Electron.</i> 8, 181 (1978) Soviet Union
2457	A11 I ₂ ⁺ + I ₂ ; I ₂ ⁺ + Xe	E	293-413 K	Solov, V. Y. Investigation of the fluorescence of molecular iodine in the 340 nm band. <i>Sov. J. Quantum Electron.</i> 8, 223 (1978) Soviet Union
2458	F01 He Seq	T		Beiko, V. A.; Pikhiz, S. A.; Feencov, A. Y. Intensities of resonance line satellites of helium-like ions with Z=12-23 in laser plasma x-ray emission. <i>Sov. J. Quantum Electron.</i> 8, 226 (1978) Soviet Union

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2459	F01 He Seq	I		Vainshtein, L. A.; Vinogradov, A. V.; Safronova, U. I.; Shobelev, I. Y. Stimulated emission in far ultraviolet due to transitions in multiply charged neon-like ions. Sov. J. Quantum Electron. 8, 235 (1978) Soviet Union
2460	B07 Undef	I		Donch-Bruelovich, A. M.; Przhibel'skii, S. G.; Khromov, V. V. Optical processes in close atomic collisions. Sov. J. Quantum Electron. 8, 268 (1978) Soviet Union
2461	A12 I ⁺ + Ne; I ⁺ + Ne; I ⁺ + Ar; I ⁺ + Xe M14 hv + I ⁺	E	A12 430 K M14 1.315 μ	Babkin, V. I.; Kuznetsova, S. V.; Paslov, A. I. Simple method for determination of stimulated emission cross section of $^2P_{1/2}(F=3) \rightarrow ^2P_{3/2}(F \text{ prime}=4)$ transition in atomic iodine. Sov. J. Quantum Electron. 8, 285 (1978) Soviet Union
2462	M05 Undef	I	0-1 eV	Sazonov, V. M. Influence of transitions between states with similar energies on the dissociation of polyatomic molecules in a laser radiation field. Sov. J. Quantum Electron. 8, 324 (1978) Soviet Union
2463	G08 $e + [C + Ne]; e + [C + He]$	E	0-10 eV	Matsukanyan, A. K.; Maida, G. V.; Shernov, M. P. Distribution of electron energies in mixtures of copper vapor with neon and helium. Sov. J. Quantum Electron. 8, 342 (1978) Soviet Union
2464	B03 Na ⁺	E		Apatin, V. M.; Letokhov, V. S.; Pishin, V. I. Stark effect in sodium atomic states highly excited by laser radiation. Sov. J. Quantum Electron. 8, 363 (1978) Soviet Union
2465	hv nhv + BCl ₂	E	13.6 μ	Kolomiishii, Y. R.; Ryabov, L. A. Frequency characteristics of isotopically selective dissociation of BCl ₂ in a strong infrared CO ₂ laser field. Sov. J. Quantum Electron. 8, 375 (1978) Soviet Union
2466	A11 HgBr ⁺ + SF ₆ ; HgBr ⁺ + Xe; HgBr ⁺ + He; HgBr ⁺ + N ₂ ; HgBr ⁺ + O ₂ M05 hv + HgBr ₂	E	210-190 nm	Bazhulin, S. P.; Basov, M. G.; Zuev, V. S.; Leonov, Y. S.; Stollow, Y. Y. Stimulated emission at $\lambda = 202$ nm as a result of prolonged optical pumping of HgBr ₂ vapor. Sov. J. Quantum Electron. 8, 402 (1978) Soviet Union
2467	M04 Undef	I	Undef	Kuz'min, M. V. Dynamics of many-photon excitation of molecular vibrations. Sov. J. Quantum Electron. 8, 438 (1978) Soviet Union
2468	A10 Eu ⁺ + Eu; Sm ⁺ + Sm M06 hv + Eu; hv + Sm	E	A1 ⁺ 1052-1200 K M06 5765-5916 A ⁺	Karlov, M. V.; Krynetshii, B. E.; Pishin, V. A. Influence of atomic collisions on the selectivity of resonant excitation in isotope separation. Sov. J. Quantum Electron. 8, 502 (1978) Soviet Union
2469	B07 Undef	E		Beterov, I. M.; Chebotayev, V. P.; Fateev, A. V.; Yakovin, D. V. Influence of laser radiation on electron capture by molecules. Sov. J. Quantum Electron. 8, 533 (1978) Soviet Union
2470	F01 H Seq F02 H Seq	E		Vinogradov, A. V.; Paragudov, G. V.; Ragozin, E. N.; Shobelev, I. Y.; Yukov, L. A. Dependence of the spectrum of hydrogen-like ions on the electron density in a laser plasma. Sov. J. Quantum Electron. 8, 615 (1978) Soviet Union
2471	A10 I ⁺ + Ar; I ⁺ + Xe; I ⁺ + SF ₆ M05 hv + CF ₃ I M08 hv + CF ₃ I	E	A1 ⁺ 294 K M05; M08 2570 A ⁺	Ershov, L. S.; Zeleskii, V. Y. Collision-induced I($5^2P_{1/2} \rightarrow 5^2P_{3/2}$) radiative transition. Sov. J. Quantum Electron. 8, 649 (1978) Soviet Union
2472	G08 $e + Si$	E	1.7 MeV	Kaplin, V. V.; Vorob'ev, S. A. Molecular-type states in fast-electron channeling. Sov. Phys.-Solid State 20, 16 (1978) Soviet Union

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2473	C02 e + Au E18 e + Au	E	5-30 keV	Vyatshin, A. T.; Salimov, B. M. Electron-beam energy losses in a bulk gold target. <i>Sov. Phys.-Solid State</i> 20, 143 (1978) Soviet Union
2474	D15 H ⁺ + Al	T	0-2 MeV	Taratko, A. M.; Vorob'ev, S. A. Characteristics of the energy and spatial distributions of primary knocked-out atoms in single crystals. <i>Sov. Phys.-Solid State</i> 21, 565 (1978) Soviet Union
2475	D06 e + [Al + Mo]	E	0-50 eV	Ershova, T. P.; Koroblev, V. V.; Mironov, Y. A. Characteristics of elastic reflection of slow electrons from a film-single-crystal system. <i>Sov. Phys.-Solid State</i> 20, 710 (1978) Soviet Union
2476	D02 Ar ⁺ + Si	E	151-500 eV	Labunov, V. A.; Borisenko, V. E. Temperature dependence of the sputtering coefficient of silicon. <i>Sov. Phys.-Solid State</i> 20, 712 (1978) Soviet Union
2477	D04 He ⁺ + Si	E	1-10 keV	Dorozhkin, A. A.; Petrov, A. A.; Petrov, N. B. Role of the Auger processes in electron emission due to bombardment with light ions. <i>Sov. Phys.-Solid State</i> 20, 734 (1978) Soviet Union
2478	D04 e + GaP	E	3.2-3.8 keV	Afonina, L. F.; Stechinskii, G. E. Energy spectra of secondary electrons emitted from gallium phosphide with a reduced work function. <i>Sov. Phys.-Solid State</i> 20, 874 (1978) Soviet Union
2479	D06 e + W	E	2-51 eV	Ershova, T. P.; Koroblev, V. V.; Mironov, Y. A. Elastic reflection of slow electrons from tungsten single crystal. <i>Sov. Phys.-Solid State</i> 20, 905 (1978) Soviet Union
2480	D06 e + Mo	E	3.5-1.5 keV	Gotsymova, M. V.; Zaslavskii, S. L.; Pronin, I. I. Anisotropy of the elastic reflection of electrons from a molybdenum single crystal. <i>Sov. Phys.-Solid State</i> 20, 919 (1978) Soviet Union
2481	A07 He ²⁺ + He; Kr ⁺ + Kr A17 He ²⁺ + He; Kr ⁺ + Kr	T	Under	Nikulin, V. K.; Gushchina, N. A. Shielded-orbital model for quasimolecule analysis of ion-atom collisions. <i>Sov. Phys.-Tech. Phys.</i> 23, 7 (1978) Soviet Union
2482	A27 Li ⁺ + He; Li ⁺ + Ne; C ⁺ + He; C ⁺ + Ne; N ⁺ + He; N ⁺ + Ne; Ne ⁺ + He; Ne ⁺ + Ne; Na ⁺ + He; Na ⁺ + Ne; Mg ⁺ + He; Mg ⁺ + Ne	E	121-2000 eV	Latypov, Z. Z.; Shaporenko, A. A. Ionization of atomic He and Ne by slow Li ⁺ , C ⁺ , N ⁺ , Ne ⁺ , Na ⁺ , and Mg ⁺ ions. <i>Sov. Phys.-Tech. Phys.</i> 23, 112 (1978) Soviet Union
2483	A07 Na ⁺ + He; Mg ⁺ + He	T	100-2000 eV	Latypov, Z. Z.; Shaporenko, A. A. Use of effective ionization cross sections to examine nonadiabatic transitions in the Na ⁺ -He and Mg ⁺ -He systems. <i>Sov. Phys.-Tech. Phys.</i> 23, 114 (1978) Soviet Union
2484	E02 e + He; e + Ne; e + Ar; e + Kr; e + Xe	E	0.025-1 eV	Gushkev, Y. K.; Savvov, R. V.; Slobodyanyuk, V. A. Time-of-flight measurement of the total cross section for elastic scattering of low-energy electrons (E=0.025-1.0 eV) by He, Ne, Ar, Kr, and Xe. <i>Sov. Phys.-Tech. Phys.</i> 23, 167 (1978) Soviet Union
2485	A03 He ⁺ + Kr; Co ⁺ + Ar; Co ⁺ + Xe; Sr ⁺ + Xe	E	3.1-2 keV	Borisev, V. B.; Egorov, V. S.; Zolotarevnyuk, M. M.; Pastor, A. A.; Fares, M. E. Ion composition of a pulsed microwave discharge in an inert gas. <i>Sov. Phys.-Tech. Phys.</i> 23, 171 (1978) Soviet Union
2486	E02 e + Ag; e + Ne E17 e + Ag; e + Ne	T	3.6-4 keV	Akhmedov, A. F.; Chernov, G. V. Elastic scattering of electrons by atoms in the keV range. <i>Sov. Phys.-Tech. Phys.</i> 23, 247 (1978) Soviet Union
2487	D13 H + ZrC	T	30'-1500 K	Matskevich, T. L.; Krachino, I. V. Hydrogen adsorption on zirconium carbide and its rhenium alloys. <i>Sov. Phys.-Tech. Phys.</i> 23, 314 (1978) Soviet Union

REF. NO.	REACTANTS	EXP OR THEOP	ENERGY RANGE	REFERENCE
2488	CEA e + Al	T	0.5-500 keV	Nakarov, V. V. Spatial distribution of excitation density in a solid bombarded by electrons at 0.5-500 keV. Sov. Phys.-Tech. Phys. 23, 324 (1978) Soviet Union
2489	D89 Undef	T	1-100 eV	Kishinevskii, N. E. Secondary negative-ion emission. Sov. Phys.-Tech. Phys. 23, 456 (1978) Soviet Union
2490	A86 H ⁺ + H ⁺ ; Si ²⁺ + Ca	T	10 ¹⁰ -10 ¹¹ cm/s	Zhdanov, V. P.; Chiblov, N. I. Effect of level degeneracy on charge exchange at a term pseudointersection. Sov. Phys.-Tech. Phys. 23, 322 (1978) Soviet Union
2491	C87 e + Na ⁺	E	47 ^o -1500 K	Denisev, V. I.; Kabanov, N. E. Collisions of the second kind between electrons and excited neon atoms. Sov. Phys.-Tech. Phys. 23, 617 (1978) Soviet Union
2492	D96 Undef	T	Undef	Tolmachev, A. I. Elastic reflection of electrons from solids. Sov. Phys.-Tech. Phys. 22, 703 (1978) Soviet Union
2493	A17 N ₂ ; CH ₄ ; C ₂ H ₆ ; CO ₂	E	81-300 K	Barhan, E. S. Second virial coefficient at low temperature. Sov. Phys.-Tech. Phys. 23, 721 (1978) Soviet Union
2494	A87 H + H; H + He; H ⁺ + H; H ⁺ + He; He + H; He + He; He ⁺ + H; He ⁺ + He; He ²⁺ + H; He ²⁺ + He; Li ⁺ + H; Li ⁺ + He; Li ²⁺ + H; Li ²⁺ + He; Li ²⁺ + He; Be ²⁺ + H; Be ²⁺ + He; H ₂ ⁺ + H; H ₂ ⁺ + He	T	10 ¹⁰ -6x10 ¹⁰ cm/s	Nikolaev, V. S.; Senashenko, V. S.; Sidorovich, V. A.; Shafer, V. Y. Ionization of hydrogen and helium by fast atomic particles with one and two electrons. Sov. Phys.-Tech. Phys. 23, 789 (1978) Soviet Union
2495	A16 O ⁻ + O ₂ ⁺ ; O ⁻ + N ₂ ⁺ ; C ₂ ⁻ + O ₂ ⁺ ; C ₂ ⁻ + N ₂ ⁺ E87 e + [O ⁻ + O ₂ ⁺]; e + [O ⁻ + N ₂ ⁺]; e + [C ₂ ⁻ + O ₂ ⁺]; e + [C ₂ ⁻ + N ₂ ⁺]	T	3.1-10 eV	Aleksandrov, M. L. Electron detachment from O ⁻ and C ₂ ⁻ ions in excited molecules in an air discharge. Sov. Phys.-Tech. Phys. 23, 806 (1978) Soviet Union
2496	A87 H ⁺ + Ar; H ⁺ + Sb	T	13-1000 keV	Komarcov, F. F.; Novikov, A. P. Inner-shell ionization by heavy charged particles in the binary-collision model I. Effect of the electron momentum distribution on the energy dependence of the ionization cross section. Sov. Phys.-Tech. Phys. 23, 819 (1978) Soviet Union
2497	A17 Ar ⁺ + Kr	T	Undef	Gushchina, N. A.; Nikulin, V. K. Correlation diagram of the Kr-Ar ⁺ heteronuclear system. Interpretation of the quasihole Auger spectra. Sov. Phys.-Tech. Phys. 23, 1135 (1978) Soviet Union
2498	A87 H ⁺ + Cu; H ⁺ + Ag; He ⁺ + Cu; He ⁺ + Ag	E	15 ^o -800 keV	Benka, O.; Geretschleger, M. Energy dependence of the x-ray production cross sections of Cu and Ag for 150 to 800 keV proton and He ⁺ bombardment. Z. Phys. A 284, 29 (1978) Austria
2499	A85 S ⁺ + NaCl; S ⁺ + Cl ₂ ; S ⁺ + Ar; Cl ⁺ + NaCl; Cl ⁺ + Cl ₂ ; Cl ⁺ + Ar A19 S ⁺ + NaCl; S ⁺ + Cl ₂ ; S ⁺ + Ar; Cl ⁺ + NaCl; Cl ⁺ + Cl ₂ ; Cl ⁺ + Ar	E	3.22-48 MeV	Schmidt-Boeking, M.; Schuch, R.; Tseruya, I.; Schule, R.; Specht, M. J.; Bethge, K. Experimental determination of the production mechanism for noncharacteristic radiation in swift heavy-ion collisions. Z. Phys. A 284, 39 (1978) West Germany
2500	A83 Pb + Ag; Pb + Au A19 Pb + Ag; Pb + Au	E	5.8 MeV/amu	McDonald, J. W.; Armbruster, F.; Lehnke, M. H.; Folkmann, F.; Maymann, S.; Lieser, D.; Mohler, P. H.; Warczek, A. An absolute measurement of the probability for 1 s (sigma) and 2 p (sigma) excitation of the lead K shell. Z. Phys. A 284, 57 (1978) West Germany
2501	D88 Ne + Cu; Ar + Cu; Kr + Cu	T	Undef	Schroder, M. Unified description of circular polarization in supermultiplet lines of ions, excited by heavy surface interaction. Z. Phys. A 284, 12b (1978) West Germany
2502	A11 Ba ⁺ + He; Ba ⁺ + Ne; Ba ⁺ + Ar; Ba ⁺ + Kr; Ba ⁺ + Xe; Pb ⁺ + He; Pb ⁺ + Ne; Pb ⁺ + Ar; Pb ⁺ + Kr; Pb ⁺ + Xe	T	Thermal	Ruttler, W.; Buckel, W.; Weber, E. W. Collisional relaxation of ionic 2P _{3/2} excited states in rare gases. Z. Phys. A 284, 115 (1978) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2503	A15 $\text{Ca}_2 + \text{Ca}; \text{Na}_2 + \text{Na}$	E	Thermal	Weber, M. G. Studies of the atom-dimer polarization transfer: Part II. Z. Phys. A 284, 145 (1978) West Germany
2504	A07 $\text{S}^0 + \text{Na}; \text{S}^0 + \text{Mg}; \text{S}^0 + \text{Al}; \text{S}^0 + \text{Si};$ $\text{S}^0 + \text{NaCl}; \text{S}^0 + \text{Ca}; \text{S}^0 + \text{Sc}; \text{S}^0 +$ $\text{Ti}; \text{Cl}^0 + \text{Ar}$ A19 $\text{S}^0 + \text{Na}; \text{S}^0 + \text{Mg}; \text{S}^0 + \text{Al}; \text{S}^0 + \text{Si};$ $\text{S}^0 + \text{NaCl}; \text{S}^0 + \text{Ca}; \text{S}^0 + \text{Sc}; \text{S}^0 +$ $\text{Ti}; \text{Cl}^0 + \text{Ar}$	E	3.9-48 MeV	Schuch, R.; Holte, G.; Lichtenberg, B.; Schmidt-Bocking, M.; Schule, R.; Tarrago, I. K-shell ionization cross sections in nearly symmetric collisions by S and Cl impact. Z. Phys. A 284, 153 (1978) West Germany
2505	H06 $\text{h}\nu + \text{N}$	T	0.1-1 Ry	Neups, K. Photoionization cross section of atomic nitrogen calculated by the many-channel quantum defect method. Z. Phys. A 284, 247 (1978) West Germany
2506	A*4 $\text{Ca}_2 + \text{Ne}; \text{Ca}_2 + \text{Ne}; \text{Ca}_2 + \text{Ar}; \text{Ca}_2 +$ $\text{Kr}; \text{Ca}_2 + \text{N}_2; \text{Ca}_2 + \text{CH}_4$	E	Thermal	Glas, H.-J.; Weber, M. G. Collisions induced dissociation of Ca_2 studied by atom-molecule-exchange optical pumping. Z. Phys. A 284, 253 (1978) West Germany
2507	H04 $\text{h}\nu + \text{Ba}^+$ H08 $\text{h}\nu + \text{Ba}^+$	E	585 nm	Hohle, C.; Mühnermann, M.; Meier, T.; Wagner, M. High resolution spectroscopy of the transition $5d^2D_{3/2} + 6p$ $^2P_{3/2}^0$ in a fast Ba^+ ion beam. Z. Phys. A 284, 261 (1978) West Germany
2508	A05 $\text{H}^0 + \text{Al}; \text{H}^0 + \text{Si}; \text{H}^0 + \text{Ti}; \text{h}^0 + \text{Al};$ $\text{H}^0 + \text{Si}; \text{H}^0 + \text{Ti}$	E	3.5-14 MeV	Bauer, C.; Gippner, P.; Mohrath, K.; Mann, R.; Nebelung, A.; Rudolph, W. Emission of x-ray continua by bombardment of thick Al, Si and Ti targets with protons and ^{10}B ions. Z. Phys. A 284, 275 (1978) East Germany
2509	E15 Undef	E	Undef	Magnier, P.; Bouchard, J.; Blondel, M.; Legrand, J.; Perolat, J. P.; Vatin, R. Precise measurement of the λ (sub h) emission rate following the electron capture-decay of ^{54}Mn -fluorescence yield W (sub h) of Cr. Z. Phys. A 284, 309 (1978) France
2510	H08 $\text{h}\nu + \text{Cs}$	E	6231 Å	Fredriksson, A.; Lundberg, M.; Svarberg, S. Fine-structure measurements for highly excited f states of cesium. Z. Phys. A 284, 429 (1978) Sweden
2511	A07 Undef	T	550-1470 MeV	Müller, B.; Soff, G.; Greiner, W.; Cossuvascu, V. Scaling behaviour of inner-shell ionization in superheavy quasi-molecules. Z. Phys. A 285, 27 (1978) West Germany
2512	C02 $\text{He}^{2+} + \text{Si}$	E	6.15-6.78 MeV	Rosendahl, E. W.; Monkhedieh, J. Measurement of the energy loss of non-channelled α -particles in transmission and interpretation with the aid of an averaged continuum potential. Z. Phys. A 285, 33 (1978) West Germany
2513	A07 $\text{U} + \text{U}; \text{U} + \text{Pb}; \text{Pb} + \text{U}; \text{Pb} + \text{Pb}$	T	4.7 MeV/amu	Hellenthal, G.; Betz, W.; Soff, E.; Müller, B.; Greiner, W. The influence of rotational coupling on x-vacancy formation in U-Pb collisions. Z. Phys. A 285, 105 (1978) West Germany
2514	A15 $\text{Cs} + \text{Rb}$	E	Thermal	Loff, M.; Violino, P.; Maucchi, M. A new technique for measuring the spin-exchange cross-section between different atoms. Z. Phys. A 285, 107 (1978) Italy
2515	H08 $\text{h}\nu + \text{Ba}$	E	470-5000 Å	Kaiser, D.; Kulina, P.; Livingston, A. E.; Radlo, H.-M.; Tudoreche, S. Lifetime measurements of Rydberg states in the 6nd $^{10}\text{S}_2$ -series of Ba I. Z. Phys. A 285, 111 (1978) West Germany
2516	B07 Undef	T		Mohr, M.; Chand, P. Electron scattering in the presence of an intense electromagnetic field. Z. Phys. A 285, 115 (1978) Italy

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2517	A03 Ar ¹⁸⁺ + C; Ar ¹⁹⁺ + C	E	1.4 MeV/amu	Bohmann, M.-D.; Liesen, D.; Pfeng, M. High resolution spectroscopy of prompt and metastable decaying levels in highly ionized argon, especially of the metastable ^{3P₂} -state of Ar ¹⁸⁺ and the ^{3P_{3/2}} -state of Ar ¹⁹⁺ . Z. Phys. A 285, 171 (1978) West Germany
2518	A07 Cu ¹⁶⁺ + Kr; Cu ¹⁶⁺ + Xe; Cu ¹⁷⁺ + Kr; Cu ¹⁷⁺ + Xe; Cu ¹⁸⁺ + Kr; Cu ¹⁸⁺ + Xe; Cu ¹⁹⁺ + Kr; Cu ¹⁹⁺ + Xe; Cu ²⁰⁺ + Kr; Cu ²⁰⁺ + Xe; Cu ²¹⁺ + Kr; Cu ²¹⁺ + Xe; Cu ²²⁺ + Kr; Cu ²²⁺ + Xe; Cu ²³⁺ + Kr; Cu ²³⁺ + Xe	E	1.4 MeV/amu	Warczak, A.; Liesen, D.; MacDonald, J. R.; Rohler, P. H. Charge state dependence of characteristic x-ray emission under single collision conditions for 1.4 MeV/amu Cu ions. Z. Phys. A 285, 235 (1978) West Germany
2519	A07 Cu ¹⁵⁺ + Ar; Cu ¹⁶⁺ + Ar; Cu ¹⁷⁺ + Ar; Cu ¹⁸⁺ + Ar; Cu ¹⁸⁺ + Kr; Cu ¹⁹⁺ + Ar; Cu ¹⁹⁺ + Kr; Cu ²⁰⁺ + Ar; Cu ²⁰⁺ + Kr; Cu ²¹⁺ + Ar; Cu ²¹⁺ + Kr	E	53-78 MeV	Schiebel, U.; Doyle, B. L. Ar K x-ray production cross sections in collisions with highly ionized Cu at 56-76 MeV. Z. Phys. A 285, 241 (1978) United States
2520	A17 H + H; Br + Zr	T	Undef	Jakubassa, D. H. Variational calculation of the 1 s (sigma) orbital in quasi-molecular systems. Z. Phys. A 285, 249 (1978) West Germany
2521	C04 I + NiCa; Au + NiCa	E	3-1 MeV/amu	Dauter, D.; Pate, B. D. The tracklengths of iodine and gold ions in NiCa. Z. Phys. A 285, 253 (1978) Canada
2522	A03 Ne + Ne; N + Ne	T	1-1000 keV	Gross, E. A. U.; Horbatsch, M.; Freizler, K. M. Multi-state impact parameter approximation for many particle excitations in atomic collisions; total cross sections for Ne-Ne and N-Ne. Z. Phys. A 285, 353 (1978) West Germany
2523	F01 Ne	E		Aufmuth, P.; Clivies, M.-P.; Heilig, K.; Stendel, A.; Wendlandt, D.; Bauche, J. Isotope shift in molybdenum. Z. Phys. A 285, 357 (1978) West Germany
2524	H07 hv + O ⁻ ; hv + S ⁻	E	488-515 nm	Breyer, F.; Frey, P.; Motop, M. High resolution photoelectron spectroscopy of negative ions: fine-structure transitions in L- and S ⁻ photodetachment. Z. Phys. A 286, 133 (1978) West Germany
2525	C02 Ar + C; Ti + C; Kr + C; Xe + C; Pb + C; U + C	E	0.2-1.4 MeV/amu	Pape, M.; Clark, M.-G.; Schmidt, K.-H. Energy loss of heavy ions in carbon foils. Z. Phys. A 286, 155 (1978) West Germany
2526	A07 H ⁺ + C; H ⁺ + Cu; H ⁺ + Ge	E	137 keV	Scholer, A.; Bell, F. Angular distribution and polarization fraction of characteristic x-radiation after proton impact. Z. Phys. A 286, 162 (1978) West Germany
2527	A06 C ⁶⁺ + Ar; O ⁸⁺ + Ar	E	1.6-2.8 MeV/amu	Vane, C. R.; Sellin, I. A.; Suter, M.; Alton, G. D.; Elston, S. B.; Griffin, P. M.; Ipoe, R. S. Continuous electron capture dependence on projectile Z and velocity. Z. Phys. A 286, 233 (1978) United States
2528	F01 Ne	E		Oppen, G. V.; Perschmann, W.-U.; Szostak, D. Cascade-free lifetime measurements on the 1 s j d-levels of Ne I. Z. Phys. A 286, 243 (1978) West Germany
2529	A05 F + Al; Al + Al; Cl + Al	E	0.4-2.2 MeV/amu	Wolfl, U.; Stiller, C.; Bononi, G.; Stockli, M.; Suter, M.; Deppen, W. Evidence for a molecular REC-effect in heavy ion collisions. Z. Phys. A 286, 249 (1978) Switzerland
2530	C02 Cl + [Ar + CH ₄]	E	3.4-39.4 keV	Schmidt-Bocking, M.; Hornung, M. Energy straggling of Cl ions in gases. Z. Phys. A 286, 283 (1978) West Germany
2531	A06 PERT	T	1 e.u.	Shevelko, V. P. One-electron capture in collisions of fast ions with atoms. Z. Phys. A 287, 16 (1978) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2532	A07 H ⁺ + Si; H ⁺ + Ti; H ⁺ + Cu; H ⁺ + Ag; He ⁺ + Si; He ⁺ + Ti; He ⁺ + Cu; He ⁺ + Ag; Ag; H ⁺ + Si; H ⁺ + Ti; H ⁺ + Cu; H ⁺ + Ag	E	3.17-2 MeV/amu	Bauer, C.; Mann, R.; Rudolph, W. K-shell ionization of Si, Ti, Cu and Ag for incident protons, He and H ⁺ ions in the energy range of 0.17-2.6 MeV/amu. Z. Phys. A 287, 27 (1978) East Germany
2533	A05 Ag + Ag; Nb + Nb; Br + Br; Ge + Ge; Fe + Fe	E	7-66 MeV	Stoller, C.; Wolfli, W.; Benoni, G.; Morenzoni, E.; Stockli, M. The anisotropy of the K α -2p (sigma)-radiation observed in symmetric heavy ion collisions. Z. Phys. A 287, 33 (1978) Switzerland
2534	E03 e + H	T	200-500 eV	Blum, K.; Fitchard, E. L.; Kleinspöngen, H. Coherent excitation of the n=3 level of hydrogen in a field free region. Z. Phys. A 287, 137 (1978) Scotland
2535	A07 H ⁺ + W	E	3.15-2.8 MeV	Tittel, H.; Bell, F. W-shell ionization of tungsten by proton impact. Z. Phys. A 287, 143 (1978) West Germany
2536	A03 Nb + Kr; Kr + Nb A05 Nb + Kr; Kr + Nb	E	43-47 MeV	Frank, W.; Koun, K.-M.; Hanfress, F. The excitation of the 1s (sigma) and 2p (sigma) quasispherical radiation in Nb + Kr collisions. Z. Phys. A 287, 149 (1978) Soviet Union
2537	H08 2h ν + Li	E	573-6400 Å	Kowalski, J.; Neumann, R.; Sahy, N.; Winkler, K.; zu Putlitz, G. Two-photon intracavity dye laser spectroscopy of the 4S and 3D term in ⁷ Li. Z. Phys. A 287, 247 (1978) West Germany
2538	A03 He ²⁺ + N ₂ ; He ²⁺ + N ₂	E	19 MeV	Schule, R.; Steinhäuser, A.; Stefani, M.; Bethge, R. Collisional configuration-rearrangement in fast neon projectiles. Z. Phys. A 287, 343 (1978) West Germany
2539	C07 N ⁺ + C F01 N ⁺ ; N ²⁺	E	C07 1-10 MeV	Brink, J. A.; Coetzee, F. J.; Cliver, J. H. I.; van der Westhuizen, P.; Pretorius, R.; McMurray, W. A. Level lifetimes in N II and N III: apparatus and results. Z. Phys. A 288, 1 (1978) South Africa
2540	A04 H ₂ ⁺ + N ₂ ; H ₂ ⁺ + Ne; H ₂ ⁺ + Ar	E	17 keV	Vogel, M. Dissociative charge exchange in collisions of 10 keV H ₂ ⁺ ions on N ₂ , Ne, and Ar targets. Z. Phys. A 288, 7 (1978) West Germany
2541	C07 Ar ¹⁸⁺ + C; Ar ¹⁸⁺ + C	E	1.4 MeV/amu	Dohmann, M. D.; Pfeng, M. Measurement of the population of the ² P _{3/2} -state in Ar ¹⁸⁺ by cascading processes. Z. Phys. A 288, 25 (1978) West Germany
2542	A06 Cs ⁺ + Cs	E	Thermal	Nienstedt, H.; Goulik, D.; zu Putlitz, G.; Weber, H. G. Cross section for the resonant charge exchange Cs ⁺ + Cs at thermal energies. Z. Phys. A 288, 109 (1978) West Germany
2543	C02 Ar + C; Ar + Al; Ar + Ag; Ar + Au; Ar + Bi; Kr + C; Kr + Al; Kr + Ag; Kr + Au; Kr + Bi; Xe + C; Xe + Al; Xe + Ag; Xe + Au; Xe + Bi; U + C; U + Al; U + Ag; U + Au; U + Bi C05 Ar + C; Ar + Al; Ar + Ag; Ar + Au; Ar + Bi; Kr + C; Kr + Al; Kr + Ag; Kr + Au; Kr + Bi; Xe + C; Xe + Al; Xe + Ag; Xe + Au; Xe + Bi; U + C; U + Al; U + Ag; U + Au; U + Bi	E	1.2 MeV/amu	Nichols, F.; Pava, D.; Guttner, K.; Hofmann, S.; Munzenberg, G. Multiple scattering and energy loss of fast heavy ions in thin solid targets. Z. Phys. A 288, 125 (1978) West Germany
2544	A05 H ⁺ + In; H ⁺ + Sn; H ⁺ + Nd; H ⁺ + Dy; H ⁺ + Pt; H ⁺ + Au	E	1-1 MeV	Khan, M. R.; Hopkins, A. G.; Crumpton, D. Proton induced L x-ray cross-sections for In, Sn, Nd, Dy, Pt, and Au. Z. Phys. A 288, 133 (1978) United Kingdom
2545	A07 N; + N ₂	T	12-90 MeV	Anholt, R. Theory of the angular distribution of molecular orbital K x-ray seen in heavy-ion-atom collisions. Z. Phys. A 288, 227 (1978) West Germany
2546	A03 He ⁺ + Ne A04 He ⁺ + Ne	E	10-355 keV	Wittmann, W.; Andra, M. J. Observation of the He I 3p polarization after medium energy He ⁺ -Ne collisions with impact parameter selection. Z. Phys. A 288, 336 (1978) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2547	A07 Xe* + Ag	T	27-2-70.8 MeV	Martens, M.; Fricke, B. Kinematic dipole model for the anisotropy of quasi-molecular x-rays. Z. Phys. A 282, 345 (1978), West Germany
2548	C01 U + Al	T	0.9-MeV/amu	Schäfer, W.; Stöcker, H.; Heller, E.; Greiner, W. Pech cones induced by fast heavy ions in electron plasma. Z. Phys. A 288, 349 (1978) West Germany
2549	A03 I* + Ag; I* + Sn; I* + Sb; I* + Te; I* + Yb; I* + Au; I* + Pb; I* + Th; I* + U	E	5-50 MeV	Hagmann, S.; Ambrester, P.; Kraft, G.; Meier, P. h.; Stein, H.-J. Inner-shell x-ray production in adiabatic iodine-Z ₂ collisions, with Z ₁ + Z ₂ greater than or equal to 100: I. Vacancy configurations and cross sections. Z. Phys. A 288, 353 (1978) West Germany
2550	A03 Xe + Au	E	4.7 MeV/amu	Liesen, D.; Ambrester, P.; Böhne, H.-M.; Hagmann, S. Measurement of shape and absolute value of ls (sigma) excitation probability in 4.7 MeV/a Xe + Au collisions. Z. Phys. A 288, 417 (1978) West Germany
2551	A06 K + I	T	0-10 eV	Andersen, B.; Kuppermann, A.; de Vries, A. E. Chemi-ionization in K-I collisions: I. Integral cross sections. Z. Phys. A 289, 1 (1978) United States
2552	A06 K + I A18 K + I	T	1.3-3.5 eV	Andersen, B.; Kuppermann, A. Chemi-ionization in K-I collisions: II. Differential cross sections. Z. Phys. A 289, 11 (1978) United States
2553	A12 Na + Na	E	Thermal	Graubner, F.; Hermann, G. Disalignment collision cross sections of the neon levels 2p, and 2s, obtained by mode crossing. Z. Phys. A 289, 21 (1978) West Germany
2554	E15 Undef	E	Undef	Thomas, D. J. The electron capture decay of ⁴⁰ Sc-measurements of the K x-ray emission probability, half-life, and decay scheme. Z. Phys. A 289, 51 (1978) United Kingdom
2555	E09 e + Cl ₂ ; e + Cl ₂ + Ar	E	300 K	Bohni, M.; Jacob, J. M.; Nanyano, J. A. Electron-attachment rate constant for Cl ₂ at room temperature and 250° C. Appl. Phys. Lett. 34, 187 (1979) United States
2556	H06 hv + N ₂	E	9440 cm ⁻¹	Berevink, G.; Gohert, J.; Sulten, C. Experimental results on the multiphoton ionization of molecular nitrogen. Appl. Phys. Lett. 34, 150 (1979) France
2557	A14 KrF* + Ar + Ar; KrF* + Kr + Kr	T	35°-80° K	Shul, V. M. Temperature dependence of recombination rate constants for KrF* + h + F + 5KrF* + n(KrAr, Kr). Appl. Phys. Lett. 34, 203 (1979) United States
2558	D05 hv + C; hv + Al; hv + S; hv + C-; hv + Zr; hv + Ag; hv + Sn; hv + Te; hv + Au; hv + Pb	E	5-130 keV	Pattasamy, K. S.; Gowda, R.; Sasjeevalah, B. Photoelectric cross sections derived from the total absorption cross sections in the energy range 5-130 keV. Can. J. Phys. 57, 92 (1979) India
2559	H05 hv + KI	E	255-336 nm	van Veen, H. J. A.; de Vries, M. S.; de Vries, A. E. State determination of atoms formed by dye-laser induced photodissociation of KI in the near UV. Chem. Phys. Lett. 60, 104 (1979) The Netherlands
2561	H02 hv + H ₂ O H04 hv + H ₂ C H06 hv + H ₂ C	T	4-60 eV	Williams, G. R. J.; Langhoff, P. W. Photoabsorption in H ₂ O: Stieltjes-Tchebycheff calculations in the time-dependent Hartree-Fock approximation. Chem. Phys. Lett. 60, 201 (1979) Australia
2561	A10 CO* + CO	T	310 K	Vassou, V. A., Jr. Numerical inversion of the V-V master equation. Chem. Phys. Lett. 60, 220 (1979) United States

REF. NO.	REACTANTS	EXP OF THEOR	ENERGY RANGE	REFERENCE
2562	A17 Rb ⁺ + Li; Rb ⁺ + Na; Rb ⁺ + K; Rb ⁺ + Rb; Rb ⁺ + Cs; Li ⁺ + Na; Li ⁺ + K; Li ⁺ + Rb; Li ⁺ + Cs; Na ⁺ + K; Na ⁺ + Rb; Na ⁺ + Cs; K ⁺ + Rb; K ⁺ + Cs; Rb ⁺ + Cs	T	Undef	Kotko, F. Core-core interaction potentials of alkali diatomic molecular ions. Heteronuclear case. Chem. Phys. Lett. 60, 271 (1979) Japan
2563	A13 Na ⁺ + H ₂ ; Na ⁺ + H ₂ ; Na ⁺ + CO; Na ⁺ + CO ₂ ; Na ⁺ + H ₂ O; Na ⁺ + CH ₄ ; Na ⁺ + O ₂ ; Na ⁺ + NC; Na ⁺ + NH ₃ ; Na ⁺ + SO ₂ ; Na ⁺ + CH ₃ Cl; Na ⁺ + CCl ₄ ; Na ⁺ + H ₂ O; Na ⁺ + C ₂ H ₆	E	39° K	Bakshit, A. D.; Twiddy, N. D. Measurements of thermal energy neon ion-neutral reaction rate coefficients and product ion distributions. Chem. Phys. Lett. 60, 400 (1979) United Kingdom
2564	A17 Li ⁺ + Li; Na ⁺ + Na; Rb ⁺ + Rb; Cs ⁺ + Cs; K ⁺ + K	T	Undef	Mamukhin, A. V.; Stepanov, B. F. Two-centre model potential energy calculations for the ² I and ² Σ states of Li ₂ ⁺ , Na ₂ ⁺ , K ₂ ⁺ , Rb ₂ ⁺ and Cs ₂ ⁺ . Chem. Phys. Lett. 60, 421 (1979) Soviet Union
2565	M08 hv + SO ₂ M19 hv + SO ₂	E	4 μ	Bielkowsky, S. E.; Gullory, W. A. The infrared photolysis of SO ₂ . Chem. Phys. Lett. 60, 429 (1975) United States
2566	M04 2hv + I ₂	E	4250-3960 Å	Williamson, A. B. Stepwise two-photon excitation of molecular iodine: the E state vindicated. Chem. Phys. Lett. 60, 451 (1979) United States
2567	M04 hv + BO ₂	E	579 nm	Beaudet, R. A.; Meyer, R. G.; Balthar, M. Photoexcitation spectroscopy of BO ₂ with a single frequency dye laser. Chem. Phys. Lett. 60, 486 (1979) United States
2568	A02 Li ⁺ + H ₂ ; H ⁺ + H ₂ A03 Li ⁺ + H ₂ ; H ⁺ + H ₂	T	0.6-3.7 eV	McCann, K. J.; Fienner, M. R. Multistate semiclassical orbital treatment of Li ⁺ -H ₂ and H ⁺ -H ₂ collisions. Chem. Phys. Lett. 60, 523 (1979) United States
2569	M14 hv + HF	E	3.28 eV	Hinchen, J. J.; Hobbs, R. H. Rotational population transfer in HF. J. Opt. Phys. 56, 628 (1979) United States
2570	D04 e + Nb; e + Nb ₂ O ₅ ; e + Nb ₂ S ₅ ; e + NbW; e + Ti; e + TiN	E	200-2000 eV	Pedersen, M.; Joshi, A. Secondary electron emission measurements on materials used for superconducting microwave cavities. J. Appl. Phys. 50, 1112 (1975) United States
2571	A17 H ⁺ + H ₂	T	Undef	Dykstra, C. E.; Swape, W. C. The D ₂ ⁺ potential surface. J. Chem. Phys. 70, 1 (1979) United States
2572	A03 Ar + HCl	T	0-1.1 eV	Band, Y. B. HCl rotational excitation by Ar impact: quasiclassical close coupling approximation for atom-atomic molecule scattering. J. Chem. Phys. 70, 4 (1979) United States
2573	E16 e + Ar	E	13^1 keV	Firesione, R. F.; Oke, T.; Takao, I. Kinetics and mechanisms for the decay of Paschen (is) resonance state argon atoms. J. Chem. Phys. 70, 123 (1979) United States
2574	A10 BaCl + He; BaCl + Ar; BaCl + H ₂	E	30° K	Edelstein, S. A.; Muehle, D. L.; Byss, J. Intermultiplet energy transfer in BaCl(C ² Σ). J. Chem. Phys. 70, 131 (1979) United States
2575	A07 He + H ₂ A10 He + H ₂	T	0.1-2.0 eV	Lin, C. S.; Sacrest, D. Vibrationally inelastic integral cross sections for the scattering of He from H ₂ . J. Chem. Phys. 70, 199 (1976) Canada
2576	M06 hv + Ne	E	577-572 Å	Radler, K.; Berkhovitz, J. Photoionization mass spectrometry of neon using synchrotron radiation: anomalous variation of resonance widths in the noble gases. J. Chem. Phys. 70, 216 (1979) United States
2577	M06 hv + Ar A07 Ar + Ar	E	M06 73^1-778 Å A07 30° K	Radler, K.; Berkhovitz, J. Photoionization of argon at high resolution: collisional processes leading to formation of Ar ₂ ⁺ and Ar ⁺ . J. Chem. Phys. 70, 241 (1979) United States

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2578	A17 Au + Au	T	Undef	Lee, Y. S.; Ermler, W. C.; Pitzer, R. S.; McLean, A. D. Ab initio effective core potentials including relativistic effects: III. Ground state Au ₂ calculations. <i>J. Chem. Phys.</i> 70, 286 (1979) United States
2579	A17 Au + Au	T	Undef	Ermler, W. C.; Lee, Y. S.; Pitzer, R. S. Ab initio effective core potentials including relativistic effects: IV. Potential energy curves for the ground and several excited states of Au ₂ . <i>J. Chem. Phys.</i> 70, 293 (1979) United States
2580	A14 H + H ₂	T	0.4-2.5 eV	Pollak, E.; Pechukas, P. Unified statistical model for complex and direct reaction mechanisms: a test on the collinear H + H ₂ exchange reaction. <i>J. Chem. Phys.</i> 70, 325 (1979) United States
2581	A02 H ₂ + H ₂	T	0-9.5 eV	Schaefer, J.; Meyer, W. Theoretical studies of H ₂ -H ₂ collisions: I. Elastic scattering of ground state para- and ortho-H ₂ in the rigid rotor approximation. <i>J. Chem. Phys.</i> 70, 344 (1979) West Germany
2582	H08 He + Ar + Ar H10 He + Ar + Ar	E	Undef	Tanaka, Y.; Walker, W. C.; Yoshino, K. Emission spectrum of rare gas dimers in the vacuum uv region: I. Ar ₂ . <i>J. Chem. Phys.</i> 70, 380 (1979) United States
2583	A02 He + Ar A17 He + Ar A10 He + Ar	E	300 K	Kell, M.; Sienkows, J. T.; Kuppermann, A. Scattering of thermal He beams by crossed atomic and molecular beams: II. The He-Ar van der Waals potential. <i>J. Chem. Phys.</i> 70, 482 (1979) United States
2584	A17 H ⁻ + H ₂	T	Undef	Ross, A. R.; Bartram, R. H. Low-lying excited states of H ₂ ⁻ . <i>J. Chem. Phys.</i> 70, 532 (1979) United States
2585	A02 He + H ₂ ; He + D ₂ ; He + CO; He + NO A17 He + H ₂ ; He + D ₂ ; He + CO; He + NO A10 He + H ₂ ; He + D ₂ ; He + CO; He + NO	E	300 K	Kell, M.; Sienkows, J. T.; Kuppermann, A. Scattering of thermal He beams by crossed atomic and molecular beams: III. Anisotropic intermolecular potentials for He + H ₂ , D ₂ , CO, and NO. <i>J. Chem. Phys.</i> 70, 541 (1979) United States
2586	A11 BaCl + He; BaCl + Ar; BaCl + H ₂	E	330 K	Edelstein, S. A. Collisional quenching of BaCl(C ² Σ) by He, Ar, and H ₂ . <i>J. Chem. Phys.</i> 70, 591 (1979) United States
2587	A13 Kr ⁺ + Cl ₂ ; Ar ⁺ + CF ₄ ; Kr ⁺ + SF ₆ ; Ar ⁺ + I ₂ ; Kr ⁺ + CF ₄ ; Ar ⁺ + Cl ₂	E	330 K	Kuen, I.; Noworke, F. Noble gas halide ions: KrCl ⁺ , KrF ⁺ , ArCl ⁺ , ArI ⁺ . <i>J. Chem. Phys.</i> 70, 565 (1979) Austria
2588	H05 He + H ₂ O	E	980-400 Å	Yu, C. Y. R.; Phillips, E.; Lee, L. C.; Judge, D. L. Lyman-α and Balmer-series fluorescence from hydrogen photochemical fragments of H ₂ O vapor. <i>J. Chem. Phys.</i> 70, 601 (1979) United States
2589	A13 H ⁺ + H ₂ ; H ⁺ + CH ₄	E	1.6-150 eV	Kusunoki, I.; Ottlinger, C. Chemiluminescence in reactions of H ⁺ ions with hydrogen and hydrocarbons: I. Rotational-vibrational product excitation. <i>J. Chem. Phys.</i> 70, 699 (1979) West Germany
2590	A13 H ⁺ + H ₂ ; H ⁺ + CH ₄	E	1.6-450 eV	Kusunoki, I.; Ottlinger, C. Chemiluminescence in reactions of H ⁺ ions with hydrogen and hydrocarbons: II. Dependence of total reaction cross sections on the collision energy. <i>J. Chem. Phys.</i> 70, 710 (1979) West Germany
2591	A17 He + He ₂ ⁺	T	Undef	Kendrick, J.; Kuntz, P. J. Practical application of extended valence bond diatomic calculations to the method of diatomics-in-molecules for HeHe ₂ ⁺ . <i>J. Chem. Phys.</i> 70, 736 (1979) West Germany
2592	A10 Hg ⁰ + CO; Hg ⁰ + NO	E	300 K	Moriguchi, M.; Isuchiya, S. Vibrational distribution of CO and NO excited by electronic-to-vibrational energy transfer collisions with Hg(6 ³ P ₁ and 6 ³ P ₀). <i>J. Chem. Phys.</i> 70, 762 (1979) Japan

REF. NO.	REACTANTS	EXP OR THECP	ENERGY RANGE	REFERENCE
2593	A63 He + NH ₃ ; He + H ₂ CO	T	123-234 cm ⁻¹	Green, S. Rotational excitation of symmetric top molecules by collisions with atoms: II. Infinite order sudden approximation. J. Chem. Phys. 70, 216 (1979) United States
2594	A17 Fe + Fe; Ni + Ni; Ti + Ti; K + K	T	Undef	Harris, J.; Jones, R. O. Density functional theory and molecular bonding: III. Iron-series diatoms. J. Chem. Phys. 70, 830 (1979) West Germany
2595	A17 Si + O	T	Undef	Langhoff, S. R.; Arnold, J. U. Theoretical study of the X ¹ Σ ⁺ , A ¹ Σ ⁺ , C ¹ Σ ⁺ and E ¹ Σ ⁺ states of the SiO molecule. J. Chem. Phys. 70, 452 (1979) United States
2596	A17 Ar + C ⁺	T	Undef	Millier, I. M.; Guest, M. F.; Ding, A.; Aarieu, J.; Weiss, J. The potential energy curves of ArC ⁺ . J. Chem. Phys. 70, 864 (1979) United Kingdom
2597	H08 He + NO ₂	E	455 nm	Inanaka, T.; Ogawa, T.; Ishibashi, B. Time-resolved spectroscopy on the excited electronic states of NO ₂ in the neighborhood of 454.6 nm. J. Chem. Phys. 70, 281 (1979) Japan
2598	A17 C + C	T	Undef	Kirby, K.; Liu, B. The valence states of C ₂ : a configuration interaction study. J. Chem. Phys. 70, 893 (1979) United States
2599	A17 S + S	T	Undef	Swope, W. C.; Lee, Y. P.; Schneider, M. F., III Diatomic sulfur: low lying bound molecular electronic states of S ₂ . J. Chem. Phys. 70, 947 (1979) United States
2600	A14 OH + O ₂	E	234-357 K	navishankara, A. R.; Wine, P. H.; Langford, A. U. Absolute rate constant for the reaction OH(v=0) + O ₂ + O ₂ over the temperature range 236-357 K. J. Chem. Phys. 70, 984 (1979) United States
2601	A14 F + H ₂ + He B07 F + H ₂ + He	T	A14 1-16 μm	Yuan, J.-M.; George, T. F. Semiclassical study of reactive scattering in a laser field: F + H ₂ + He (1.06 μm) system. J. Chem. Phys. 70, 950 (1979) United States
2602	E06 e + H ₂ O; e + NH ₃ ; e + CO ₂	E	222 K	Verma, J. M.; Sennhauser, L. S.; Armstrong, D. A. Three body electron-ion recombination in molecular gases. J. Chem. Phys. 70, 592 (1979) The Netherlands
2603	F03 e + HF ₂ ; e + WF ₆	E	33-75 eV	Riande, R.; Fruholz, R. P.; Kuppermann, A. Electronic spectroscopy of HF ₂ and WF ₆ by electron impact. J. Chem. Phys. 70, 1056 (1979) United States
2604	A10 CO ₂ ⁺ + H ₂	E	23° K	Bass, M. E.; Causey, J.; West, R. Vibrational de-excitation of CO ₂ ⁺ (v ₂) by H ₂ at 200 K. J. Chem. Phys. 70, 1666 (1979) United States
2605	F09 e + H ₂ O	E	251-373 K	Shiomi, M.; Fessenden, R. W. The temperature dependence of electron attachment to H ₂ O in the gas phase. J. Chem. Phys. 70, 1137 (1979) United States
2606	A17 S + H ₂	T	Undef	Roberge, R.; Salahub, D. R. Valence and Rydberg excited states of H ₂ S: an SCF-Mo-Sb molecular orbital study. J. Chem. Phys. 70, 1177 (1979) Canada
2607	A10 He ⁺ + He; He ⁺ + Ar; He ⁺ + Kr; He ⁺ + Xe; He ⁺ + H ₂ ; He ⁺ + O ₂ ; He ⁺ + N ₂ ; He ⁺ + CO; He ⁺ + NO; He ⁺ + H ₂ O; He ⁺ + HCl; He ⁺ + H ₂ O; He ⁺ + N ₂ O; He ⁺ + NO ₂ ; He ⁺ + CO ₂	E	33° K	Collins, C. B.; Lee, F. W. Measurement of the rate coefficients for the bimolecular and termolecular de-excitation reactions of He(2 ¹ S) with selected atomic and molecular species. J. Chem. Phys. 70, 1275 (1979) United States
2608	A03 He + H ₂ A11 He + H ₂	T	3.72-4 eV	Augustin, S. D.; Rabitz, H. Multiple time scale stochastic formulation for collision problems with zero then one degree of freedom. J. Chem. Phys. 70, 1286 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2609	H95 hv + MnCl_2 ; hv + MnBr_2 ; hv + FeCl_2 ; hv + FeBr_2 ; hv + CoCl_2 ; hv + CoBr_2 ; hv + NiCl_2 ; hv + NiBr_2	E	594 Å	Berkowitz, J.; Streets, D. G.; Gerritz, A. PES of high temperature vapors: VIII. Transition metal dihalides. <i>J. Chem. Phys.</i> 70, 1305 (1975) United States
2610	A85 $\text{Ba} + \text{H}_2\text{O}$	E	1300 K	Torres-Filho, A.; Fawcett, J. G. Populations of BaO states in the $\text{Ba} + \text{H}_2\text{O}$ chemiluminescent flame using the $\text{BaO } ^3\Pi^0$ state as a probe. <i>J. Chem. Phys.</i> 70, 1427 (1979) United States
2611	A86 $\text{N}^+ + \text{Ar}$; $\text{N}^+ + \text{N}_2$; $\text{N}^+ + \text{H}_2$; $\text{N}^+ + \text{O}_2$; $\text{N}^+ + \text{CO}$; $\text{N}^+ + \text{NO}$; $\text{N}^+ + \text{CO}_2$	E	1-3 keV	Moran, T. F.; Wilcox, J. M. Charge transfer reactions of ground $\text{N}^+(^4P)$ and excited $\text{N}^+(^2D)$ state ions with neutral molecules. <i>J. Chem. Phys.</i> 70, 1467 (1975) United States
2612	A17 $\text{He} + \text{CH}_4$; $\text{He} + \text{NH}_3$; $\text{He} + \text{H}_2\text{C}$; $\text{He} + \text{SF}_6$ A18 $\text{He} + \text{CH}_4$; $\text{He} + \text{NH}_3$; $\text{He} + \text{H}_2\text{C}$; $\text{He} + \text{SF}_6$	E	332 K	Slonka, J. T.; Kell, M.; Kuppermann, A. Scattering of thermal He beams by crossed atomic and molecular beams: IV. Spherically symmetric intermolecular potentials for $\text{He} + \text{CH}_4$, NH_3 , H_2O , SF_6 . <i>J. Chem. Phys.</i> 70, 1482 (1979) United States
2613	A14 $\text{Hg} + \text{Cl}_2$; $\text{HgCl}^+ + \text{Cl}_2$; $\text{HgCl}^+ + \text{Ar}$	E	359 K	Tang, K. Y.; Hunter, R. U., Jr.; Oldenettel, J.; Huestis, D. L. Laser-induced chemiluminescence study of the $\text{HgCl}(B \rightarrow X)$ transition: formation, radiation, and quenching processes. <i>J. Chem. Phys.</i> 70, 1492 (1979) United States
2614	A10 $\text{F} + \text{H}_2$	T	0-1.1 eV	Wyatt, R. E.; Walker, R. B. Quantum mechanics of electronic-rotational energy transfer in $\text{F}(^2P) + \text{H}_2$ collisions. <i>J. Chem. Phys.</i> 70, 1501 (1975) United States
2615	A17 $\text{D} + \text{H}_2$ A18 $\text{D} + \text{H}_2$	E	332 K	Tornello, F.; Bondi, M. G. Experimental determination of the isotropic part of the D-H ₂ potential surface. <i>J. Chem. Phys.</i> 70, 1564 (1975) West Germany
2616	A11 $\text{D}_2\text{O} + \text{D}_2\text{O}$; $\text{H}_2\text{O} + \text{H}_2\text{O}$	E	20°-40° K	Kim, Y. N.; Shin, M. K. Vibrational relaxation of $\text{D}_2\text{O}(010)$. <i>J. Chem. Phys.</i> 70, 1565 (1979) United States
2617	A13 $\text{N}_2^+ + \text{H}_2$; He ; $\text{O}_2^+ + \text{O}_2$; He	E	83 K	Fehsenfeld, F. C.; Ferguson, E. E. Comments on Observation of saturation in three-body ion-neutral association reactions by D. K. Bohme, D. R. Dunkin, F. C. Fehsenfeld, and E. E. Ferguson. <i>J. Chem. Phys.</i> 70, 1579 (1979) United States
2618	D15 $\text{Cr}^{3+} + \text{SS}$; $\text{Ni}^{2+} + \text{SS}$	E	22-46 MeV	Williams, T. M. Interstitial loop nucleation and growth in solution-treated type 316 stainless steel irradiated to low doses with 22 MeV Cr^{3+} and 40.5 MeV Ni^{2+} ions. <i>J. Nucl. Mater.</i> 79, 28 (1975) United Kingdom
2619	D15 $\text{e} + \text{SS}$; $\text{Cr}^{3+} + \text{SS}$; $\text{Ni}^{2+} + \text{SS}$ D14 $\text{e} + \text{SS}$; $\text{Cr}^{3+} + \text{SS}$; $\text{Ni}^{2+} + \text{SS}$	T	1-46 MeV	Foreman, A. J. E.; Mahin, M. J. The effect of vacancy loops on the swelling of irradiated materials. <i>J. Nucl. Mater.</i> 75, 43 (1979) United Kingdom
2620	D14 $\text{Ni}^+ + \text{Ni}$ D15 $\text{Ni}^+ + \text{Ni}$	T	4-45 MeV	Yoo, M. M. A generalized model of void swelling—the depth dependent swelling by self-ion irradiation. <i>J. Nucl. Mater.</i> 79, 135 (1975) United States
2621	D14 $\text{Ni}^+ + \text{Ni}$; $\text{Cu}^+ + \text{Ni}$ D15 $\text{Ni}^+ + \text{Ni}$; $\text{Cu}^+ + \text{Ni}$	E	14 MeV	Whitley, J. B.; Kulcinshi, G. L.; Wilkes, P.; Smith, M. V., Jr. The depth dependent damage profile in nickel irradiated with nickel or copper ions. <i>J. Nucl. Mater.</i> 79, 159 (1975) United States
2622	D16 $\text{D}^+ + \text{Be}$	E	15 keV	Liu, M. B.; Sheft, I.; Gruen, D. M. Deuterium trapping in ion-bombarded beryllium. <i>J. Nucl. Mater.</i> 75, 267 (1979) United States
2623	A12 $\text{Na} + \text{Na}$	E	62°-77° K	voordeen, J. P. Self-broadening of the Na 3S-3S and 3S-4D two-photon transitions. <i>Opt. Commun.</i> 28, 65 (1979) The Netherlands

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2624	CO ₂ T ⁺ + 3eO ₂ ; T ⁺ + Al ₂ O ₃ ; T ⁺ + SiO ₂ ; T ⁺ + TiO ₂ ; T ⁺ + ZnO; T ⁺ + Nb ₂ O ₅ ; T ⁺ + Ta ₂ O ₅	E, T	3 MeV	Ishii, K.; Blondiaux, G.; Velladen, M.; Debrun, J. L. The study of stopping powers by the method of the average stopping power. Nucl. Instrum. Methods 158, 199 (1979) France
2625	CO ₂ Under	T	Under	Daniel, M.; Leon, M. The effect of multiple Coulomb scattering on the stopping ratios of charged particles in inhomogeneous targets. Nucl. Instrum. Methods 155, 233 (1979) West Germany
2626	CO ₂ He ⁺ + Au; N ⁺ + Au C ₆ He ⁺ + Au; N ⁺ + Au DC ₈ He ⁺ + Au; N ⁺ + Au	E	1.7-2.3 MeV	Kido, T.; Yada, T.; Fukuzawa, F. Measurements of charge state distributions of channelled ions with thick targets of single crystals. Nucl. Instrum. Methods 156, 525 (1979) Japan
2627	Al ₉ H ⁺ + Al; H ⁺ + Si; H ⁺ + SS; C ⁺ + Al; C ⁺ + Si; C ⁺ + SS; N ⁺ + Al; N ⁺ + Si; N ⁺ + SS; N ₂ ⁺ + Al; N ₂ ⁺ + Si; N ₂ ⁺ + SS; O ⁺ + Al; O ⁺ + Si; O ⁺ + SS; CO ⁺ + Al; CO ⁺ + Si; CO ⁺ + SS; CO ₂ ⁺ + Al; CO ₂ ⁺ + Si; CO ₂ ⁺ + SS; Ar ⁺ + Al; Ar ⁺ + Si; Ar ⁺ + SS	E	50-120 keV	Cairns, J. A.; Holloway, D. F. An examination of the origin of molecular orbital X-rays from atomic and molecular impact on a series of solid targets. Nucl. Instrum. Methods 155, 99 (1979) United Kingdom
2628	GP5 e + Ar + CH ₄ ; e + Ar + C ₂ H ₆ ; e + Ar; e + CH ₄ ; e + C ₂ H ₆	E	2-1 MeV	Jean-Marie, B.; Lepeltier, V.; L'Hôte, D. Systematic measurement of electron drift velocity and study of some properties of four gas mixtures: A-CH ₄ , A-C ₂ H ₆ , A-C ₂ H ₂ , A-C ₂ H ₄ . Nucl. Instrum. Methods 155, 213 (1979) France
2629	CO ₂ B ⁺ + O ₂ ; C ⁺ + O ₂ ; N ⁺ + O ₂ ; C ⁺ + O ₂ ; F ⁺ + O ₂ ; C ⁺ + N ₂ ; C ⁺ + Ar; Ar ⁺ + N ₂ ; Ar ⁺ + Ar; B ⁺ + N ₂ ; C ⁺ + N ₂ ; N ⁺ + N ₂ ; O ⁺ + N ₂ ; F ⁺ + N ₂ ; Ne ⁺ + N ₂ CO ₄ C ⁺ + Ag	T	130-400 MeV	Mukherji, S.; Nayak, A. K. Calculation of heavy ion ranges in complex media. Nucl. Instrum. Methods 155, 421 (1979) India
2630	A07 H ⁺ + Ti; H ⁺ + Fe; H ⁺ + Cu; H ⁺ + Se; H ⁺ + Y; H ⁺ + Sm; H ⁺ + Cs; H ⁺ + Ce; H ⁺ + Sr; H ⁺ + Mo; H ⁺ + V; H ⁺ + Au; H ⁺ + Pb; He ⁺ + Ti; He ⁺ + Fe; He ⁺ + Cu; He ⁺ + Se; He ⁺ + Y; He ⁺ + Sm; He ⁺ + Cs; He ⁺ + Ce; He ⁺ + Sr; He ⁺ + Mo; He ⁺ + Au; He ⁺ + Pb	E	6-30 MeV	Poncet, M.; Engelmann, C. Contribution à l'étude de l'ionisation des éléments par des protons et des particules alpha de 4 à 30 MeV. Nucl. Instrum. Methods 159, 455 (1979) France
2631	GP5 e + Ar + CH ₄ ; e + Ar + CO ₂	T	2-10 eV	Petherson, E.; El Mahrouk, M. Calculation of electron transport coefficients in counting gas mixtures. Nucl. Instrum. Methods 159, 469 (1975) United Kingdom
2632	CO ₂ Under	T	Under	Sugiyama, M. Small-angle multiple scattering of low-energy ions. Nucl. Instrum. Methods 159, 643 (1979) Japan
2633	H06 He + Th; He + Th ⁹⁰⁺ ; He + Cu; He + Ce ⁹⁰⁺ ; He + Th ⁹²⁺	T	2.50-81.6 keV	Dag, B.; Hanson, S. T.; Truong, M. B.; Pratt, R. H. Photoionization of highly stripped atomic ions: relativistic calculations. Phys. Lett. 65A, 319 (1979) United States
2634	D03 Xe ⁺ + Si; Xe ⁺ + Si; Ar ⁺ + Si; Ar ⁺ + Si; He ⁺ + Si; Kr ⁺ + Si	E	3-30 keV	Wittmann, K. On the mechanism of cluster emission in sputtering. Phys. Lett. 65A, 322 (1979) United States
2635	CP4 He ⁺ + H ₂ O	E	1-2 MeV	Mukherjee, S. D.; Palmer, D. W. Planar channelling of helium ions along (100), (110) and (111) PGL. Phys. Lett. 69A, 386 (1979) United Kingdom
2636	F02 e + He F17 e + He	T	137 eV	Das, J. M. An improved second Born calculation of e-He elastic scattering at intermediate energies. Phys. Lett. 62A, 405 (1979) India

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2637	C01 Ar ⁺ + Si; Cl ⁺ + Si	E	33 keV	Ahmed, M. A. G.; Christodoulides, C. E.; Carter, G. The depth distribution of disorder produced by room temperature 30 keV Ar ⁺ and Cl ⁺ ion irradiation of silicon. <i>Phys. Lett.</i> 69A, 431 (1979) United Kingdom
2638	C02 H ⁺ + Si C08 H ⁺ + Si	T	130 keV	Burenkov, A. F.; Komarov, F. F. Energy loss of charged particles in nonuniform electron gas. <i>Phys. Lett.</i> 69A, 439 (1979) Soviet Union
2639	A02 C + C A24 C + C	T	12.7 MeV	Tanigawa, O.; Imantski, B. Effect of the adiabatic process on the absorption in heavy-ion scattering. <i>Phys. Lett.</i> 80B, 340 (1979) Japan
2640	A18 O + Sm	E	72 MeV	Kim, B.-T. Nuclear excitation effects on heavy-ion scattering. <i>Phys. Lett.</i> 80B, 323 (1979) France
2641	D07 He + C	T	330 K	Chou, H. Atom-solid scattering: He + graphite basal plane. <i>Surface Sci.</i> 79, 157 (1979) United States
2642	D04 Ar ⁺ + Cu; Ar ²⁺ + Cu	E	15-60 keV	Brusilovsky, B. A. Ion-electron emission from a spherical crystalline target. <i>Surface Sci.</i> 79, L227 (1979) Soviet Union
2643	D02 Ar ⁺ + Cu + Ni	E	0.5-2.0 keV	Koshikawa, T.; Goto, K.; Sakai, A.; Shimizu, R.; Sugata, E. Preferential sputtering of Cu-Ni alloys at low temperature using lower energy Auger electron spectra. <i>Surface Sci.</i> 79, 461 (1979) Japan
2644	D03 Under	T	Under	Coles, J. N. A study of the feasibility of a surface plasma influencing secondary ion and photon emission under medium-energy ion bombardment. <i>Surface Sci.</i> 79, 545 (1979) Australia
2645	D13 e + O + W	E	1.5 keV	Bellard, S. W.; Williams, E. M. Electron desorption cross sections with oxygen at tungsten (100). <i>Surface Sci.</i> 80, 456 (1979) United Kingdom
2646	D07 He + C	E	33° K	Boato, G.; Cantini, P.; Tatarek, R.; Felcher, G. P. Diffraction of helium atoms by the basal (0001) face of graphite: a study of bound state resonances. <i>Surface Sci.</i> 80, 518 (1979) Italy
2647	D08 He ⁺ + Ni	E	135 keV	Varelas, C.; Goltz, K.; Sizmann, H. Optical excitation of He projectiles during reflection at a monocrystalline surface under channeling conditions. <i>Surface Sci.</i> 80, 524 (1979) West Germany
2648	D07 Under	T	Under	Aréand, G.; Manson, J. W. Elastic and inelastic scattering of neutral atoms by a corrugated hard wall. <i>Surface Sci.</i> 80, 532 (1979) France
2649	D07 Under	T	Under	Benedek, G.; Garcia, M. Theory of the one-phonon scattering of atoms from a hard corrugated surface. <i>Surface Sci.</i> 80, 543 (1979) West Germany
2650	D08 Ne ⁺ + Cu D07 Ne ⁺ + Cu	E	5-10 keV	Luitjens, S. B.; Aigra, A. J.; Biers, A. L. Ion fractions of low energy Ne(E ₀ less than 10 keV) scattered from a copper single crystal. <i>Surface Sci.</i> 80, 566 (1979) The Netherlands
2651	D03 Ar ⁺ + Cu D07 Ar ⁺ + Cu	E	12-35 keV	Belashova, L. L.; Borisov, A. P.; Pashkova, L. S.; Molchanov, V. A. Energy distributions of fast ionized recoils ejected from crystals under ion bombardment. <i>Surface Sci.</i> 80, 573 (1979) Soviet Union
2652	D06 Under	T	Under	Lenac, Z.; Gunjic, M.; Soudewic, D.; Braho, M. Low-energy scattering by molecules adsorbed on metal surfaces. <i>Surface Sci.</i> 80, 582 (1979) Yugoslavia

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2653	DC2 He ⁺ + NaCl; He ⁺ + NaCl; Ar ⁺ + NaCl; Kr ⁺ + NaCl; Xe ⁺ + NaCl	E	23 keV	Husinsky, V.; Brockmüller, R. Energy spectra of sputtered Na atoms from bombardment of NaCl with 20 keV rare gas ions. <i>Surface Sci.</i> 80, 437 (1975) Austria
2554	D04 e + Mg; e + Al; e + Si; e + GaP; e + Ti	E	2-16 keV	Vierle de Lasogno, P.; Beaunequin, J.-F. Ar ⁺ and e ⁻ excited argon Auger electron emission from Mg, Al, Si, GaP and Ti surfaces. <i>Surface Sci.</i> 80, 456 (1979) France
2655	DC7 Under	I	Under	Ficocelli Varracchio, E. Effective potential theory of atom-solid surface elastic scattering. <i>Surface Sci.</i> 81, 265 (1979) Italy
2556	D07 Ar + LiF; He + LiF	I	337 K	Klein, J. R.; Cole, M. W. On the energy dependence of rainbow peaks in classical atom-surface scattering. <i>Surface Sci.</i> 81, L319 (1979) United States
2657	D07 He + Ag; H ₂ + Ag	E	15-300 K	Asada, M. Specular reflection of helium and hydrogen molecular beams from the (111) plane of silver. <i>Surface Sci.</i> 81, 386 (1975) Japan
2458	C02 e + Al C04 e + Al	I	1-105 eV	Ashley, J. C.; Tung, C. J.; Hitchie, R. H. Electron inelastic mean free paths and energy losses in solids: I. Aluminum metal. <i>Surface Sci.</i> 81, 405 (1975) United States
2659	C02 e + Al; e + Au; e + Ag; e + Cu; e + Ni; e + Si C04 e + Al; e + Au; e + Ag; e + Cu; e + Ni; e + Si	I	1-10 ⁻⁴ eV	Tung, C. J.; Ashley, J. C.; Hitchie, R. H. Electron inelastic mean free paths and energy losses in solids: II. Electron gas statistical model. <i>Surface Sci.</i> 81, 427 (1979) United States
2660	D17 C ₂ ⁺ + Ta ₂ O ₅ ; Kr ⁺ + Ta ₂ O ₅ ; Ar ⁺ + Ta ₂ O ₅ ; Xe ⁺ + Ta ₂ O ₅	E	20-80 keV	Murti, D. K.; Kelly, R.; Liaw, Z. L.; Poate, J. M. Structural and compositional changes in ion-bombarded Ta ₂ O ₅ . <i>Surface Sci.</i> 81, 571 (1975) Canada
2661	D07 Hg + LiF; Hg + NaF; D + LiF; D + NaF	I	337 K	Chow, H.; Thompson, E. D. The optical potential in the scattering of hydrogen and deuterium atoms from LiF and NaF(001). <i>Surface Sci.</i> 82, 1 (1979) United States
2662	J17 e + CO + Ni; e + CO ₂ + Ni D13 e + CO + Ni	E	0.5-1.5 keV	Vernooven, J.; Los, J. The influence of an electron beam on the adsorption of CO and CO ₂ onto a Ni(110) surface. <i>Surface Sci.</i> 82, 105 (1979) The Netherlands
2663	D04 He ⁺ + W; He ⁺ + CO + W	E	Under	Johnson, P. D.; Delchar, T. A. The interaction of helium metastable atoms with a clean and CO covered polycrystalline tungsten surface. <i>Surface Sci.</i> 82, 237 (1979) United Kingdom
2664	D11 Under	I	Under	Diebold, A. C.; Volken, G., Jr. The energetics of diatom/solid dissociative adsorption. <i>Surface Sci.</i> 82, 245 (1979) United States
2445	DC7 Ar ⁺ + Cu	E	3.25-1.0 keV	Hart, R. G.; Cooper, C. B. Investigation of the binary model of scattering of 1 keV to 25 eV Ar ⁺ ions from a Cu surface. <i>Surface Sci.</i> 82, L282 (1975) United States
2666	A11 HgBr ⁺ + Fe; HgBr ⁺ + Au; HgBr ⁺ + Ar; HgBr ⁺ + Xe; HgBr ⁺ + Hg; HgBr ⁺ + N ₂ ; HgBr ⁺ + Br ₂ ; HgBr ⁺ + HBr; HgBr ⁺ + CH ₃ Br; HgBr ⁺ + CCl ₂ Br ₂ ; HgBr ⁺ + HgBr ₂ ; HgBr ⁺ + H ₂ ; HgBr ⁺ + Ar; HgBr ⁺ + Xe; HgBr ⁺ + N ₂ ; HgBr ⁺ + H ₂ ; HgBr ⁺ + H ₂ ; HgBr ⁺ + CF ₄ I; HgBr ⁺ + Hg; HgBr ⁺ + HgI ₂	E	301-300 K	Eden, J. G.; Weynant, R. V. HgBr and HgI p-state quenching rate constants. <i>Appl. Phys. Lett.</i> 34, 324 (1979) United States
2447	DC2 P ⁺ + Ag; P ₂ ⁺ + Ag; Cl ⁺ + Ag; Cl ₂ ⁺ + Ag; As ⁺ + Ag; As ₂ ⁺ + Ag; As ₃ ⁺ + Ag; Se ⁺ + Ag; Se ₂ ⁺ + Ag; Sb ⁺ + Ag; Sb ₂ ⁺ + Ag; Te ⁺ + Ag; Te ₂ ⁺ + Ag; Sb ₃ ⁺ + Ag; Bi ⁺ + Ag; Bi ₂ ⁺ + Ag; Sb ₄ ⁺ + Au; Sb ₅ ⁺ + Pt; Sb ₆ ⁺ + Au; Sb ₇ ⁺ + Pt	E	15-135 keV	Thompson, D. A.; Johar, S. S. Nonlinear sputtering effects in thin metal films. <i>Appl. Phys. Lett.</i> 34, 342 (1979) Canada

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
2668	H86 hv + Ba; hv + He	E	6142-5053 Å ⁰	Pollard, B. D.; Blackburn, M. D.; Hibbel, S.; Nannem, A.; Winfordner, J. D. Atomic fluorescence spectrometry in the inductively coupled plasma with a continuous dye laser. Appl. Spectrosc. 33, 5 (1975) United States
2669	E93 e + H ²⁺ A93 H ²⁺ + H ²⁺	T	E93 56 eV A93 10 ⁻¹⁰ K	Bussatner, M.; Storey, P. J. A III lines for solar diagnostics. Astron. Astrophys. 71, L-6 (1975) Switzerland
2670	E88 e + Al	E	1x10 ⁴ K	Hodgins, G.; Kusch, M. J. Electron impact broadening of aluminum I-lines. Astron. Astrophys. 71, 44 (1979) West Germany
2671	A93 H ²⁺ + Ca ¹⁰⁺ ; H ²⁺ + Fe ¹⁰⁺ ; H ²⁺ + Fe ¹²⁺ ; H ²⁺ + Fe ¹⁴⁺ ; H ²⁺ + Fe ¹⁶⁺ ; H ²⁺ + Ca ¹²⁺ ; H ²⁺ + Si ¹⁰⁺	T	1x10 ⁻⁴ -1x10 ⁴ K	Kortner, S. O.; Bhatia, A. K. Approximations for proton excitation: erratum and extension. Astron. Astrophys. 71, 211 (1979) United States
2672	A86 O ²⁺ + He	T	10 ⁴ K	Tarter, C. B.; Uehlein, J. C.; Delgarno, A. Double-charge transfer processes in gaseous helium. Astron. Astrophys. 71, 366 (1979) United States
2673	A13 H ²⁺ + He H85 hv + HeH ⁺	T	A13 10 ⁴ K H85 4 eV	Flower, D. R.; Boueff, E. On the formation and destruction of He H ²⁺ in gaseous nebulae and the associated infra-red emission line spectrum. Astron. Astrophys. 72, 361 (1975) France
2674	E93 e + O; e + C; e + N ²⁺ ; e + H ²⁺ ; e + C ²⁺ ; e + Si ²⁺ A93 H ²⁺ + O; H ²⁺ + C; H ²⁺ + N ²⁺ ; H ²⁺ + H ²⁺ ; H ²⁺ + C ²⁺ ; H ²⁺ + Si ²⁺ ; H ²⁺ + N; H ²⁺ + C; H ²⁺ + C; H ²⁺ + N ²⁺ ; H ²⁺ + N ²⁺ ; H ²⁺ + C ²⁺ ; H ²⁺ + Si ²⁺	T	10 ⁴ K	Seeding, A. G.; Pottebach, S. R. Population ratios of fine structure levels. Astron. Astrophys., Suppl. Ser. 35, 257 (1979) The Netherlands
2675	H85 hv + H ₂ ⁺	T	100 Å ⁰	Federman, S. R.; Glassgold, A. E.; Kwon, J. Atomic to molecular hydrogen transition in interstellar clouds. Astrophys. J., Part 1 227, 466 (1979) United States
2676	H12 hv + e	T	1-20 keV	Illarionov, A.; Kallman, T.; McCray, R.; Rose, R. Comptonization of x-rays by low-temperature electrons. Astrophys. J., Part 1 228, 275 (1979) Soviet Union
2677	E88 Under	T	0.1-10 ⁴ eV	Cooper, J. Redistribution of scattered radiation by collisions in the nonisotropic region of the spectral line profile. Astrophys. J., Part 1 228, 335 (1979) United States
2678	A13 H + H ⁻	T	10 ⁴ -10 ⁵ K	Bianchi, R. J.; Delgarno, A. Associative detachment in collisions of H and H ⁻ . Astrophys. J., Part 1 228, 635 (1979) United States
2679	E93 e + Fe ¹⁰⁺	T	10 ⁴ K	Haug, E. Fe IX lines as density indicators in coronal plasmas. Astrophys. J., Part 1 228, 903 (1979) United States
2680	E96 e + H ₂ N ⁺ ; e + H ₂ D ⁺	E	0.106-0.75 eV	McL, P. N.; McGowan, F. V. Dissociative recombination of H ₂ N ⁺ and H ₂ D ⁺ . Astrophys. J., Part 2 227, L157 (1979) Canada
2681	E96 e + Li Seq; e + Be Seq; e + B Seq	T	10 ⁴ K	Vernazza, J. E.; Raymond, J. C. On the ionization equilibrium balance. Astrophys. J., Part 2 228, L85 (1979) United States
2682	E95 e + He	T	0.12-10 keV	Bayashenker Ionization yield in neon due to electron impact. Physics B+C 96, 160 (1975) India

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2583	GB2 He + He; He + Ar; He + Kr; He + Xe; He + Ar; He + Kr; He + Xe; Ar + Kr; Ar + Xe A17 He + He; He + Ar; He + Kr; He + Xe; He + Ar; He + Kr; He + Xe; Ar + Kr; Ar + Xe	E T	275-323 K	Arora, P. S.; Bobjohns, M. L.; Dool, J. P. Use of accurate diffusion and second virial coefficients to determine (s, s, s) potential parameters for nine binary noble gas systems. <i>Physica A</i> 98, 841 (1979) Australia
2584	A12 He + He	E T	303 K	Weber, E. M.; Goldsmith, J. E. M. Anomalous shifts of hydrogen Balmer- α fine structure lines in helium. <i>Phys. Lett.</i> 70A, 95 (1979) United States
2585	EE3 e + Ar E16 e + Ar	E	0.3-3.0 keV	Bennet, J.-J.; Hubert, D.; Bennet, F.; Beauregard, R.; Fleury, A.; Swan, L. Relative line intensities in the argon L x-ray emission spectra produced by 0.3 to 3 keV electron impact. <i>Phys. Lett.</i> 70A, 99 (1979) France
2586	CB3 e + CO; e + CO ₂ CB5 e + CO; e + CO ₂	E	330 K	Ramerski, W.; Muchinsko-Praske, J. Ratio of the internal diffusion coefficient to the mobility for electrons in carbon monoxide and carbon dioxide. <i>Phys. Lett.</i> 70A, 271 (1979) Poland
2587	A07 D ⁺ + Ta; D ⁺ + Pt; D ⁺ + Au; He ²⁺ + Ta; He ²⁺ + Pt; He ²⁺ + Au	E	65 MeV/amu	Morgan, J. F.; Blatt, S. L.; Pleschke, W. D.; Kavanagh, R. A. L-shell ionization with high velocity positive ions. <i>Phys. Lett.</i> 70A, 309 (1979) United States
2588	D12 Pb + Pb	E	4.7 MeV/amu	Meyerhof, W. E.; Clark, D. L.; Stoller, C.; Mazzoni, E.; Wolf, U.; Folkmann, F.; Vincent, P.; Mohler, P. M.; Armstrong, P. Molecular-orbital x-rays from 1 GeV ²⁰⁸ Pb + ²⁰⁸ Pb and ²⁰⁸ Pb + ²⁰⁸ Pb collisions. <i>Phys. Lett.</i> 70A, 303 (1979) United States
2589	A02 O + Ca; C + Ca; O + Ni A18 O + Ca; C + Ca; O + Ni	E	83-215 MeV	Kuback, S.; Bond, P. D.; Thorn, C. E. Backward angle heavy ion elastic scattering on ⁴⁰ Ca and ⁵⁸ Ni. <i>Phys. Lett.</i> 81B, 140 (1979) United States
2590	A02 He + Ca A18 He + Ca	E	830 MeV	Igo, G. Elastic differential cross sections and analyzing powers for p(vectors) + ⁴⁰ Ca, ⁴⁸ Ca at 0.8 GeV. <i>Phys. Lett.</i> 81B, 181 (1979) United States
2591	A02 D ⁺ + Ni A18 D ⁺ + Ni	T	21-80 MeV	Abehara, M.; Yoneji, S.; Muri, A.; Yasuki, K. Adiabatic treatment of elastic deuteron-nucleus scattering. <i>Phys. Lett.</i> 82B, 13 (1979) Japan
2592	A05 F ²⁺ + Ti; F ²⁺ + V; F ²⁺ + Cu; F ²⁺ + Mn; F ²⁺ + Fe; F ²⁺ + Co; F ²⁺ + Ni; F ²⁺ + Cu; F ²⁺ + ZnS; F ²⁺ + Ge; F ²⁺ + KBr; F ²⁺ + Ag; F ²⁺ + Sb; F ²⁺ + LaF ₃ ; F ²⁺ + Ti; F ²⁺ + V; F ²⁺ + Cu; F ²⁺ + Ni; F ²⁺ + Co; F ²⁺ + ZnS; F ²⁺ + Ge; F ²⁺ + KBr; F ²⁺ + Ag; F ²⁺ + Sb; F ²⁺ + LaF ₃ ; F ²⁺ + Ti; F ²⁺ + V; F ²⁺ + Cu; F ²⁺ + Mn; F ²⁺ + Fe; F ²⁺ + Ca; F ²⁺ + Ni; F ²⁺ + Cu; F ²⁺ + ZnS; F ²⁺ + Ge; F ²⁺ + KBr; F ²⁺ + Ag; F ²⁺ + Sb; F ²⁺ + LaF ₃ ; F ²⁺ + Ti; F ²⁺ + V; F ²⁺ + Cu; F ²⁺ + Mn; F ²⁺ + Fe; F ²⁺ + Ca; F ²⁺ + Ni; F ²⁺ + Cu; F ²⁺ + ZnS; F ²⁺ + Ge; F ²⁺ + KBr; F ²⁺ + Ag; F ²⁺ + Sb; F ²⁺ + LaF ₃ ; F ²⁺ + Mn; F ²⁺ + Fe; F ²⁺ + Cu	E	2-28 MeV	Kraf, B.; Prosser, G.; Stahler, J. K-shell x-ray production for fluorine ions on target elements Ti to La. <i>Z. Phys. A</i> 280, 131 (1979) West Germany
2593	E12 e ⁺ + H	T	0.1-0.6 e.v.	Serker, K.; Sene, D.; Teinhdar, E. Variable-phase method in positron-hydrogen elastic scattering. <i>Z. Phys. A</i> 289, 235 (1979) India
2594	A07 He + He; He ²⁺ + He Z05 e + He	E	1.4-400 keV	Beyer, H. F.; Nippner, R.; Scheriner, K.-H.; Albat, R. An application of the branching ratio method for ion impact cross section measurements in the far ultraviolet. <i>Z. Phys. A</i> 289, 239 (1979) West Germany

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
2695	C86 Na ²⁺ + C; Na ²⁺ + C; Na ²⁺ + C; Na ²⁺ + C; Na ²⁺ + C; Na ²⁺ + C C87 Na ²⁺ + C; Na ²⁺ + C; Na ²⁺ + C; Na ²⁺ + C; Na ²⁺ + C; Na ²⁺ + C	E	5.0-10.0 keV	Schumann, R.; Greenwald, R. D.; Helte, G.; Fricks, R. Equilibrium K-shell excitation of highly ionized neon. Z. Phys. A 289, 245 (1979) West Germany
2696	A87 Xe + C; Xe + U; Pb + C; Pb + U A83 Xe + C; Xe + U; Pb + C; Pb + U	E	1.4-5.9 keV/amu	Behrke, H.-W.; Arbruster, P.; Folkmann, F.; Hagmann, S.; Henderson, J. S.; Rohrer, P. H. Measurements of K-shell ionization with ¹³⁶ Xe and ²⁰⁸ Pb projectiles in the energy range of 1.4-5.9 MeV/c. Z. Phys. A 289, 337 (1979) West Germany
2697	A83 U + C, U + U A87 U + C; U + U	E	3.6-5.9 keV/amu	Anholt, R.; Behrke, H.-W.; Hagmann, S.; Arbruster, P.; Folkmann, F.; Rohrer, P. H. K-vacancy production by 3.6-, 4.75-, and 5.9-MeV/amu ²³⁸ U ions. Z. Phys. A 289, 349 (1979) West Germany
2698	G86 Ar + Kr; Ar + Xe	E	5 eV	Saad, F.; Schaefer, R.; Rulhove, P.; Ziegeler, L. The slowing down of atoms with kinetic energies of 5 less than or equal to 50 eV in noble gases: evidence for inelastic interactions. Z. Phys. A 289, 360 (1979) West Germany
2699	A83 K + H ₂ ; K + CO A18 K + H ₂ ; K + CO	E	50-500 eV	Martin, P. J.; Clemens, E.; Zehle, L.; Kempter, W. Application of near-photon coincidence techniques to the determination of the differential cross section for excitation of K(4P) in low-energy K-H ₂ , CO collisions. Z. Phys. A 289, 373 (1979) West Germany
2700	A83 C ²⁺ + Ar; O ²⁺ + Ar; Si ¹²⁺ + Ar; Si ¹¹⁺ + Ar; Si ¹⁰⁺ + Ar A87 C ²⁺ + Ar; O ²⁺ + Ar; Si ¹²⁺ + Ar; Si ¹¹⁺ + Ar; Si ¹⁰⁺ + Ar	E	2-4 MeV/amu	Suter, M.; Vane, C. R.; Elston, S. B.; Alton, G. D.; Griffin, P. M.; Thoe, R. S.; Williams, L.; Sollen, I. A.; Lambert, P. Observation of intense low energy autoionization lines in the wings of the forward peak from fast ion-atom collisions. Z. Phys. A 289, 433 (1979) United States
2701	H82 Zn + SF ₆	E	10 μm	Quigley, G. P. Optoacoustic studies of two-frequency infrared-linear pumping of SF ₆ . Opt. Lett. 4, 84 (1979) United States
2702	H84 Ar + Ba H86 Ar + Ba	E	2300-2100 Å	Wynne, J. J.; Hermann, J. P. Spectroscopy of even-parity autoionizing levels in Ba. Opt. Lett. 4, 106 (1979) United States
2703	H82 Ar + He H84 Ar + He H86 Ar + He	E	360-450 Å	Sugar, J.; Lucotorto, T. D.; Neilroth, T. J.; Weiss, A. B. Even-parity autoionizing states in neutral sodium (360-450 Å). Opt. Lett. 4, 105 (1979) United States
2704	A12 La ²⁺ + Kr	E	1200 K	Fujimoto, T.; Ueda, K.; Fukuda, K. Observations of the collision-induced dipole transitions and of a quadrupole transition for barium in krypton. J. Quant. Spectrosc. Radiat. Transfer 21, 85 (1979) Japan
2705	A10 Na ²⁺ + H ₂ O + Ar; Na ²⁺ + H ₂ O A11 Na ²⁺ + H ₂ O + Ar; Na ²⁺ + H ₂ O	E	1800 K	van Dijk, C. A.; Zengere, P. J. T.; Alkenade, C. T. J. Redistribution of population among the higher levels of Na atoms in an H ₂ O-Ar flame. J. Quant. Spectrosc. Radiat. Transfer 21, 115 (1979) The Netherlands
2706	A12 Under	T	Under	Batsan, J.; Nienhuis, G.; Scheller, F. Impact and quadrupole limit in the quantum-path theory of pressure broadening. J. Quant. Spectrosc. Radiat. Transfer 21, 123 (1979) France
2707	H87 Ar + O ⁻	E	0.5-4 eV	Hoffmann, N. O ⁻ -ion radiation in the spectrum of an oxygen arc plasma. J. Quant. Spectrosc. Radiat. Transfer 21, 163 (1979) West Germany
2708	A12 Ca + Ca	E	120-250 C	Wobor, K.-H.; Niemax, K. Self-broadening of Doppler-free two-photon lines of Ca. Opt. Commun. 28, 217 (1979) West Germany

REA. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2709	ED3 e + Li; e + K; e + Rb; e + Sb; e + Cs	T	15-600 eV	Liepinsh, A. K.; Paterhap, B. K. Electron impact excitation of autoionizing states in alkali atoms. Opt. Spectrosc. 44, 621 (1979) Soviet Union
2710	A11 Ti ⁰ + Kr; Ti ⁰ + Xe; Ti ⁰ + Ar; Ti ⁰ + N ₂ ; Ti ⁰ + He G02 Ti ⁰ + Kr; Ti ⁰ + Xe; Ti ⁰ + Ar; Ti ⁰ + N ₂ ; Ti ⁰ + He	E	300 °C	Aleksandrov, E. B.; Baranov, A. V.; Bulgakov, V. B. Quenching, diffusion, and spontaneous decay of metastable thallium atoms in buffer gases. Zh. Spektrosk. 44, 624 (1979) Soviet Union
2711	H05 He + H ₂ O H08 He + H ₂ O	E	930-1400 Å	Vinogradov, I. P.; Vilesov, F. I. Effect of temperature on the process of photoassociation of water with formation of the OH(A ² Σ ⁺) radical. Opt. Spectrosc. 44, 653 (1979) Soviet Union
2712	ED3 e + Al; e + Ga; e + In; e + Tl	T	3-700 eV	Paterhap, B. K.; Ryabikh, V. I. Ionization of Al, Ga, In, and Tl atoms by electron impact. Opt. Spectrosc. 45, 111 (1979) Soviet Union
2713	A11 Ti ⁰ + CO ₂ G02 Ti ⁰ + CO ₂	E	300 °C	Aleksandrov, E. B.; Baranov, A. V. Relaxation of the thallium excited states 6 ² P _{3/2} and 7 ² P _{3/2} in collisions with CO ₂ molecules. Opt. Spectrosc. 45, 243 (1979) Soviet Union
2714	A17 F + F	L	Undef	Shlyapnikov, G. V.; Shostov, I. F. Potential curves and electronic phototransitions of the F ₂ molecule. Opt. Spectrosc. 45, 274 (1979) Soviet Union
2715	H06 He + H ₂ C	E	12.7-16.5 eV	Beer, T.; Guyon, P.-R.; Monner, I.; Taché-Fochelle, A.; Better, R.; Ferreira, L. F. A.; Gervais, Y. B. Non-Franck-Condon transitions in resonant autoionization of H ₂ C. J. Chem. Phys. 70, 1866 (1979) France
2716	A17 O + O ⁺	T	Undef	Yanaka, K.; Yoshinaka, N. A theoretical study of the predissociation of the c ⁴ Σ ⁺ (sub v) state of O ₂ ⁺ . J. Chem. Phys. 70, 1626 (1979) United States
2717	A04 SO ₂ + Ar	E	2800-3600 K	Grillo, A.; Reed, R.; Stock, N. b. Infra-red measurements of sulfur dioxide thermal decomposition rate in chem. waves. J. Chem. Phys. 70, 1634 (1979) United States
2718	A03 Li ⁰ + H ₂	T	0.3-2.0 eV	Easton, W.; Tennyson, J. P. A statistical model for rotationally and vibrationally inelastic collisions. J. Chem. Phys. 70, 1644 (1979) West Germany
2719	A14 NO ₂ + NC	E	275-425 K	Lee, R.-T. Rate constant for the reaction NO ₂ + NC → ON + NO ₂ . J. Chem. Phys. 70, 1662 (1979) United States
2720	EC2 e + N ₂ E17 e + N ₂ G09 e + N ₂	T	30 eV	Ono, K.; Truhler, D. G. SCF treatment of charge polarization effects in intermediate-energy electron scattering calculations with applications to N ₂ . J. Chem. Phys. 70, 1661 (1979) United States
2721	A14 O + H ₂ O	E	172-436 K	Davidson, J. A.; Howard, C. J.; Schiff, N. I.; Fehsenfeld, F. C. Measurements of the branching ratios for the reaction of O(¹ D ₂) with H ₂ O. J. Chem. Phys. 70, 1697 (1979) United States
2722	A10 HF ⁰ + HF	T	350-4000 K	Winkler, R. L.; Koch, W. A. Temperature dependence of HF(v ₁ =1) + HF(v ₂ =0) vibrational relaxation. J. Chem. Phys. 70, 1711 (1979) United States
2723	A17 O + CO	T	Undef	England, V. B.; Ernster, V. C. Theoretical studies of atmospheric triatomic molecules. New ab initio results for the v ₁ (sub g)-v ₂ (sub a) vertical state ordering in CO ₂ . J. Chem. Phys. 70, 1706 (1979) United States

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
2724	H66 $\text{hv} + \text{O}_2^-; \text{hv} + \text{O}_2^- + \text{H}_2\text{O}; \text{hv} + \text{O}_2^-; \text{hv} + \text{O}_2^- + \text{H}_2\text{O}; \text{hv} + \text{O}_2^-; \text{hv} + \text{O}_2^-;$ H67 $\text{hv} + \text{O}_2^-; \text{hv} + \text{O}_2^- + \text{H}_2\text{O}; \text{hv} + \text{O}_2^- + \text{H}_2\text{O}; \text{hv} + \text{O}_2^- + \text{H}_2\text{O}; \text{hv} + \text{O}_2^-;$ $\text{hv} + \text{O}_2^-; \text{hv} + \text{O}_2^- + \text{H}_2\text{O}; \text{hv} + \text{O}_2^-;$ $\text{hv} + \text{O}_2^-; \text{hv} + \text{O}_2^-$	E	8000-3000 Å ^o	Lee, L. C.; Smith, G. P. Photodissociation and photodetachment of molecular negative ions: VI. Ions in O ₂ /CH ₄ /H ₂ O mixtures from 3000 to 8000 Å ^o . J. Chem. Phys. 70, 1727 (1979) United States
2725	A17 $\text{Li} + \text{H}; \text{Li} + \text{D}$	T	undef	Li, K. C.; Stuelley, U. C. Resonance quantum numbers: Application to the isotopic lithium hydrides (X ¹ Σ ⁺). J. Chem. Phys. 70, 1736 (1979) United States
2726	A14 $\text{Cl} + \text{BI}; \text{Br} + \text{BI}$	E	220-400 K	Nal, C.-C.; Moore, C. B. Thermal rate constants, energy dependence, and isotope effect for halogen-hydrogen halide reactions. J. Chem. Phys. 70, 1769 (1979) United States
2727	A11 $\text{NF}^+ + \text{N}_2; \text{NF}^+ + \text{O}_2; \text{NF}^+ + \text{CO}_2$	E	203 K	Buglass, F. J.; Moerr, C. B. Vibrational relaxation of NF ⁺ (v ₃ ,4) by N ₂ , O ₂ , and CO ₂ . J. Chem. Phys. 70, 1769 (1979) United States
2728	A63 $\text{Na} + \text{H}_2$	T	0.75-1.0 eV	Lin, C. S. Threshold behavior of vibrationally inelastic cross sections. J. Chem. Phys. 70, 1791 (1979) Canada
2729	G99 $\text{U} + \text{Kr}$ A18 $\text{U} + \text{Kr}$	E	3.1 eV	Stern, R. C.; Long, R. C. Measurement of the U-Kr momentum transfer cross section using crossed molecular beams. J. Chem. Phys. 70, 1802 (1979) United States
2730	A66 $\text{Ne}^+ + \text{H}_2\text{O}$	E	1-100 eV	Ryrie, G. B.; Leventhal, J. J. Charge transfer excitation in Ne ⁺ -H ₂ O collisions at energies down to 1 eV. J. Chem. Phys. 70, 2030 (1979) United States
2731	C18 $e + \text{SF}_6$	E	0.5-100 eV	Kennedy, R. E.; Bonham, R. A.; McMillan, H. The total absolute electron scattering cross sections for SF ₆ for incident electron energies between 0.5 and 100 eV including resonance structures. J. Chem. Phys. 70, 2030 (1979) United States
2732	A17 $\text{Ne} + \text{Ar}; \text{Ne} + \text{Ne}$	T	Jodef	Goble, J. R.; Vinn, J. S. Analytic potential functions for weakly bound molecules: The X and A states of NeAr and the A state of NeNe. J. Chem. Phys. 70, 2061 (1979) United States
2733	H66 $\text{hv} + \text{N}_2; \text{hv} + \text{O}_2; \text{hv} + \text{H}_2$	E	15-19 eV	Stockbauer, R. Threshold photoelectron spectra of atmospheric molecules: I. Description of method and application to N ₂ , O ₂ , and F ₂ . J. Chem. Phys. 70, 2108 (1979) United States
2734	A18 $\text{N}_2 + \text{Ar}; \text{N}_2 + \text{Li}^+; \text{CCl}_4 + \text{Ar}; \text{LIN} + \text{Ar}$	T	300 K	Pritchard, W. E.; Smith, W.; Driver, R. D.; Brunner, T. A. Power law scaling for rotational energy transfer. J. Chem. Phys. 70, 2115 (1979) United States
2735	A13 $\text{C}^+ + \text{H}_2 + \text{He}; \text{N}^+ + \text{H}_2 + \text{He}; \text{H}_3^+ + \text{H}_2 + \text{He}$	T	100-300 K	Herbst, E. A statistical theory of three-body ion-molecule reactions. J. Chem. Phys. 70, 2201 (1979) United States
2736	H67 $\text{hv} + \text{NaCl}^-; \text{hv} + \text{NaBr}^-; \text{hv} + \text{NaI}^-$	E	2.0-2.3 eV	Movich, S. E.; Jones, P. L.; Hollenay, T. J.; Lindeberger, U. C. Resonances in photodetachment of sodium halide negative ions. J. Chem. Phys. 70, 2210 (1979) United States
2737	A67 $\text{Ar}^+ + \text{CS}_2$	E	17-80 meV	Martin, R. M.; Parr, T. P. Collisional energy dependence of molecular ionization by metastable rare gas atoms. J. Chem. Phys. 70, 2220 (1979) United States
2738	A18 $\text{CO}_2^+ + \text{Ne}; \text{CO}_2^+ + \text{Ar}; \text{CO}_2^+ + \text{K}$ $\text{CO}_2^+ + \text{Kr}; \text{CO}_2^+ + \text{Xe}$	E	153-393 K	Lapierre, F.; Louis, G.; Tolne, J. A photoacoustic study of intramolecular energy transfer in CO ₂ deactivated by monatomic gases between 193 and 393 K. J. Chem. Phys. 70, 2220 (1979) France

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2739	E83 e + CO ₂ E84 e + CO ₂	E	25-100 eV	Schiavone, J. A. Dissociative excitation of CO ₂ by electron impact: translational spectroscopy of O ⁺ fragments. <i>J. Chem. Phys.</i> 70, 2236 (1979) United States
2740	A14 HBr + Cl ₂ ; HBr + BrCl	T	1-7 eV	Brown, J. C.; Boco, R. E.; Thompson, B. L. A quasiclassical trajectory study of the four-center reactions: HBr + Cl ₂ and HBr + BrCl. <i>J. Chem. Phys.</i> 70, 2326 (1979) United States
2741	A11 Ar ₂ ⁺ + H ₂	E	294 K	Chen, H.-C.; Firestone, R. F. Quenching of the lowest-lying metastable excimer of argon by H ₂ and effects of three-body Ar(1s) quenching on the yield of Ar ₂ ⁺ (X ⁺ and ⁺). <i>J. Chem. Phys.</i> 70, 2336 (1979) United States
2742	A14 H ₂ + F; H ₂ + F; H + Cl ₂ A17 H ₂ + F; H ₂ + F; H + Cl ₂	T	0.06-0.14 eV	Vill, C. L.; Kinney, J. L.; Roma, J.; Schatz, G. C. Franch-Condon factors in studies of dynamics of chemical reactions. V. Simple construction of quasidiabatic potential energy surfaces and numerical evaluation of Franch-Condon integrals. <i>J. Chem. Phys.</i> 70, 2416 (1979) United States
2743	A03 CO + He A11 CO + He	T	0-1.0 eV	Rosenzweig, R.; Augustin, S. D.; Satitz, R. Stochastic theory for molecular collisions: application to the CO-He system. <i>J. Chem. Phys.</i> 70, 2455 (1979) United States
2744	A11 He + HD ⁺	T	300-500 K	Tarr, S. W.; Rabitz, R. Vibrational-rotational relaxation from high vibrational states in He-HD. <i>J. Chem. Phys.</i> 70, 2569 (1979) United States
2745	A03 Li ⁺ + CH ₃ ; Li ⁺ + He A08 Li ⁺ + CH ₃ ; Li ⁺ + He	E	250 keV	Bieganski, P.; Bruch, R.; Rodhe, N. High resolution Auger spectra of Li, Be, B and C excited in single gas collisions. <i>J. Phys. (Paris)</i> 40, C1-14 (1979) Denmark
2746	A07 Ar ¹⁸⁺ + He; Ti ¹⁸⁺ + He; Hf ¹⁸⁺ + He; Kr ¹⁸⁺ + He; Xe ¹⁸⁺ + He; Pb ¹⁸⁺ + He A03 Ar ¹⁸⁺ + He; Ti ¹⁸⁺ + He; Hf ¹⁸⁺ + He; Kr ¹⁸⁺ + He; Xe ¹⁸⁺ + He; Pb ¹⁸⁺ + He	E	1.4 MeV/amu	Bayer, M. F.; Fehmann, F.; Schottner, K. H. Franck-Condon states of He produced by 1.4 MeV/amu heavy ion impact. <i>J. Phys. (Paris)</i> 40, C1-17 (1979) West Germany
2747	M05 hv + H ₂ ⁺ ; hv + Ar ₂ ⁺ ; hv + Kr ₂ ⁺ ; hv + O ₂ ⁺ ; hv + O ₂ ⁺ ; hv + CH ₃ I ⁺	E	5070-6500 Å	Hosley, J. T.; Conby, P. C.; Duray, J.; Cannon, J. B. Photofragment spectroscopy of molecular ions using fast ion beams. <i>J. Phys. (Paris)</i> 40, C1-46 (1979) United States
2748	M05 hv + CO ⁺ ; hv + O ₂ ⁺ ; hv + CH ⁺ ; hv + H ₂ O ⁺ M04 hv + CO ⁺ ; hv + O ₂ ⁺ ; hv + CH ⁺ ; hv + H ₂ O ⁺ A06 CO ⁺⁺ + H ₂ ; CO ⁺⁺ + CO	E	M04; M05 4570 Å A36 2 keV	Carrington, A.; Sarra, P. J. Sub-Euclid laser spectroscopy of molecular ions in ion beams. <i>J. Phys. (Paris)</i> 40, C1-54 (1979) Austria
2749	E04 e + Fe ²³⁺	E T	23 ± 10 ⁴ K	Steenman-Clark, L.; Bely-Dubau, F.; Dubau, J.; Fancher, P.; Gabriel, A. M.; Louargue, N.; Volante, S. High dielectronic satellite lines in solar flare spectra. <i>J. Phys. (Paris)</i> 40, C1-98 (1979) France
2750	A11 O ₂ + O ₂ ; He ⁺ + He	E	20 eV	Schwane, F.; Sullin, I. A.; Mann, B.; Frischborn, H. J.; Neuloh, D.; Scobe, G.; Grommold, K. G. Delayed coincidence Auger electron lifetime measurements. <i>J. Phys. (Paris)</i> 40, C1-221 (1979) West Germany
2751	A07 O ⁹⁺ + Ar; O ⁹⁺ + Ar; O ⁹⁺ + Ar; O ⁹⁺ + Ar; Ar; O ⁹⁺ + Ar; O ⁹⁺ + Ar; Si ¹⁰⁺ + Ar; Si ¹⁰⁺ + Ar; Si ¹⁰⁺ + Ar; Si ¹⁰⁺ + Ar; Si ¹⁰⁺ + Ar A08 O ⁹⁺ + Ar; O ⁹⁺ + Ar; C ⁸⁺ + Ar; O ⁹⁺ + Ar; Ar; O ⁹⁺ + Ar; O ⁹⁺ + Ar; Si ¹⁰⁺ + Ar; Si ¹⁰⁺ + Ar; Si ¹⁰⁺ + Ar; Si ¹⁰⁺ + Ar; Si ¹⁰⁺ + Ar	E	2.5 MeV/amu	Sullin, I. A. Electron cusp spectroscopy of the forward peak in continuum electron capture and loss in gases and solids. <i>J. Phys. (Paris)</i> 40, C1-225 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2752	A06 He ²⁺ + He; He + CH ₄ A07 Xe ²⁺ + He; Ar ²⁺ + He	E	A07 1.4 MeV/amu. A06 12 eV	Mann, R.; Folkmann, F. Selective electron capture effects at highly ionized He target atom after 1.4 MeV/amu heavy ion impact. <i>J. Phys. (Paris)</i> 40, C1-236 (1979) West Germany
2753	A06 He ²⁺ + He; Be ²⁺ + CH ₄ A03 Be ²⁺ + He; Be ²⁺ + CH ₄	E	100-400 keV	Disgaard, P.; Bruch, R.; Dahl, P.; Bodbru, H. Production of alignment in autoionizing core-excited Be II states. <i>J. Phys. (Paris)</i> 40, C1-243 (1979) Denmark
2754	A07 Fe ²⁺ + He; He ²⁺ + He; Li ²⁺ + He; C ²⁺ + He; Mg ²⁺ + He; Fe ²⁺ + He; Cl ²⁺ + He	E	1300 keV	Neving, E.-G.; Edlund, K.; Sorenson, C. Quasi-molecular effects in ion-atom collisions at ion energies in the hundred-keV region. <i>J. Phys. (Paris)</i> 40, C1-246 (1979) Denmark
2755	A08 S ²⁺ + He; S ²⁺ + He; S ²⁺ + He; S ²⁺ + He; S ²⁺ + Ar; S ²⁺ + Ar; S ²⁺ + Ar; S ²⁺ + Ar; S ²⁺ + Kr; S ²⁺ + Kr; S ²⁺ + Kr; S ²⁺ + Kr; S ²⁺ + Xe; S ²⁺ + Xe; S ²⁺ + Xe; S ²⁺ + Xe A06 S ²⁺ + He; S ²⁺ + He; S ²⁺ + He; S ²⁺ + He; S ²⁺ + Ar; S ²⁺ + Ar; S ²⁺ + Ar; S ²⁺ + Ar; S ²⁺ + Kr; S ²⁺ + Kr; S ²⁺ + Kr; S ²⁺ + Kr; S ²⁺ + Xe; S ²⁺ + Xe; S ²⁺ + Xe; S ²⁺ + Xe	E	32-46 MeV	Noor, D.; Reamer, B. Charge exchanging processes in small impact parameter collisions between S ²⁺ ions and rare gases. <i>J. Phys. (Paris)</i> 40, C1-250 (1979) Israel
2756	B07 H ⁺ + Cu B08 Ar ⁺ + Cu	E	B12 300 keV B07 153 keV	Andra, W. J.; Frohling, R.; Plohn, R. J.; Winter, R.; Vittmann, W. Ion surface interaction at grazing incidence. <i>J. Phys. (Paris)</i> 40, C1-276 (1979) West Germany
2757	B14 He ⁺ + C	E	00-400 keV	Sander, W.; Boken, W. R.; Buttler, H. V. Relation between crystallographic transformation and lifetimes of ion-irradiated carbon foils. <i>J. Phys. (Paris)</i> 40, C1-301 (1979) West Germany
2758	B08 He ⁺ + C; B ⁺ + C; B ⁺ + C	E	63-96 keV	Church, D. A. Anisotropic excitation by foils and surfaces. <i>J. Phys. (Paris)</i> 40, C1-304 (1979) United States
2759	B08 Review	T	430 keV	Schroder, H. Calculation of polarization in anisotropic lines emitted after beam-surface interaction. <i>J. Phys. (Paris)</i> 40, C1-316 (1979) West Germany
2760	B06 C ⁺	T		Gabriel, H.; Kasper, E. Transfer of orbital angular momentum polarization to nuclear spin polarization in external fields. - A theoretical study. <i>J. Phys. (Paris)</i> 40, C1-321 (1979) West Germany
2761	B08 B ⁺ + Si; B ²⁺ + Si	E	140 keV	Church, D. A.; Lee, C. S. Fast ion double collision spectroscopy. <i>J. Phys. (Paris)</i> 40, C1-324 (1979) United States
2762	A03 H ₂ ⁺ + He; H ₂ ⁺ + H ₂ ; H ₂ ⁺ + Ar; H ₂ ⁺ + He; H ₂ ⁺ + H ₂ ; H ₂ ⁺ + Ar A04 H ₂ ⁺ + He; H ₂ ⁺ + H ₂ ; H ₂ ⁺ + Ar	E	71 keV/amu	Schumann, S.; Frischhorn, H. J.; Kluge, R.; Reisch, D.; Schoder, J.; Groenewald, E. O. Beam foil - and beam gas - excitation of mono- and di-atomic projectiles. <i>J. Phys. (Paris)</i> 40, C1-344 (1979) West Germany
2763	B06 hv + He	E	30-300 eV	Willeumier, F.; Krause, M. O. Determination of partial and differential photoionization cross sections of L-subshells of neon. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 15, 15 (1979) France
2764	B06 hv + He; hv + H ₂ ; hv + CO	T	0-1000 eV	Mack, H. S.; Milton, P. R.; Nordheim, S. Calculation of atomic and molecular photoionization cross sections using the ground state inversion potential method. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 15, 101 (1979) Australia
2765	B06 Undef	T	Undef	Nordheim, S. Calculation of photoionization cross sections by the absorbing boundary method. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 15, 109 (1979) Australia

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2766	E83 $e + \text{HCN}$	E	1.5-2.5 keV	Hitchcock, A. P.; Brion, C. E. K-shell excitation of HCN by electron energy loss spectroscopy. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 15, 241 (1977) Canada
2767	H96 $h\nu + \text{Ne}; h\nu + \text{Ar}; h\nu + \text{Xe}$	E	33-118 eV	Aden, R. Y.; Vuilleumier, F.; Brunencher, S.; Sandner, H.; Schmidt, V.; Mohlberg, U. Recent progress in the study of photoionization processes at atomic species by electron spectroscopy using synchrotron radiation. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 15, 211 (1977) France
2768	H96 $h\nu + \text{CO}_2; h\nu + \text{H}_2\text{O}$	E	28-68 eV	Brion, C. E.; Yan, K. H. Partial photoionization cross-sections for CH_2 and H_2O from 20 to 60 eV. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 15, 241 (1977) Canada
2769	E85 $e + \text{H}$ E17 $e + \text{H}$	E	256-414 eV	Wiegold, E.; Mohle, C.; Reed, E. Y.; Fene, L. (a, 2a) experiments on atomic hydrogen: comparison with the distorted and plane wave impulse approximation. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 15, 233 (1977) Australia
2770	H96 $h\nu + \text{H}_2^+; h\nu + \text{Xe}$	E	10-150 eV	Sanson, J. A. R. Vacuum ultraviolet photoelectron spectroscopy of atoms and molecules. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 15, 227 (1977) United States
2771	H96 $h\nu + \text{N}_2; h\nu + \text{CO}; h\nu + \text{O}_2; h\nu + \text{H}_2\text{O}; h\nu + \text{NH}_3; h\nu + \text{CH}_4$	E	504 Å	Kiura, K.; Achiba, Y.; Morishita, N.; Tanazaki, T. Vacuum UV photoelectron intensity of gaseous compounds: I. He spectra of simple compounds. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 15, 269 (1977) Japan
2772	H96 $h\nu + \text{N}_2; h\nu + \text{H}_2; h\nu + \text{CO}; h\nu + \text{CO}_2; h\nu + \text{O}_2; h\nu + \text{Ar}; h\nu + \text{Xe}$	E	15.9-21.2 eV	Kibel, M. H.; Lang, F. J.; Nyberg, G. L. Angular-distribution He(I)/He(I) photoelectron spectra of N_2 , H_2 and other small molecules. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 15, 221 (1977) Australia
2773	H96 $h\nu + \text{O}_2$	E	875-89 Å	Lindemann, V.; Biale, A. J.; Carver, J. H.; Motton, J. R.; Tarap, L. An instrument for measuring branch ratios in photoionizing processes. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 15, 227 (1977) Australia
2774	H96 $h\nu + \text{Sb}$	E	33-800 eV	Lindau, I.; Spicer, W. E. Photoelectron spectroscopy in the energy region 30 to 800 eV using synchrotron radiation. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 15, 255 (1977) United States
2775	H96 $h\nu + \text{CO}$	E	504 Å	Sell, J. A.; Kuppermann, A.; Mintz, B. N. Angular distributions in the photoelectron spectroscopy of carbon monoxide. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 16, 127 (1977) United States
2776	D15 $n + \text{Zr}$	E	1 MeV	Northwood, D. O.; Gilbert, R. W.; Cohen, L. E.; Kelly, P. M.; Biale, R. G.; Jostons, A.; Madden, P. A.; Faulkner, D.; Sell, V.; Adamson, R. B. Characterization of neutron irradiation damage in zirconium alloys - an international round-robin experiment. <i>J. Nucl. Mater.</i> 79, 279 (1977) Canada
2777	D15 $n + \text{SS}$	E	Under	McVay, G. L.; Walters, L. C.; Hudson, G. B. Neutron irradiation-induced creep of helium pressurized 304L stainless steel capsules. <i>J. Nucl. Mater.</i> 79, 306 (1977) United States
2778	D15 $n + \text{SS}$	E	0.1 MeV	Porter, D. L. Ferrite formation in neutron-irradiated type 304L stainless steel. <i>J. Nucl. Mater.</i> 79, 406 (1977) United States
2779	D97 $\text{He}^+ + \text{U}; \text{He}^+ + \text{U}; \text{He}^+ + \text{UO}_2; \text{He}^+ + \text{UO}_2$	E	5-10 keV	Bhattacharya, R. S.; Echstein, U.; Verbeek, H. Backscattering of He and He from U and UO_2 . <i>J. Nucl. Mater.</i> 79, 420 (1977) West Germany
2780	D14 $\text{He}^+ + \text{Zr}; \text{He}^+ + \text{SS}$	E	2 MeV	Krishnan, R.; Mehta, M. K. Blistering of zirconium, Inconel-718 and stainless steel-216 by 2 MeV helium ions. <i>J. Nucl. Mater.</i> 79, 423 (1977) India

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2781	886 $h\nu + CO_2$	T	21 eV	Beuche, V. Vibrational state dependence of the photoelectron angular asymmetry parameter caused by vibronic coupling. <i>Phys. Scripta</i> 19, 11 (1979) West Germany
2782	A83 $He + H_2^+; He + H_2^0; Ar + H_2^0$	E	300 K	Carlson, V. A.; Dovic, M.; Erman, F.; Larsson, N. Collisional transfer to the B state in H_2 . <i>Phys. Scripta</i> 19, 25 (1979) Sweden
2783	E86 $e + Mg$	E	4-32 keV	Ritkala, E.; Keshi-Rahkonen, O.; Knappele, R. K α (copper h) hyperultraviolet spectrum and electron double ionization cross section of the K-shell in magnesium. <i>Phys. Scripta</i> 19, 29 (1979) Finland
2784	B83 $Ar^+ + Al; Ar^+ + Al_2O_3$	E	43 keV	Braun, R. Spectral investigation of excited sputtered aluminum particles and the influence of oxygen during ion irradiation. <i>Phys. Scripta</i> 16, 33 (1979) Sweden
2785	E92 $e + Ne$	T	Undef	Peach, C. The evaluation of phase shifts at very low energies. <i>J. Phys. B</i> 12, L13 (1979) United Kingdom
2786	A17 $He + CO_2; Ar + CO_2; Ar + N_2$ A18 $He + CO_2; Ar + CO_2; Ar + N_2$ A82 $He + CO_2; Ar + CO_2; Ar + N_2$	T	9.1-5 eV	Khramov, V. M.; Lomon, V. B. The direct test of accuracy of calculated repulsive potential energy surfaces, based on differential scattering data. <i>J. Phys. B</i> 12, L19 (1979) Soviet Union
2787	A89 $H^+ + H^-$	E	44-570 eV	Peart, B.; Forrest, R. A. Measurements of cross sections for double charge transfer in collisions between H^+ and H^- ions. <i>J. Phys. B</i> 12, L23 (1979) United Kingdom
2788	E85 $e + Ne$	T	250 eV	Salashov, V. V.; Gran-Grazhinskiy, B. N.; Kabanov, N. M.; Nagmov, A. I.; Strakhova, S. I. On the theory of electron angular correlations in electron impact ionization of neon. <i>J. Phys. B</i> 12, L27 (1979) Soviet Union
2789	A17 $O + O$	T	Undef	Vietscherke, K.-W.; Heller, B.; Grunow, H.; Soff, G. Self-consistent determination of critical two-centre distances. <i>J. Phys. B</i> 12, L31 (1979) West Germany
2790	A83 $Ne_2 + He$	T	331 K	I tun, B. R. Formation of excited helium atoms from helium molecular ions. <i>J. Phys. B</i> 12, L35 (1979) United Kingdom
2791	886 $h\nu + H_2; h\nu + CO$	E	20-48 eV	Harr, G. V.; Norton, J. R.; Holmes, R. R.; McCoy, D. G. Angular distribution of photoelectrons from free molecules of H_2 and CO as a function of photon energy. <i>J. Phys. B</i> 12, 43 (1979) United Kingdom
2792	A17 $H + He$	T	Undef	Valiron, P.; Gayet, R.; McCorrall, R.; Renou-Soussy, F.; Philippe, R. Model-potential methods for the calculation of atom-rare-gas interactions: application to the H-He system. <i>J. Phys. B</i> 12, 83 (1979) France
2793	A10 $He + He; He + Ar; He + Kr; He + Xe;$ $He + H_2; He + CO_2$	E	$7.1-9.6 \times 10^4$ cm $^{-1}$	Apt, J.; Pritchard, D. E. Velocity dependence of fine-structure changing collisions of He with He, Ar, Kr, Xe, H_2 and CO_2 . <i>J. Phys. B</i> 12, 83 (1979) United States
2794	A86 $H^+ + H$ A83 $H^+ + H$	T	5.625-2 MeV	Ray, A.; Ghosh, A. S. The capture of electrons by fast protons from hydrogen atoms. <i>J. Phys. B</i> 12, 99 (1979) India
2795	E92 $e + He$	T	0-10 eV	Barratt, R. F.; Robson, S. A. Natural boundary condition methods for low energy electron-helium scattering. <i>J. Phys. B</i> 12, 165 (1979) Australia
2796	E83 $e + He$	E	21-2000 eV	Vesterfeld, V. B.; Malsman, M. G. N.; van Ech, J. Electron impact excitation of 1^1S-2^1P and 1^1S-2^1P of helium: excitation cross sections and polarization fractions obtained from XUV radiation. <i>J. Phys. B</i> 12, 115 (1979) The Netherlands

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2797	E83 e + CO; e + CH ₄ ; e + CF ₄ ; e + CO ₂ ; e + COS; e + C ₂ H ₂ ; e + C ₂ H ₄	E	1.5 keV	Trease, N.; King, G. C.; Reed, F. H. Carbon K-shell excitation in small molecules by high-resolution electron impact. <i>J. Phys. B</i> 12, 137 (1979) United Kingdom
2798	H96 hv + He	T	334 Å	Connerade, J. P.; Reed, S. J.; Grant, I. F. Two-step autoionization and the double ionization anomaly in He I. <i>J. Phys. B</i> 12, 153 (1979) United Kingdom
2799	E82 e + H ₂ E83 e + H ₂	T	1-10 eV	Kienover, A.; Kaldor, U. Zero-point vibration in low-energy electron-molecule scattering theory. <i>J. Phys. B</i> 12, 161 (1979) Israel
2800	E83 e + H ₂	E	50 eV	McLennan, I. C.; McConkey, J. W. Electron-polarized-photon coincidence study of H ₂ [¹ Σ(ub g) ⁺ ← ¹ σ(ub u)] excitation. <i>J. Phys. B</i> 12, 167 (1979) Canada
2801	H94 hv + Fe; hv + Co; hv + Ni; hv + Cu	E	45-90 eV	Brink, R.; Sonntag, D.; Wolff, M. b. 3p excitations of atomic and metallic Fe, Co, Ni, and Cu. <i>J. Phys. B</i> 12, 283 (1979) West Germany
2802	A12 He + Ar ⁺	T	Undef	Chaboud, G.; Millie, P.; Ricard, J.; Levy, R. Profile of the Lyman α line in the presence of an argon plasma. <i>J. Phys. B</i> 12, 221 (1979) France
2803	A17 Ca + He; Cu + He; Co + Ar; Co + Kr; Co + Xe	E	Undef	Sayer, B.; Furray, R.; Loisinget, J. Experimental determination of the Ca(7S)→rare-gas potential energy curves and of the 6S-7S collision-induced oscillator strengths. <i>J. Phys. B</i> 12, 227 (1979) France
2804	A97 Undef A93 Undef	T	Undef	Kunc, J. Binary encounter approximation treatment of collisions within the atomic structure. <i>J. Phys. B</i> 12, 241 (1979) Poland
2805	A97 C ⁶⁺ + N; Ne ²⁺ + N	T	3.4-4 MeV	Selap, A.; Eichler, J. Sudden approximation cross sections for ionization of N atoms by energetic C ⁶⁺ and Ne ²⁺ impact. <i>J. Phys. B</i> 12, 287 (1979) United States
2806	E82 e + He; e + Ne; e + Ar E17 e + He; e + Ne; e + Ar	E	0.5-20 eV	Williams, J. F. A phase-shift analysis of experimental angular distributions of electrons elastically scattered from He, Ne and Ar over the range 0.5-20 eV. <i>J. Phys. B</i> 12, 265 (1979) United Kingdom
2807	E82 e + CO ₂ E83 e + CO ₂	T	23 eV	Onda, K.; Truhler, D. G. Close-coupling calculations with an INDO/1s static potential, semiclassical exchange, and a semi-empirical polarization potential for electron-CO ₂ elastic scattering and rotational excitation. <i>J. Phys. B</i> 12, 283 (1979) United States
2808	E86 e + H E17 e + H	E, T	100-413 eV	Veigold, L.; Noble, C. J.; Hood, S. I.; Fues, I. Electron impact ionization of atomic hydrogen: experimental and theoretical (e,2e) differential cross sections. <i>J. Phys. B</i> 12, 291 (1979) Australia
2809	E83 e + Sr E86 e + Sr	E	23-500 eV	White, N. D.; Reed, D.; Reed, K. J. The ejected-electron spectrum of strontium vapour autoionizing and Auger levels excited by 23.5 to 500 eV electrons. <i>J. Phys. B</i> 12, 315 (1979) United Kingdom
2810	E82 e + N ₂ E83 e + N ₂	T	0.5-10 eV	Kienover, A.; Kaldor, U. Ab initio electron-molecule scattering theory including polarization; vibrational and vibrational-rotational excitation of N ₂ . <i>J. Phys. B</i> 12, 323 (1979) Israel
2811	H92 hv + La; hv + Yb	E	63-130 Å	Reith, L.-R. On the character of the intense 4d → f resonances in atomic La and Yb. <i>J. Phys. B</i> 12, L71 (1979) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2012	H96 2hv + Co	T	4.4-5.6 eV	Theodosiou, C. E.; Armstrong, L., Jr. Two-photon ionization of cobalt. <i>J. Phys. B</i> 12, L87 (1979) United States
2013	H92 2hv + He ₂ H95 2hv + He ₂	E	4926 Å	Hitz, B. E.; Magon, P. B.; Schenker, L. B.; Smith, S. J. Photodissociation of He ₂ ⁺ in He ₂ multiphoton absorption. <i>J. Phys. B</i> 12, L103 (1979) United States
2014	A67 H + H A68 H + H A11 H + H A66 H + H	T	1-3 e.u.	Olsen, R. E. Rydberg-atom-Rydberg-atom ionization cross sections. <i>J. Phys. B</i> 12, L169 (1979) United States
2015	E13 e + F-	E	13-1000 eV	Peart, B.; Forrest, R.; Bolder, K. T. Measurement of detachment from F ⁻ by electron impact and tests of classical scaling for electron impact detachment cross sections. <i>J. Phys. B</i> 12, L116 (1979) United Kingdom
2016	H96 hv + He	T	3.2-2.4 Ry	Stewart, A. L. The 1snp ³ P triplet continuum and the photoionization of the 1s2s ³ S state of helium. <i>J. Phys. B</i> 12, 401 (1979) United Kingdom
2017	H11 Undef	T	Undef	Friedland, L. Correspondence principle in multiphoton inverse bremsstrahlung. <i>J. Phys. E</i> 12, 409 (1979) Israel
2018	E83 e + He ⁺ ; e + He ⁰ A11 He ⁺ + h	T	Undef	Flannery, M. P.; McCann, K. J. Systematic trends in the inelastic cross sections and form factors for n1 → n'1' direct collisional transitions. <i>J. Phys. B</i> 12, 427 (1979) United States
2019	A63 Br + He; Br + Zr; Br + Sr A67 Br + He; Br + Zr; Br + Sr	T	1-500 MeV	Nacías, A.; Riéra, A.; Salin, A. Molecular model of the K-shell vacancy sharing process in heavy ion collisions. <i>J. Phys. B</i> 12, 447 (1979) Spain
2020	E82 e + NH ₃	E	35 keV	Bennani, A. L.; Duguet, A.; Mullenstein, H. F. Differential cross sections for 35 keV electrons elastically scattered from NH ₃ . <i>J. Phys. B</i> 12, 461 (1979) France
2021	E83 e + H	T	100 eV	Vanderpoorten, R.; Winters, K. M. Off-diagonal potentials in the distorted-wave expansion for electron-atom scattering. <i>J. Phys. B</i> 12, 473 (1979) Belgium
2022	E83 e + H; e + He; e + Be	T	Undef	Hedde, D. V. D. The Bethe approximation: where to draw the line. <i>J. Phys. B</i> 12, 465 (1979) United Kingdom
2023	E83 e + He	T	23-500 eV	Roy, A. C.; Sill, N. C. Excitation of ³ H(1s,3s) state of helium by electron impact in the Glauber approximation. <i>J. Phys. B</i> 12, 497 (1979) India
2024	E83 e + Ar	E	51 eV	Malcolm, I. C.; McConkey, J. V. Electron-photon coincidence studies of the resolved argon resonance lines. <i>J. Phys. B</i> 12, 511 (1979) Canada
2025	A12 Ti + Ar	E	Undef	Raymer, M. G.; Corlston, J. L.; Fichler, G. Comparison of collisional redistribution and collision line shapes. <i>J. Phys. B</i> 12, L119 (1979) United States
2026	H96 hv + Xe	E	132-192 eV	Yama, M. S.; Krauss, M. U.; Mollenhauer, F. The xenon 4d _{5/2} /4d _{3/2} photoelectron intensity ratio in the region of the Cooper minimum. <i>J. Phys. B</i> 12, L125 (1979) United States
2027	E85 e + He ⁺ ; e + Li ²⁺ ; e + Be ³⁺	T	Undef	Grujic, P. V. Angular momenta near ionization thresholds for electron-ion collisions. <i>J. Phys. B</i> 12, L131 (1979) Yugoslavia

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
2828	A01 Under	T	Under	Saha, M. P.; Sili, M. C. Evaluation of exchange matrix elements with momentum transfer for ion-atom collision-. J. Phys. B 12, 845 (1979) India
2829	A03 Ar + LiH	T	0.8 eV	Bhattacharyya, S. S.; Dickinson, A. S.; Richards, S. Rotational transitions in Ar-LiH collisions. J. Phys. B 12, 895 (1979) United Kingdom
2830	A03 H ⁺ + Ca; h ⁺ + Fe	E	0.2-0.5 MeV	Lopes, J. S.; Jesus, A. P.; Ramos, S. C.; Ferreira, G. P. Proton-induced K x-ray production from Ca to Fe for 0.2 to 0.5 MeV incident energy. J. Phys. B 12, 604 (1979) Portugal
2831	B07 Under	T		Duguchi, K.; Taylor, M. S.; Varis, R. Electron scattering from atoms within a laser field. J. Phys. B 12, 613 (1979) United States
2832	E03 e + H	E	43-100 eV	Wood, S. Y.; Veigold, E.; Dixon, A. J. Electron-photon angular correlations in the electron impact excitation of H(2p). J. Phys. B 12, 631 (1979) Australia
2833	E05 e + Ar	T	30-100 eV	Amusia, N. Y.; Shelnarman, S. A. Single-electron ionization of Ar 3d ⁵ subshell by slow electrons. J. Phys. B 12, 645 (1979) Soviet Union
2834	E03 e + H ₂ E05 e + H ₂ C03 e + H ₂	T	2-30 keV	Douthett, L. A. Energy deposition and electron energy degradation in molecular hydrogen. J. Phys. B 12, 653 (1979) Canada
2835	E09 e + H ₂ S E04 e + H ₂ S	E	4.5-9 eV	Azria, R.; Le Cont, Y.; Lefevre, G.; Simeon, E. Dissociative electron attachment of H ₂ S: energy and angular distributions of H ⁻ ions. J. Phys. B 12, 679 (1979) France
2836	A06 C ⁺ + H; C ⁺ + H ₂ ; N ⁺ + H; N ⁺ + H ₂ ; O ⁺ + H; O ⁺ + H ₂	E	0.1-13 keV	Hutt, W. L.; McCullough, R. W.; Glibbery, R. B. Electron capture by 0.1-13 keV C ⁺ , N ⁺ and O ⁺ ions in H and H ₂ . J. Phys. B 12, L167 (1979) United Kingdom
2837	A06 N ²⁺ + He; N ²⁺ + He; N ²⁺ + Ar	E	1.6-1.7 keV	Sharma, S.; Aved, G. L.; Masad, J. B.; Mathur, D. Energy-loss spectra of product ions in electron capture. J. Phys. B 12, L163 (1979) United Kingdom
2838	E02 e + H E17 e + H	T	50-200 eV	Tayal, S. S.; Tripathi, A. M.; Srivastava, R. K. Comments on the ikonal-Born series approach to electron-atom scattering. J. Phys. B 12, L167 (1979) India
2839	E03 e + He	T	81 eV	Fen, W. C.; Farrington, K. J.; Kingston, A. L. Alignment and orientation parameters for excitation of the ground state of helium to the 2 ¹ P state by 81 eV electrons. J. Phys. B 12, L171 (1979) United Kingdom
2840	E03 e + He	T	22.5 eV	Andrick, D. Comment on the resonance near the n=3 threshold in e ⁻ -He scattering. J. Phys. B 12, L175 (1979) West Germany
2841	E04 e + H ₂ E03 e + H ₂	E	0.01-0.17 eV	Spence, D.; Burrow, P. D. Resonant dissociation of H ₂ by electron impact. J. Phys. B 12, L179 (1979) United States
2842	E02 e + SF ₆ E17 e + SF ₆	T	0.6-10 eV	Rohr, K. Absolute differential cross sections for e-SF ₆ scattering in the s(sub 1g) and t(sub 1u) resonance region. J. Phys. B 12, L186 (1979) West Germany
2843	B03 He B06 He	T		Leopold, J. G.; Percival, I. C. Ionization of highly excited atoms by electric fields III. Microwave ionization and excitation. J. Phys. B 12, 709 (1979) United Kingdom

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2844	H86 Undef	T	Undef	McClean, W. A.; Sutin, S. Theory of resonant and non-resonant three-photon ionization. <i>J. Phys. B</i> 12, 723 (1979) United Kingdom
2845	A83 H + D; H + H F11 H + D; H + H	T	300 K	Buffe, G.; Martinelli, M.; Terripi, O.; Vauton, C. Ammonia inversion spectrum: detailed measurements and theoretical calculations of pressure shift. <i>J. Phys. B</i> 12, 743 (1979) France
2846	A87 Undef	T	Undef	Rihan, T. M.; Heller, S.; Gruber, b. On the adequacy of first-order perturbation theory for calculations of inner-shell ionization. <i>J. Phys. E</i> 12, 761 (1979) West Germany
2847	A86 Undef	T	Undef	Crathern, D. S. F. Charge transfer: symmetrized non-resonance in fast or slow collisions. <i>J. Phys. B</i> 12, 775 (1979) United Kingdom
2848	Q84 Undef Q86 Undef	T	Undef	Lin, S. L.; Hansen, E. A. Influence of resonant charge transfer on ion mobility. <i>J. Phys. B</i> 12, 783 (1979) United States
2849	A86 Xe ²⁺ + Ar; Xe ²⁺ + Kr; Xe ²⁺ + H ₂ ; Xe ²⁺ + H ₂ ; Xe ²⁺ + O ₂ ; Xe ²⁺ + CO ₂	E	370 K	Adams, W. G.; Smith, D.; Grief, E. Single-charge transfer reactions of the ground and metastable states of Xe ²⁺ at 300 K. <i>J. Phys. B</i> 12, 751 (1979) United Kingdom
2850	E82 e + Li	T	5-60 eV	Gaba, S.; Ghosh, A. K. Elastic e-Li scattering using integral approach. <i>J. Phys. B</i> 12, 801 (1979) India
2851	E83 e + H E17 e + H	E	136-300 eV	White, M. D.; Ross, K. J.; Bolouri, M. Differential cross section and generalized oscillator strength for the 1s + (2s + 2p) transition in atomic hydrogen for incident electron kinetic energies 136,200 and 300 eV and scattering up to 20°. <i>J. Phys. B</i> 12, 811 (1979) United Kingdom
2852	E83 e + He E17 e + He	E	81.2 eV	Hollywood, M. T.; Cross, A.; Williams, J. F. Coherent excitation of the 2 ¹ P state of He for large resonant transfer electron scattering. <i>J. Phys. B</i> 12, 819 (1979) United Kingdom
2853	E83 e + He	T	30-200 eV	Bolaji, K. L.; McDowell, M. R. C. Electron impact excitation of the 2 ¹ P and 2 ³ S levels of helium. <i>J. Phys. B</i> 12, 835 (1979) United Kingdom
2854	E13 e + C ⁻ ; e + O ⁻	E	10-1000 eV	Peart, B.; Forrest, R.; Dolder, K. T. Measurements of cross sections for detachment of electrons from C ⁻ and O ⁻ ions by electron impact. <i>J. Phys. B</i> 12, 847 (1979) United Kingdom
2855	E12 e ⁺ + H	T	60-200 eV	Lal, M.; Srivastava, M. K. Positron-hydrogen scattering in two-potential orbital approximation. <i>J. Phys. B</i> 12, 855 (1979) India
2856	A12 He + He A17 He + He	E	Undef	Bielshi, A.; Wojniakowski, J. Selfbroadening of the 2p ² 3p-2p ² 4d spectral lines of neon. <i>Acta Phys. Pol. A</i> 54, 601 (1978) Poland
2857	A12 He + He A17 He + He	E	Undef	Bielshi, A.; Bielshi, E.; Nesterov, N.; Wojniakowski, J. Broadening of the 2p ² 3p-2p ² 4d neon spectral lines by helium. <i>Acta Phys. Pol. A</i> 54, 611 (1978) Poland
2858	A12 Sr + Ar A17 Sr + Ar	E	474-564 °C	Chen, S. Y.; Wang, S. Y. The effects of argon pressure on the resonance line of strontium. <i>Acta Phys. Pol. A</i> 54, 721 (1978) United States
2859	A12 Rb + Na; Rb + Ar; Rb + Kr; Rb + Xe; Li + Xe; Na + Xe; Rb + Xe; Cs + Xe A17 Rb + Na; Rb + Ar; Rb + Kr; Rb + Xe; Li + Xe; Na + Xe; Rb + Xe; Cs + Xe	T	210-10° K	Gallagher, A. Far-wing line broadening. <i>Acta Phys. Pol. A</i> 54, 751 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2860	A11 Hg + Ti + H ₂	E	430-600 °C	Wade, M. R.; Canjuchchi, R.; Krause, L. Quenching of mercury-sensitized fluorescence in thallium by collisions with H ₂ molecules. <i>Acta Phys. Pol. A</i> 54, 6-9 (1978) Canada
2861	D02 Ar + Cu; He + Cu; PERT + Cu	T	0.1-1.5 keV	Now, M.; Robinson, M. T. Computer simulation of low-energy sputtering in the binary collision approximation. <i>Appl. Phys. (Germany)</i> 18, 361 (1975) Belgium
2862	D02 H + Fe; H + Ni; D + Fe; D + Ni; T + Fe; T + Ni; He + Fe; He + Ni	T	0.1-10 keV	Babrich, R.; Roderlochner, G.; Schermer, S. M. U.; Robinson, M. T. The sputtering mechanism for low-energy light ions. <i>Appl. Phys. (Germany)</i> 18, 351 (1979) West Germany
2863	H06 hv + Xe	E	922-0.085 Å ⁰	West, J. B.; Norton, J. Absolute photoionization cross-section tables for xenon in the vuv and the soft x-ray regions. <i>Atomic Data and Nuclear Data Tables</i> 22, 103 (1978) United Kingdom
2864	L03 Undef	E T	Undef	Way, K. Atomic data related to x and xuv radiation. <i>Atomic Data and Nuclear Data Tables</i> 22, 125 (1978) United States
2865	H02 hv + C; hv + N; hv + O; hv + F; hv + Ne; hv + Na; hv + Mg; hv + Al; hv + Si; hv + P; hv + S; hv + Cl; hv + Ar; hv + K; hv + Ca; hv + Sc; hv + Ti; hv + V; hv + Cr; hv + Mn; hv + Fe; hv + Co; hv + Ni; hv + Cu; hv + Zn; hv + Ga; hv + Ge; hv + As	E	2.6-28.6 keV	Montenegro, E. C.; Baptista, G. A.; Duarte, P. M. E. P. K and L x-ray mass attenuation coefficients for low-Z materials. <i>Atomic Data and Nuclear Data Tables</i> 22, 131 (1978) Brazil
2866	J01 Undef	T	Undef	Bento, G.; Kropf, A. Tables for plane-wave Born-approximation calculations of K- and L-shell ionization by protons. <i>Atomic Data and Nuclear Data Tables</i> 22, 219 (1978) Austria
2867	C04 Review	T	2.2 x 10 ⁶ cm/s	Lund, D. J.; Brannan, J. G. Electronic stopping power of low-velocity ions: ions C-Xe, targets H-Xe. <i>Atomic Data and Nuclear Data Tables</i> 22, 235 (1978) United States
2868	G03 e + H ₂ G05 e + H ₂ G08 e + H ₂ G10 e + H ₂	T	Undef	Glewin, M. A.; Fletcher, J.; Hunter, S. R. A Monte-Carlo simulation of the behaviour of electron swarms in hydrogen using an anisotropic scattering model. <i>Aust. J. Phys.</i> 31, 299 (1978) Australia
2869	A14 H + NO ₂	E	293 K	Hack, U.; Proust, A. U.; Wagner, M. G.; Meyermann, K. Reactions of hydrogen atoms with hydroperoxyl radicals. II. Determination of the rate constant of the overall reaction. <i>Ber. Bunsenges, Phys. Chem.</i> 83, 212 (1979) West Germany
2870	H08 hv + NO ₂ H10 hv + NO ₂	E	366 nm	Canosa, C.; Ponzhorn, M.-D.; von Sonntag, C. Product quantum yields from the photolysis of NO ₂ at 366 nm in the presence of ethylene - the role of NO ₂ . <i>Ber. Bunsenges, Phys. Chem.</i> 83, 217 (1979) West Germany
2871	A14 O ₂ + N ₂ C	E	5-180 kJ/mol	Mars, U.; Bohn, F.; Schurath, U. The NO yield of O(1D) + N ₂ O as function of kinetic energy. <i>Ber. Bunsenges, Phys. Chem.</i> 83, 225 (1979) West Germany
2872	A04 I ₂ + He; I ₂ + Ar; I ₂ + Xe; Br ₂ + He; Br ₂ + Ar; Br ₂ + Xe A14 I ₂ + He; I ₂ + Ar; I ₂ + Xe; Br ₂ + He; Br ₂ + Ar; Br ₂ + Xe	T	270-1500 K	Snider, M. Bound complex and triple collision mechanisms for diatom dissociation and recombination. <i>Can. J. Chem.</i> 57, 1167 (1979) Canada

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
2873	CB2 C ⁺ + C; C ⁺ + Al; C ⁺ + Ni; C ⁺ + Au; C ⁺ + Ag; N ⁺ + C; N ⁺ + Al; N ⁺ + Ni; N ⁺ + Au; N ⁺ + Ag; O ⁺ + C; O ⁺ + Al; O ⁺ + Ni; O ⁺ + Au; O ⁺ + Ag; F ⁺ + C; F ⁺ + Al; F ⁺ + Ni; F ⁺ + Au; F ⁺ + Ag; Ne ⁺ + C; Ne ⁺ + Al; Ne ⁺ + Ni; Ne ⁺ + Au; Ne ⁺ + Ag; Ne ⁺ + C; Ne ⁺ + Al; Ne ⁺ + Ni; Ne ⁺ + Au; Ne ⁺ + Ag; Ne ⁺ + C; C; Ag ⁺ + Al; Mg ⁺ + Ni; Mg ⁺ + Au; Mg ⁺ + Ag; Al ⁺ + C; Al ⁺ + Al; Al ⁺ + Ni; Al ⁺ + Au; Al ⁺ + Ag; Si ⁺ + C; Si ⁺ + Al; Si ⁺ + Ni; Si ⁺ + Au; Si ⁺ + Ag; P ⁺ + C; P ⁺ + Al; P ⁺ + Ni; P ⁺ + Au; P ⁺ + Ag; S ⁺ + C; S ⁺ + Al; S ⁺ + Ni; S ⁺ + Au; S ⁺ + Ag; Cl ⁺ + C; Cl ⁺ + Al; Cl ⁺ + Ni; Cl ⁺ + Au; Cl ⁺ + Ag; Ar ⁺ + C; Ar ⁺ + Al; Ar ⁺ + Ni; Ar ⁺ + Au; Ar ⁺ + Ag; K ⁺ + C; K ⁺ + Al; K ⁺ + Ni; K ⁺ + Au; K ⁺ + Ag; Ca ⁺ + C; Ca ⁺ + Al; Ca ⁺ + Ni; Ca ⁺ + Au; Co ⁺ + Ag	E	25-28 keV/amu	Ward, D.; Andrews, M. R.; Mitchell, I. V.; Leonard, B. M.; Walker, M. E.; Rod, M. Systematics for the Z ₁ -oscillation in stopping powers of various solid materials. Can. J. Phys. 57, 645 (1979) Canada
2874	N03 hv + Cu; hv + Cd; hv + Te; hv + Pb	E	245-1400 keV	Panayathan, M.; Kenneth, T. J.; Frestwich, W. V. An experimental investigation of small angle photon elastic scattering. Can. J. Phys. 57, 343 (1979) Canada
2875	D15 He ⁺ + Al	E	600 keV	Swanson, N. L.; Offermann, P.; Ecker, K. H. A comparison of radiation damage in Al by channelled and random beams of 0.6 MeV He ⁺ ions. Can. J. Phys. 57, 457 (1979) West Germany
2876	A02 N ⁺ + Zr A03 N ⁺ + Zr A18 N ⁺ + Zr	E T	43 MeV	de Swinartski, R.; Pham, D.-L.; Bagieu, G.; Geraud, h. V. Elastic and inelastic scattering of 40 MeV polarized protons from ⁹⁰ Zr and ⁹² Zr. Can. J. Phys. 57, 540 (1979) France
2877	B04 H ⁻	T		Scherh, L. R. An improved value for the electron affinity of the negative hydrogen ion. Can. J. Phys. 57, 558 (1979) Canada
2878	A02 N ⁺ + He	T	Under	Leung, S. W.-L.; Sherif, M. S. *Erratum Optical model analysis of p + ¹⁴ N elastic scattering at intermediate energies. Can. J. Phys. 57, 681 (1979) Canada
2879	A14 O ₂ + O ₂	T	300 K	Metropoulos, A.; Chiu, Y.-W. Rovibronic symmetry correlation in molecular combination and dissociation II. The O ₂ + O ₂ going to or coming from C ₂ (D ₂ sub h) system. Chem. Phys. 36, 113 (1975) United States
2880	A03 Li ⁺ + N ₂ A17 Li ⁺ + N ₂ A18 Li ⁺ + N ₂	T	4.2-7.1 eV	Billing, G. D. Semiclassical calculations of differential cross sections for rotational/vibrational transitions in Li ⁺ + N ₂ . Chem. Phys. 36, 127 (1975) Denmark
2881	A10 OCS + NH ₂ ; OCS + DCS; OCS + CO ₂ ; OCS + N ₂ ; OCS + Ar; OCS + He	E	300 K	Williams, J. R.; Kuehlich, S. G. Beam laser rotational relaxation measurements on OCS. Chem. Phys. 36, 281 (1979) United States
2882	E03 e + N ₂ O; e + D ₂ O E04 e + N ₂ O; e + D ₂ O	E	18-200 eV	Kouchi, N.; Ito, K.; Motono, Y.; Oda, N.; Tsuboi, T. Translational spectroscopy of electron-impact dissociative excitation of N ₂ O and D ₂ O by Doppler profile measurements of Balmer-α emission. Chem. Phys. 36, 239 (1979) Japan
2883	A05 He ⁺ + N ₂ O A06 He ⁺ + N ₂ O E05 e + N ₂ O E16 e + N ₂ O	E	A05; A06 0.05 eV E05; E16 16-100 eV	Gerard, M.; Govers, T. R.; Marx, R. Ionization of N ₂ O by low-energy electrons and near-thermal rare-gas ions. Chem. Phys. 36, 247 (1979) France

REF. NO.	REACTANTS	EXP. OP. THEORY	ENERGY RANGE	REFERENCE
2884	A04 $O_2 + Ar$; $HCl + Ar$	E	3520-8520 K	Ramakrishnan, N.; Babu, S. V. Dissociation in dilute mixtures of shock heated O_2 and HCl in Ar. Chem. Phys. 36, 259 (1979) India
2885	A11 $HF + DF$; $DF + HF$	T	330-3000 K	Poulsen, L. L.; Billing, G. D. Calculation of vibrational deactivation of $HF(1$ less than or equal to n less than or equal to 7) by $DF(0)$; and of $DF(1$ less than or equal to n less than or equal to 7) by $HF(0)$. Chem. Phys. 36, 271 (1979) Denmark
2886	A03 $H_2 + H_2$; $H_2 + CO$; $H_2 + O_2$; $H_2 + H_2$; $H_2 + HBr$ A10 $H_2 + H_2$; $H_2 + CO$; $H_2 + O_2$; $H_2 + H_2$; $H_2 + HBr$	T	330 K	Chapman, K.; Bergeron, G. Asymmetry effects in the collinear collision of two diatomic molecules. Chem. Phys. 36, 397 (1979) France
2887	A11 $He + CO^+$; $He + HF^+$	T	8-10 eV	Ewing, T. F.; Conn, R. V. Vibrational relaxation in $He-CO$ and $He-HF$: a variational distorted-wave approach. Chem. Phys. 37, 407 (1979) United States
2889	E04 $e + H_2O$; $e + D_2O$ E09 $e + H_2O$; $e + D_2O$	E	2-10 eV	Jungen, H.; Vogt, J.; Stammeler, W. Resonance and dissociative electron attachment of H_2O . Chem. Phys. 37, 49 (1979) Switzerland
2890	A02 $He + He$ A11 $He + He$ A17 $He + He$	T	A02: A11 15-300 K A17 Undef	Lin, W.-X.; McCourt, F. R. DURA calculations of relaxation and kinetic cross sections. III. Application to the $He-He$ system. Chem. Phys. 37, 75 (1979) Canada
2891	A14 $He + Na_2$	E	430-454 K	Huber, R.; Weber, M. G. The collision complex in the exchange reaction $He + Na_2$ I. An after-pump experiment on Na_2 . Chem. Phys. 37, 173 (1979) West Germany
2891	A14 $He + Na_2$	T	Undef	Weber, M. G.; Huber, R. The collision complex in the exchange reaction $He + Na_2$ II. A study of the observables. Chem. Phys. 37, 181 (1979) West Germany
2892	A17 $He + He^+$	T	Undef	Iwata, S. Potential energy curves of several excited states of the He_2^+ excimer: assignment of the transient absorption spectra of the excimer. Chem. Phys. 37, 251 (1979) Japan
2893	A03 $H + H_2$; $He + HF$; $He + DF$; $He + HCl$; $He + DCI$; $Ar + H_2$ E03 $e + H_2$	T	A03 0.5-1.5 eV; 0.01-0.1 eV; 0.07 eV E03 0.4-2.0 eV	Top, Z. M.; Kouri, D. J. Computational tests of the factorization of cross sections in the sudden approximation. Chem. Phys. 37, 265 (1979) United States
2894	H06 $Na + HCl$; $Na + DCl$	T	15.5-14.5 eV	Koppel, H.; Cederbaum, L. S.; Bosche, W.; von Niessen, W. Vibronic coupling in linear molecules and linear-to-bent transitions: HCl . Chem. Phys. 37, 303 (1979) West Germany
2895	E16 $e + HCN$; $e + C_2H_2$	E	1.5-2.5 keV	Hitchcock, A. P.; Brion, C. E. Inner shell electron energy loss studies of HCN and C_2H_2 . Chem. Phys. 37, 319 (1979) Canada
2896	A03 $CO + H_2$ A17 $CO + H_2$	T	77-300 K	Flower, D. R.; Looney, J. N.; Kochanski, E.; Priopetto, J. An ab initio potential energy surface for the study of $CO-H_2$ collisions at thermal energies. Chem. Phys. 37, 365 (1979) France
2897	A11 $He + N$	E	330 K	Taghizadeh, A.; Brennan, W. $N(2p^2 \ ^3P)$ in the nitrogen afterglow. Chem. Phys. 37, 363 (1979) United States
2898	H06 $He + H_2$	T	730-800 Å	Itikawa, Y. Vibrational-rotational structure in the angular distribution and intensity of photoelectrons from diatomic molecules. III. Effects of higher partial waves of ejected electrons from H_2 . Chem. Phys. 37, 401 (1979) Japan

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2899	G04 Under G06 Under	T	Under	Liu, S. L.; Viehland, L. A.; Neuen, E. A. Three-temperature theory of gaseous ion transport. <i>Chem. Phys.</i> 37, 411 (1979) United States
2900	H06 hv + SeF ₆ ; hv + SeCl ₄ ; hv + SeBr ₄	E	9-19 eV	de Leeuw, B. H.; Nooyman, R.; de Lange, C. A. Na(1) photoelectron spectroscopy of transient species: the SeX ₄ molecules (X=F, Cl and Br). <i>Chem. Phys.</i> 30, 21 (1979) The Netherlands
2901	A03 H ₂ + H ₂ A10 H ₂ + H ₂ A11 H ₂ ⁺ + H ₂	T	A03; A10 0-5 eV A11 300-2500 K	Gianturco, F. A.; Lomonso, U. T. Vibrational excitation cross sections and v + 1 rate constants in molecular hydrogen. <i>Chem. Phys.</i> 38, 97 (1979) Italy
2902	A04 He + He ₂ ⁺ A13 He + He ₂ ⁺	T	2.7-10.7 eV	Kuntz, P. J.; Kendrick, J.; Whittor, W. B. Surface-hopping trajectory calculations of collision-induced dissociation processes with and without charge transfer. <i>Chem. Phys.</i> 30, 147 (1979) West Germany
2903	A04 He + H ₂ ⁺ A13 He + H ₂ ⁺	T	3.5-5.0 eV	Zahrt, C.; Schneider, F.; Neumann, U.; Zeliche, L.; Herman, Z. Dynamics of the reaction H ₂ ⁺ (He, H ₂ He) ⁺ . Influence of various forms of reactant energy on the total and differential cross section. <i>Chem. Phys.</i> 28, 295 (1979) Czechoslovakia
2904	A14 O + CHF	E	331 K	Hou, L. S. Y.; Shortridge, R. G.; Liu, M. C. Products vibrational energy distributions in the O(⁴ P)+CHF reaction. <i>Chem. Phys.</i> 38, 205 (1979) United States
2905	A04 Ar + O ₂ ; Ar + H ₂ ; Ar + D ₂	T	3000-8000 K	Kiefer, J. M.; Rajesh, J. C. A vibrational bias mechanism for diatomic dissociation: induction times and steady rates for O ₂ , H ₂ and D ₂ dilute in Ar. <i>Chem. Phys.</i> 38, 329 (1979) United States
2906	A17 Cl + Xe A18 Cl + Xe	E	2.37-26.1 kcal/mol	Becker, C. H.; Valentini, J. J.; Casavacchio, P.; Sibener, S. J.; Lee, Y. I. Crossed molecular beam studies on the interaction potentials for Cl(⁴ P) + Xe(¹ S). <i>Chem. Phys. Lett.</i> 61, 1 (1979) United States
2907	A17 Na ⁺ + Ar A18 Na ⁺ + Ar	E	330 K	Duren, R.; Greger, W. Experimental determination of the potential for Na(² P) + Ar from differential scattering cross sections. <i>Chem. Phys. Lett.</i> 61, 6 (1979) West Germany
2908	H06 hv + CS ₂	E	24 eV	Schirrer, J.; Demcke, V.; Cederhaus, L. S.; von Nieusen, W.; Anbrink, L. Strong correlation effects in the ionisation of CS ₂ . <i>Chem. Phys. Lett.</i> 61, 30 (1979) West Germany
2909	A17 Na + Na	T	Under	Lyyra, M.; Bunker, P. R. The potential energy curve of the B ¹ Σ _g ⁺ (sub v) state of Na ₂ . <i>Chem. Phys. Lett.</i> 61, 67 (1979) Canada
2910	A13 NH ₂ ⁺ + H ₂ ; H ⁺ + NH ₂	T	300 K	Cerchy, P.; Zahradnik, R.; Urban, P.; Kallio, V. Ab initio studies of chemical equilibria. A refined approach to the reaction NH ₂ ⁺ + H ₂ going to or coming from NH ₂ + H ⁺ . <i>Chem. Phys. Lett.</i> 61, 86 (1979) Czechoslovakia
2911	A11 HF ⁺ + HF	E	300 K	Headonald, R. G.; Sloan, J. J. Microscopic V-E energy transfer rates in the HF/HF system. <i>Chem. Phys. Lett.</i> 61, 137 (1979) Canada
2912	H06 hv + Hg ₂ + Hg H10 hv + Hg	E	H06 300 K H10 193 nm	Ehrlich, D. J.; Osgood, R. M., Jr. Collision induced predissociation in photoassociated Hg ₂ . <i>Chem. Phys. Lett.</i> 61, 169 (1979) United States
2913	A17 H + He; H + Ne; H + Ar; H + Kr	T	Under	Brual, G., Jr.; Rothstein, S. M. Atom-rare gas interaction potentials from an electron gas model. <i>Chem. Phys. Lett.</i> 61, 167 (1979) Canada

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2914	D06 $h\nu + \text{SF}_6$	E	24 eV	de Laun, B. N.; Moynon, B.; de Lange, C. A. <i>Res(I)</i> photoelectron spectroscopy of transient species: the SF_6 molecule. <i>Chem. Phys. Lett.</i> 61, 191 (1979) The Netherlands
2915	A11 $\text{H}_2^+ + \text{H}_2\text{O}$	T	300-900 K	Hagel, J.; Rogovin, D. Dissociation of vibrationally excited H_2 by H_2O . <i>Chem. Phys. Lett.</i> 61, 209 (1979) United States
2916	D05 $h\nu + \text{H}_2^+$	T	1.7-2.6 eV	Wier, T.; Baigarn, A. Photodissociation of H_2^+ . <i>Chem. Phys. Lett.</i> 61, 213 (1979) United States
2917	A06 $\text{K} + \text{HCl}$	E	15-60 eV	Ohada, S. Measurements of energy loss spectra in ion-pair formation reactions for the $\text{K} + \text{HCl}$ system. <i>Chem. Phys. Lett.</i> 61, 245 (1979) Japan
2918	A06 $\text{K} + \text{Br}_2$	E	2-6 eV	Houtch, A. R. C.; Klayn, A. U.; Lee, J. Ion-pair formation in some potassium-molecule collisions. Dependence on the vibrational energy. <i>Chem. Phys. Lett.</i> 61, 249 (1979) Portugal
2919	A14 $\text{BrO} + \text{NO}$	E	230-425 K	Lee, H.-Y. Rate constant for the reaction $\text{BrO} + \text{NO} \rightarrow \text{Br} + \text{NO}_2$. <i>Chem. Phys. Lett.</i> 61, 275 (1979) United States
2920	A11 $\text{C}_2^+ + \text{Ar}; \text{C}_2^+ + \text{O}_2$	E	331 K	Filanth, S. V.; Hancock, G.; Fournier, J.; Meier, R. Quenching of $\text{C}_2^+(a^1\pi, \text{sub } u)$ produced in an intense infrared laser field. <i>Chem. Phys. Lett.</i> 61, 280 (1979) Canada
2921	A14 $\text{N} + \text{NO}_2$	E	400 K	Porter, R. A. R.; Brown, G. R.; Gresser, A. L. Angular distribution of reaction products from the elementary reaction $\text{N} + \text{NO}_2 \rightarrow \text{N}_2\text{O} + \text{O}$ by crossed molecular beams. <i>Chem. Phys. Lett.</i> 61, 313 (1979) Canada
2922	D09 $\text{CO} + \text{Ru}$	E	300-800 K	McCarty, J. G.; Wise, M. Dissociative chemisorption of CO on ruthenium. <i>Chem. Phys. Lett.</i> 61, 323 (1979) United States
2923	A03 $\text{H}_2 + \text{H}_2$	T	3.5-15 kcal/mol	Gold, A. Classical trajectory study of rotational excitation in collisions of hydrogen molecules. <i>Chem. Phys. Lett.</i> 61, 333 (1979) Mexico
2924	E03 $\alpha + \text{CO}$	E	12-15 eV	Bose, N. Influence of resonances in the electron impact excitation function of CO by $\text{X}^+ + \alpha$ γ radiation. <i>Chem. Phys. Lett.</i> 61, 347 (1979) West Germany
2925	H05 $h\nu + \text{C}_2; h\nu + \text{OCS}$ H10 $h\nu + \text{O}_2; h\nu + \text{OCS}$	E	4 m	Proch, D.; Schrader, H. IR laser photochemistry of C_2 and OCS. The first multiphoton dissociation of triatomic molecules. <i>Chem. Phys. Lett.</i> 61, 426 (1979) West Germany
2926	A17 $\text{Li} + \text{NaK}$	T	Undef	Verondu, A. J. C.; Tennyson, J.; Parrill, J. R. Charge transfer to argon. <i>Chem. Phys. Lett.</i> 61, 431 (1979) United Kingdom
2927	A11 $\text{HCl} + \text{SF}_6$	E	331 K	Roodhart, L. P.; Vagdan, G. H. Relaxation of a non-equilibrium rotational distribution in HCl. <i>Chem. Phys. Lett.</i> 61, 449 (1979) The Netherlands
2928	A17 $\text{Li}^+ + \text{Li}$	T	Undef	Kononov, S. D.; Resonkova, N. E. Ab initio calculations of the electronic structure and the vibrational spectra of the $\text{Li}^+ \text{Li}$ (sub g), $\text{Li}^+ \text{Li}$ (sub u), $\text{Li}^+ \text{Li}$ (sub u) and $\text{Li}^+ \text{Li}$ (sub g) states of Li_2^+ . <i>Chem. Phys. Lett.</i> 61, 469 (1979) United States
2929	A03 $\text{H}_2 + \text{Xe}$ A10 $\text{H}_2 + \text{Xe}$	T	450 K	Rosenow, R.; BaPrate, A. L.; Rabitz, H. On the correlation of rotationally inelastic rates: a scaling theoretical analysis. <i>Chem. Phys. Lett.</i> 61, 496 (1979) United States

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2930	A96 $N + S; N + S_2Cl_2$	E	300 K	Nural, H.-; Vogl, Y.; Ohi, K.; Tanaka, I. Chemiluminescence of NS radical produced by the reaction of active nitrogen with sulfur vapor and sulfur chloride. Chem. Phys. Lett. 61, 513 (1979) Japan
2931	A11 $NH_2^+ + H_2$	E	300 K	Yamato, F.; Ishimizu, Y.; Kawanishi, M.; Ohi, K.; Tanaka, I. State-selected fluorescence lifetimes and collisional quenching rates of NH_2^+ (A^1A' double prime). Chem. Phys. Lett. 61, 518 (1979) Japan
2932	M90 $h\nu + HCN$	E	123 nm	Borunovskii, A. P. The fluorescence spectrum of $NCH(A^1\Pi \rightarrow A^1\Sigma^+ \text{ double prime} + X^1\Pi \rightarrow X^1\Sigma^+)$ using ArF laser excitation. Chem. Phys. Lett. 61, 532 (1979) United States
2933	A17 $H + H$	T	Underf	Kufri, D. Modified Morse function fitting procedure for diatomic potentials. Chem. Phys. Lett. 61, 538 (1979) Israel
2934	A14 $C + H_2O$	E	300 K	Costes, H.-; Berthe, G.; Bastrin, P. Vibrational distribution in $CH(A^1\Pi \text{ sub } 1)$ from the reaction $C + H_2O \rightarrow CH + HO$. Chem. Phys. Lett. 61, 548 (1979) France
2935	A17 $H^+ + HF; H + HF^+$	T	Underf	Acou, R. D. An ab initio potential energy surface for the reaction between hydrogen fluoride and the hydride ion. Chem. Phys. Lett. 61, 557 (1979) United Kingdom
2936	A13 $H_2^+ + H_2 + He$	E	100-300 K	Alamo, R. G.; Smith, D.; Lister, D. G.; Renshaw, A. B.; Tully, H. D. A further study of the ternary association reaction $H_2^+ + H_2 + He \rightarrow H_3^+ + He$. Chem. Phys. Lett. 61, 608 (1979) United Kingdom
2937	A17 $Ar + Ar; Ar + Ar_2$	T	Underf	Baudry, J. P.; Navaro, O.; Berreault, M. Use of pseudopotentials for the analysis of the non-additivity of short-range intermolecular interactions. Chem. Phys. Lett. 62, 25 (1979) Mexico
2938	D10 $H_2 + Fe$	T	Underf	Parviz, G. B., III; Welton, G., Jr. Model potential for the interaction of molecules with amorphous surfaces. Chem. Phys. Lett. 62, 42 (1979) United States
2939	E92 $e + HCl; e + HBr$	E	0.25-1.15 eV	McCher, D.; Hasted, J. B. Low-lying resonant states in HCl and HBr . Chem. Phys. Lett. 62, 86 (1979) United Kingdom
2940	A10 $SO_2 + SC_2$	T	300-2000 K	Chalapetti Rao, Y. V. Vibrational relaxation in SO_2 . Chem. Phys. Lett. 62, 107 (1979) India
2941	M90 $h\nu + CO^+$	E	Underf	Brown, R. D.; Godfrey, P. D.; Crafts, J. G.; Hinkov, Z.; Vaccani, S. Molecular ion fluorescence excitation spectrum from an ion beam. Chem. Phys. Lett. 62, 156 (1979) Australia
2942	M96 $2He + He_2$	E	5500-6000 A°	Herrmann, A.; Hefmann, H.; Lentzner, S.; Schumacher, E.; Wente, L. Optical spectroscopy of He_2 by two-photon ionization in a supersonic molecular beam. Chem. Phys. Lett. 62, 216 (1979) Switzerland
2943	A10 $Li^+ + H_2; Li^+ + CO$	T	6.2-7.1 eV	Nieha, D. A.; Villalonga, E.; Tonnies, J. P. Rotational-vibrational energy transfer in collisions of Li^+ with H_2 and CO in the 1-10 eV range. Chem. Phys. Lett. 62, 230 (1979) United States
2944	A17 $Li^+ + Ar$	T	Underf	Olsen, R. E.; Lin, S. Interaction potential for the $X^1\Sigma$ state of $Li^+ + Ar$. Chem. Phys. Lett. 62, 242 (1979) United States
2945	M96 $h\nu + H_2$	T	304 A°	Ishikawa, Y. Vibrational-state dependence of the intensity and angular distribution of photoelectrons from H_2 at the impact of 304 A° line. Chem. Phys. Lett. 62, 261 (1979) Japan

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2946	NO hv + NO	E	3360-3950 Å	Anderson, B. R.; Cresley, D. R. Laser-excited fluorescence in the A-X system of NO. Chem. Phys. Lett. 62, 275 (1979) United States
2947	NO Ar + N ₂ Ar + N ₂	E	750-12200 K	Sanctuary, S. C. Energy dependence of rotational cross sections. Chem. Phys. Lett. 62, 278 (1979) Canada
2948	NO NO ⁺ + NO	E	300 K	Hutt, G. F.; Hayden, S. C.; McIntosh, A. I. Measurement of electronic quenching rates in nitric oxide using two-photon spectroscopy. Chem. Phys. Lett. 62, 462 (1979) Australia
2949	NO e + NO	E	0-40 eV	Nishiyama, I.; Kadow, T.; Kuchitsu, K. Formation of CH(X ¹ Σ ⁺) by the electron impact dissociation of NO. Measurements near threshold. Chem. Phys. Lett. 62, 462 (1979) Japan
2950	NO NO ⁺ + Cl ₂	E	300 K	Wodarczyk, F. J.; Marner, A. D. Molecular modulation study of the reaction of NO(Σ ⁺ P ₁) with Cl ₂ . Chem. Phys. Lett. 62, 529 (1979) United States
2951	NO Xe + Xe	E	13-16 eV	Buck, W.; Mattern, L.; Post, D.; Neebe, D. Ultraviolet emission in Xe + Xe collisions near threshold. Chem. Phys. Lett. 62, 542 (1979) West Germany
2952	NO Cd ⁺ + N ₂ ; Cd ⁺ + O ₂ ; Cd ⁺ + H ₂ ; Cd ⁺ + CO; Cd ⁺ + CO ₂	E	300 K	Breckenridge, V. W.; Bonavent, B. J.; Reine, G. K. Laser excitation of Cd (Σ ⁺ P ₁). Absolute quenching cross sections and branching ratios for the processes: Cd (Σ ⁺ P ₁) + N ₂ , Cd (Σ ⁺ P ₁) + O ₂ , Cd (Σ ⁺ P ₁) + H ₂ , Cd (Σ ⁺ P ₁) + CO. Chem. Phys. Lett. 62, 608 (1979) United States
2953	NO N + HCl; N + HBr; N + HI	E	Undef	Schwein, U.; Toennies, J. P. Determination of the van der Waals potential of N-HCl, -HBr and -HI from resolved orbiting resonance maxima in very low energy scattering. Chem. Phys. Lett. 63, 17 (1979) West Germany
2954	NO hv + NO ⁺	T	4751-3925 Å	Uzer, T.; Balgarni, A. The photodissociation of NO ⁺ through absorption into shape resonances of the A ¹ Σ ⁺ state. Chem. Phys. Lett. 63, 22 (1979) United States
2955	NO Na ⁺ + Ar	E	Undef	Sisko, P. E. An improved scattering potential for Na ⁺ (2 ² S) + Ar. Chem. Phys. Lett. 62, 25 (1979) United States
2956	NO hv + CuCl; hv + Cu ₂ O	E	1487 eV	Scrocco, N. Satellite structure in the x-ray photoelectron spectra of CuCl and Cu ₂ O. Chem. Phys. Lett. 63, 52 (1979) Italy
2957	NO hv + BaCl ₂ ; hv + BaBr ₂ ; hv + BaI ₂	E	54 eV	Lee, E. P. F.; Potts, A. V. The NaI x photoelectron spectra of the barium halides. Chem. Phys. Lett. 63, 61 (1979) United Kingdom
2958	NO PH ⁺ + N ₂ ; PH ⁺ + O ₂ ; PH ⁺ + CO; PH ⁺ + NO; PH ⁺ + H ₂	E	300 K	Lenzi, M.; Margani, A.; Nguyen Xuan, C.; di Stefano, G. Collisional deactivation of PH(b ¹ Σ ⁺) by some diatomic molecules. Chem. Phys. Lett. 62, 86 (1979) Italy
2959	NO CS ⁺ + O ₂ ; CS ⁺ + CO NO hv + CS	E T	All 300 K	Mynes, A. J.; Brophy, J. M. Laser-induced fluorescence study of radiative lifetimes and quenching rates in CS A ¹ Σ ⁺ (v=0). Chem. Phys. Lett. 62, 53 (1979) United Kingdom
2960	NO Cl ⁺ + CO	E	2-18 eV	Freese, L. C.; Pearl, P. L.; Keph, V. S. Cross section for the reaction Cl ⁺ (CO,0)CCl ⁺ : heat of formation of CCl ⁺ . Chem. Phys. Lett. 63, 101 (1979) United States
2961	NO F + N ₂	T	3.3-0.0 eV	Redmon, M. J.; Byatt, R. E. Quantum resonance structure in the three-dimensional F + N ₂ reaction. Chem. Phys. Lett. 63, 249 (1979) United States

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2962	A10 $F + H_2$	T	0.41-0.83 eV	DeVries, P. L.; George, T. F. On the interweaving of partial cross sections of different parity. <i>Chem. Phys. Lett.</i> 63, 240 (1979) United States
2963	A02 $H^+ + Ca$ A10 $H^+ + Ca$	T	13.4-24.2 eV	El Maddouri, B.; Valance, A. Differential elastic cross-section calculation of H^+ ion on Ca target using uniform and transitional approximations. <i>Chem. Phys. Lett.</i> 63, 243 (1979) France
2964	A06 $H^+ + Ca$ A10 $H^+ + Ca$	T	25 eV	Valance, A.; El Maddouri, B. Application of semiclassical theory of inelastic scattering to $H^+ + Ca + H(2s) + Ca^+$. <i>Chem. Phys. Lett.</i> 63, 247 (1979) France
2965	A10 $HBr + CO_2; HBr + H_2O$	E	300-900 K	Smoot, B.; Boyenette, L.; Margottin-Maclou, H.; Chabreau, A.; Henry, L. Temperature dependence of vibration-vibration energy transfer in $HBr-CO_2$ and $HBr-H_2O$ systems. <i>Chem. Phys. Lett.</i> 63, 251 (1979) France
2966	M06 $h\nu + H_2$	E	304 Å	Estimote, S.; Schibe, Y.; Kinuro, K. Angular distribution of Hall photoelectron spectra of H_2 . <i>Chem. Phys. Lett.</i> 63, 281 (1979) Japan
2967	A10 $H + F_2$	T	330 K	Kersch, H. J. On the forced harmonic oscillator model for γ -T energy transfer in triatomic reactions. <i>Chem. Phys. Lett.</i> 63, 297 (1979) West Germany
2968	A06 $K + Cl$ A07 $K + Cl$	T	15-60 eV	Ghade, S. Measurements of energy loss spectra in the ion-pair formation reaction for the $K + HCl$ system. <i>Chem. Phys. Lett.</i> 63, 322 (1979) Japan
2969	A03 $Ar + H_2$ A04 $Ar + H_2$ A11 $Ar + H_2$	T	4500 K	Truhlar, D. G.; Biale, R. C.; Vajda, J.-C. J.; Kiefer, J. H. Monte Carlo trajectory study of $Ar + H_2$ collisions: master-equation simulation of a 4500 K shock wave experiment with thermal rotation. <i>Chem. Phys. Lett.</i> 63, 337 (1979) United States
2970	M02 $h\nu + XeCl; h\nu + XeI; h\nu + XeBr$ M10 $h\nu + Cl_2 + Kr; h\nu + Cl_2 + Xe; h\nu + Br_2 + Xe; h\nu + I_2 + Fe$	E	M02 320-220 nm M10 337 nm	Shostak, S. L.; Strong, A. L. Transient absorption following flash photodissociation of halogens in rare gases. <i>Chem. Phys. Lett.</i> 63, 370 (1979) United States
2971	A14 $OH + HBr$	E	249-416 K	Ravishankar, A. R.; Vine, P. M.; Langford, A. G. Absolute rate constant for the reaction $OH + HBr \rightarrow H_2O + Br$. <i>Chem. Phys. Lett.</i> 63, 475 (1979) United States
2972	A11 $F + H_2$	T	0.004-0.09 eV	Wyatt, R. E. Quantum mechanical study of $F(^2P_{3/2}) + H_2(j\sigma C)$ quenching: the role of virtual orbitals mixing. <i>Chem. Phys. Lett.</i> 63, 482 (1979) United States
2973	M05 $h\nu + Ca_2$	E	633 nm	Kramling, E. K.; Popernov, A. N.; Jonson, M. L. He-Ne 632.8 nm radiation-induced disintegration of cesium dimer. <i>Chem. Phys. Lett.</i> 63, 631 (1979) Soviet Union
2974	A17 $He + He; Ar + Ar; Kr + Kr; Xe + Xe; Hg + Hg$	T	Undef	Clugston, W. J.; Pyper, N. C. A cooperative study of Gordon-Kim interatomic potential theory variants: application to the inert gases and mercury. <i>Chem. Phys. Lett.</i> 63, 649 (1979) United Kingdom
2975	M08 $h\nu + CS_2$	E	5145-6800 Å	Shankar, N. D.; Zambello, L.; Novak, R.; Happer, W. Laser-excited green fluorescent emission from cesium molecules. <i>Chem. Phys. Lett.</i> 63, 666 (1979) United States
2976	D05 $h\nu + Pd; h\nu + Au; h\nu + Au + Pd + Quartz$	E	uv	Slomov, K.; White, J.; Christopher, L. G.; Carter, I. G. Photoelectron injection in gases from thin metal films on quartz. <i>Chem. Phys. Lett.</i> 63, 660 (1979) United States
2977	M04 $h\nu + H_2$ M05 $h\nu + H_2$	E	841-771 Å	Glass-Maujean, N.; Bruton, J.; Guyon, P. H. A femo-profile study of the predissociation of the $3p\pi B^{11}(sub u)^0$ state of H_2 . <i>Chem. Phys. Lett.</i> 63, 661 (1979) France

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
2978	MS6 $Wf_0 + Cu; Wf_0 + Cu$ MS7 $Wf_0 + Cu; Wf_0 + Cu$	E	27 JV	Stockdale, J. A. D.; Vernack, R. J.; Compton, R. H. Collisional ionization of atomic cesium by Wf_0 and Wf_{0+} . Chem. Phys. Lett. 63, 621 (1975) United States
2979	MS6 $Br + Pd; Br + Xe$	E T	0-10 Ry	Amusia, R. Y. The manifestation of intershell interactions in the process of atomic photoionization. Comments At. Mol. Phys. 8, 61 (1979) Soviet Union
2980	ES3 $e + Na; e + Li$ ES7 $e + H; e + Li$	E T	25-100 eV	Winters, K. R. Higher-order distorted-wave methods. Comments At. Mol. Phys. 8, 93 (1979) United Kingdom
2981	ES6 Review	E T	Under	Stern, E. A. Atomic structure determination by x-ray absorption. Contemp. Phys. 19, 289 (1979) United States
2982	ES2 Review MS6 Review MS6 Review	E T	Under	Williams, R. R. Electron spectroscopy of surfaces. Contemp. Phys. 19, 309 (1979) United Kingdom
2983	MS2 Review MS4 Review ES6 Review	E T	Under	Commins, J. P. The non-Dysonian spectroscopy of atoms. Contemp. Phys. 19, 411 (1979) United Kingdom
2984	ES3 Review	E T	Under	Stenholm, S. Laser-induced multiphoton transitions. Contemp. Phys. 20, 37 (1979) Finland
2985	GS7 $Hg + Ar; Hg + Kr; Hg + Xe$	E T	50-250 eV	Partlow, W. D.; Kline, L. E. Prebreakdown discharges in mercury-rare-gas mixtures. J. Appl. Phys. 50, 1230 (1979) United States
2986	D17 $e + WO_3; e + Ta_2O_5$	E	3 keV	Lin, T. Y.; Lichtman, D. The effects of electron bombardment on the surface composition of WO_3 , oxidized b and Ta foil. J. Appl. Phys. 50, 1206 (1979) United States
2987	MS5 $Br + Si$	E	1.0-2.4 eV	Shahriary, I.; Schwach, J. D.; Allen, F. C. Energy loss and escape depth of hot electrons from shallow p-n junctions in silicon. J. Appl. Phys. 50, 1420 (1979) United States
2988	MS4 $H^+ + Cu; C^{2+} + Cu; C^{3+} + Cu; C^{4+} + Cu$	E	15-150 keV/2	Beccaro, R.; Ripin, B. W. Secondary-electron emission by energetic ions incident on metal surfaces. J. Appl. Phys. 50, 1503 (1979) United States
2989	MS2 $Ar + Si; Xe + Si$ MS7 $Rn + Si$	E	MS2 15-540 keV MS7 150-250 keV	Black, P.; Wittwerch, K. Energy and fluence dependence of the sputtering yield of silicon bombarded with argon and xenon. J. Appl. Phys. 50, 1615 (1979) West Germany
2990	ES3 $e + Ca$	E	20-300 eV	Ugrin, S. V. Spectroscopic investigation of excitation of $3p^4$ subshell of calcium atoms by electron impact. J. Appl. Spectrosc. 29, 860 (1975) Soviet Union
2991	ES8 $e + N_2$	T	62-120 Td	Golubovskii, Y. D.; Florke, A. V. Discharge parameters in nitrogen at moderate pressures. J. Appl. Spectrosc. 29, 902 (1979) Soviet Union
2992	MS3 Under MS8 Under	T	Under	Aponosovich, P. A.; Kilin, S. V. Pulitine correlation in scattering and fluorescence. J. Appl. Spectrosc. 29, 931 (1979) Soviet Union
2993	MS6 $Br + O_2^-$ MS6 $Br + O_2^-$ MS7 $Br + O_2^-$	E	6400-6400 Å	Novich, S. L.; Engelking, P. C.; Jones, P. L.; Petrelli, J. H.; Linberger, V. C. Laser photoelectron, photoionization, and photodestruction spectra of O_2^- . J. Chem. Phys. 79, 2662 (1975) United States

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2994	E92 $e + H_2$	T	0-100 eV	Ritchie, B. Electron-molecule scattering in momentum space. <i>J. Chem. Phys.</i> 70, 2643 (1979) United States
2995	A10 $H^+ + HF$	T	300-3100 K	Bluhme, R. L. Mechanism of energy transfer in the deuteron fluorine system. <i>J. Chem. Phys.</i> 70, 2700 (1979) United States
2996	A17 $C + O$	T	Underf	Buffahar, J. W. Extended accuracy for analytic model potentials for diatomic molecules. <i>J. Chem. Phys.</i> 70, 2720 (1979) United States
2997	A17 $H_2^+ + He$	T	Underf	McLaughlin, B. R.; Thompson, D. L. Ground- and lower excited-state diabatic adiabatic electronic potential-energy surfaces for diatomic $H_2H_2^+$. <i>J. Chem. Phys.</i> 70, 2740 (1979) United States
2998	B11 $H_2 + Pt$	E	25-800 K	Salmann, H.; Gale, R. J.; Somorjai, G. A. A detailed molecular beam study of the mechanism of the H_2-Pt exchange reaction on Pt(111) and Pt(332) crystal surfaces. <i>J. Chem. Phys.</i> 70, 2807 (1979) United States
2999	H06 $He + Xe$ H10 $He + Xe$	E	127-112 nm	Margoni, A.; Nguyen Lam, C.; di Stefano, G.; Lenzi, R. Pressure dependence of near Sp emissions in vacuum ultraviolet irradiated Xe. <i>J. Chem. Phys.</i> 70, 2871 (1979) Italy
3000	A06 $H_2^+ + H; HeH^+ + H; CH_2^+ + H; D_2^+ + H; CO_2^+ + D; CO^+ + D; H_2^+ + D; HCN^+ + D$ A13 $H_2^+ + H; HeH^+ + H; CH_2^+ + H; D_2^+ + H; CO_2^+ + D; CO^+ + D; H_2^+ + D; HCN^+ + D$	E	300 K	Karpas, Z.; Anich, V.; Montross, V. T., Jr. An ion cyclotron resonance study of reactions of ions with hydrogen atoms. <i>J. Chem. Phys.</i> 70, 2877 (1979) United States
3001	H06 $He + Br_2$	E	511-634 nm	Lindemann, T. G.; Viennefeld, J. E. Photodissociation of Br_2 in the visible continuum. <i>J. Chem. Phys.</i> 70, 2842 (1979) United States
3002	A17 $H + CD$	T	Underf	Tanaka, K.; Davidson, E. R. A theoretical study on the potential surfaces of the lower electronic states of HCD. <i>J. Chem. Phys.</i> 70, 2804 (1979) United States
3003	H06 $He + O_2; He + NO; He + ICl; He + IBr; He + I_2$	E	7-16 eV	Elmad, J. H. B. Angular distributions, energy disposal, and branching studied by photoelectron-photoion coincidence spectroscopy: O_2^+ , NO^+ , ICl^+ , IBr^+ , and I_2^+ fragmentation. <i>J. Chem. Phys.</i> 70, 2826 (1979) United States
3004	A04 $Ar + H_2$	T	4500 K	Diels, H. C.; Truhlar, D. G. Monte Carlo trajectory study of $Ar + H_2$: vibrational selectivity of dissociative collisions at 4500 K and the characteristics of dissociation under equilibrium conditions. <i>J. Chem. Phys.</i> 70, 2862 (1979) United States
3005	A03 $He + CD$	T	820 1/cm	Thomas, L. B. Solution of the coupled equations of inelastic atom-molecule scattering for a single initial state. <i>J. Chem. Phys.</i> 70, 2975 (1979) West Germany
3006	A02 $F + He; F + Ar; F + Kr$ A17 $F + He; F + Ar; F + Kr$ A10 $F + He; F + Ar; F + Kr$	E, T	2-13 kcal/mol	Bucher, C. R.; Casavacchio, P.; Lee, Y. T. Crossed molecular beam studies on the interaction potentials for $F(^4P) + He, Ar, Kr(^1S)$. <i>J. Chem. Phys.</i> 70, 2906 (1979) United States
3007	A10 $HCl + HCl; HCl + HF; HCl + HI; HCl + HBr$	T	300 K	Yorfa, A. F.; Marcus, R. A. Rotational energy transfer in hydrogen halide molecules at supersonic beam velocities. <i>J. Chem. Phys.</i> 70, 3025 (1979) United States

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3008	A10 $D + HD_r$	T	0-1.0 eV	Jolicard, G. The influence of the phase shift on the vibration energy transfer for a collision between an atom and a highly asymmetric diatomic molecule. <i>J. Chem. Phys.</i> 70, 3062 (1979) France
3009	A17 $He + He$	T	Under	Barton, P. C. Design of basis sets for precise intermolecular force computation. Investigation of the He_2 potential curve using CEPA-V50 correlated wavefunctions. <i>J. Chem. Phys.</i> 70, 3112 (1979) Australia
3010	A11 $I_2^+ + He$	E	0-100 cm ⁻¹	Yano, J.; Saito, R.; Sato, S. A. Low energy collisional relaxation of I_2^+ in He: evidence for resonance enhanced vibrational deactivation. <i>J. Chem. Phys.</i> 70, 3126 (1979) United States
3011	W08 $h\nu + Cu + Xe$ W10 $h\nu + Cu + Xe$	E	1.1-0.7 μ	Benedict, R. P.; Drummond, B. L.; Schile, L. A. Fluorescence spectra and kinetics of Cu_2^+ . <i>J. Chem. Phys.</i> 70, 315 (1979) United States
3012	A10 $Ar^+ + N_2$	E T	0.06-0.61 eV	Cutshall, E. R.; Moschitz, E. E., Jr. Transfer of electronic excitation in collisions of metastable argon atoms with nitrogen molecules. <i>J. Chem. Phys.</i> 70, 3171 (1979) United States
3013	A19 $F + Xe; F + N^+$	T	0.32-1.0 eV	McCarthy, C. M.; Meyer, R. B.; Miller, W. R. Classical model for electronic degrees of freedom in nonadiabatic collision processes: pseudopotential analysis and calculations for $F(^2P_{3/2}) + N^+$, $He + F(^2P_{3/2}) + N^+$, He . <i>J. Chem. Phys.</i> 70, 3177 (1979) United States
3014	A17 $F + F$ W02 $h\nu + F_2$	T	A17 Under W02 510-150 nm	Cartwright, B. C.; May, P. J. Theoretical study of the valence electronic states and the $^1\sigma$ (sub a) cooling from 1^1I (sub g) absorption spectrum of the F_2 molecule. <i>J. Chem. Phys.</i> 70, 3191 (1979) United States
3015	W05 $h\nu + Cl_2^-; h\nu + ClO^-; h\nu + Cl_2^-; h\nu + BrCl_2^-$ W07 $h\nu + Cl_2^-; h\nu + ClO^-; h\nu + Cl_2^-; h\nu + BrCl_2^-$	E	7600-3500 Å	Lee, L. C.; Smith, G. P.; Rowley, J. T.; Cooby, P. C.; Goss, J. A. Photodissociation and photostretching of Cl_2^- , ClO^- , Cl_2^- and $BrCl_2^-$. <i>J. Chem. Phys.</i> 70, 3237 (1979) United States
3016	A11 $Ar_2^+ + Kr; Ar_2^+ + Xe; Ar_2^+ + N_2; Ar_2^+ + R_2; Ar_2^+ + CO; Ar_2^+ + O_2; Ar_2^+ + H_2O; Ar_2^+ + SF_6; Ar_2^+ + N_2O; Ar_2^+ + CH_4; Ar_2^+ + C_2H_2$	E	33° K	Kogoma, M.; Isumura, R.; Arai, S.; Matsuda, T. Energy transfer of argon excited diatomic molecules. <i>J. Chem. Phys.</i> 70, 3304 (1979) Japan
3017	A10 $He + N_2^+$	T	0.6-1.6 eV	Seccombe, B.; Lin, C. S. On the rotational energy sudden approximation in vibrationally inelastic collisions. <i>J. Chem. Phys.</i> 70, 3428 (1979) United States
3018	A11 $O_2 + O; O_2 + O_2$	E	333 K	Slanger, T. G.; Black, G. Interactions of O_2 (b $^1\Sigma$ sub g) with $O(^3P)$ and O_2 . <i>J. Chem. Phys.</i> 70, 3434 (1979) United States
3019	W06 $z + Ar$	T	Under	Vervaeke, P.; Terrier, M. Influence of inelastic collisions between excited states on the electron energy distribution in argon. <i>J. Chem. Phys.</i> 70, 3463 (1979) France
3020	W02 $h\nu + Ar_2^+; h\nu + ArKr^+; h\nu + Kr_2^+$	E	320-290 nm	West, J. B.; Long, V. M., Jr. Ultraviolet absorption by diatomic rare gas ions in a-beam excited plasmas. <i>J. Chem. Phys.</i> 70, 3467 (1979) United States
3021	W02 $h\nu + TiH; h\nu + ZrH; h\nu + HfH$	E	600-1050 cm ⁻¹	DeVore, T. C.; Gallaher, T. M. The vibrational infrared spectrum of the group IV transition metal nitride gaseous molecules. <i>J. Chem. Phys.</i> 70, 3497 (1979) United States
3022	A14 $F + H_2$	T	0.300-0.375 eV	Hutchinson, J. F.; Wyatt, R. E. Detailed dynamics of collinear $F + H_2$ trajectories. <i>J. Chem. Phys.</i> 70, 3609 (1979) United States

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3023	886 $He + He^+$ 886 He^+	E	886 300 K	Baiting, E. J.; Hildebrandt, G. F.; Kellert, F. G.; Foltz, G. W.; Smith, K. A.; Burning, F. B.; Stobbings, R. F. The effects of 300 K background radiation on Rydberg atoms. <i>J. Chem. Phys.</i> 70, 3561 (1979) United States
3024	882 $He + Br_2$	E	616-570 nm	Rosenway, C. P.; Lindeman, T. G.; Hilsenfeld, J. R. Measurement of the $A^2\Pi$ (sub 1/2) cooling from $X^1\Sigma$ (sub g) ⁺ continuum absorptivity in Br_2 . <i>J. Chem. Phys.</i> 70, 3560 (1979) United States
3025	811 $N + Cu; N^+ + Cu$	E	300 K	Tibbatts, G. G. Electronically activated chemisorption of nitrogen on a copper (100) surface. <i>J. Chem. Phys.</i> 70, 3680 (1979) United States
3026	885 Underf	T	Underf	Morse, N. D.; Freed, K. F.; Sand, Y. B. Rotational distributions from photodissociation: I. Linear triatomic molecules. <i>J. Chem. Phys.</i> 70, 3684 (1979) United States
3027	885 $He + ICH$	T	290-220 nm	Morse, N. D.; Freed, K. F.; Sand, Y. B. Rotational distributions from photodissociation: II. Results for $ICH + He \rightarrow I + CH(I^2\Pi^+)$. <i>J. Chem. Phys.</i> 70, 3620 (1979) United States
3028	807 $He + LiF; He + V$	T	$0.05-10^6$ eV	Lee, H. W.; George, T. F. High-energy approximation for atom-surface elastic scattering. <i>J. Chem. Phys.</i> 70, 3685 (1979) United States
3029	A17 $H + H_2$	T	Underf	Varandas, A. J. C. A LEPS potential for H_2 from force field data. <i>J. Chem. Phys.</i> 70, 3584 (1979) Portugal
3030	A17 $O_2 + O_2; O_2 + Ar$	T	Underf	Hingulgrin, U.; Gordon, R. G. The interaction potential and the determination of some cross sections and spectra of pure O_2 and O_2 -Ar gas mixtures. <i>J. Chem. Phys.</i> 70, 3628 (1979) United States
3031	A14 $C_2 + NO$	E	2500 K	Krauss, R. F. A carbon reaction studied by crossed molecular beams. <i>J. Chem. Phys.</i> 70, 3671 (1979) United States
3032	A17 $He + I_2$	T	0-1 eV	Donich, J. A.; Delgado-Barrio, C.; Jortner, J. Vibrational predissociation lifetimes of the van der Waals molecule HeI_2 . <i>J. Chem. Phys.</i> 70, 3095 (1979) France
3033	A14 $Cl + HD$	T	4-16 kcal/mol	Parshy, A. Quasiclassical trajectory studies of the chlorine-hydrogen system: III. Branching ratio, energy partitioning, and angular distribution in the reaction of Cl atoms with HD. <i>J. Chem. Phys.</i> 70, 3910 (1979) Israel
3034	G86 $Cl^- + He; Cl^- + Ar; Cl^- + Kr$	E	0-10 eV	Thackston, M. G.; Elieul, F. L.; Pope, W. M.; Ellis, H. W.; Gatland, I. R.; McDaniels, E. W. Mobility of Cl^- ions in He, Ar, and Kr. <i>J. Chem. Phys.</i> 70, 3094 (1979) United States
3035	A86 $Ne^+ + O_2; Ar^+ + O_2$	E	300 K	Mandaleira, G.; Beral, R.; Fenistein, S.; Razi, R. Energy disposal in thermal-energy charge transfer reactions determined by kinetic energy measurements of product ions: $Ne^+ + O_2 \rightarrow O^+ + C + He$ and $Ar^+ + O_2 \rightarrow C_2^+ + Ar$. <i>J. Chem. Phys.</i> 70, 4017 (1979) France
3036	A86 $Ne^+ + O_2; O^+ + O_2$	E	0.04-0.3 eV	Mandaleira, G.; Beral, R.; Fenistein, S.; Razi, R.; Joannson, R. Thermal energy charge transfer from Ne^+ to O_2 : kinetic energy, nature, and reactivity of the O^+ product ions. <i>J. Chem. Phys.</i> 70, 4023 (1979) France
3037	E82 $e + H_2$	T	13.6 eV	Munich, J. R.; Truhlar, D. G. Low-energy electron-molecule scattering: comparison of coupled channel treatments of $e^- H_2$ scattering at 13.6 eV using various approximations to the static and exchange potentials and an approximate polarization potential. <i>J. Chem. Phys.</i> 70, 4101 (1979) United States

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3038	B07 $H + H_2; H + LiF$	T		Light, J. C.; Altenburger-Siczek, A. Laser-collision induced chemical reactions: collinear exchange reaction model on two electronic surfaces. <i>J. Chem. Phys.</i> 70, 4108 (1979) United States
3039	A10 $BF^+ + D_2; BF^+ + H_2; BF^+ + N_2; BF^+ + HF; BF^+ + CO_2$	E	295 K	Bott, J. F. Vibrational relaxation of BF^+ ($v=1-4$) in D_2, H_2, N_2, HF , and CO_2 . <i>J. Chem. Phys.</i> 70, 4123 (1979) United States
3040	A03 $Na_2^+ + Xe$ A11 $Na_2^+ + Xe$	E	300 K	Brenner, T. A.; Driver, R. B.; Smith, W.; Pritchard, D. E. Rotational energy transfer in $Na_2^+ - Xe$ collisions: level to level dynamics. <i>J. Chem. Phys.</i> 70, 4156 (1979) United States
3041	A11 $ICl^+ + ICl; ICl^+ + He$	E	293 K	Harris, S. J.; Batzle, W. C.; Moore, C. B. Zero pressure lifetimes and fluorescence quenching of $ICl(A^2\Pi_g)$. <i>J. Chem. Phys.</i> 70, 4215 (1979) United States
3042	B07 $He + H$	T		Lee, R. W.; George, T. F. Energy transfer in gas-surface scattering in the presence of a laser field. <i>J. Chem. Phys.</i> 70, 4220 (1979) United States
3043	A14 $H + H + H_2$	E	300 K	Yamashita, T. Rate of recombination of nitrogen atoms. <i>J. Chem. Phys.</i> 70, 4240 (1979) Japan
3044	A07 $He^+ + Xe$	E	0.01-10 eV	Reynolds, R. M.; Tong, S. Y. Chem-ionization in collisions of metastable neon with xenon. <i>J. Chem. Phys.</i> 70, 4272 (1979) United States
3045	A17 $He + He$	T	Under	Aziz, R. A.; Main, V. P. S.; Corley, J. S.; Taylor, W. L.; McConville, G. T. An accurate intermolecular potential for helium. <i>J. Chem. Phys.</i> 70, 4 (1979) Canada
3046	B07 $H + H_2; F + H_2; Cl + H_2$ M10 $hv + H + H_2; hv + F + H_2; hv + Cl + H_2$	T	M10 Under	Orel, A. E.; Miller, V. M. Infrared laser enhancement of chemical reactions via collision induced absorption. <i>J. Chem. Phys.</i> 70, 4393 (1979) United States
3047	D10 $He + C; Ar + C; Kr + C; Xe + C$	T	Under	Rybicki, T. R.; Pierotti, R. A. Rare gas-graphite interaction potentials. <i>J. Chem. Phys.</i> 70, 4413 (1979) United States
3048	A07 $Li^+ + F_2; Li^+ + Cl_2; Li^+ + NO_2$	E	300 K	Marshall, R. P., Jr. Collisional ionization of electronically excited lithium. <i>J. Chem. Phys.</i> 70, 4420 (1979) United States
3049	M05 $hv + TlI$	E	256 nm	Sinha, N. P.; Su, R. T.; Riley, S. J. Photofragment spectroscopy and assignment of excited states of thallium iodide. <i>J. Chem. Phys.</i> 70, 4431 (1979) United States
3050	A17 $Li + Li$ M02 $hv + Li_2$ M08 $hv + Li_2$	E	A17 Under M02; M08 6500-4800 Å	Hessel, R. M.; Vidal, C. R. The $B^1\Sigma^+ - X^1\Sigma^+$ band system of the Li_2 molecule. <i>J. Chem. Phys.</i> 70, 4439 (1979) United States
3051	E03 $e + H_2; e + D_2; e + N_2; e + CO; e + CO_2; e + HF; e + He; e + Ar; e + Kr; e + Xe$ E04 $e + H_2; e + D_2; e + N_2; e + CO; e + CO_2$	E	E03 0-300 eV E04 100 eV	Schiavone, J. A.; Tarr, S. R.; Freund, R. L. High-Rydberg atomic fragments from electron-impact dissociation of molecules. <i>J. Chem. Phys.</i> 70, 4448 (1979) United States
3052	M07 $hv + Co^+; hv + Ni^+$	E	488 nm	Corderman, R. R.; Engelking, P. C.; Lindeberg, W. C. Laser photoelectron spectroscopy of Co^+ and Ni^+ . <i>J. Chem. Phys.</i> 70, 4474 (1979) United States

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3053	A17 $C^- + H$	T	Undef	Taylor, P. R.; Bacskay, G. B.; Nash, M. S.; Hurley, A. C. Unlinked cluster effects in molecular electronic structure II. Potential curve for the CH^- ion and the adiabatic electron affinity of CH . J. Chem. Phys. 70, 4481 (1979) Australia
3054	A14 $F + H_2$; $F + D_2$	E	295 K	Heidner, R. F., III; Bott, J. E.; Gardner, C. E.; Melzer, J. E. Absolute rate coefficients for $F + H_2$ and $F + D_2$ at $T = 295$ K. J. Chem. Phys. 70, 4509 (1979) United States
3055	A03 $I + Br$	T	3700-100 1/cm	Chang, A. H.; Pritchard, D. E. Effects of interatomic attraction on total cross sections in curve crossing collisions. J. Chem. Phys. 70, 4524 (1979) United States
3056	M05 $hv + Ar_2^+$	E	715-265 nm	Rose, T. L.; Katayama, D. M.; Bulst, J. A.; Paulson, J. F. Photodissociation of vibrationally excited Ar_2^+ formed by associative ionization. J. Chem. Phys. 76, 4542 (1979) United States
3057	A17 $H + H$; $H + H^+$ M05 $hv + H_2$ M06 $hv + H_2$	T	25-37 eV	Kirby, K.; Cushman, S.; Daigarn, A. Resonant dissociative photoionization of H_2 . J. Chem. Phys. 70, 4635 (1979) United States
3058	A10 $I^+ + H_2$; $I^+ + HD$; $I^+ + D_2$	E	300 K	Grimley, A. J.; Houston, P. L. Electronic to vibrational energy transfer from $I(^5P_{1/2})$ to H_2 , HD , and D_2 . J. Chem. Phys. 70, 4724 (1979) United States
3059	A17 $Ar + Kr$	T	Undef	Aziz, R. A.; Presley, J.; Buck, U.; Schluessener, J. An accurate intermolecular potential for $Ar-Kr$. J. Chem. Phys. 70, 4737 (1979) Canada
3060	A10 $Zn^+ + NO$	E	550 K	Brackenridge, W. H.; Bickensdörfer, R. P.; Fitzpatrick, J.; Oba, D. Near-resonant electronic energy transfer: initial rotational state populations of $NO(A^2\Sigma^+, v' = 0, 1)$ produced by energy transfer from $Zn(^1P_1)$. J. Chem. Phys. 70, 4751 (1979) United States
3061	M05 $hv + O_2^+$	E	1.7-2.6 eV	McGillivray, D. C.; Morrison, J. D.; Smith, D. L. Laser induced photodissociation of O_2^+ . J. Chem. Phys. 70, 4761 (1979) Australia
3062	A14 $H + O_2$	E	299 K	Finlayson-Pitts, B. J.; Kieindienst, T. E. The reaction of hydrogen atoms with ozone: evidence for a second reaction path producing HO_2 and $O(^3P)$. J. Chem. Phys. 70, 4884 (1979) United States
3063	A14 $OH + O_2$	E	238-357 K	Ravishankara, A. R.; Wine, P. H.; Langford, A. O. *Erratum Absolute rate constant for the reaction $CH(v = 0) + O_2 \rightarrow HO_2 + O_2$ over the temperature range 238-357 K [J. Chem. Phys. 70, 984 (1979)]. J. Chem. Phys. 70, 4812 (1979) United States
3064	D03 $Mo^+ + KCICuCl$; $Ar^+ + KCICuCl$	E	0.2-3.0 keV	Monda, F.; Fukuda, Y.; Rabalais, J. W. Clustering distances critical to metal dimer formation in the secondary ion mass spectra (SIMS) of cesium chloride. J. Chem. Phys. 70, 4834 (1979) United States
3065	A04 $Ne + H_2$	T	10000 K	Lehr, T.; Birks, J. W. Monte Carlo quasiclassical trajectory study of the collision-induced dissociation of hydrogen by neon. J. Chem. Phys. 70, 4843 (1979) United States
3066	A17 $Ar + N_2$	T	Undef	Lee, S.; Kim, Y. S. Study of the $Ar-N_2$ interaction: II. Modification of the electron gas model potential at intermediate and large distances. J. Chem. Phys. 76, 4856 (1979) Korea

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3067	A89 $H^+ + H^-$; $H_2^+ + D^-$; $H_2^+ + D_2^-$; $H^+ + O^-$; $O^+ + O^-$; $He^+ + O^-$; $HO^+ + O^-$; $O_2^+ + O^-$; $HC^+ + HO_2^-$; $HO^+ + HO_2^-$	T	300 K	Nicham, A. P. Approximate scaling formula for ion-ion mutual neutralization rates. <i>J. Chem. Phys.</i> 70, 4272 (1979) United States
3068	A14 $O + N_2$	T	1-40 kcal/mol	Schinke, R.; Lester, W. A., Jr. Trajectory study of $O + N_2$ reactions on fitted ab initio surfaces. I. Triplet case. <i>J. Chem. Phys.</i> 70, 4092 (1979) United States
3069	A10 $HCl + HCl$	E	192-632 K	Horvitz, A. B.; Leone, S. R. Temperature dependence of resonant isotopic vibrational energy transfer in $H^{35}Cl-H^{37}Cl$. <i>J. Chem. Phys.</i> 70, 4916 (1979) United States
3070	D07 $He + W$; $He + WC$; $Ne + W$; $Ne + WC$; $Ar + W$; $Ar + WC$	E	298-1850 K	Bush, P. S.; Raff, L. M. Atomic beam diffraction and scattering from $A(3s5)W(110)$ -carbide surface. <i>J. Chem. Phys.</i> 70, 5026 (1979) United States
3071	A07 $He^+ + Ar$ D07 $He^+ + Ar$	T	A17 300 K	Bellus, J. C.; George, T. F. Collisional ionization in the presence of intense laser radiation: quantum-mechanical calculations for $He(^3S) + Ar$ plus or minus $\hbar\omega$; $He + Ar^+ (^2P) \rightarrow e^-$. <i>J. Chem. Phys.</i> 70, 5059 (1979) United States
3072	A14 $H_2O + D_2O$	T	300 K	Wolfsberg, H. Effect of vibrational anharmonicity on the equilibrium $H_2O + D_2O = 2 HDO$. <i>J. Chem. Phys.</i> 70, 5322 (1979) West Germany
3073	A03 $H_2 + H_2$ A11 $H_2 + H_2$	T	2000-8000 1/cm	Goldflam, R.; Kesri, D. J. On angular momentum decoupling approximations and factorization in diatom-diatom scattering. <i>J. Chem. Phys.</i> 70, 5076 (1979) United States
3074	H05 $h\nu + CS_2$; $h\nu + COS$ H06 $h\nu + CS_2$; $h\nu + COS$	E	960-630 Å	Eland, J. H. D.; Berkowitz, J. Dissociative photoionization of carbon disulphide and carbonyl sulphide. <i>J. Chem. Phys.</i> 70, 5151 (1979) United States
3075	A10 $Br^+ + H_2$; $Br^+ + HD$; $Br^+ + D_2$	E	330 K	Grimley, A. J.; Houston, P. L. Electronic to vibrational energy transfer from $Br(4^2P_{1/2})$ to H_2 , HD , and D_2 . <i>J. Chem. Phys.</i> 70, 5164 (1979) United States
3076	A14 $H + O_2$	E	298 K	Stief, L. J.; Payne, W. A.; Lee, J. H.; Michael, J. V. The reaction $H(^2S) + O_2$: an upper limit for the rate constant at 298 K. <i>J. Chem. Phys.</i> 70, 5241 (1979) United States
3077	A14 $Be + SO_2$	E	5-65 kJ/mol	Freedman, A.; Parr, T. P.; Behrens, R., Jr.; Horn, R. R. Crossed molecular beams kinetics: BeO recoil velocity spectra from spin-forbidden $Be + SO_2$. <i>J. Chem. Phys.</i> 70, 5251 (1979) United States
3078	A17 $Li + F$; $Li + Cl$; $Li + Br$; $Li + I$; $Na + F$; $Na + Cl$; $Na + Br$; $Na + I$; $K + F$; $K + Cl$; $K + Br$; $K + I$; $Rb + F$; $Rb + Cl$; $Rb + Br$; $Rb + I$	T	Undef	Shapiro, M.; Ze'evi, Y. Semimpirical potential surfaces for the alkali hydrogen-halide reactions. <i>J. Chem. Phys.</i> 70, 5264 (1979) Israel
3079	A02 $LiF + Ar$ A17 $LiF + Ar$ A10 $LiF + Ar$	E	0.3-1.9 eV	Tsao, L.-Y.; Averbach, D. J.; Wharton, L. Polarized rotationally state-selected cross sections and anisotropic intermolecular potentials for LiF on Ar . <i>J. Chem. Phys.</i> 70, 5296 (1979) United States
3080	H05 $h\nu + SO_2$	E	193 nm	Freedman, A.; Yang, S.-C.; Barabba, R. Translational energy distribution of the photofragments of SO_2 at 193 nm. <i>J. Chem. Phys.</i> 70, 5313 (1979) United States
3081	A14 $H + H_2$	E	0.3-2.0 eV	Mayne, M. R.; Toennies, J. P. Quasiclassical cross sections for the $H + H_2(0,0) \rightarrow H + H_2$ reaction: comparison of the Siegbahn-Liu-Truhlar-Horowitz and the Porter-Karpman potential surfaces. <i>J. Chem. Phys.</i> 70, 5314 (1979) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3082	A14 K + HCl	E	330 K	Dispert, M. N.; Gais, M. W.; Brochu, P. R. Molecular beam reaction of K with HCl: effect of rotational state of HCl. <i>J. Chem. Phys.</i> 70, 5317 (1979) United States
3083	A11 F ⁺ + Ne; O ⁺ + Ne; O ⁺ + Ar; O ⁺ + Kr; O ⁺ + Xe	E	300 K	Kinnerly, S. R.; Marrelli, J. A.; Sedwell, V. H. Collisional quenching of U(1D) by rare gas atoms. <i>J. Chem. Soc., Faraday Trans., II</i> 74, 600 (1978). United Kingdom
3084	H08 hv + BrCl	E	595-550 nm	Clyne, M. A. A.; McDermid, I. E. Studies of BrCl by laser-induced fluorescence. Part 1. Excitation spectra and predissociation in the excited B ² _u (0 ⁺) state. <i>J. Chem. Soc., Faraday Trans., II</i> 74, 750 (1978) United Kingdom
3085	H08 hv + BrCl	E	595-550 nm	Clyne, M. A. A.; McDermid, I. E. Studies of BrCl by laser-induced fluorescence. Part 2. State-selected kinetics in the excited B ² _u (0 ⁺) state of BrCl. <i>J. Chem. Soc., Faraday Trans., II</i> 74, 807 (1978) United Kingdom
3086	A14 Review	E	233-505 K	Anastasi, C.; Smith, I. W. H. Rate measurements of reactions of OH by resonance absorption. Part 6. Rate constants for OH + NO(+R) + HNC ₂ (+P) over a wide range of temperatures and pressures. <i>J. Chem. Soc., Faraday Trans., II</i> 74, 1056 (1978) United Kingdom
3087	A14 Review	E	300-670 K	Chowdhury, R. A.; Husain, D. Kinetic studies of ground state tin atom, Sn(5p ² 3P ₀), by resonance line absorption. <i>J. Chem. Soc., Faraday Trans., II</i> 74, 1065 (1978) United Kingdom
3088	H06 hv + TlCl; hv + TlBr; hv + TlI; hv + InCl; hv + InBr; hv + InI	E	26 eV	Egdell, R. G.; Orchard, A. F. Mg(II) photoelectron spectra of indium(I) and thallium(I) halides. <i>J. Chem. Soc., Faraday Trans., II</i> 74, 1179 (1978) United Kingdom
3089	H03 hv + PH ₂	E	530-430 nm	Hale, R. E.; Long, M. J. T.; Thrush, B. A. Laser induced fluorescence of the PH ₂ radical. <i>J. Chem. Soc., Faraday Trans., II</i> 74, 1253 (1978) United Kingdom
3090	H08 hv + CS ₂	E	220-200 nm	Hara, K.; Phillips, D. Fluorescence of CS ₂ excited to the third excited singlet state. <i>J. Chem. Soc., Faraday Trans., II</i> 74, 1441 (1978) United Kingdom
3091	A11 Si ⁺ + Ne; Si ⁺ + Kr; Si ⁺ + Xe; Si ⁺ + H ₂ ; Si ⁺ + N ₂ ; Si ⁺ + O ₂ ; Si ⁺ + Cl ₂ ; Si ⁺ + NO; Si ⁺ + CO ₂ ; Si ⁺ + N ₂ O; Si ⁺ + CH ₄	E	300 K	Husain, D.; Morris, P. E. Collisional quenching of electronically excited silicon atoms, Si(3p ² 1D ₂), by atomic absorption spectroscopy. <i>J. Chem. Soc., Faraday Trans., II</i> 74, 1483 (1978) United Kingdom
3092	A14 P + O ₂ ; P + Cl ₂ ; P + NO; P + C ₂ H ₂ ; P + C ₂ H ₄ ; P + PCl ₃	E	330 K	Husain, D.; Slater, M. K. H. Time-resolved resonance fluorescence studies of ground state phosphorus atoms, P(3p ² 4S _{3/2}). <i>J. Chem. Soc., Faraday Trans., II</i> 74, 1627 (1978) United Kingdom
3093	H08 hv + Cl ₂	E	543-501 nm	Clyne, M. A. A.; McDermid, I. E. Laser-induced fluorescence studies: the B-X transition of Cl ₂ . Part 1. Rotationally-resolved excitation spectra and predissociation in the excited B ² _u (0 sub v ⁺) state. <i>J. Chem. Soc., Faraday Trans., II</i> 74, 1935 (1978) United Kingdom
3094	H08 hv + Br ₂	E	633-643 nm	Clyne, M. A. A.; Heaven, M. C. Kinetics of excited states of Br ₂ using laser excitation. Part 1. System description and rotationally-dependent lifetimes in Br ₂ (B). <i>J. Chem. Soc., Faraday Trans., II</i> 74, 1952 (1978) United Kingdom
3095	H06 hv + KrF ₂	E	1100-600 Å	Berkowitz, J.; Holloway, J. H. Photoionization mass spectrometric study of KrF ₂ . <i>J. Chem. Soc., Faraday Trans., II</i> 74, 2077 (1978) United States

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3096	A14 $F + H_2$	E F	300 K	Beedle, P.; Dunn, N. R.; Jonathan, N. B. N.; Liddy, J. P.; Naylor, J. C.; Ohada, S. Initial vibrational and rotational energy distributions of hydrogen fluoride produced in reactions $F + H - H$, where $H = H, CH_3, C_2H_5$ and CHO . <i>J. Chem. Soc., Faraday Trans., II</i> 74, 2188 (1978) United Kingdom
3097	A14 $F + HCl; F + HBr; F + HI$	E F	300 K	Beedle, P.; Dunn, N. R.; Jonathan, N. B. N.; Liddy, J. P.; Naylor, J. C. Initial vibrational and rotational energy distributions of hydrogen fluoride formed in reactions of atomic fluorine with hydrogen halides. <i>J. Chem. Soc., Faraday Trans., II</i> 74, 2170 (1978) United Kingdom
3098	A14 $O + O_2$	T	300-500 K	Steele, A. J.; Murrell, J. R. Dynamics of the oxygen exchange reaction. <i>J. Chem. Soc., Faraday Trans., II</i> 74, 2182 (1978) United Kingdom
3099	A17 $Ge + O; Ge^+ + O$ W06 $h\nu + GeO$	E F	21 eV	Colbourn, E. A.; Dyke, J. R.; Fackrell, A.; Morris, A.; Trichie, I. E. Vacuum ultraviolet photoelectron spectrum of the $GeO(X^2E^+)$ molecule. <i>J. Chem. Soc., Faraday Trans., II</i> 74, 2278 (1978) United Kingdom
3100	A07 $Na^+ + Ar; Na^+ + H_2; Na^+ + NO; Na^+ + O_2; Na^+ + H_2O; Na^+ + CO_2$	E	400-1000 K	Metop, M.; Kolt, E.; Lorenzen, J. The temperature dependence of Penning ionization electron energy spectra: $Na(2^2S)-Ar, H_2, NO, O_2, H_2O, CO_2$. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 16, 213 (1978) West Germany
3101	W06 $h\nu + H_2O; h\nu + HF; h\nu + CO; h\nu + NH_3$	T	132-1254 eV	Fujikawa, Y.; Ohta, Y.; Kuroda, H. Orthogonalized-plane-wave approximation in the calculation of photoionization cross sections of molecules. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 16, 285 (1979) Japan
3102	E03 $e + Sb_2; e + Te_2$ E05 $e + Sb_2; e + Te_2$	T	2-3 keV	Ahtala, M.; Vaynsen, J.; Ahola, E. Vapour phase $M_{2n}M_{2m}M_{2l}$ Auger electron spectra of antimony and tellurium. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 16, 339 (1979) Finland
3103	D15 $Ar^+ + FeS; Ar^+ + FeS_2; O_2^+ + FeS; O_2^+ + FeS_2$	E	1.5 keV	Tsang, Y.; Coyle, G. J.; Adler, I.; Yin, L. XPS studies of ion bombardment damage of iron-sulfur compounds. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 16, 389 (1979) United States
3104	A13 $O^{+} + O_2$	E	Under	Torr, D. G.; Donabue, K.; Busch, D. W.; Torr, M. R.; Nier, A. O.; Kryser, D.; Hanson, W. S.; Hoffman, J. H. Charge exchange of metastable ^{16}O oxygen ions with molecular oxygen: a new source of thermospheric O_4^+ ions. <i>J. Geophys. Res.</i> 84, 367 (1979) United States
3105	W04 $h\nu + NO_2$	E	5000 Å	Brand, J. C. D.; Chiu, P. M. Spin-orbit-induced transitions in the laser-excited fluorescence of nitrogen dioxide. <i>J. Mol. Spectrosc.</i> 76, 1 (1979) Canada
3106	A12 $NO^+ + H_2; NO^+ + Ar$	T	297 K	Henry, A.; Severin, F.; Henry, L. Magnetic moment effect on pressure broadening: lines from the $^2\Pi_{3/2}$ and $^2\Pi_{1/2}$ states of the (1-0) band of NO colliding with H_2 and Ar. <i>J. Mol. Spectrosc.</i> 75, 456 (1979) France
3107	D14 $Cr^{2+} + SS; Ni^{2+} + SS$	E	22-46 MeV	Williams, T. M.; Arholl, D. R. Void-swelling in 20 percent cold-worked FV548 austenitic stainless steel irradiated with 22 MeV Cr^{2+} ions or 46.6 MeV Ni^{2+} ions. <i>J. Nucl. Mater.</i> 80, 79 (1979) United Kingdom
3108	D02 $H^+ + Be$	E	250-1000 eV	Matton, D. R.; Sharp, D. J. Influence of surface morphology on the low energy hydrogen ion erosion yields of beryllium. <i>J. Nucl. Mater.</i> 80, 115 (1979) United States
3109	D14 $n + Zr + Sn$	E	Under	Regerson, A.; Margetroyd, R. A. Effects of texture and temperature cycling on irradiation growth in cold-worked sironel-2 at 353 and 553 K. <i>J. Nucl. Mater.</i> 80, 263 (1979) United Kingdom

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
3110	D14 $n + Zr + Nb$	E	Undef	Regerman, A.; Mergatroyd, R. A. Irradiation-growth in annealed Zr-2.5 wt percent Nb at 323 K. J. Nucl. Mater. 80, 260 (1979) United Kingdom
3111	D02 $N_2^+ + SS$	E	10 keV	Smith, J. W., Jr. Angular effects in the sputtering of Cr^+ from stainless steel by 10 keV N_2^+ . J. Nucl. Mater. 80, 356 (1979) United States
3112	D15 $He^+ + Ni$	E	530 keV	Fenske, G.; Ben, S. K.; Kaminsky, P. A technique for determining the depth distribution of cavities in He^+ -irradiated nickel. J. Nucl. Mater. 80, 373 (1979) United States
3113	D14 $Ni^+ + Nb$; $Ni^+ + Nb + Ti$	E	3.0 MeV	Leonis, D. A.; Herber, S. B. Reduction of void-volume fraction in Nb by Ti alloying. J. Nucl. Mater. 80, 303 (1979) United States
3114	C09 $He^+ + UO_2$ D07 $He^+ + UC_2$	E	0.9-1.5 MeV	Nasu, S.; Shiozawa, K.; Kurasawa, I. Channeling studies of epitaxial uranium dioxide films. J. Nucl. Mater. 80, 386 (1979) Japan
3115	D16 Undef	T	Undef	Wilson, K. L.; Boskes, M. I. *Erratum Deuterium trapping in irradiated 316 stainless steel [J. Nucl. Mater. 76-77, 251 (1976)]. J. Nucl. Mater. 80, 393 (1979) United States
3116	E03 $e + Hg$	E	53 eV	Kaul, R. D. Measurement of excitation cross section of the 6^3P_1 state of Hg using self-calibrating apparatus. J. Opt. Soc. Am. 69, 150 (1979) United States
3117	M01 Undef	T	Undef	Letikhov, V. S.; Minogin, V. G. Cooling, trapping, and storage of atoms by resonant laser fields. J. Opt. Soc. Am. 69, 413 (1979) Soviet Union
3118	E06 Undef	T	Undef	Handoo, I. Variational principle equivalent to the quasi-equilibrium condition. J. Phys. B 12, L269 (1979) Yugoslavia
3119	A17 $He + He$	T	Undef	Hansson, J.; McCarroll, R.; Vallron, P. Model potential calculations of the He-He system. J. Phys. B 12, 899 (1979) France
3120	A03 Undef	T	Undef	Souza, M. D.; Kumar, A. Electron spin couplings in ion-atom collisions. J. Phys. B 12, 909 (1979) India
3121	A03 $He^+ + N$; $C^{2+} + N$; $O^{2+} + N$ A06 $He^+ + N$; $C^{2+} + N$; $O^{2+} + N$	T	1-1.7 velocity/ β .u.	Selop, A. The distribution of excitation resulting from electron capture in stripped-low-hydrogen-atom collisions. J. Phys. B 12, 919 (1979) United States
3122	A03 $Be^+ + He$; $Be^+ + He$ A06 $Be^+ + He$; $Be^+ + He$ A10 $Be^+ + He$; $Be^+ + He$	E	2-5 keV	Outgaard Olsen, J.; Vedel, K.; Dahl, P. Differential cross sections for charge transfer and excitation in low-energy $Be^+ - He$, He collisions. J. Phys. B 12, 529 (1979) Denmark
3123	E06 $e + H$	T	250 eV	Lal, M.; Tripathi, A. M.; Srivastava, M. K. Triple differential cross section for electron impact ionisation of the hydrogen atom. J. Phys. B 12, 945 (1979) India
3124	E02 $e + He$ E03 $e + He$ E17 $e + He$	T	0-16.5 eV	O'Malley, T. F.; Burke, P. G.; Berrington, K. A. R-matrix calculation of low-energy e-He scattering. J. Phys. B 12, 963 (1979) United Kingdom
3125	E06 $e + He$	E	35 eV	Schubert, E.; Schuch, A.; Jung, K.; Goltmann, S. Triple differential cross sections for the electron impact ionisation of helium at 35 eV collision energy. J. Phys. B 12, 967 (1979) West Germany

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3126	EP2 e + He; e + Ar; e + Kr; e + Xe E03 e + Ne; e + Ar; e + Kr; e + Xe EP5 e + He; e + Ar; e + Kr; e + Xe	T	25-3000 eV	de Meer, F. J.; Jansen, R. N. J.; van der Kooij, H. Total cross sections for electron scattering by He, Ar, Kr and Xe. J. Phys. B 12, 975 (1979) The Netherlands
3127	EP3 e + H ₂ ED4 e + H ₂	E	13-300 eV	Malcen, I. C.; Benson, M. W.; McCashy, J. W. Polarization of radiation from H ₂ excited by electron impact—Lyman and Werner emissions and Lyman-α. J. Phys. B 12, 1003 (1979) Canada
3128	EC2 e + KON; e + CaOM EO3 e + KON; e + CaOM	T	0.01-10 eV	Collins, L. A.; Horvath, D. W.; Schmid, G. B. Electron collisions with highly polar molecules: integrated and momentum transfer cross sections and conductivity integrals for KON and CaOM. J. Phys. B 12, 1019 (1979) United States
3129	E12 e+ + Ar	T	0.5-12 eV	McEachern, R. P.; Ryman, A. G.; Stoeffler, A. D. Positron scattering from argon. J. Phys. B 12, 1031 (1979) Canada
3130	A06 He+ + He; He+ + He; He+ + Ar; He+ + Kr; He+ + Na; He+ + Na; He+ + Ar; He+ + Kr; He+ + Na; He+ + Na; He+ + Ar; He+ + Kr; He+ + Na; He+ + Na; He+ + Ar; He+ + Kr A07 He+ + He; He+ + He; He+ + Ar; He+ + Kr; He+ + Na; He+ + Na; He+ + Ar; He+ + Kr; He+ + Na; He+ + Na; He+ + Ar; He+ + Kr; He+ + Na; He+ + Na; He+ + Ar; He+ + Kr	E	10 ⁴ keV	Woolson, P. H.; El Sharbini, T. H.; de Meer, F. J.; Saris, F. W. Energy spectra of electrons produced in collisions of multiply charged neon ions with noble-gas atoms. J. Phys. B 12, 1235 (1975) The Netherlands
3131	EP2 e + He E17 e + He	T	0-19 eV	Houbert, R. K. Accurate e ⁻ -He cross sections below 19 eV. J. Phys. B 12, 1243 (1979) United States
3132	E03 e + C ²⁺ ; e + N ²⁺ ; e + O ²⁺ E05 e + C ²⁺ ; e + N ²⁺ ; e + O ²⁺	E	55-1500 eV	Crandall, D. H.; Phaneuf, R. A.; Masonquist, B. E.; Gregory, D. C. Measured cross sections for ionisation of C ²⁺ , N ²⁺ and O ²⁺ ions with contribution due to excitation-autoionisation. J. Phys. B 12, 1249 (1979) United States
3133	EP5 e + He	E	1-3000 eV	Hink, U.; Schmitt, H. P.; Edding, T. PCI in K-L _{2,3} L _{2,3} Auger processes following electron impact ionisation of He. J. Phys. B 12, 1257 (1979) West Germany
3134	HP2 hv + Fe	T	50-88 eV	Ruruk, K. On line strengths and energy-level structure for the 3p-edge absorption spectrum of Fe vapour. J. Phys. B 12, 1125 (1979) Sweden
3135	E08 e + H Seq	T	13° K	Lee, R. V. Study of the plasma broadening of spectral lines of hydrogenic ions. J. Phys. B 12, 1129 (1979) United Kingdom
3136	A12 H ⁰ + H ⁰ E08 e + H ⁰	E	13° K	Lee, R. V. Study of ion dynamic effects on Lyman and Balmer hydrogen lines. J. Phys. B 12, 1146 (1975) United Kingdom
3137	EC8 e + He; e + HeO; e + SiH ₂ O	T	5x10 ³ -5x10 ⁶ K	Lee, R. V. A model study of non-thermal effects in the plasma broadening of spectral lines. J. Phys. B 12, 1168 (1979) United Kingdom
3138	E08 e + He ⁰	E	13900-14700 K	Ehrlich, M.; Helbig, V. Observation of ion dynamics in the He I 4026 Å ⁰ Stark profile. J. Phys. B 12, 1163 (1979) West Germany
3139	HP4 hv + Na	T	Undef	Wilson-Gordon, A. D.; Friedmann, M. Coherence effects in ordinary Raman scattering in the presence of two-photon resonance. J. Phys. B 12, 1190 (1979) Israel

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3140	803 $h\nu + B$; $h\nu + C$; $h\nu + N$; $h\nu + Cu$; $h\nu + Se$; $h\nu + La$; $h\nu + Nd$; $h\nu + Dy$; $h\nu + Mg$; $h\nu + Pb$; $h\nu + Th$; $h\nu + Co$; $h\nu + Al$	E T	0-145-1.33 MeV	Sen Gupta, S. K.; Paul, N. C.; Ray, S. C.; Choudhuri, R. New measurements of coherent and incoherent photon scattering by low, medium and high Z atoms. J. Phys. B 12, 1211 (1979) India
3141	E12 $e^+ + H$	T	undef	Belyaev, V. B.; Podkopyayev, A. P.; Urziclonko, J.; Zubarev, A. L. The Schwinger variational principle for charged particle scattering on atomic systems. J. Phys. B 12, 1225 (1979) Soviet Union
3142	A02 $He^+ + He$ A03 $He^+ + He$ A06 $He^+ + He$ A10 $He^+ + He$	E	5-40 keV	Berenson-Rontosevich, B.; Degnac, B. Elastic and inelastic scattering of He^+ by He in the energetic and angular ranges 5 to 40 keV and 0.5 to 3 degrees. J. Phys. B 12, 1233 (1979) France
3143	A11 $O^+ + H_2$	T	330 K	Villarreal, P.; Delgado-Barrio, C.; Saegert, T. C. Electronic quenching of $O(^1D)$ by H_2 : a semiclassical study. J. Phys. B 12, 1247 (1979) Spain
3144	A06 $H^+ + H^-$	E	30-200 eV	Brouillard, F.; Cloys, W.; Poulart, G.; Robaut, G.; van Veenendaal, G. Double charge transfer in H^+-H^- collisions. J. Phys. B 12, 1253 (1979) Belgium
3145	A03 $H^+ + He^+$; $H^+ + Li^{2+}$ A06 $H^+ + He^+$; $H^+ + Li^{2+}$	T	5-1000 keV	Mukherjee, S.; Sili, N. C.; Basu, B. Electron capture by protons from some hydrogen-like ions. J. Phys. B 12, 1259 (1979) India
3146	C05 $e + He$	T	100-400 eV	Bransden, B. H.; Smith, J. J.; Winters, K. N. Cross sections for the ionization of helium by electron impact in a distorted-wave model. J. Phys. B 12, 1267 (1979) United Kingdom
3147	802 $h\nu + He$	T	undef	Goncharova, V. S.; Vagov, A. Resonance photoabsorption of the helium atom in the vicinity of the $(3s3p)^1P$ resonance. J. Phys. B 12, 1269 (1979) Soviet Union
3148	E03 $e + O^{++}$	T	0.5-7 Ry	Borrington, K. A.; Burke, P. G.; Duffon, P. L.; Kingston, A. E.; Sinfield, A. L. Electron collisional excitation of O V: effect of resonances converging to the $n = 3$ thresholds. J. Phys. B 12, 1275 (1979) United Kingdom
3149	E04 $e + H_2$ E09 $e + H_2$	E T	13.5-17 eV	Tronc, N.; Hall, R. I.; Schermann, C.; Taylor, M. S. Interference in dissociative attachment cross sections of H_2 around 14 eV. J. Phys. B 12, 1279 (1979) France
3150	806 $h\nu + Ar$; $h\nu + Xe$	T	undef	Cheraphov, N. A. Spin polarization of photoelectrons ejected from unpolarized atoms. J. Phys. B 12, 1275 (1979) Soviet Union
3151	808 $h\nu + PERT$	T	undef	Langenberg, A.; van Eck, J. An evaluation of K-shell fluorescence yields; observation of outer-shell effects. J. Phys. B 12, 1331 (1979) The Netherlands
3152	A01 undef	T	undef	Reading, J. F.; Ford, A. L. A new coupled-state equation for ion-atom collisions. J. Phys. B 12, 1367 (1979) United States
3153	A03 $H^+ + H$	T	50-200 keV	Bransden, B. H.; Bowman, D. P. Pseudo-state expansions and the second Born approximation for excitation of atomic hydrogen by proton impact. J. Phys. B 12, 1377 (1979) United Kingdom
3154	A03 $H^+ + He^+$; $H^+ + Li^{2+}$; $H^+ + C^{4+}$ A06 $H^+ + He^+$; $H^+ + Li^{2+}$; $H^+ + C^{4+}$	T	50-400 keV	Sinha, C.; Mukherjee, S.; Sili, N. C. Electron capture in an arbitrary excited state by protons passing through hydrogenic ions. J. Phys. B 12, 1391 (1979) India

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3155	A03 He ⁺ + Zn; He ⁺ + Cd; He ⁺ + Hg A06 He ⁺ + Zn; He ⁺ + Cd; He ⁺ + Hg A07 He ⁺ + Zn; He ⁺ + Cd; He ⁺ + Hg	E	Thermal	Littlewood, I. R.; Piper, J. A.; Webb, C. E. Relative yields of ground-state and excited-state ions of Zn, Cd and Hg in thermal-energy charge-transfer reactions of He ⁺ ions. <i>J. Phys. B</i> 12, 1395 (1979) United Kingdom
3156	D03 He ⁺	E		Vialle, J.-L.; Duong, M. T. Field ionization study of high Rydberg states of He. <i>J. Phys. B</i> 12, 1407 (1979) France
3157	E05 Underf	T	1-2 MeV	Weisselutsch, B. L.; Harrington, P. M. The L ₁ -shell ionization of atoms by relativistic particles. <i>J. Phys. B</i> 12, L283 (1979) United Kingdom
3158	D07 He + Co + Sr	T		Robinson, E. J. Radiative collisions with impact level shifts. <i>J. Phys. B</i> 12, 1451 (1979) United States
3159	A03 He ⁺ + H ₂ A10 He ⁺ + H ₂	T	230 keV	Briggs, J. S.; Rostek, J. M.; Taulbjerg, K. Angular distributions of NO K-ray emission. <i>J. Phys. B</i> 12, 1457 (1979) United Kingdom
3160	A03 He ⁺ + He; He ⁺ + Ne; He ⁺ + Ar; He ⁺ + Kr; He ⁺ + Xe; He ⁺ + H ₂ ; He ⁺ + N ₂ A06 He ⁺ + He; He ⁺ + Ne; He ⁺ + Ar; He ⁺ + Kr; He ⁺ + Xe; He ⁺ + H ₂ ; He ⁺ + N ₂	E	4-20 keV	King, R. F.; Letimer, C. J. Formation of highly excited hydrogen atoms by electron capture in proton collisions. <i>J. Phys. B</i> 12, 1477 (1979) United Kingdom
3161	A03 He ⁺ + Co A06 He ⁺ + Co A10 He ⁺ + Co	E	22.4-100 eV	Prod'el, P.; Spence, G.; Sidis, V.; Kuebach, C. Differential cross sections for the near-resonant charge-transfer processes He ⁺ + Co → He(2s) + Co ⁺ at low energy. <i>J. Phys. B</i> 12, 148b (1979) France
3162	E02 e + He E17 e + He	T	2-19 eV	Steph, M. C.; McDonald, L.; Golden, D. E. Analysis of low-energy scattering cross sections I. Electron-helium elastic scattering. <i>J. Phys. B</i> 12, 1507 (1979) United States
3163	E02 e + H ⁻	T	0-8 eV	Valley, M.; Berry, R. S. Correlation effects in low-energy scattering of electrons by a model negative ion. <i>J. Phys. B</i> 12, 1529 (1979) United States
3164	E02 e + Ar E17 e + Ar	T	9.4-146 eV	Lucas, C. B. Critical positions in elastic electron scattering by argon. <i>J. Phys. B</i> 12, 1545 (1979) United Kingdom
3165	E03 e + H ₂ E17 e + H ₂	E	0.5-100 eV	Widdon, D. G.; Nicho, P. J.; Comer, J. High resolution studies of dipole-forbidden states of H ₂ using low-energy electron energy-loss spectroscopy. <i>J. Phys. B</i> 12, 1579 (1979) United Kingdom
3166	E04 e + O ₂ ⁺ ; e + NO ⁺ ; e + H ₂ ⁺ E06 e + O ₂ ⁺ ; e + NO ⁺ ; e + H ₂ ⁺	E	0.007-1 eV	Mul, P. M.; McGowan, J. W. Merged electron-ion beam experiments: III. Temperature dependence of dissociative recombination for atmospheric ions NO ⁺ , O ₂ ⁺ and H ₂ ⁺ . <i>J. Phys. B</i> 12, 1561 (1979) Canada
3167	E12 e ⁺ + H	T	0.7-2000 eV	Mandal, P.; Guha, S. On the first-order approximations for positronium formation in atomic hydrogen. <i>J. Phys. B</i> 12, 1603 (1979) India
3168	G06 He ⁺ + He	T	77-294 K	Sinha, S.; Lin, S. L.; Bardsley, J. N. The mobility of He ⁺ ions in He. <i>J. Phys. B</i> 12, 1613 (1979) United States
3169	D06 e + MoS ₂	E	151 eV	Quemener, Y.; Bandet, J.; Malaveaud, A. Etude de surfaces de MoS ₂ naturel par l'analyse angulaire de pertes d'énergies d'électrons lents: influence du clivage de la surface. <i>J. Phys. C</i> 12, L249 (1979) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3170	Q83 e + CO ₂ + N ₂ + He Q86 e + CO ₂ + N ₂ + He G10 e + CO ₂ + N ₂ + He	E	1-100 Vcm ⁻¹ Torr ⁻¹	Sakai, Y.; Kaneko, S.; Tognashiro, D.; Sakamoto, S. A Boltzmann equation analysis of electron swarm parameters in CO ₂ laser mixtures. <i>J. Phys. B</i> 12, 23 (1979) Japan
3171	D12 Ar ⁺ + Si	E	53-500 keV	Shattocharya, R. S.; Rosenkemp, B.; Schattner, A.-H. Energy dependence of excitation in sputtering. <i>J. Phys. D</i> 12, L35 (1979) West Germany
3172	Q83 e + CO ₂	E	10-5450 Td	Lucas, J.; Kucherski, M. R. A pulse technique for the measurement of the ratio of diffusion to mobility for electron swarms in gases at high E/N. <i>J. Phys. E</i> 12, 763 (1979) United Kingdom
3173	C82 e + C; e + AlN E93 e + C; e + AlN	E	80 keV	Reynow, C. J.; Uebler, M. J. The K-shell cross-section for 80 keV electrons in single-crystal graphite as AlN. <i>J. Phys. D</i> 12, 757 (1979) United Kingdom
3174	A84 NO ₂ + N ₂ ; NO ₂ + He; NO ₂ + Ar; NOCl + N ₂ ; NOCl + He; NOCl + Ar A14 O + NO + N ₂ ; O + NO + He; O + NO + Ar; Cl + NO + N ₂ ; Cl + NO + He; Cl + NO + Ar	E	217-2500 K	Michael, J. V.; Lee, J. M. Rate constant measurements at constant temperature by the flash photolysis-resonance fluorescence technique and recombination-dissociation theory for NO ₂ and NOCl. <i>J. Phys. Chem.</i> 83, 10 (1979) United States
3175	A14 OH + N ₂ ; OH + CO; OH + ON	E	250-2000 K	Zellner, R. Non-arrhenius behavior in bimolecular reactions of the OH radical. <i>J. Phys. Chem.</i> 83, 11 (1979) West Germany
3176	A14 H + H ₂ O	E	1473-2710 K	Glass, G. P.; Qay, R. B. Measurement of high temperature rate constants using a discharge flow shock tube. <i>J. Phys. Chem.</i> 83, 30 (1979) United States
3177	A14 H ₂ + Cl; H + DCl	E	200-1200 K	Weston, R. E., Jr. A survey reactions involving H ⁺ , H ⁺ , and Cl atoms. <i>J. Phys. Chem.</i> 83, 61 (1979) United States
3178	A10 HCl + Cl A14 Cl + HCl	E	296 K	Kneba, M.; Wolfram, J. Symmetric atom exchange reaction Cl + HCl. An arduous task for theory and experiment. <i>J. Phys. Chem.</i> 83, 65 (1979) West Germany
3179	A14 F ₂ + N; F ₂ + D; F ₂ + T	T	300-900 K	Connor, J. R. L.; Jakubetz, V.; Lagana, A. Comparison of quasi-classical, transition state theory, and quantum calculations of rate constants and activation energies for the collinear reaction F ₂ + N ₂ → NF + F (X=H, N, D, T). <i>J. Phys. Chem.</i> 83, 73 (1979) Austria
3180	A14 F + N ₂ ; Cl + N ₂ ; F + N ₂	T	230-1000 K	Muckerman, J. T.; Faist, R. B. Rate constants from Monte Carlo quasi-classical trajectory calculations. A procedure for importance sampling. <i>J. Phys. Chem.</i> 83, 79 (1979) United States
3181	A14 OH + CO	T	300-1200 K	Golden, D. M. Experimental and theoretical examples of the value and limitations of transition state theory. <i>J. Phys. Chem.</i> 83, 108 (1979) United States
3182	A84 H ₂ + He A10 H ₂ + He	T	1070-10000 K	Dove, J. E.; Rayner, S. An ab initio calculation of the rate of vibrational relaxation and thermal dissociation of hydrogen by helium at high temperatures. <i>J. Phys. Chem.</i> 82, 127 (1978) Canada
3183	A84 H ₂ + Ar	T	2000-6000 K	Yau, A. W.; Pritchard, H. O. Toward a unified master-equation theory of thermal decomposition reactions. Analytic solution for diatomic dissociation. <i>J. Phys. Chem.</i> 83, 134 (1979) Canada
3184	A14 H + N ₂ ; F + N ₂ ; F + D ₂	T	200-1000 K	Kuppermann, A. An exact quantum mechanical transition state theory. I. An overview. <i>J. Phys. Chem.</i> 83, 171 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3185	A14 $H + H_2; Cl + H_2; F + H_2; I + H_2; H + Cl_2$	T	300-1500 K	Truhlar, D. G. Accuracy of trajectory calculations and transition state theory for thermal rate constants of atom transfer reactions. <i>J. Phys. Chem.</i> 83, 168 (1979) United States
3186	A14 $H + H_2; Cl + H_2; D + D_2; Cl + T_2$	T	330-1500 K	Garrett, B. C.; Truhlar, D. G. Accuracy of tunneling corrections to transition state theory for thermal rate constants of atom transfer reactions. <i>J. Phys. Chem.</i> 83, 208 (1979) United States
3187	B17 $H_2^+ + Ti; H_2^+ + V; H_2^+ + Cr; H_2^+ + Nb; H_2^+ + Co; H_2^+ + Fe; H_2^+ + Ni; H_2^+ + Cu; H_2^+ + Zn$	E	33-3000 eV	Leuzinger, E. R.; Bohlsis, J. W. Chemical reactions of H_2^+ ion beams with first-row transition metals. <i>J. Phys. Chem.</i> 83, 299 (1979) United States
3188	A14 $H + O_3$	E	196-424 K	Kayser, L. F. Absolute rate constant and temperature dependence of the reaction between hydrogen (² H) atoms and ozone. <i>J. Phys. Chem.</i> 83, 442 (1979) United States
3189	A14 $O + H_2; O + H_2; H + NO; O_2 + Ar$	E	400-4000 K	Brown, C. T.; Hanson, R. K. Shock tube measurements of rate coefficients of elementary gas reactions. <i>J. Phys. Chem.</i> 83, 767 (1979) United States
3190	A14 $NO_2 + O_3; NO_2 + OH$	E	-45 to 61 °C	Behr, V. B. Reaction of NO_2 with O_3 and the effect of water vapor on NO_2 kinetics. <i>J. Phys. Chem.</i> 83, 1113 (1979) United States
3191	A11 $Zn^+ + CH_4; Zn^+ + CO; Zn^+ + H_2; Zn^+ + D_2; Zn^+ + HD; Zn^+ + N_2$	E	330 K	Brockmridge, V. H.; Reinsel, A. M. Collisional quenching of electronically excited zinc atoms. Cross sections and exit channels. <i>J. Phys. Chem.</i> 83, 1145 (1979) United States
3192	A17 $He + H^+; K + H^+; He + H; K + H$	T	Undef	Nellis, C. F.; Hurreich, R. B.; Truhlar, D. G. Calculations of potential energy curves for the ground states of HeH^+ and KH^+ and II states of HeH and KH . <i>J. Phys. Chem.</i> 83, 1221 (1979) United States
3193	A67 $CH + O$ A14 $CH + O$	E	295 K	Vinchier, C. Determination of the rate constant of the reaction $CH + O \rightarrow CHO + e^-$ at 295 K. <i>J. Phys. Chem.</i> 83, 1234 (1979) Belgium
3194	A63 $HF + HF$	T	8300 1/cm	Alexander, R. M.; DePrieto, A. E. An adiabatically corrected sudden approximation for rotationally inelastic collisions between polar molecules. <i>J. Phys. Chem.</i> 83, 1499 (1979) United States
3195	A14 $H + H_2$	T	0.5 eV	Adams, J. E.; Miller, V. M. Expansion of exchange kernels for reactive scattering. <i>J. Phys. Chem.</i> 83, 1665 (1979) United States
3196	A14 $H + H_2$	T	0.03-0.5 eV	Kwai, G. H.; Werschbach, D. R. Optical model analysis of $H + H_2$ reactive scattering. <i>J. Phys. Chem.</i> 83, 1668 (1979) United States
3197	A14 $NO_2 + NO_2; NO_2 + SO_2; NO_2 + CO; NO_2 + H_2O$	E	330 K	Graham, R. A.; Binar, A. M.; Atkinson, R.; Pitts, J. N., Jr. Rate constants for the reaction of NO_2 with NO_2 , SO_2 , CO , H_2O , trans-2-butene, and 2,3-dimethyl-2-butene at 300 K. <i>J. Phys. Chem.</i> 83, 1643 (1979) United States
3198	A12 $Xe + Xe; Kr + Kr$	E	0.25 eV	Leprie, P.; Demany, M. High density self-broadening of the first xenon and krypton resonance line. <i>J. Phys. (Paris)</i> 40, 9 (1979) France
3199	H66 $2h\nu + Cs; 2h\nu + Cs^0; 3h\nu + Cs; 3h\nu + Cs^0; 4h\nu + Cs; 4h\nu + Cs^0$	E T	19000 Å	Petit, G.; Morillot, J.; Normand, D. Resonant multiphoton ionization of caesium atoms. <i>J. Phys. (Paris)</i> 40, 115 (1979) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3200	A12 Under	T	Under	Mallick, J. An efficient method for evaluation of the complex probability function: the half function and its derivatives. J. Quant. Spectrosc. Radiat. Transfer 21, 389 (1979) Czechoslovakia
3201	H06 hv + H H07 hv + H ⁻	T	3000-6000 K	Kalchauer, W.; Klein, R. I.; Stair, R. F. Deviations from LTE in a stellar atmosphere. J. Quant. Spectrosc. Radiat. Transfer 21, 366 (1979) United States
3202	A12 OH ⁺ + H ₂ ; OH ⁺ + H ₂ ; OH ⁺ + H ₂ H02 hv + OH	E	A12 330 K H02 13.4 GHz	Seetard, D.; Bretonneau, A.; Charu, A.; Picherit, F. Determination of mean collision cross sections of free radical OH with foreign gases. J. Quant. Spectrosc. Radiat. Transfer 21, 369 (1979) France
3203	H02 hv + SiH	E	630-160 nm	Park, C. Shock-tube determination of absorption cross sections and A ² Σ ⁺ - X ² Σ ⁺ band transition moments of SiH. J. Quant. Spectrosc. Radiat. Transfer 21, 372 (1979) United States
3204	G00 H ₂ O + Ar; H ₂ O + Ne	E	350 K	Rei, A. K.; McKeever, R. R.; Tellinghuisen, J. Temperatures of Tula discharges from OH A + X intensity measurements. J. Quant. Spectrosc. Radiat. Transfer 21, 387 (1979) United States
3205	E11 e + Kr	E	18° K	Bietrich, L.; Busse, T. Measurements of emission coefficient for continuous radiation from shock-heated krypton plasmas. J. Quant. Spectrosc. Radiat. Transfer 21, 423 (1979) West Germany
3206	E03 e + Ne H06 hv + Ne	T	E03 25-1000 eV H06 10 ¹⁰ -10 ¹² Hz	Fajardo, T. A collisional-radiative model for helium and its application to a discharge plasma. J. Quant. Spectrosc. Radiat. Transfer 21, 429 (1979) Japan
3207	G00 Ar + Ar ⁺	E	5000-10000 K	Kafrouni, R.; Bagmaux, J. R.; Glaizes, A.; Vacquin, S. Temporal changes of particles densities and temperatures in a decaying arc discharge. J. Quant. Spectrosc. Radiat. Transfer 21, 487 (1979) France
3208	H02 hv + H ₂ ; hv + H ₂ O	E	2259 Å; 4.52 μ	Salzmann, R. G. P.; Kline, J. R.; Femer, S. S. Empirical determinations of the effective absorption coefficients for the H ₂ γ-bands at 2259 Å and the ν ₂ -fundamental of H ₂ O at 4.52 μ. J. Quant. Spectrosc. Radiat. Transfer 21, 479 (1979) United States
3209	E11 e + CO H11 hv + e + CO	T	50-15000 K	John, T. L. Neutral bromination by carbon monoxide. J. Quant. Spectrosc. Radiat. Transfer 21, 483 (1979) United Kingdom
3210	H07 hv + Si ⁻	T	1-3 eV	John, T. L. Photodetachment of Si ⁻ . J. Quant. Spectrosc. Radiat. Transfer 21, 486 (1979) United Kingdom
3211	A14 Xe + F H07 Xe + F + hv	T	A14 300 K	McVie, P. L.; George, T. F. Quantum-mechanical theory including angular momentum analysis of atom-atom collisions in a laser field. Mol. Phys. 36, 181 (1979) United States
3212	A02 H ₂ + Kr	T	0-8 meV	Bouman, S. The contribution of orbiting to elastic total cross section. Mol. Phys. 26, 483 (1975) Israel
3213	A17 Under	T	Under	Mattland, G. C.; Mason, E. A.; Viehland, L. A.; Mahan, V. A. A justification of methods for the inversion of gas transport coefficients. Mol. Phys. 36, 757 (1979) United States
3214	A17 H + ND ⁺ ; H + OH ⁺	T	Under	McLean, A. D.; Louw, G. M.; Berkowitz, D. S. MND ⁺ and NDH ⁺ . Potential energy surfaces for the lowest two electronic states, including the barrier to isomerization. Mol. Phys. 36, 1315 (1979) United States

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3215	A17 He + He ⁺	T	Undef	Chandra, A. K.; Sebastian, K. L. A study of interactions in He ₂ ⁺ in terms of the electrostatic forces. <i>Ind. Phys.</i> 36, 1496 (1979) India
3216	A15 Li ₂ + He; Li ₂ + Ar	E	63°-650 °C	Joyou, S. H.; McCaffery, A. J.; Bone, R. E. Energy and angular momentum transfer in atom-diatom collisions from polarized laser fluorescence: I. Li ₂ -rare gas interactions. <i>Ind. Phys.</i> 36, 1441 (1979) United Kingdom
3217	E96 e + Fe ²²⁺	T	0-300 K	Bely-Dubau, F.; Gabriel, A. H.; Volante, S. Dielectronic satellite spectra for highly charged helium-like ions: III. calculations of a = 3 solar flare iron lines. <i>Mon. Not. Roy. Astron. Soc.</i> 186, 485 (1979) Soviet Union
3219	D16 N ⁺ + Ta	E	13-100 keV	Kinnison, J.; Sattile, A. Preparation of implanted nitrogen targets. <i>Nucl. Instrum. Methods</i> 166, 211 (1979) Finland
3219	D84 N ⁺ + Au; N ₂ ⁺ + Au; Ne ⁺ + Au; Ne ⁺ + Cu; Ne ⁺ + Zr; Ne ⁺ + PtSi	E	1-4 MeV	Hatteson, S.; Nicolet, R.-A. Electron and ion currents relevant to accurate current integration in Ne ⁺ ion backscattering spectrometry. <i>Nucl. Instrum. Methods</i> 166, 301 (1979) United States
3223	M96 nhv + UF ₆ M98 nhv + UF ₆	E	294 nm	Wampler, F. B.; Rice, W. W.; Gidenberg, R. C.; Aharon, M. A.; Hagmann, B. v.; Smith, B. F.; Warner, C. K. Emission and ionization induced by focused KrF-laser irradiation of UF ₆ . <i>Opt. Lett.</i> 4, 143 (1979) United States
3221	M96 He + Sr ⁺	E	36 GHz	Cook, V. E.; Gallagher, T. F. Measurement of ⁸⁷ Rb + ⁸⁷ Rb ⁺ microwave transitions in strontium Rydberg states using selective resonance ionization. <i>Opt. Lett.</i> 4, 173 (1979) United States
3222	A63 He ⁺ + Cd; He ⁺ + Cd A66 He ⁺ + Cd; He ⁺ + Cd A67 He ⁺ + Cd; He ⁺ + Cd	E	53° K	Kartazov, V. A.; Tolmachev, Y. P. Penning ionization and resonant charge exchange in the afterglow of a discharge in a He-Cd mixture. <i>Opt. Spectrosc.</i> 46, 629 (1978) Soviet Union
3223	E83 e + Cd	E	151 eV	Dogdenova, I. P.; Rymontova, S. G.; Yakhontova, V. E. Special features of the excitation of cadmium levels by slow electrons. <i>Opt. Spectrosc.</i> 46, 622 (1978) Soviet Union
3224	M86 He + H ₂	T	11-16 eV	Tugov, I. I. Franck-Condon factors for Morse potentials. <i>Opt. Spectrosc.</i> 46, 627 (1978) Soviet Union
3225	E87 e + Ar ⁺	E	0.1-0.24 eV	Diagoev, A. B.; Popov, T. A. Investigation of the electron energy distribution function in an argon afterglow plasma. <i>Phys. Lett.</i> 70P, 416 (1979) Bulgaria
3226	D16 H + Ag; H + Cu; H + Pt; H + Pd	E	Undef	Dugast, J. P.; Ligeon, E. Lattice location and trapping of hydrogen implanted in fcc metals. <i>Phys. Lett.</i> 71A, 93 (1979) France
3227	A63 He ⁺ + He ⁺ A66 He ⁺ + He ⁺	T	50-400 keV	Sinh, C.; Sil, H. C. Charge transfer in proton-positive-ion collisions producing hydrogen atoms in any arbitrary p state. <i>Phys. Lett.</i> 71A, 281 (1979) India
3228	A66 He ⁺ + He; He ²⁺ + He; He ³⁺ + He; He ⁴⁺ + He; He ⁵⁺ + He; He ⁶⁺ + He; He ⁷⁺ + He; He ⁸⁺ + He; He ⁹⁺ + He; He ¹⁰⁺ + He	E T	0.2-2.3 MeV/amu	Tavara, M. On a scaling of electron capture by fully ionized heavy ions in light gas targets at low MeV energies. <i>Phys. Lett.</i> 71A, 288 (1979) United States
3229	A66 He ²⁺ + C ²⁺ ; He ²⁺ + O ²⁺ ; He ²⁺ + O ³⁺ A67 He ²⁺ + C ²⁺ ; He ²⁺ + O ²⁺ ; He ²⁺ + O ³⁺	T	5.25-1.6 MeV/amu	Olsen, R. E. Cross sections for alpha particles colliding with oxygen ions: loss of alpha heating in tokamak plasmas. <i>Phys. Lett.</i> 71A, 341 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3230	A06 $\text{Fe}^{20+} + \text{N}; \text{C}^{10+} + \text{N}; \text{C}^{10+} + \text{N}$ A07 $\text{Fe}^{20+} + \text{N}; \text{O}^{10+} + \text{N}; \text{C}^{10+} + \text{N}$	T	9.01-30 MeV	Salop, A.; Olson, B. E. Electron removal from atomic hydrogen by collisions with fully stripped iron ions. Phys. Lett. 71A, 407 (1979) United States
3231	A03 $\text{N}^+ + \text{H}_2$ A06 $\text{N}^+ + \text{H}_2$	T	9.05-5 MeV	Ray, P. P.; Saha, B. C. Electron capture in N^+-H_2 collisions. Phys. Lett. 71A, 415 (1979) India
3232	A07 $\text{Ar}^{20+} + \text{Al}; \text{Ar}^{20+} + \text{Sn}$ A19 $\text{Ar}^{20+} + \text{Al}; \text{Ar}^{20+} + \text{Sn}$	E	5-2 MeV	Flis, P.; Guillaume, G.; Jundt, F. C.; Jochen, K. b.; Johnson, B. M. Impact-parameter dependence of K- and L-radiation produced in Ar-Al and Ar-Sn collisions. Phys. Lett. 71A, 423 (1979) France
3233	C07 $e + \text{CO}_2; e + \text{N}_2; e + \text{He}$	T	Under	Bardelay, J.; Pinson, P. Calculations of vibrational excitation in CO_2 , CO , N_2 , and He discharges. Phys. Lett. 71A, 427 (1979) France
3234	A02 $\text{Na}^{20+} + \text{Li}$ A08 $\text{Na}^{20+} + \text{Li}$	T	99.6 MeV	Sunkel, U. A method for analytically computing the resonating-group kernel function and its application to $e + \text{Li}$ scattering. Phys. Lett. 62B, 17 (1975) West Germany
3235	A02 $\text{O} + \text{Si}$ A10 $\text{O} + \text{Si}$	T	51-55 MeV	Lipperhulde, R.; Fiedelmay, M.; Hakerzetti, M.; Haidco, K. Determination of the potential for back-angle enhanced elastic heavy-ion scattering: application to the scattering of ^{16}O on ^{28}Si . Phys. Lett. 62B, 35 (1979) West Germany
3236	E03 $e + \text{N}; e + \text{He}$	E T	6-200 eV	Blum, K.; Kleinpoppen, H. Electron-photon angular correlation in atomic physics. Phys. Reports 52, 203 (1979) West Germany
3237	K03 Review K06 Review	E T	Under	Bayfield, J. E. Excited atomic and molecular states in strong electromagnetic fields. Phys. Reports 51, 317 (1979) United States
3238	A04 $\text{H}_2^+ + \text{H}_2$	E	13 keV	Vogler, M. Observation of an electronically excited state of H_2 and determination of its vibrational level structure. Phys. Rev. A 19, 1 (1979) West Germany
3239	A06 $\text{Na}^+ + \text{He}$	E	0.1-107 eV	Rundel, R. D.; Nitz, D. E.; Smith, K. A.; Geise, R. W.; Stebbings, R. F. Resonant charge transfer in Na^+-He collisions studied with the merging-beams technique. Phys. Rev. A 19, 33 (1979) United States
3240	E02 $e + \text{Be}; e + \text{Mg}$	T	3-7.5 eV	Kurtz, M. A.; Ohm, Y. Calculation of 2P shape resonances in Be and Mg. Phys. Rev. A 12, 43 (1975) United States
3241	A07 $\text{N} + \text{Ar}$ A16 $\text{N} + \text{Ar}$	E	3.5 MeV	Duncan, M. R.; Menendez, M. G. Ionization of 0.5-MeV N by Ar and a comparison with the N^+-Ar system. Phys. Rev. A 19, 49 (1979) United States
3242	A07 $\text{B}^+ + \text{CH}_4; \text{C}^+ + \text{CH}_4; \text{C}^+ + \text{N}_2; \text{C}^+ + \text{O}_2; \text{N}^+ + \text{CH}_4; \text{N}^+ + \text{N}_2; \text{B}^+ + \text{N}_2; \text{C}^+ + \text{BF}_3; \text{C}^+ + \text{He}; \text{N}^+ + \text{BF}_3; \text{N}^+ + \text{N}_2; \text{N}^+ + \text{He}; \text{N}^+ + \text{O}_2; \text{O}^+ + \text{N}_2; \text{O}^+ + \text{He}; \text{O}^+ + \text{CH}_4; \text{O}^+ + \text{O}_2; \text{N}^+ + \text{BF}_3; \text{O}^+ + \text{He}; \text{N}^+ + \text{O}_2$	E	43-600 keV	Schneider, D.; Stofferant, M. Cross section for K-shell excitation in slow-ion-atom collisions. Phys. Rev. A 19, 55 (1979) United States
3243	A06 $\text{H}^+ + \text{N}; \text{H}^+ + \text{He}; \text{H}^+ + \text{Ar}; \text{He}^{20+} + \text{He}$	T	0-3.6 MeV	Guldner, K. Scaling of cross sections for K-electron capture by high-energy protons and alpha-particles from the multielectron atoms. Phys. Rev. A 19, 65 (1979) United States
3244	E03 $e + \text{O}^{10+}$	T	573-650 eV	Pindzola, M. S.; Tomsin, A.; Bhatia, A. K. Calculation of resonant effects in electron-impact excitation of positive ions: application to oxygen VII. Phys. Rev. A 19, 72 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3245	A19 $\text{Ni}^+ + \text{Na}; \text{Ni}^+ + \text{Sn}; \text{Bi}^+ + \text{Pt}$	E	45-138 MeV	Johnson, B. M.; Jones, K. W.; Brandt, W.; Jundt, F. C.; Guillaume, G.; Kruse, T. M. Impact-parameter-dependent inner-shell vacancy production in 6.7-2.7 MeV/amu ^{56}Ni collisions with ^{23}Na , ^{90}Sn , and ^{208}Pb . <i>Phys. Rev. A</i> 19, 81 (1979) United States
3246	E05 $e + \text{N}^{++}; e + \text{O}^{++}$	E	80 eV	Rowan, W. L.; Roberts, J. R. Electron-impact ionization-rate coefficients for lithiumlike nitrogen and oxygen. <i>Phys. Rev. A</i> 19, 98 (1979) United States
3247	B07 Under	T		Mittleman, M. H. Scattering of a charged particle by a model atom in the presence of a low-frequency laser. <i>Phys. Rev. A</i> 19, 99 (1979) United States
3248	E01 Under	T	Under	Kelder, U. L^2 -basis-set theory of electron-molecule scattering with vibrational and rotational coupling. <i>Phys. Rev. A</i> 19, 105 (1979) Israel
3249	A06 $\text{C}^{5+} + \text{Al}; \text{C}^{6+} + \text{Al}$ C05 $\text{C}^{5+} + \text{Al}; \text{C}^{6+} + \text{Al}$	E	3-36 MeV	Cover, M. E. B.; Safford, C. J.; Fromm, J. M.; Mason, J. P. Energy straggling of 3-36-MeV ^{12}C ions in aluminum. <i>Phys. Rev. A</i> 19, 111 (1979) United Kingdom
3250	E02 $e + \text{N}_2$ E03 $e + \text{N}_2$ E17 $e + \text{N}_2$ G09 $e + \text{N}_2$	T	50-500 eV	Choi, B. H.; Poo, R. Y.; Sun, J. C.; Shao, Y. Two-potential approach for electron-molecule collisions at intermediate and high energies; application to $e\text{-N}_2$ scattering. <i>Phys. Rev. A</i> 19, 116 (1979) United States
3251	A02 $\text{H} + \text{Hg}$ A18 $\text{H} + \text{Hg}$	T	0.1-1.25 eV	Bosanac, S. Contribution of orbitals to different cross sections. <i>Phys. Rev. A</i> 19, 125 (1979) Israel
3252	B07 Under	T		Mittleman, M. H. Potential scattering of charged particles in the field of a low-frequency laser. <i>Phys. Rev. A</i> 19, 134 (1979) United States
3253	B04 $h\nu + \text{S}^-$	T		Blumberg, W. A. M.; Itano, W. R.; Leron, D. J. Theory of the photo detachment of negative ions in a magnetic field. <i>Phys. Rev. A</i> 19, 139 (1979) United States
3254	H07 $h\nu + \text{Fe}^-$	E	4500 Å	Engelking, P. C.; Lindeberger, W. C. Laser photoelectron spectroscopy of Fe^- : the electron affinity of iron and the nonstatistical fine-structure detachment intensities at 480 nm. <i>Phys. Rev. A</i> 19, 149 (1979) Israel
3255	A11 $\text{He}^+ + \text{He}$	E	292 K	Louler, J. E.; Parker, J. W.; Anderson, L. W.; Fitzsimmons, V. A. Helium 3^2S decay rates in a high-pressure afterglow. <i>Phys. Rev. A</i> 19, 156 (1979) United States
3256	A12 $\text{Ar} + \text{Ar}$ H03 $h\nu + \text{Ar} + \text{Ar}$	T	Under	Balestri, U.; Tognetti, V.; Valleuri, R. Liner-shape theory and molecular dynamics in collision-induced light scattering. <i>Phys. Rev. A</i> 19, 177 (1979) Italy
3257	E11 $e + \text{Al}; e + \text{Au}; e + \text{Ne}; e + \text{O}; e + \text{Ag}; e + \text{U}$	T	1-500 keV	Tsang, M. R.; Pratt, R. M.; Lee, C. M. Electron bremsstrahlung angular distributions in the 1-500 keV energy range. <i>Phys. Rev. A</i> 19, 187 (1979) United States
3258	A03 $\text{Ar}^+ + \text{H}_2$	E	0.5-40 eV	Brandt, D.; Ottlinger, C. $2p^1$ (sub g^1) + b^1 (sub u^1) continuum emission excited by low-energy rare-gas ion collisions. <i>Phys. Rev. A</i> 19, 219 (1979) West Germany
3259	H06 $3h\nu + \text{Cs}; 4h\nu + \text{Cs}$	T	9443-14414 cm^{-1}	Gentler, Y.; Trahin, M. Theory of resonant multiphoton ionization: application to the cesium atom. <i>Phys. Rev. A</i> 19, 264 (1979) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3260	M02 Undef	T	Undef	Cc. trin Vasconcellos, J. I. Nonlinear absorption of monochromatic radiation near a gas-medium resonance. Phys. Rev. A 19, 280 (1979) Brazil
3261	A17 $H_2 + H_2$	T	Undef	Luyckx, R.; Delbecq, F.; Coulon, P.; Lehterkerker, h. N. V. New bounds for Van der Waals coefficients. Phys. Rev. A 19, 324 (1975) Belgium
3262	A01 Undef	T	Undef	Fano, U. Adiabatic analysis of collisions. III. Remarks on the spin model. Phys. Rev. A 19, 410 (1979) United States
3263	A06 $O^{+} + He; O^{+} + He$ A19 $O^{+} + He; O^{+} + He$	E	12-22 MeV	Ellsworth, L. D.; Doyle, B. L.; Schiebel, U.; Macdonald, J. R. p-state alignment of one- and two-electron oxygen ions excited by collisions in helium. Phys. Rev. A 19, 943 (1975) United States
3264	A03 $H^{+} + CO; H^{+} + CO_2; H^{+} + H_2O$ A06 $H^{+} + CO; H^{+} + CO_2; H^{+} + H_2O$	E	2.2-8.2 keV	Loyd, D. H.; Dawson, M. R. Electron capture into the n=3 states of hydrogen by proton impact on CO, CO ₂ , and H ₂ O. Phys. Rev. A 19, 948 (1979) United States
3265	C07 $He^{+} + C$ D04 $He^{+} + C$	E	60-160 keV	Gay, T. J.; Berry, H. C. Temperature dependence of alignment production in He I by laser-foil excitation. Phys. Rev. A 19, 952 (1975) United States
3266	A07 $Li^{+} + He$	E	13-50 keV	Elston, S. B.; Schumann, S.; Vane, C. R. Remy-electron aspects of molecular promotion in ion-atom collisions: production of core-excited states of Li in Li ⁺ -He collisions. Phys. Rev. A 19, 562 (1975) United States
3267	A03 $Ar + Ar; Kr + Kr$	E	8-400 eV	Rothwell, H. L., Jr.; Ames, R. C.; van Zyl, B. Ultraviolet radiation produced in ion-energy Ar + Ar and Kr + Kr collisions. Phys. Rev. A 19, 970 (1975) United States
3268	C06 $B^{+} + Au; C^{+} + Au; B^{+} + Au; O^{+} + Au; F^{+} + Au; F^{+} + Au; B^{+} + Ag; C^{+} + Ag; B^{+} + Ag; C^{+} + Ag; F^{+} + Ag; F^{+} + Ag$ C08 $B^{+} + Au; C^{+} + Au; B^{+} + Au; O^{+} + Au; F^{+} + Au; F^{+} + Au; B^{+} + Ag; C^{+} + Ag; B^{+} + Ag; C^{+} + Ag; F^{+} + Ag; F^{+} + Ag$ C07 $B^{+} + Au; C^{+} + Au; B^{+} + Au; O^{+} + Au; F^{+} + Au; F^{+} + Au; B^{+} + Ag; C^{+} + Ag; B^{+} + Ag; C^{+} + Ag; F^{+} + Ag; F^{+} + Ag$	E, T	31-44 MeV	Reah, C. D.; Betz, S.; Crawford, D. H.; Arnone, H. F.; Dittner, P. F.; Gomez del Campo, J.; Biggerstaff, J. A.; Miller, P. D.; Hvelplund, P.; Knudsen, H. Resonant coherent excitation of channeled ions. Phys. Rev. A 19, 977 (1979) United States
3269	A03 $Na^{+} + He; Na^{+} + He; Na^{+} + Ar$ E02 $e + He; e + He; e + Ar$	T	0-0.8 eV	Nichman, A. P. Relation between low-energy-electron scattering and l-changing collisions of Rydberg atoms. Phys. Rev. A 19, 994 (1975) United States
3270	A07 $H^{+} + PERT$ E06 $e + PERT$		A17 4.80 GeV E05 2-900 MeV	Anholt, R. Calculation of K-vacancy production by relativistic projectiles. Phys. Rev. A 19, 1004 (1979) United States
3271	A01 Undef E01 Undef	T	Undef	Takatsuka, K.; Fueno, T. Optimized Kohn method for scattering: I. Single-channel scattering. Phys. Rev. A 19, 1011 (1979) Japan
3272	A01 Undef E01 Undef	T	Undef	Takatsuka, K.; Fueno, T. Optimized Kohn method for scattering: II. Multichannel scattering. Phys. Rev. A 19, 1016 (1979) Japan
3273	A06 Undef	T	Jndef	Spruch, L.; Shakeshaft, R. Classical cross section for charge transfer via knock-on capture from high-Rydberg states at asymptotically high impact velocities. Phys. Rev. A 19, 1023 (1979) United States

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
3274	A07 Fe ²⁺ + H ₂ ; Fe ²⁺ + Ar; Fe ²⁺ + Kr; Fe ²⁺ + Xe; Fe ²⁺ + SF ₆ C06 Fe ²⁺ + H ₂ ; Fe ²⁺ + Ar; Fe ²⁺ + Kr; Fe ²⁺ + Xe; Fe ²⁺ + SF ₆	E	20 MeV	Knudsen, N.; Neek, C. D.; Jones, C. N.; Miller, P. D.; Sayer, R. O.; Alton, G. B.; Bridwell, L. B. Total electron-loss cross sections and absolute charge-state yields of 20-MeV Fe ions transmitted through gaseous targets. <i>Phys. Rev. A</i> 19, 1029 (1979) United States
3275	A19 Cu ²⁺ + H C06 Cu ²⁺ + C	E	50-65.6 MeV	Annett, C. N.; Curnutte, B.; Cocke, C. L. Impact-parameter dependence of K-vacancy production in Cu-H collisions. <i>Phys. Rev. A</i> 15, 1038 (1977) United States
3276	A03 H ⁺ + He	T	25-1000 keV	Ser, S. K.; Mukherjee, S. C. Calculation of proton-impact excitation of helium using the Glauber approximation. <i>Phys. Rev. A</i> 19, 1048 (1979) India
3277	B07 e + H	T		Brandt, H. S.; Kollner, B.; Lima de Barros, N. G. P. Electron-hydrogen-atom collisions in the presence of a laser field: Born-Oppenheimer approximation. <i>Phys. Rev. A</i> 19, 1058 (1979) Brazil
3278	E18 e + H	T	Undef	Kelsey, E. J. Electron scattering from hydrogen: collisions in which the total spin quantum numbers change. <i>Phys. Rev. A</i> 19, 1062 (1979) United States
3279	D12 Ar ⁺ + BaSO ₄	E	436-22000 MeV	Ahlon, S. P.; Salamon, M. N. Optical Cerenkov radiation from microscopic BaSO ₄ grains. <i>Phys. Rev. A</i> 19, 1064 (1979) United States
3280	H06 hv + SF ₆	T	21-52 eV	Levinson, N. J.; Gustafsson, T.; Sven, P. Calculated photoionization cross sections for SF ₆ . <i>Phys. Rev. A</i> 19, 1069 (1979) United States
3281	H06 hv + Li; hv + Li ₂	E	7150-4400 Å	Koch, M. E.; Collins, C. B. Space-charge ion detection of multiphoton absorption phenomena in lithium vapor. <i>Phys. Rev. A</i> 19, 1098 (1979) United States
3282	B07 hv + Undef	T		Yeh, S.; Berman, P. R. Theory of collisionally aided radiative excitation. <i>Phys. Rev. A</i> 19, 1106 (1979) United States
3283	H05 Undef	T	Undef	Lau, A. N. F. Laser-induced molecular predissociation by stimulated single-photon or multiphoton absorption or emission of infrared photons. <i>Phys. Rev. A</i> 19, 1117 (1979) United States
3284	H06 Undef	T	Undef	Zoller, P. Resonant multiphoton ionization by finite-bandwidth chaotic fields. <i>Phys. Rev. A</i> 19, 1151 (1979) Austria
3285	H06 2hv + Undef	T	Undef	Eberly, J. N.; O'Hell, S. V. Coherence versus incoherence: time-independent rates for resonant two-photon ionization. <i>Phys. Rev. A</i> 19, 1161 (1979) United States
3286	A19 B ⁺ + Cu; B ⁺ + Ge; B ⁺ + Br; B ⁺ + Rb	E	4-38 MeV	Matta, R.; McDonnell, F. D.; Duggan, J. L.; Miller, P. D. K-shell ionization of elements ₂₉ Cu to ₃₇ Rb for 0.4-3.8-MeV/amu ¹⁰ B-ion bombardment. <i>Phys. Rev. A</i> 19, 1363 (1979) United States
3287	C02 Undef	T	Undef	Brice, D. K. *Erratum Three-parameter formula for the electronic stopping cross section [Phys. Rev. A 6, 1791 (1972)]. <i>Phys. Rev. A</i> 19, 1367 (1979) United States
3288	D13 e + BaO; e + SrO; e + MgO; e + ZnO; e + O + Fe	T	10-300 eV	Phillips, J. C. Slow-electron-stimulated desorption from oxides: theoretical models of selected experiments. <i>Phys. Rev. B</i> 19, 47 (1979) United States
3289	D02 n + Au	E	Undef	Kirk, M. A.; Connor, R. A.; Wozniak, D. G.; Greenwood, L. R.; Mawicki, R. L.; Mainrich, R. R. Sputtering of gold by fast neutrons. <i>Phys. Rev. B</i> 19, 67 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3290	D04 $H^+ + Li; H_2^+ + Li; D^+ + Li; D_2^+ + Li;$ $He^+ + Li; He^+ + Al; He_2^+ + Al; D^+ + Al;$ $D_2^+ + Al; He^+ + Cr; He^+ + Cr; He_2^+ + Cr;$ $H^+ + Cu; H_2^+ + Cu; D^+ + Cu; D_2^+ + Cu;$ $He^+ + Cu; He^+ + Ag; He_2^+ + Ag; D^+ + Ag;$ $D_2^+ + Ag; He^+ + Au; He_2^+ + Au; D^+ + Au;$ $D_2^+ + Au; He^+ + Au$	E	2-50 keV	Saragiotto, R. A.; Alonso, E. V.; Olive Florio, A. Elec. ion emission from clean metal surfaces induced by low-energy light ions. <i>Phys. Rev. B</i> 19, 121 (1975) Argentina
3291	C02 $He^+ + Ag; He^+ + Au$	E	0.3-2.0 MeV	Fontell, A.; Luomaajervi, M. Stopping powers of Ag and Au for 0.3-2.0-MeV He ions. <i>Phys. Rev. E</i> 19, 155 (1979) Finland
3292	D07 $He + NiO$	E T	300 K	Contini, P.; Tatarok, R.; Felcher, G. P. Diffraction of a beam of monenergetic helium atoms from the (001) face of nickel oxide. <i>Phys. Rev. E</i> 19, 1161 (1975) Italy
3293	H06 $h\nu + Ag$	E	1650-930 Å	Conte, A. M.; Jannitti, E.; Mazzoni, R.; Pettini, M.; Tondello, G. Absorption spectrum of Ag I in the vacuum ultraviolet. <i>Phys. Scripta</i> 19, 263 (1979) Italy
3294	A01 Underf	T	Underf	Dubrovskiy, G. V.; Fischer-Mjølner, I. Resonant scattering of heavy particles in the pseudo-crossing problem. <i>Phys. Scripta</i> 19, 319 (1979) Sweden
3295	C07 $H^+ + C; H_2^+ + C; H_3^+ + C; D^+ + C; D_2^+ + C$	E	25-300 keV	Andersen, B.; Hultberg, S.; Jelenkovic, B.; Liljebj, L.; Mønnervik, E.; Vaje, E. A study of molecular effects in beam-foil spectroscopy. <i>Phys. Scripta</i> 19, 335 (1979) Denmark
3296	D15 $n + Nb$	E	Underf	Vavra, F. Influence of metallic impurities on defect production and recovery in niobium neutron-irradiated at 4.6 K. <i>Phys. Status Solidi A</i> 52, 269 (1979) Czechoslovakia
3297	D15 $n + Fe$	E	Underf	Dunlop, A.; Lorenzelli, M.; Jousset, J. C. Irradiation du fer à 20 K par les neutrons rapides et par les produits de fission de l'uranium 225. <i>Phys. Status Solidi A</i> 51, 479 (1979) France
3298	D14 $He^+ + Al$	E	2.5 MeV	Debras, G.; Gillon, J. M.; Lucas, A. A. Observation of overpressurized bubbles in helium-irradiated aluminum films. <i>Phys. Status Solidi A</i> 51, 559 (1979) Belgium
3299	D02 $He^+ + Al; He^+ + Nb; He^+ + Ag; He^+ + Pb;$ $Ar^+ + Al; Ar^+ + Nb; Ar^+ + Ag; Ar^+ + Pb;$ $Kr^+ + Al; Kr^+ + Nb; Kr^+ + Ag; Kr^+ + Pb$	E	13 keV	Milderbrandt, D.; Ramm, R. Angular distribution in sputtering of metals by 10 keV inert-gas ions. <i>Phys. Status Solidi A</i> 51, 1151 (1979) East Germany
3300	A06 PERT	T	30-5000 keV/atom	Chen, F. T.; Eichler, J. Approximation scheme for electron capture into arbitrary principal shells of energetic bare projectiles. <i>Phys. Rev. Lett.</i> 42, 88 (1979) West Germany
3301	H04 $He + He^+$	E	4 μ	Panack, R.; Rotenbluth, M.; Lee, B.; Hillier, T. A. Laser-driven forbidden transitions to high-L states in He. <i>Phys. Rev. Lett.</i> 42, 172 (1979) United States
3302	A06 $H^+ + Na; D^+ + Na; He^+ + Na; He^+ + Na;$ $Ar^+ + Na; Kr^+ + Na$	E	360 K	Dutta, N.; Thach, R.; Frohlich, D.; Tong, C. L.; Mahr, R.; Hartman, P. L. Resonance charge transfer from a photoexcited donor state. <i>Phys. Rev. Lett.</i> 42, 176 (1979) United States
3303	D09 $CH^+ + C$	E	15 MeV	Brackin, A.; Folbio, A.; Goldring, G.; Mees, R.; Kain, R.; Vager, Z.; Zhang, N. Charge-state dependence of the Coulomb explosion of 10-MeV CH^+ . <i>Phys. Rev. Lett.</i> 42, 369 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3304	E04 $e + H_2^+; e + HD^+; e + D_2^+; e + CH_2^+;$ $e + NH^+; e + OH^+; e + C_2^+; e + N_2^+;$ $e + NO^+; e + O_2^+; e + H_3^+; e +$ $HD_2^+; e + D_2^+; e + CH_3^+; e + CH_2^+;$ $e + CH_3^+; e + CH_3^+; e + N_2O^+; e +$ $H_2O^+; e + C_2H_2^+; e + C_2H_3^+; e +$ H_2H^+ E06 $e + H_2^+; e + HD^+; e + D_2^+; e + CH_2^+;$ $e + NH^+; e + OH^+; e + C_2^+; e + N_2^+;$ $e + NO^+; e + O_2^+; e + H_3^+; e +$ $HD_2^+; e + D_2^+; e + CH_3^+; e + CH_2^+;$ $e + CH_3^+; e + CH_3^+; e + N_2O^+; e +$ $H_2O^+; e + C_2H_2^+; e + C_2H_3^+; e +$ H_2H^+	E	0-0.1 eV	McGowan, J. V.; Nui, P. M.; D'Angelo, V. S.; Mitchell, J. B. A.; Infranca, P.; Froelich, L. R. Energy dependence of dissociative recombination below 0.08 eV measured with (electron-ion) merged-beam technique. Phys. Rev. Lett. 42, 373 (1979) United States
3305	A03 $He^+ + H_2; He^+ + He$ A06 $He^+ + H_2; He^+ + He$	E	25-90 keV	Pedersen, E. M. Notable atom population of fast, neutral helium beams. Phys. Rev. Lett. 42, 640 (1979) Denmark
3306	C04 $He^+ + W$	E	300-475 eV	Vagner, A.; Seldman, D. H. Range profiles of 300- and 475-eV He^+ ions and the diffusivity of He in tungsten. Phys. Rev. Lett. 42, 515 (1979) United States
3307	A03 $H^+ + He; H^+ + Ar; H^+ + O_2$ A06 $H^+ + He; H^+ + Ar; H^+ + O_2$	E	2-3 a.u.	Sellin, I. A.; Liljebj, L.; Nannervik, S.; Maltberg, S. Observation of mixed-parity electric-dipole oscillations in charge transfer to the $n = 2$ hydrogen levels by fast protons in gases. Phys. Rev. Lett. 42, 570 (1979) Sweden
3308	A17 $K + K$ H02 $h\nu + K_2$	E	1.6-1.1 μ m	Bhaskar, M. D.; Zouboulis, L.; McClelland, T.; Mapper, U. New infrared absorption bands of alkali vapors. Phys. Rev. Lett. 42, 640 (1979) United States
3309	A03 $He^+ + H$	T	25-3000 keV	France, V. Excitation of atomic hydrogen to the $n = 2$ state by helium ions. Phys. Rev. Lett. 42, 759 (1979) United States
3310	A06 $O + C; S + C; S + Al$	E	93-123 MeV	Spindler, E.; Betz, M.-D.; Bell, F. Influence of retardation on the angular distribution of radiative electron capture. Phys. Rev. Lett. 42, 832 (1979) West Germany
3311	B06 $h\nu + Li$ H02 $h\nu + Li$	E T	H02 43237-43250 1/cm	Crosswhite, M.; Fano, U.; Lu, K. T.; Rau, A. R. P. Resonant Stark effect on Li vapor photoabsorption in high magnetic fields. Phys. Rev. Lett. 42, 963 (1979) United States
3312	A10 $Sr + Ca$ D07 $Sr + Ca$	E	A10 380 K	Green, U. R.; Lukasik, J.; Villison, J. R.; Wright, R. D.; Young, J. F.; Harris, S. E. Measurement of large cross sections for laser-induced collisions. Phys. Rev. Lett. 42, 970 (1979) United States
3313	H02 $h\nu + Li_2$ H06 $h\nu + Li_2$	E	6400-5700 $\text{\AA}$	Koch, M. E.; Stuelley, W. C.; Collins, C. B. Observation of bound-free-bound triplet absorption bands in Li_2 . Phys. Rev. Lett. 42, 1062 (1979) United States
3314	D04 $He^+ + CC + Pd; He^+ + Pd$	E	330 K	Conrad, M.; Ertl, G.; Koppers, J.; Wang, S. U.; Garard, K.; Heberland, H. Penning-ionization electron spectroscopy of chemisorbed CO. Phys. Rev. Lett. 42, 1062 (1979) West Germany
3315	E12 $e^+ + Ar$	E	2-9 eV	Coleman, P. G.; McHett, J. B. Measurement of differential cross sections for the elastic scattering of positrons by argon atoms. Phys. Rev. Lett. 42, 1130 (1979) United States
3316	A03 $Be^+ + He$	E T	2-15 keV	Anderson, M.; Anderson, T.; Olson, J. O.; Pedersen, E. M.; Nielsen, S. E.; Dahler, J. S. Quantum-mechanical phase jumps in collision-induced coherent excitation. Phys. Rev. Lett. 42, 1134 (1979) Denmark

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3317	E12 $e^+ + Si$	E	56 MeV	Alguard, M. J.; Suent, R. L.; Partell, R. W.; Berman, B. L.; Bloom, S. D.; Bet., S. Observation of radiation from channelled positrons. <i>Phys. Rev. Lett.</i> 42, 1142 (1979) United States
3318	E04 $e + CH_3^+; e + H_2O^+; e + H_2D^+; e + C_2H_5^+; e + H_2H^+$ E06 $e + CH_3^+; e + H_2O^+; e + H_2D^+; e + C_2H_5^+; e + H_2H^+$	E	Undef	McGowan, J. W.; Mai, P. M.; D'Angelo, V. S.; Mitchell, J. B. A.; Boffanco, P.; Froelich, R. H. Erratum Energy dependence of dissociative recombination below 0.00 eV measured with (electron-ion) merged-beam technique [<i>Phys. Rev. Lett.</i> 42, 372 (1979)]. <i>Phys. Rev. Lett.</i> 42, 1106 (1979) Japan
3319	E02 $e + Ne; e + Ne; e + Ar$	E	15-25 keV	Geiger, J.; Rosen-Leon, B. Electron-atom shadow scattering. <i>Phys. Rev. Lett.</i> 42, 1336 (1979) West Germany
3320	D06 $e + U$	E	50-150 eV	Hong, C.-C.; Dunlap, B. I.; Collette, R. J.; Pierce, B. T. Symmetry in low-energy-polarized-electron diffraction. <i>Phys. Rev. Lett.</i> 42, 1349 (1979) United States
3321	D03 $h\nu + Rb$ D06 $h\nu + Rb$	E	D06 33.6 1/cm	Feneuille, S.; Liberman, S.; Pinero, J.; Toleb, A. Observation of Fano profiles in photoionization of rubidium in the presence of a dc field. <i>Phys. Rev. Lett.</i> 42, 1404 (1979) France
3322	D08 $H^+ + H$	E	9 keV	Tolk, M. M.; Tully, J. C.; Kraus, J. S.; Neiland, b.; Hoff, S. M. Polarization from grazing-incidence collisions of protons on a nickel single crystal. <i>Phys. Rev. Lett.</i> 42, 1475 (1979) United States
3323	D06 $h\nu + Xe$	E	130-40 nm	Meixner, U.; Schonhense, G.; Kessler, J. Polarization of photoelectrons ejected by unpolarized light from xenon atoms. <i>Phys. Rev. Lett.</i> 42, 1683 (1979) West Germany
3324	A02 $He + He$	E	350 K	Mousberg, T.; Flusberg, A.; Kachru, S.; Martmann, S. R. Total-scattering cross section for He on He measured by stimulated photon echoes. <i>Phys. Rev. Lett.</i> 42, 1645 (1979) United States
3325	D07 Undef D04 Undef	T	D04 Undef	Smith, R. A. Excitation of transitions between atomic or molecular energy levels by monochromatic laser radiation: I. Excitation under conditions of strictly homogeneous line broadening. <i>Proc. Roy. Soc., London A</i> 362, 1 (1978) United Kingdom
3326	D07 Undef D04 Undef	T	D04 Undef	Smith, R. A. Excitation of transitions between atomic or molecular energy levels by monochromatic laser radiation: II. Excitation under conditions of strictly inhomogeneous line broadening and sized homogeneous and inhomogeneous broadening. <i>Proc. Roy. Soc., London A</i> 362, 13 (1978) United Kingdom
3327	D04 $h\nu + Cd$	E	1100-400 Å	Manfield, R. W. D. The simultaneous excitation of two electrons in atomic cadmium. <i>Proc. Roy. Soc., London A</i> 362, 129 (1978) United Kingdom
3328	D02 Undef D04 Undef	T	Undef	Metz, F.; Howard, W. E.; Vansich, L.; Reusser, M. J.; Schleg, E. W. The theory of molecular two-photon spectroscopy in the gas phase. <i>Proc. Roy. Soc., London A</i> 363, 361 (1978) West Germany
3329	D02 $h\nu + Rb$ D04 $h\nu + Rb$	E, T	15-19 eV	Manfield, R. W. D. A new interpretation of the Rb I 4p subshell excitation spectrum between 18 and 19 eV. <i>Proc. Roy. Soc., London A</i> 364, 131 (1979) United Kingdom
3330	D02 $2h\nu + In$ D06 $2h\nu + In$	E	4350-4225 Å	Mirza, M. Y.; Duley, W. W. Two photon laser spectroscopy of indium. <i>Proc. Roy. Soc., London A</i> 364, 266 (1979) Canada

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3331	Hg2 hv + Hg H84 hv + Hg	E	2300-700 Å	Beig, M. A.; Coenegrade, J. P. Extensions to the spectrum of doubly excited Hg I in the vacuum ultraviolet. <i>Proc. Roy. Soc., London A</i> 364, 363 (1979) United Kingdom
3332	D12 e + H ₂	E	220-340 eV	Sayer, R. J.; Prince, R. N.; Bailey, M. W. Luminescence of H atoms in solid H ₂ stimulated by low energy electrons. <i>Proc. Roy. Soc., London A</i> 364, 230 (1979) Canada
3333	E83 e + K; e + Ca E85 e + K; e + Ca	E T	10-35 eV	Manaffield, M. W. B.; Otting, T. b. The identification of low energy K and Ca ⁺ autoionizing levels observed in electron impact experiments. <i>Proc. Roy. Soc., London A</i> 365, 413 (1979) United Kingdom
3334	D12 H ⁺ + HgCl; H ₂ ⁺ + HgCl; He ⁺ + HgCl; H ⁺ + HgCl; H ₂ ⁺ + HgCl; e + HgCl	E	2.5-2000 keV	Agutter, M.; Chandler, P. J.; Youssand, P. B. Luminescence of HgCl I. Electron and ion beam excited spectra. <i>Radiat. Eff.</i> 40, 1 (1975) United Kingdom
3335	D03 Review	T	Underf	Snowden, K. J. A fundamental analysis of the validity of thermodynamic models of ionized and excited particle production during sputtering. <i>Radiat. Eff.</i> 40, 9 (1979) United Kingdom
3336	D03 Review	E T	Underf	Snowden, K. J.; Andrusen, B.; Vuja, E. An evaluation of the methods of determining excited state population distributions from sputtering sources. <i>Radiat. Eff.</i> 40, 15 (1979) United Kingdom
3337	D08 Ar ⁺ + Cu	T	6 keV	Nishiyama, S. L.; Parilla, E. S.; Verleger, V. A. Orientational effects in charge state of ions scattered by single crystal. <i>Radiat. Eff.</i> 40, 23 (1979) Soviet Union
3338	D14 Na ⁺ + Cr + Ni; Na ⁺ + SS	E	42-100 keV	Ganev, V. N.; Ganeva, N. I.; Kortynskho, Y. V.; Mansurova, A. M.; Marusev, V. B.; Chelishov, D. I. Helium blistering at high irradiation doses. <i>Radiat. Eff.</i> 40, 37 (1979) Soviet Union
3339	D07 Ar ⁺ + Cu	T	32 keV	Nishiyama, S. L.; Parilla, E. S.; Turov, N. V. Ion scattering by atomic chains on a solid surface. <i>Radiat. Eff.</i> 40, 43 (1979) Soviet Union
3340	C02 Underf	T	Underf	Akhiezer, I. A.; Danylov, L. N. Elastic stopping of fast heavy ions by electrons in solids. <i>Radiat. Eff.</i> 40, 52 (1979) Soviet Union
3341	D15 e + Cu; e + Ag	E	2 MeV	Landier, J.; Girard, P.; Ninier, C. Thermal variation of dislocation pinning by point defects created by electron bombardment in copper and silver. <i>Radiat. Eff.</i> 40, 57 (1979) France
3342	D04 Ar ⁺ + Cu	E	31 keV	Brustlovsky, B. A.; Melchanev, V. A. Ion-electron collision from spherical targets. <i>Radiat. Eff.</i> 40, 113 (1979) Soviet Union
3343	D14 Underf	T	Underf	Torresault, B. Letter to the Editor. <i>Radiat. Eff.</i> 40, 123 (1979) Canada
3344	C08 He ⁺ + V ₂ Si	T	2 MeV	Kaufmann, R.; Meyer, O. Computer simulation of channeling measurements in He-irradiated V ₂ Si single crystals. <i>Radiat. Eff.</i> 40, 161 (1979) West Germany
3345	C02 H ⁺ + Al; H ⁺ + Ti; H ⁺ + Ni; H ⁺ + Cu; H ⁺ + Zn; H ⁺ + Mo; H ⁺ + Ag; H ⁺ + Ta; H ⁺ + W; H ⁺ + Au	E	0.3-1.5 MeV	Laukajarvi, M. Stopping powers of some metals for 0.3-1.5 MeV protons. <i>Radiat. Eff.</i> 40, 173 (1979) Finland
3346	D12 Review	E T	Underf	Artamonov, G. M.; Samarin, S. N. Radiative interaction of slow electrons with metal surfaces. <i>Radiat. Eff.</i> 40, 201 (1979) Soviet Union

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
3347	D15 Undef	E	Undef	Colson, R. W.; Violet, C. E.; Sloney, J. R.; Bannish, A. C. Simulation of fusion reactor first wall enhanced diffusion by fission fragment irradiation of α -brass. Radiat. Eff. 40, 209 (1979) United States
3348	C06 $H^+ + H_2O$ D07 $H^+ + H_2C$	E	1 MeV	Fujino, Y.; Yamaguchi, S.; Kato, P.; Hirobayashi, R.; Takahashi, J.; Cason, K.; Del, K. An ion channeling study of H ₂ O crystals: I. General investigation. Radiat. Eff. 40, 221 (1979) Japan
3349	C06 $H^+ + H_2O$ D07 $H^+ + H_2C$	E	1 MeV	Yamaguchi, S.; Kato, P.; Hirobayashi, R.; Fujino, Y.; Takahashi, J.; Cason, K.; Del, K. An ion channeling study of H ₂ O crystals: II. Neutrons and deuterons. Radiat. Eff. 40, 231 (1979) Japan
3350	D07 $Ar^+ + Au$; $H^+ + Au$; $H_2^+ + Au$	E	78 keV	Lebecqz, S. Y.; Lysova, G. V. Angular distribution of reflected keV ions under bombardment of single crystals of gold. Radiat. Eff. 40, 245 (1979) Soviet Union
3351	D15 Undef	T	Undef	Carter, G.; Webb, R. The accumulation of amorphousness as a function of irradiation fluence in a composite model of disorder production. Radiat. Eff. Lett. 43, 19 (1979) United Kingdom
3352	A17 Undef	T	Undef	Pathak, A. P. Interatomic potential for atomic collisions in real solids. Radiat. Eff. Lett. 43, 25 (1979) India
3353	H04 Review H05 Review H06 Review E06 Review	E T	Undef	Willoughby, A. F. W. Recent developments in the spectroscopy of small molecules. Reports Prog. Phys. 41, 1469 (1978) France
3354	A01 Review C01 Review E01 Review	T	Undef	Inokuti, M.; Itihawa, Y.; Turner, J. E. Aspects: Inelastic collisions of fast charged particles with atoms and molecules—the Bethe theory revisited [Rev. Mod. Phys. 43, 297 (1971)]. Rev. Mod. Phys. 50, 23 (1978) United States
3355	D15 $Be^+ + Be$; $Be^+ + Ni$; $Ni^+ + Be$; $Ni^+ + Ni$; $H^+ + Be$; $H^+ + Ni$; $n + Be$; $n + Ni$	T	2.5-20 MeV	Saliyev, B. A.; Stabitskii, B. P.; Yonitskii, V. A.; Timshvskii, G. F.; Rozina, G. P.; L'vov, A. B.; Nigalova, V. Y. Modeling point defects of radiation damage to materials by protons, neutrons, and heavy ions. Sov. Atomic Energy 4b, 674 (1975) Soviet Union
3356	C02 $H^+ + Fe$; $H^+ + Ga$; $H^+ + GaAs$; $H^+ + FeGa_2$	E	0.75-7.4 MeV	Ved'manov, G. B.; Mashov, F. G.; Pazanov, A. A.; Urmanov, A. R. Determining stopping powers from spectra of backscattered ions. Sov. Atomic Energy 45, 909 (1979) Soviet Union
3357	C04 $H^+ + PERT$	T	1-100 MeV	Mironov, V. B.; Kravov, R. B.; Koryshkin, N. A. Analytic range-energy relation for light ions in materials with atomic numbers from 1 to 92. Sov. Atomic Energy 4b, 993 (1979) Soviet Union
3358	D03 $Ar^+ + Si$; $Ar^+ + Cu$; $Ar^+ + Au$; $Ar^+ + Ge$; $Ar^+ + As$	E	15-30 keV	Williams, P.; Evans, C. A., Jr. Anomalous enhancement of negative sputtered ion emission by oxygen. Surface Sci. 78, 324 (1978) United States
3359	D03 $Ar^+ + SS$	T	43-74 keV	MacDonald, R. J.; Garrett, R. F. A method of quantitative analysis based on ion bombardment induced secondary ion and photon emission. Surface Sci. 78, 371 (1978) Australia
3360	D02 $Ar^+ + Cu$	T	630 eV	Winegrad, N.; Morrison, D. E., Jr.; Garrison, B. J. Structure sensitive factors in molecular cluster formation by ion bombardment of single crystal surfaces. Surface Sci. 78, 467 (1978) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3361	D04 He ⁺ + Mg; He ⁺ + Al; He ⁺ + Mg; He ⁺ + Al; He ⁺ + Mg; He ⁺ + Al; Ar ⁺ + Al; Kr ⁺ + Mg; Kr ⁺ + Al; Xe ⁺ + Mg; Zn ⁺ + Al	E	10-100 keV	Benazeth, C.; Benazeth, M.; Viel, I. Spectres Auger et sections efficaces d'ionisation de la couche L ₂₃ du magnésium et de l'aluminium sous impact de protons et d'ions lourds (10-100 keV). <i>Surface Sci.</i> 78, 625 (1978) France
3362	D02 e + WO ₃ D13 e + WO ₃	E	100-500 eV	Niehus, M. Electron stimulated desorption from ordered WO ₃ layers. <i>Surface Sci.</i> 78, 647 (1978) West Germany
3363	D04 e + MgO; e + NiO	E	5 keV	Place, J. B.; Prutton, M. Angular dependence of Auger electron emission from MgO and NiO. <i>Surface Sci.</i> 82, 315 (1979) United Kingdom
3364	D04 Ar ⁺ + Al	E	51 keV	Nischler, J.; Negro, M.; Benazeth, M.; Sponjaard, B.; Goubert, C.; Abaydon, B. Experimental and theoretical study of the angular resolved Auger emission L ₂₃ of a single crystal target of aluminium excited by ion impact. <i>Surface Sci.</i> 82, 453 (1978) France
3365	D02 O ₂ ⁺ + B; O ₂ ⁺ + C; O ₂ ⁺ + Mg; O ₂ ⁺ + Al; O ₂ ⁺ + Si; O ₂ ⁺ + Ti; O ₂ ⁺ + V; O ₂ ⁺ + Cr; O ₂ ⁺ + Mn; O ₂ ⁺ + Fe; O ₂ ⁺ + Co; O ₂ ⁺ + Cu; O ₂ ⁺ + Ni; O ₂ ⁺ + Zn; O ₂ ⁺ + Ga; O ₂ ⁺ + Ge; O ₂ ⁺ + Zr; O ₂ ⁺ + Nb; O ₂ ⁺ + Mo; O ₂ ⁺ + Ru; O ₂ ⁺ + Pd; O ₂ ⁺ + Ag; O ₂ ⁺ + Sn; O ₂ ⁺ + Sb; O ₂ ⁺ + Te; O ₂ ⁺ + Hf; O ₂ ⁺ + Ta; O ₂ ⁺ + W; O ₂ ⁺ + Pt; O ₂ ⁺ + Bi; O ₂ ⁺ + U	E	5.5 keV	Rusat, M. A.; Morrison, G. H. Energy spectra of ions sputtered from elements by O ₂ ⁺ : a comprehensive study. <i>Surface Sci.</i> 82, 549 (1979) United States
3366	D07 Undef	T	Undef	Manson, J. R.; Armand, G.; Lapujoulade, J. On the Fourier components of the atom-surface scattering potential. <i>Surface Sci.</i> 82, 1593 (1979) United States
3367	D04 e + MgO	E	3 keV	Bermudez, V. M.; Ritz, V. M. Low-energy Auger transitions in magnesium oxide. <i>Surface Sci.</i> 82, 1401 (1979) United States
3368	D07 Undef	T	Undef	Armand, G.; Lapujoulade, J.; Manson, J. R. Hard corrugated wall potential: numerical calculation of diffracted peak intensities for any type of corrugation. <i>Surface Sci.</i> 82, 1628 (1979) France
3369	D06 e + Sn	E	100-1000 eV	Bayat-Nokhtari, P.; Barlow, S. M.; Gallon, T. E. The electron energy loss spectrum of tin a low primary beam energies. <i>Surface Sci.</i> 83, 131 (1979) United Kingdom
3370	D04 Undef	T	Undef	Genachaud, J. P.; Cailler, M. A Monte-Carlo calculation of the secondary electron emission of normal metals: I. The model. <i>Surface Sci.</i> 83, 498 (1979) France
3371	D04 e + Al D06 e + Al	T	0-1000 eV	Genachaud, J. P.; Cailler, M. A Monte-Carlo calculation of the secondary electron emission of normal metals: II. Results for aluminium. <i>Surface Sci.</i> 83, 519 (1979) France
3372	D02 Ar ⁺ + Cu	E	3-15 keV	Abatino, C.; Luzzi, G.; Papagno, L. Sputtering yield coefficients of thin copper films resarded by 3-15 keV Ar ⁺ at an angle of incidence of 20°. <i>Thin Solid Films</i> 56, 261 (1979) Italy
3373	A12 H + Ar ⁺ ; D + Ar ⁺ EEN e + H	E	9570 K	Ehrlich, M. Experimental study of Reimer's Stark broadening. <i>Z. Naturforsch. A</i> 34, 188 (1979) West Germany
3374	A05 Si ²⁺ + C	E	21-24 MeV	Trabert, E.; Heckeann, P. M.; Buttler, M. V. Highly resolved EUV beam-fall spectra of silicon. <i>Z. Phys. A</i> 290, 7 (1979) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3375	A19 S + Na; S + Mg; S + Al; S + Si; S + Cl; S + Co; S + Se; S + Ti; Cl + Ar	E	3.9-48 MeV	Schoch, R.; Goshier, G.; Scholiet-Becking, M. Dependence of the K (sub a) (sup h)/K (sub double a)-branching ratio on projectile velocity and nuclear charge. Z. Phys. A 290, 19 (1975); West Germany
3376	A63 I + Yb; I + Au; I + Pb; I + Th; I + U A19 I + Yb; I + Au; I + Pb; I + Th; I + U	T	6.3-45 MeV	Nagman, S.; Arambuster, P.; Kraft, G.; Rohler, P. h.; Stein, H.-J. Inner-shell x-ray production in adiabatic iodine-Z ₂ collisions with Z ₁ + Z ₂ greater than or equal to 100: II. Molecular vacancy production mechanisms and coupling strengths. Z. Phys. A 290, 25 (1979); West Germany
3377	A17 K + H ₂ ; K + CO A18 K + H ₂ ; K + CO	E	1.34-1.24 eV	Schapper, U.; Riss, U.; Boch, D. Anisotropy of the repulsive intermolecular potential from rotationally inelastic scattering. Z. Phys. P 290, 131 (1979); West Germany
3378	A13 H ₂ O ⁺ + H ₂ S; H ₂ O ⁺ + CH ₃ O; H ₂ O ⁺ + CH ₃ NH ₂ ; H ₂ O ⁺ + NH ₃ ; H ₂ O ⁺ + CH ₃ CO; H ₂ O ⁺ + HCOOH	E	298 K	McKay, G. I.; Tanner, S. D.; Hopkinson, A. C.; Bohac, D. K. Gas-phase proton-transfer reactions of the hydronium ion at 298 K. Can. J. Chem. 57, 1518 (1979); Canada
3379	A75 Xe ⁺ + Kr; Ar ⁺ + Kr; Kr ⁺ + Kr; Xe ⁺ + Kr; Ar ⁺ + Xe	E	63-115 keV	Hird, B.; All, S. P. Search for long-lived states of the heavier rare gas negative ions. Can. J. Phys. 57, 567 (1979); Canada
3380	A17 TIF + Ar; TIF + Kr; TIF + Xe; CoF + Ar; NO + CO ₂ ; NO + CS ₂ ; NO + N ₂ C; NO + H ₂ ; NO + Ar; NO + Kr; NO + Xe; NO + Ne; NO + CCl ₄ ; NO + SF ₆ ; H ₂ + Ne; H ₂ + Kr; H ₂ + Xe; H ₂ + Ar; H ₂ + H ₂ ; H ₂ + CO; H ₂ + CH ₄	E T	Undef	Thuis, M.; Stolte, S.; Reuse, J. Molecular-beam investigations of anisotropic potentials. Comments At. Mol. Phys. 8, 123 (1979); The Netherlands
3381	A62 H + Ar; H + Kr; H + Xe; H ₂ + Ar; H ₂ + Kr; H ₂ + Xe; H + O ₂ ; H + C ₂ H ₆ ; H + C ₂ H ₅ F A17 H + Xe	E T	A52 300-3000 eV; 360-3500 eV n/a A17 Undef	Toennies, J. P. Resonances in the scattering of atoms and molecules. Comments At. Mol. Phys. 8, 137 (1979); West Germany
3382	A13 Cl ⁻ + SO ₂ Cl ₂ ; SO ₂ Cl ⁻ + SO ₂ Cl ₂ ; SO ₂ ⁻ + SO ₂ Cl ₂ ; F ₂ ⁻ + SO ₂ F ₂	E	Undef	Robbioni, R.; Franklin, J. L. Negative ion-molecule reactions in sulfoxyl halides. J. Am. Chem. Soc. 101, 3789 (1979); United States
3383	D62 Ar ⁺ + XeF ₂ + Si; Ar ⁺ + Cl ₂ + Si; Ar ⁺ + F ₂ + Al; e + XeF ₂ + Si ₃ N ₄ ; e + XeF ₂ + SiO ₂ D17 Ar ⁺ + XeF ₂ + Si; Ar ⁺ + Cl ₂ + Si; Ar ⁺ + F ₂ + Al; e + XeF ₂ + Si ₃ N ₄ ; e + XeF ₂ + SiC ₂	E	450 eV; 1500 eV	Coburn, J. W.; Winters, M. F. Ion- and electron-assisted gas-surface chemistry—an important effect in plasma etching. J. Appl. Phys. 50, 3105 (1979); United States
3384	D14 He ⁺ + Nb	E	25-500 keV	Das, S. K.; Kaulsky, M.; Fenebo, G. On the correlation of blister diameter and blister skin thickness in helium-ion-irradiated Nb. J. Appl. Phys. 50, 3304 (1979); United States
3385	D64 e + V ₂ O ₅ ; e + P ₂ O ₅	E	0.09-5.5 keV	Flinn, E. A.; Salehi, M. Secondary electron emission from vanadate-phosphate glasses. J. Appl. Phys. 50, 3674 (1979); United Kingdom
3386	G62 Ni + Ar; Cu + Ar; Mo + Ar; W + Ar	E	Undef	Mase, M.; Tanabe, T.; Miyamoto, G. Direct measurement of diffusion coefficients of sputtered atoms in Al. J. Appl. Phys. 50, 3604 (1979); Japan
3387	A63 Ne ⁺ + N ₂ ⁺ A64 Ne ⁺ + N ₂ ⁺	E	Undef	Bochkova, O. P.; Ivanova, L. A. Effect of the vibrational excitation of an N ₂ ⁺ I (sub g) ⁺ (v is unequal to 0) molecule on the efficiency of the dissociative excitation of N (sub a) in a Ne-N ₂ mixture. Opt. Spectrosc. 45, 745 (1979); Soviet Union

REV. NO.	REACTANTS	EXP ON TINER	ENERGY RANGE	REFERENCE
3388	A17 $I_2; H_2; O_2; N_2; NO; CO; P_2$	T	Under	Noor Muhammad, S. Two new trigonometrical potentials for the bound states of diatomic molecules. <i>Physica B+C</i> 56, 410 (1979) India
3389	B02 $h\nu + I^-; h\nu + Xe; h\nu + Ca^+; h\nu + Ba^{2+}; h\nu + La^{3+}$	E	0-60 eV	Elango, M.; Holste, A.; Bana, E. Continuous and discrete states in the 3d photoabsorption spectra of Xe-like ions. <i>Phys. Lett.</i> 72A, 16 (1979) Soviet Union
3390	CE6 $H_2^+ + C$	E	2.4 MeV	Coe, B.; de Castro-Faria, R. V.; Galliard, R. J.; Polzat, J. C.; Benilleux, J. Transmission of fast H_2^+ molecules through thin carbon foils. <i>Phys. Lett.</i> 72A, 104 (1979) France
3391	E05 $e + H$	T	13.6-54.0 eV	Collaery, J.; Dze, D. N. Ionization of hydrogen atoms by electron impact. <i>Phys. Lett.</i> 72A, 207 (1979) United States
3392	A02 $He + He; He + He$ A12 $He + He; He + He$	E	668 K	Mitov, V. R.; Pavlov, L. I.; Stanev, K. V. Two-photon optical free induction decay measurement by broad-band excitation in unidirectional beams. <i>Phys. Lett.</i> 72A, 209 (1979) Bulgaria
3393	A02 $Li + He$	E	0.42 MeV	Egelhof, P.; Barrette, J.; Bruch-Munzinger, P.; Brues, H.; Gelboe, C. E.; Koss, D.; Steffens, E.; Weiss, H.; Fick, B. Vector analyzing power in the elastic scattering of 6Li by 4He . <i>Phys. Lett.</i> 84B, 176 (1979) West Germany
3394	A02 $H^+ + He$	E T	155-200 MeV	Alexander, Y.; Lmdan, R. h. Intermediate-energy proton- 4He elastic scattering with a microscopic optical potential. <i>Phys. Lett.</i> 84B, 292 (1979) Canada
3395	A02 $Si + O; Si + C$	E T	15-30 MeV	Kubota, S.; Bond, P. D.; Horn, B.; Thorn, C. E. 90° excitation functions for elastic scattering of $^{28}Si + ^{16}O$ and $^{28}Si + ^{12}C$. <i>Phys. Lett.</i> 84B, 408 (1979) United States
3396	C08 $H + Si; H + V; H + Au; H + Ge; He + Si; He + V; He + Au; He + Ge; Cl + Si; Cl + V; Cl + Au; Cl + Ge$	T	1-20 MeV	Czerbalek, J.; Polacki, M. Calculations of angular distributions backscattered particles for planar channeling for different potentials ion-planes. <i>Acta Phys. Pol. A</i> 54, 281 (1979) Poland
3397	B07 $He + He + Kr$	T		Czechaj, E. Transition probability of the system of two colliding atoms within a laser beam. <i>Acta Phys. Pol. A</i> 55, 307 (1979) Poland
3398	A17 $H_2 + H_2 + H_2$	T	Under	Les, A.; Rodzio, E. Non-additive effects in the first-order interaction energy of hydrogen molecules. <i>Acta Phys. Pol. A</i> 55, 301 (1979) Poland
3399	A15 $Rb + Rb; Cs + Ar$	T	Thermal	Sieradzki, A.; Sieradzki, W.; Polinski, E. The Bloch theory and its application for the description of optical pumping and magnetic resonance in multilevel systems. <i>Acta Phys. Pol. A</i> 55, 545 (1979) Poland
3400	D13 $H_2 + Ni; H_2 + Cu$	T	250-400 K	Steinbruehl, C. Desorption rates and mechanisms for dissociatively chemisorbed molecules. <i>Appl. Phys. (Germany)</i> 19, 413 (1979) United States
3401	D02 $H^+ + Ni; H^+ + Mo; H^+ + Au; D^+ + Ni; D^+ + Mo; D^+ + Au; He^+ + Ni; He^+ + Mo; He^+ + Au$	E	1-8 keV	Boy, R. L.; Bohdansky, J. Sputtering yields for light ions as a function of angle of incidence. <i>Appl. Phys. (Germany)</i> 19, 421 (1979) West Germany
3402	E12 $e^+ + He; e^+ + Mo; e^+ + Ar$	E	25-1000 eV	Griffith, T. C.; Hayland, G. R.; Lines, E. S.; Tenny, T. R. Total cross-sections for the scattering of positrons by helium, neon, and argon at intermediate energies. <i>Appl. Phys. (Germany)</i> 19, 431 (1979) United Kingdom
3403	D06 $h\nu + HF; h\nu + HCl; h\nu + HI; h\nu + RbF; h\nu + RbCl; h\nu + RbBr; h\nu + RbI; h\nu + CsF; h\nu + CsCl; h\nu + CsBr; h\nu + CsI$	E	15-40 eV	Sagawa, M.; Senoh, T. Photoelectric yield spectra of F-, Rb- and Cs-halides in the photon energy range 10 to 40 eV. <i>J. Phys. Soc., Jap.</i> 48, 132 (1979) Japan

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3404	A63 H ⁺ + Zn; H ⁺ + Cd; He ²⁺ + Zn; He ²⁺ + Cd A67 H ⁺ + Zn; H ⁺ + Cd; He ²⁺ + Zn; He ²⁺ + Cd	E	0.5-2.75 MeV	Kajima, H.; Kobayashi, H.; Kondo, A.; Sakimura, H. Auger electrons from zinc and cadmium vapors by proton and alpha particle bombardments. J. Phys. Soc., Jap. 46, 156 (1979) Japan
3405	A29 Na + CD ₄ ; Na + ND ₃ ; Na + CD ₂ ; Na + C ₂ H ₄ ; Na + CH ₄	E	6.8x10 ⁴ cm/s	Ray, J.; Barua, A. K. Total cross sections of Na scattered by different gases. J. Phys. Soc., Jap. 46, 285 (1979) India
3406	A63 Li ⁺ + H ₂ ; Li ⁺ + D ₂ ; Li ⁺ + H ₂ ; Li ⁺ + D ₂	E	150-1200 eV	Kobayashi, H.; Itoh, Y.; Kaneko, Y. Vibrational excitation of H ₂ , D ₂ , H ₂ and D ₂ by Li ⁺ impact in the energy range from 150 eV to 1200 eV. J. Phys. Soc., Jap. 46, 280 (1979) Japan
3407	A63 Na + He ²⁺ A64 Na + He ²⁺	T	Undef	Sato, M.; Hara, S. The radial and rotational coupling terms between the quasi-molecular states of Na ₂ ²⁺ . J. Phys. Soc., Jap. 46, 215 (1979) Japan
3408	A68 He ⁺ + He	E	10-100 keV	Arikawa, T.; Marukawa, K.; Inoue, H. Electron loss cross section of He ⁺ on He in 10-100 keV. J. Phys. Soc., Jap. 46, 353 (1979) Japan
3409	A66 H ⁺ + Cu; H ⁺ + K; H ⁺ + Na; C ⁺ + Cu; C ⁺ + K; C ⁺ + Na; O ⁺ + Cu; O ⁺ + K; O ⁺ + Na; S ⁺ + Cu; S ⁺ + K; S ⁺ + Na C64 H ⁺ + Cu; H ⁺ + K; H ⁺ + Na; C ⁺ + Cu; C ⁺ + K; C ⁺ + Na; O ⁺ + Cu; O ⁺ + K; O ⁺ + Na; S ⁺ + Cu; S ⁺ + K; S ⁺ + Na	E	0.5-5.0 keV	Nagata, Y. Charge changing collisions of atomic beams in alkali-metal vapors: I. Formation of H ⁺ , C ⁺ , O ⁺ , and S ⁺ ions. J. Phys. Soc., Jap. 46, 319 (1979) Japan
3410	A66 H ⁺ + N(n)	T	12.5 keV/n ²	Toshino, N. Charge transfer processes involving highly excited hydrogen atoms: I. The Born amplitude in a closed form. J. Phys. Soc., Jap. 46, 927 (1979) Japan
3411	A63 Li ⁺ + H ₂	E	150-750 eV	Itch, Y.; Kobayashi, H.; Kaneko, Y. Rotational excitation of n-H ₂ by Li ⁺ impact in the energy range from 150 eV to 750 eV. J. Phys. Soc., Jap. 46, 1041 (1979) Japan
3412	E64 e + H ₂ ⁺ ; e + ND ₂ ⁺ ; e + D ₂ ⁺ E66 e + H ₂ ⁺ ; e + ND ₂ ⁺ ; e + D ₂ ⁺	T	0.5-2.7 eV	Rai Dastidar, K.; Rai Dastidar, T. K. Dissociative recombination of H ₂ ⁺ , ND ₂ ⁺ and D ₂ ⁺ molecular ions. J. Phys. Soc., Jap. 46, 1286 (1979) India
3413	A66 H ⁺ + N(n)	T	3.1-20 keV	Toshino, N. Charge transfer processes involving highly excited hydrogen atoms: II. Numerical results by the Born approximation. J. Phys. Soc., Jap. 46, 1295 (1979) Japan
3414	A66 C ⁺ + Cu; C ⁺ + K; C ⁺ + Na; O ⁺ + Cu; O ⁺ + K; O ⁺ + Na; S ⁺ + Cu; S ⁺ + K; S ⁺ + Na; C ⁺ + Cu; C ⁺ + K; C ⁺ + Na; O ⁺ + Cu; O ⁺ + K; O ⁺ + Na; S ⁺ + Cu; S ⁺ + K; S ⁺ + Na	E	1-5 keV	Nagata, Y. Charge changing collisions of atomic beams in alkali-metal vapors: II. Total cross sections for one-electron capture by C ⁺ , O ⁺ , S ⁺ ions and C, O, S atoms. J. Phys. Soc., Jap. 46, 1302 (1979) Japan
3415	A17 Ar ²⁺ + Ar; Ne ²⁺ + Ne	E	Undef	Natsuura, T.; Fukuda, K. New oscillatory structures of Ne ₂ and Ar ₂ emission continua in the vacuum ultraviolet. J. Phys. Soc., Jap. 46, 1397 (1979) Japan
3416	A63 Li ⁺ + H ₂	E	150-1200 eV	Itch, Y.; Kobayashi, H.; Kaneko, Y. Vibrational excitation of H ₂ by Li ⁺ impact from 150 eV to 1200 eV. J. Phys. Soc., Jap. 46, 1399 (1979) Japan
3417	A63 H ⁺ + Cu; H ⁺ + Pb; H ⁺ + K; H ⁺ + Na A66 H ⁺ + Cu; H ⁺ + Pb; H ⁺ + K; H ⁺ + Na	E	0.2-4.0 keV	Nagata, Y. Charge changing collisions of atomic beams in alkali-metal vapors: III. Formation of N(2s) atoms from H ⁺ ions. J. Phys. Soc., Jap. 46, 1622 (1979) Japan
3418	A67 H ₂ ²⁺ + H ₂ O; H ₂ ²⁺ + SF ₆	E	75 keV	Mitsui, H.; Kondo, T.; Fukuyama, T.; Kuchitsu, S. Ionizing collisions of long-lived highly excited hydrogen molecules with H ₂ O and SF ₆ . J. Phys. Soc., Jap. 46, 1628 (1979) Japan

REV. NO.	REACTANTS	EXP CR THEOR	ENERGY RANGE	REFERENCE
3419	A17 Li + He; Li + He; Li + Ar; Li + Kr; Li + Xe; Na + He; Na + He; Na + Ar; Na + Kr; Na + Xe; K + He; K + He; K + Ar; K + Kr; K + Xe; Rb + He; Rb + He; Rb + Ar; Rb + Kr; Rb + Xe; Cs + He; Cs + He; Cs + Ar; Cs + Kr; Cs + Xe	T	Undef	Czechoslovakia; J. Slonimskiy, J. Adamiak, potentials of the alkali-vapor gas atom pairs. Z. Naturforsch. A 34, 694 (1979) Poland
3420	B07 Li ⁺ + H ⁺ + Cu	E	273 keV	Winter, H.; Andra, M. J., Nuclear polarized Li and H ions via ion beam surface interaction at grazing incidence. Z. Phys. A 291, 5 (1979) West Germany
3421	C06 Na + C C17 Na + C	E	5-18 MeV	Schule, R.; Stauf, M.; Balthus, K. Charge-state distributions and the population of x-ray emitting states. Z. Phys. A 291, 117 (1979) West Germany
3422	A03 Xe + Pb A07 Xe + Pb	E	4.6 MeV/amu	Anhalt, R.; Roperhof, W. E.; Stiller, C. Impact-parameter dependence of 1 s1 vacancy production in 4.6-MeV/amu Xe + Pb collisions. Z. Phys. A 291, 207 (1979) United States
3423	A19 Na + Na	T	35-75 MeV	Anhalt, R. Theory of the angular distribution of 2p1 molecular orbital x-rays. Z. Phys. A 291, 289 (1979) Republic of China
3424	A11 Li + He; Li + He; Li + Ar; Li + Kr; Li + Xe; Na + He; Na + He; Na + Ar; Na + Kr; Na + Xe; K + He; K + He; K + Ar; K + Kr; K + Xe; Rb + He; Rb + He; Rb + Ar; Rb + Kr; Rb + Xe	E	5-100 eV	Speller, E.; Staudenmayer, B.; Kempter, V. Quenching cross sections for alkali-inert gas collisions. Z. Phys. A 291, 311 (1979) West Germany
3425	B01 Na + W; Ar + W; Kr + W; Xe + W D11 Na + W; Ar + W; Kr + W; Xe + W	T	0-320 K	Müller, H.; Bräunig, W. Kinetic theory of gas-surface interaction. Z. Phys. B 34, 161 (1979) West Germany
3426	W02 Na + Fe; Na + Ni; Na + FeB; Na + Fe ₂ B; Na + NiB; Na + Ni ₂ B; Na + Ni ₃ B; Na + Ni ₄ Si; Na + Ni ₅ Si; Na + Ni ₆ Si; Na + Ni ₇ Si ₂ ; Na + Fe ₂ Si; Na + Fe ₃ Si; Na + Fe ₄ Si ₂	E	0-30 eV	Koval', A. V.; Koval'nik, S. M. X-ray h-line absorption spectra of certain transition metals in their binary alloys with metalloids. Sov. Phys. J. 21, 952 (1978) Soviet Union
3427	W11 Undef	T	Undef	Danilovskii, V. A.; Shvetsman, S. N. Green's function of charged water particles moving in the field of a travelling electric wave. Sov. Phys. J. 21, 1021 (1978) Soviet Union
3428	W11 Na + e	T	Jodef	Zadorachnyi, V. N.; Shvetsman, S. N. Green's function for a system consisting of a charged particle and a quantized plane wave. Sov. Phys. J. 21, 1023 (1978) Soviet Union
3429	W03 Na + e	T	Undef	Borzhov, P. V.; Kopylov, G. F. Splitting of a polarized photon by an unpolarized electron. Sov. Phys. J. 21, 1057 (1978) Soviet Union
3430	E14 e + e	T	Undef	Gnedov, V. A.; Romanov, Y. I. Possible effects of weak dipole interaction on electron-electron and electron-atom scattering. Sov. Phys. J. 21, 1219 (1978) Soviet Union
3431	W14 Na + H ₂ O	T	Undef	Lutyl, A. I.; Melnikova, L. B. Kinetics of radiation-induced relaxation of vibrational energy of gaseous system. Sov. Phys. J. 21, 1263 (1978) Soviet Union
3432	C08 Undef	T	Undef	Zimin, N. I.; Vorob'ov, S. A. Possibility of resonance radiation during channelling of relativistic particles. Sov. Phys. J. 21, 1309 (1978) Soviet Union
3433	D13 Na + H ₂ C + Glass	E	Undef	Togirev, N. B.; Kessel', M. I.; Shchelova, N. M.; Rubinshteyn, N. I. Role of photodissociation and desorption of water molecules from surface of glass under pulsed irradiation. Sov. Phys. J. 21, 1306 (1978) Soviet Union

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3434	D02 Undef	T	Undef	Lusnikov, A. V. Mechanism of sputtering of surface atoms. Sov. Phys.-Solid State 20, 1440 (1978) Soviet Union
3435	D04 e + Si D06 e + Si	E	2-35 eV	Bronshtein, I. N.; Movitzhil, N. G. Secondary electron emission from silicon bombarded with low-energy primary electrons. Sov. Phys.-Solid State 20, 1467 (1978) Soviet Union
3436	D04 e + Mo	E	0.6-1.5 keV	Guseynova, N. V.; Zaslavskii, S. I.; Pronin, I. I. Orientation effects in Auger electron spectroscopy of single-crystal molybdenum. Sov. Phys.-Solid State 20, 1607 (1978) Soviet Union
3437	D04 Ar ⁺ + Si; Ar ⁺ + Cu; Ar ⁺ + Co	E	5-15 keV	Borozhina, A. A.; Petrov, A. A.; Petrov, B. N. Structure of the energy spectra of the Auger electrons obtained by irradiation of solids with moderate-energy ions. Sov. Phys.-Solid State 20, 1660 (1978) Soviet Union
3438	D07 He + U	T	750 K	Goodman, F. O.; Garcia, M.; Cabrera, N. Scattering of atoms by surfaces with one-dimensional periodicity on the stationary sinusoidal hard-wall model. Surface Sci. 77, 94 (1978) Australia
3439	D07 Na ⁺ + Ag	E	Undef	Terzic, I.; Covic, D.; Parovic, Z. On the observation of the double-scattering effect from polycrystalline targets. Surface Sci. 77, L177 (1978) Yugoslavia
3440	D07 Undef	T	Undef	Razel, R. I. On the Debye-Haller factor for atom-surface scattering. Surface Science 77, L175 (1978) United States
3441	D13 e + H + Mo; e + O + Mo	E	1 keV	Hock, J. L.; Lichtman, D. Electron stimulated desorption of negative ions from gases adsorbed on molybdenum. Surface Sci. 77, L164 (1978) United States
3442	D07 H ⁺ + Pt	T	173 keV	van der Veen, J. F.; Sanders, J. B.; Seris, F. W. Two-ion model for the calculation of surface blocking in medium and high energy ion scattering. Surface Sci. 77, 337 (1978) The Netherlands
3443	D07 He + Cu	E	23-64 meV	Razon, B. F.; Williams, B. R. The inelastic scattering of He from Cu(001) at 20 K. Surface Sci. 77, 385 (1978) Canada
3444	D04 He ⁺ + Ni	E	300 K	Johnson, P. D.; Delcher, T. A. Electron ejection by helium metastable atoms incident on the clean and chlorine covered Ni(100) surface. Surface Sci. 77, 400 (1978) United Kingdom
3445	D07 He + NaF	E	17-62 meV	Krishnaswamy, S. V.; Derry, G.; Wagner, D.; O'Gorman, T. J.; Frankl, B. R. Debye-Haller effects in atom-surface scattering. Surface Sci. 77, 493 (1978) United States
3446	C08 He ⁺ + Si; He ⁺ + Au; He ⁺ + U; He ⁺ + Mo; He ⁺ + Ni; He ⁺ + Pt; H ⁺ + Ni; H ⁺ + U; C ⁺ + Ni; C ⁺ + U D07 He ⁺ + Si; He ⁺ + Au; He ⁺ + U; He ⁺ + Mo; He ⁺ + Ni; He ⁺ + Pt; H ⁺ + Ni; H ⁺ + U; C ⁺ + Ni; C ⁺ + U	T	0.2-3.6 MeV	Stensgaard, I.; Feldman, L. C.; Silverman, P. J. Calculation of the backscattering-channeling surface peak. Surface Sci. 77, 813 (1978) United States
3447	D03 Undef	T	Undef	Sroubek, Z.; Zavadil, J.; Kubec, F.; Zdenek, K. Model of ionization of atoms sputtered from solids. Surface Sci. 77, 683 (1978) Czechoslovakia
3448	D17 Ar ⁺ + Ag + Au	E	720 eV	Yabumoto, M.; Watanabe, K.; Yamashina, T. An AES study of surface segregation of Ag-Au alloys with ion-bombardment and annealing. Surface Sci. 77, 615 (1978) Japan

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3449	D67 $Ar^+ + Cu$	E T	30 keV	Belashova, L. L.; Borisov, A. R.; Boshkova, E. S.; Nishchenov, V. A. Blooming effects for fast ionized vacells. <i>Surface Sci.</i> 77, 1643 (1978) Soviet Union
3450	C88 $Na^+ + UC_2$ D67 $Na^+ + UC_2$	E T	Undef	Ellis, W. P.; Taylor, T. W. *Erratum Ion-scattering structure studies of WO_3 surfaces. [<i>Surface Sci.</i> 75, 279 (1978)]. <i>Surface Sci.</i> 77, 654 (1978) United States
3451	H02 $hw + H_2C$; $hw + H_2$	E	935-1062 cm^{-1}	Peterson, J. C.; Thomas, W. E.; Nordstrom, R. J.; Damm, E. K.; Lang, R. K. Water vapor-nitrogen absorption at CO_2 laser frequencies. <i>Appl. Opt.</i> 18, 834 (1979) United States
3452	H02 $hw + O_2$; $hw + O_3$	E	245-150 nm	Cann, R. V. P.; Michelle, R. V.; Evans, W. F. J.; Eabl, J. L.; Kurucz, R.; Parkinson, B. R.; Reeves, E. R. High resolution atmospheric transmission calculation down to 28.7 nm in the 200-243-nm spectral range. <i>Appl. Opt.</i> 18, 964 (1979) United States
3453	H02 $hw + H_2O$	E	2.93-2.64 μ	Mathias, W. R.; Spillacy, R. L.; White, R. O.; Sejka, R. Z.; Bower, L. R. Water vapor absorption coefficients at H^+ laser wavelengths (2.64-2.93 μ). <i>Appl. Opt.</i> 18, 1502 (1979) United States
3454	E05 $e + Na_2^+$; $e + Ar_2^+$	T	5-50 eV	McCann, K. J.; Flannery, M. R.; Nazi, A. Theoretical cross sections for ionization of metastable cations Na_2^+ and Ar_2^+ by electron impact. <i>Appl. Phys. Lett.</i> 34, 543 (1979) United States
3455	D15 $Na^+ + W$; $W^+ + W$; $Cr^+ + W$	E	33 keV	Wei, C.-Y.; Seidman, D. N. Direct observation of the vacancy structure of depleted zones in tungsten ion irradiated at 10 K. <i>Appl. Phys. Lett.</i> 34, 622 (1979) United States
3456	A10 $Na^+ + D_2$; $Na^+ + H_2O$	T	80-300 K	Taylor, H. S. Electronic to vibrational energy transfer in $Na(3^2P)$ with simple molecules. <i>Chem. Phys. Lett.</i> 64, 17 (1979) United States
3457	A10 $CO^+ + CC$	T	100-3000 K	Shin, H. K. Temperature dependence of vibration-vibration energy exchange probabilities among highly excited levels: $CO(v-1) + CC(1) + CO(v) + CO(0)$. <i>Chem. Phys. Lett.</i> 64, 21 (1979) United States
3458	A14 $Se^+ + OCS$	E	220 K	Addison, M. C.; Byrne, C. D.; Donovan, R. J. Direct observation of $S(3^2D_2)$ and determination of the absolute rate of reaction with OCS. <i>Chem. Phys. Lett.</i> 64, 57 (1979) United Kingdom
3459	A05 $Se + O_2$	E	330 K	McDermott, V. E.; Bonard, D. J. SeO chemiluminescence induced by the reaction of selenium vapors with discharged oxygen. <i>Chem. Phys. Lett.</i> 64, 60 (1979) United States
3460	A02 $Cl^- + Ar$; $I^- + Ne$ A16 $I^- + Ne$ A18 $Cl^- + Ar$; $I^- + Ne$	E	1-3 keV	de Vreugd, C.; Bijlaendts van Rosend, R. b.; Loe, J. Electron-detachment in differential $I^- + Ne$ cross section measurements. <i>Chem. Phys. Lett.</i> 64, 175 (1979) The Netherlands
3461	A17 $H + O_2$	T	Undef	Melius, C. F.; Blint, R. J. The potential energy surface of the HO_2 molecular system. <i>Chem. Phys. Lett.</i> 64, 183 (1979) United States
3462	A06 $H_2^+ + H_2O$	E	0.6-5.0 keV	Parmer, J. E.; Milner, R. G. Charge-transfer reactions of H_2^+ with H_2O . <i>Int. J. Mass Spectrom. Ion Phys.</i> 29, 29 (1979) United Kingdom
3463	D02 $Ar^+ + Cu$	E	47 keV	Snowdon, K. J.; Macdonald, R. J. Secondary ion energy per unit mass spectra from polycrystalline copper. <i>Int. J. Mass Spectrom. Ion Phys.</i> 29, 101 (1979) Australia

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3464	A13 $\text{SO}^- + \text{SO}_2; \text{O}^- + \text{NO}_2; \text{O}^- + \text{H}_2\text{O}; \text{O}^- + \text{D}_2$	E	0-1 eV	Dotan, I.; Klein, F. S. Negative ion-molecule reactions at low collision energies. <i>Int. J. Mass Spectrom. Ion Phys.</i> 29, 137 (1975) Israel
3465	A13 $\text{N}^+ + \text{H}_2; \text{C}^+ + \text{H}_2; \text{N}^+ + \text{CO}; \text{C}^+ + \text{CO}; \text{N}^+ + \text{NO}; \text{C}^+ + \text{NO}; \text{N}^+ + \text{O}_2; \text{C}^+ + \text{O}_2; \text{N}^+ + \text{H}_2\text{O}; \text{C}^+ + \text{H}_2\text{O}; \text{N}^+ + \text{NH}_3; \text{C}^+ + \text{NH}_3; \text{N}^+ + \text{CH}_4; \text{C}^+ + \text{CH}_4; \text{S}^+ + \text{H}_2; \text{S}^+ + \text{NO}; \text{S}^+ + \text{O}_2; \text{S}^+ + \text{CO}_2; \text{N}^+ + \text{CO}_2; \text{S}^+ + \text{H}_2\text{O}; \text{S}^+ + \text{NH}_3; \text{S}^+ + \text{CH}_4; \text{C}^+ + \text{CO}_2$	E	330 K	Tichy, M.; Rakshit, A. B.; Lister, D. G.; Twiddy, A. D.; Adams, N. G.; Smith, D. A study of the reactions of the ground and metastable states of C^+ , N^+ , S^+ and H_2^+ at 300 K. <i>Int. J. Mass Spectrom. Ion Phys.</i> 29, 231 (1979) United Kingdom
3466	D02 $\text{O}_2^+ + \text{Hf}; \text{O}_2^+ + \text{Co}; \text{O}_2^+ + \text{W}; \text{Hf} + \text{O}_2; \text{Co} + \text{O}_2; \text{W} + \text{O}_2$	E	5.5 keV	Rudet, M. A.; Morrison, G. M. The effects of oxygen and nitrogen adsorption on secondary ion energy spectra. <i>Int. J. Mass Spectrom. Ion Phys.</i> 30, 233 (1979) United States
3467	A13 $\text{He}^+ + \text{O}_2; \text{He}^+ + \text{N}_2; \text{O}^+ + \text{N}_2$	E	0-1 eV	Lindinger, W.; Alga, E.; Stori, M.; Verney, R. H.; Helm, E.; Holzmann, P.; Pahl, M. Investigation of ion-molecule reactions using a drift tube with separated ion source. <i>Int. J. Mass Spectrom. Ion Phys.</i> 30, 251 (1979) Austria
3468	A17 $\text{O} + \text{O}$	T	Under	Tetuwaki, M.; Tanaka, K.; Sasaki, F.; Obara, S.; Ohno, K.; Yoshinaka, R. Configuration-interaction study of lower excited states of O_2 : valence and Rydberg characters of the two lowest $^3\Sigma(\text{sub } u)^-$ states. <i>Int. J. Quantum Chem.</i> 15, 533 (1979) Japan
3469	C02 $\text{P}^+ + \text{Si}$ C04 $\text{P}^+ + \text{Si}$	E	150-300 keV	Inoue, K.; Hirao, T.; Yaegashi, Y.; Takayanagi, S. Asymmetrical profiles of ion implanted phosphorus in silicon. <i>Jap. J. Appl. Phys.</i> 18, 367 (1979) Japan
3470	A02 $\text{K} + \text{Kr}$ A18 $\text{K} + \text{Kr}$	E	1.29 kcal/mol	Arikawa, Y.; Kaneko, S. Multi-crossed-beam method. <i>Jap. J. Appl. Phys.</i> 18, 413 (1979) Japan
3471	E05 $e + \text{Zn}; e + \text{Mo}$	E	9-25 eV	Washizuma, A.; Usada, M. The electron impact ionization efficiency curve of zinc. <i>Jap. J. Appl. Phys.</i> 18, 429 (1979) Japan
3472	A14 $\text{Ar}^+ + \text{F}_2; \text{Xe}^+ + \text{Br}_2; \text{Xe}^+ + \text{Cl}_2; \text{Xe}^+ + \text{HCl}$ E16 $e + \text{Ar} + \text{F}_2; e + \text{Xe} + \text{Br}_2; e + \text{Xe} + \text{Cl}_2; e + \text{Xe} + \text{HCl}$	E	216-480 keV	Naeda, M.; Nishitarumizu, Y.; Miyazoe, Y. Formation and quenching of excimers in low-pressure rare-gas/halogen mixtures by e-beam excitation. <i>Jap. J. Appl. Phys.</i> 18, 437 (1979) Japan
3473	D07 $\text{M}^+ + \text{Mo}$ D16 $\text{He}^+ + \text{Mo}; \text{H}_2^+ + \text{Mo}$	E	2-25 keV	Okuda, S.; Kimura, T.; Akimune, H. Depth profiles of implanted M and He in metal Mo determined with backscattered protons. <i>Jap. J. Appl. Phys.</i> 18, 465 (1979) Japan
3474	D09 $\text{Li}^+ + \text{Rh}; \text{Li}^+ + \text{Ta}$	E	550 °C	Mariella, R. P., Jr. A study of laser-assisted surface ionization of lithium. <i>J. Chem. Phys.</i> 71, 94 (1979) United States
3475	H08 $\text{hv} + \text{Xe}_2$	E	1500 Å	Thornton, G.; Poliakoff, E. D.; Matthias, L.; Southworth, S. M.; Rosenberg, E. A.; White, M. G.; Shirley, D. A. Fluorescence decay of the $\text{D}(\text{sub } u)^+$ and $\text{I}(\text{sub } u)$ states of Xe_2 . <i>J. Chem. Phys.</i> 71, 133 (1979) United States
3476	A11 $\text{Ba}^+ + \text{N}_2; \text{Ba}^+ + \text{CO}; \text{Ba}^+ + \text{H}_2; \text{Ba}^+ + \text{D}_2$	E	355 K	Eversole, J. D.; Djou, M. Quenching of $\text{Ba}(6d\ ^1D)$ by N_2 , CO , H_2 , and D_2 . <i>J. Chem. Phys.</i> 71, 148 (1979) United States
3477	A07 $\text{H} + \text{He}^+$	T	0.01-1.0 eV	Ivancan, A. D. Calculations of $\text{He}(2\ ^1S) + \text{H}$ ionization cross sections using ab initio potentials and widths derived from Siegert eigenvalues. <i>J. Chem. Phys.</i> 71, 180 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3478	A13 Ar ₂ ⁺ + Kr; Ar ₂ ⁺ + Xe; Ar ₂ ⁺ + N ₂ ; Ar ₂ ⁺ + O ₂ ; Ar ₂ ⁺ + NO; Ar ₂ ⁺ + H ₂ ; Ar ₂ ⁺ + HCl; Ar ₂ ⁺ + HBr; Ar ₂ ⁺ + CO; Ar ₂ ⁺ + H ₂ O	E	38° K	Collins, C. B.; Lee, F. W. Measurement of the rate coefficients for the bimolecular and termolecular ion-molecule reactions of Ar ₂ ⁺ with selected atomic and molecular species. J. Chem. Phys. 71, 184 (1979) United States
3479	D11 H ₂ + W; H ₂ + Rh; N ₂ + W; N ₂ + Rh	E	298 K	Pollazzotti, R. S.; Ehrlich, G. Chemisorption on perfect surfaces: hydrogen and nitrogen on tungsten and rhodium. J. Chem. Phys. 71, 255 (1979) United States
3480	A17 H + H + O	T	Undef	Bartlett, R. J.; Shavitt, I.; Purvis, G. D., III The quartic force field of H ₂ O determined by many-body methods that include quadrupole excitation effects. J. Chem. Phys. 71, 281 (1979) United States
3481	A17 Li + Li	T	Undef	Konowalow, D. B.; Olson, N. L. The electronic structure and spectra of the X ¹ I(sub g) ⁺ and A ¹ I(sub u) ⁺ states of Li ₂ . J. Chem. Phys. 71, 450 (1979) United States
3482	A02 HF + Xe A17 HF + Xe A18 HF + Xe	E T	0.74-2.15 eV	Becker, C. H.; Tiedemann, P. W.; Valentini, J. J.; Lee, Y. T.; Walker, R. D. Experimental and computational study of HF + Xe scattering. J. Chem. Phys. 71, 421 (1979) United States
3493	A11 H ⁺ + H ₂ O; O ⁺ + H ₂ O	E	294 K	Quickenden, T. I.; Trotman, S. M.; Irvin, J. A.; Sengeler, D. F. H ₂ O quenching of the transitions M(n=3 + n=2) and O(3p ² P + 3s ² S ⁺) in pulse radiolysis, excited water vapor. J. Chem. Phys. 71, 487 (1979) Australia
3484	A14 C + CS ₂	T	0.1-0.25 eV	Schatz, G. C. How symmetric stretch excitation in a triatomic molecule can be more efficient than asymmetric stretch excitation in enhancing reaction rates in atom plus triatom reactions. J. Chem. Phys. 71, 542 (1979) United States
3485	A17 Hg + Hg	T	Undef	Purvis, G. D., III; Bartlett, R. J. The potential energy curve for the X ¹ I(sub g) ⁺ state of Hg ₂ calculated with coupled pair many electron theory. J. Chem. Phys. 71, 548 (1979) United States
3486	H05 hv + H ₂ C ⁺ + H ₂ O	E	675-265 nm	Thomas, T. F.; Rose, T. L.; Paulser, J. F. On the photochemical stability of H ₂ O ⁺ (h ₂ C)(sub n). J. Chem. Phys. 71, 552 (1979) United States
3487	H06 hv + SC ₂	E	780-740 Å	Weiss, M. J.; Meich, T.-C.; Meisels, G. G. Fragmentation of SO ₂ ⁺ prepared in state selected vibrational levels. J. Chem. Phys. 71, 567 (1979) United States
3488	A02 He + CO A17 He + CO A19 He + CO	T	23° cm ⁻¹	Monchick, L. Differential scattering of polarized molecules: computations for He + CO. J. Chem. Phys. 71, 578 (1979) United States
3489	A03 H ⁺ + N ₂ ; H ⁺ + CO; H ⁺ + NO A18 H ⁺ + N ₂ ; H ⁺ + CO; H ⁺ + NO	E	33-80 eV	Kruteln, J.; Linder, F. Measurements of vibrational excitation of N ₂ , CO, and NO by low energy proton impact. J. Chem. Phys. 71, 599 (1979) West Germany
3490	A02 H + Ne; H + Ar; H + Kr; H + Xe; H ₂ + Ar; H ₂ + Kr; H ₂ + Xe A17 H + Ne; H + Ar; H + Kr; H + Xe; H ₂ + Ar; H ₂ + Kr; H ₂ + Xe	E	0.5-100 meV	Toennies, J. P.; Welz, W.; Wolf, G. Molecule beam scattering studies of orbiting resonances and the determination of van der Waals potentials for H-Ne, Ar, Kr, and Xe and for H ₂ -Ar, Kr, and Xe. J. Chem. Phys. 71, 614 (1979) West Germany
3491	A11 NO ₂ ⁺ + He; NO ₂ ⁺ + Ar; NO ₂ ⁺ + H ₂ ; NO ₂ ⁺ + D ₂ ; NO ₂ ⁺ + O ₂ ; NO ₂ ⁺ + N ₂ ; NO ₂ ⁺ + NO ₂ ; NO ₂ ⁺ + CCl ₄ ; NO ₂ ⁺ + H ₂ O; NO ₂ ⁺ + D ₂ O H08 hv + NO ₂	E	A11 357 K H08 659-473 nm	Donnelly, V. M.; Kell, D. G.; Kaufman, F. Fluorescence lifetime studies of NO ₂ ; III. Mechanism of fluorescence quenching. J. Chem. Phys. 71, 659 (1979) United States

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3492	A11 $\text{Na}^+ + \text{CO}; \text{Na}^+ + \text{H}_2; \text{Na}^+ + \text{H}_2; \text{Na}^+ + \text{D}_2$	E	87-300 K	Mertel, I. V.; Hofmann, H.; Rost, R. A. Crossed beam (E-VRT) energy transfer experiment. <i>J. Chem. Phys.</i> 71, 674 (1979) West Germany
3493	H05 $h\nu + \text{HBr}^a$	E	259 nm	Zittel, P. F.; Little, D. D. Photodissociation of vibrationally excited hydrogen bromide. <i>J. Chem. Phys.</i> 71, 713 (1979) United States
3494	G02 $\text{Br}_2 + \text{NO}; \text{Br} + \text{Ar}$	E	295 K	Zittel, P. F.; Little, D. D. Diffusion coefficients for Br_2 in NO and Br in Ar at 298 K. <i>J. Chem. Phys.</i> 71, 723 (1979) United States
3495	A10 $\text{S}_2 + \text{He}; \text{S}_2 + \text{Ar}; \text{S}_2 + \text{Xe}$	E	920 K	Coughney, T. A.; Crosley, D. R. Collision-induced transfer rates connecting fine-structure levels in $\text{S}_2(\text{B}^3\Sigma^-_{g, v'=4})$. <i>J. Chem. Phys.</i> 71, 736 (1979) United States
3496	H06 $h\nu + \text{O}_2$ H08 $h\nu + \text{O}_2$	E	740-175 Å	Wu, C. Y. R.; Phillips, E.; Lee, L. C.; Judge, D. L. $\text{O}_2^+ [A^2\text{cap PI}(\text{sub } u) + X^2\text{cap FI}(\text{sub } g)]$ and $\text{O}_2^+ [b^2\Sigma(\text{sub } g) - + a^2\text{cap PI}(\text{sub } u)]$ emissions by photoionization of O_2 . <i>J. Chem. Phys.</i> 71, 769 (1979) United States
3497	H02 $h\nu + \text{O}_3$	E	3530-3350 Å	Katayama, I. M. New vibrational quantum number assignment for the UV absorption bands of ozone based on the isotope effect. <i>J. Chem. Phys.</i> 71, 815 (1979) United States
3498	A03 $\text{H}^+ + \text{CN}; \text{He} + \text{H}_2\text{H}^+; \text{He} + \text{H}_2$	T	3.04-100 eV	DePrieto, A. E.; Augustin, S. D.; Senesewany, R.; Rabitz, M. Quantum number and energy scaling for nonreactive collisions. <i>J. Chem. Phys.</i> 71, 838 (1979) United States
3499	G02 $\text{Zn} + \text{H}_2; \text{Zn} + \text{He}; \text{Zn} + \text{Ar}$	E	720-1120 K	Finch, A.; Gardner, P. J.; Tarbox, E.; Yardley, S. Binary gaseous diffusion coefficients of zinc in hydrogen, helium and argon at 1 atmosphere and 720-1120 K. <i>J. Chem. Soc., Faraday Trans., I</i> 75, 345 (1979) United Kingdom
3500	D11 $\text{Cl}_2 + \text{W}; \text{Br}_2 + \text{W}; \text{I}_2 + \text{W}$	E	330-490 K	Bhattacharya, A. K.; Broughton, J. G.; Perry, D. L. Ultraviolet photoelectron spectroscopic study of chemisorption of halogens on W(100). <i>J. Chem. Soc., Faraday Trans., I</i> 75, 850 (1979) United Kingdom
3501	A17 $\text{H} + \text{CO}; \text{H} + \text{NO}$	T	Under	Carter, S.; Millm, I. M.; Murrell, J. M. Potential energy functions for ground state surfaces of MCO and HMO . <i>J. Chem. Soc., Faraday Trans., II</i> 75, 148 (1979) United Kingdom
3502	H08 $h\nu + \text{Cl}_2$	E	525 nm	Clyne, M. A. A.; McDonald, I. S. Laser-induced fluorescence studies: B-X transition of Cl_2 . Part 2--Transition from bound to unbound excited states. <i>J. Chem. Soc., Faraday Trans., II</i> 75, 288 (1979) United Kingdom
3503	H06 $h\nu + \text{CS}_2$	E	120-60 nm	Coppers, P.; Reynaert, J. C.; Drouart, J. Mass spectrometric study of the photoionization of carbon disulphide in the wavelength interval 125-60 nm. <i>J. Chem. Soc., Faraday Trans., II</i> 75, 292 (1979) Belgium
3504	A11 $\text{HF}^+ + \text{CO}_2; \text{BF}^+ + \text{CO}_2$	E	300 K	Brown, R. D. M.; Douglas, D. J.; Polanyi, J. C. Chemiluminescence-depletion of vibrational relaxation. Part 1.-- $\text{HF}(v=2-6) + \text{CO}_2$, $\text{BF}(v=2-4) + \text{CO}_2$. <i>J. Chem. Soc., Faraday Trans., II</i> 75, 422 (1979) Canada
3505	A11 $\text{HCl}^+ + \text{CO}_2$	E	300 K	Bertoncz, F. E.; Brown, R. D. M.; Polanyi, J. C. Chemiluminescence-depletion of vibrational relaxation. Part 2.-- $\text{HCl}(v=2-4) + \text{CO}_2$. <i>J. Chem. Soc., Faraday Trans., II</i> 75, 434 (1979) Canada
3506	H06 $h\nu + \text{ClO}$	E	24 eV	Belgin, D. K.; Dyke, J. M.; Jorathen, W.; Morris, A. Vacuum ultraviolet photoelectron spectroscopy of transient species. Part 9.-- $\text{ClO}(\text{X}^2\Sigma^+[\text{sub } 1])$ radical. <i>J. Chem. Soc., Faraday Trans., II</i> 75, 466 (1979) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3507	A11 $H_2O + CO_2$	E	350-750 K	Foster, M. G.; Simpson, C. J. E. N. Vibrational energy transfer between H_2O and CO_2 . J. Chem. Soc., Faraday Trans., II 75, 509 (1979) United Kingdom
3508	A03 $H + H_2; H + O_2$	E	1.07-24.6 keV	Sheridan, J. R.; Vidner, R. J. Excitation of Balmer alpha and Lyman alpha emissions in collisions of 1.07- to 24.6-keV hydrogen atoms with H_2 and O_2 . J. Geophys. Res. 84, 1319 (1979) United States
3509	A13 $H_2^+ + O$	E	600-1000 K	Torr, B. G. Refinement of the aeronomically determined rate coefficient for the reaction of H_2^+ with O. J. Geophys. Res. 84, 1539 (1979) United States
3510	D02 $He^+ + He$	E	2 keV	Yasuda, H.; Saitoh, M.; Sone, A.; Ihtaka, M. Beam and microstructural effects on surface topography change and sputtering yield in polycrystalline tungsten bombardment with 2 keV He^+ ions. J. Nucl. Mater. 82, 155 (1979) Japan
3511	D02 $H_2^+ + Se$ D17 $H_2^+ + Se$	E	13 keV	Smith, J. M., Jr. Surface cleanup and sputtered ion production: observations with AES and SIMS. J. Nucl. Mater. 82, 179 (1979) United States
3512	C04 $He^+ + Nb$ D14 $He^+ + Nb$ D16 $He^+ + Nb$	E	33-100 keV	Risch, P. B.; Roth, J.; Scherzer, L. M. U. Dependence of blister-thickness and of depth profiles of implanted He ions in Nb on angle of incidence. J. Nucl. Mater. 82, 220 (1979) West Germany
3513	D14 $n + SS; n^+ + Ni$	T	Undef	Maydet, S. I.; Russell, K. C. Numerical simulation of void nucleation in irradiated metals. J. Nucl. Mater. 82, 271 (1979) United States
3514	D14 $n + SS$	T	Undef	Ghoniem, M. M.; Kulcinshi, G. L. The effect of damage rate on void growth in metals. J. Nucl. Mater. 82, 392 (1979) United States
3515	A14 $Cl_2O + H_2O$ M02 $hv + HNOCl$	E	A14 333 K M02 440-200 nm	Knauth, M.-D.; Alberti, M.; Clausen, M. Equilibrium constant of the gas reaction $Cl_2O + H_2O \rightleftharpoons 2HNOCl$ and the ultraviolet spectrum of $HNOCl$. J. Phys. Chem. 83, 1604 (1979) West Germany
3516	M03 $hv + PERT$	T	10^2-10^6 eV	Hubbell, J. M.; Overbo, I. Relativistic atomic form factors and photon coherent scattering cross sections. J. Phys. Chem. Ref. Data 8, 69 (1979) United States
3517	J03 $hv + PERT$	E T	Undef	Krause, M. O. Atomic radiative and radiationless yields for K and L shells. J. Phys. Chem. Ref. Data 8, 307 (1979) United States
3518	J03 $hv + PERT$	E T	Undef	Krause, M. O.; Oliver, J. H. Natural widths of atomic K and L levels, K α X-ray lines and several LLL Auger lines. J. Phys. Chem. Ref. Data 8, 329 (1979) United States
3519	D02 $H^+ + Ta; H^+ + Mo; D^+ + Ta; D^+ + Mo$	E	0.6-15 keV	Mayer, C. M., Jr.; Smith, J. M., Jr. H^+ and D^+ sputtering of thin tantalum films in the energy range of 0.6 to 15 keV. J. Vac. Sci. Technol. 16, 248 (1979) United States
3520	D02 $Ar^+ + Ti; D^+ + Ti$	E	0.5-2.0 keV	Steinbruchel, C.; Green, D. M.; Eason, J. Application of matrix isolation spectroscopy to the measurement of sputtering yields. J. Vac. Sci. Technol. 16, 251 (1979) United States
3521	D13 $e + O + Mo$	E	Undef	Yu, M. L. Abstract: electron desorption of positive and negative oxygen ions from oxygen-covered $Mo(100)$ surfaces. J. Vac. Sci. Technol. 16, 518 (1979) United States

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3522	D05 hv + TiCl ₃	E T	15.0-21.2 eV	Tait, R. W.; Sosa, A.; Chiang, G. C. Abstract: ultraviolet photon-induced secondary electron emission from TiO ₂ : theory and experiment. J. Vac. Sci. Technol. 16, 539 (1979) United States
3523	D05 hv + Cu	E	Undef	Bletz, E.; Himpel, F. J. Abstract: surface photoemission on Cu(110). J. Vac. Sci. Technol. 16, 546 (1979) United States
3524	D11 CO + In; CO ₂ + In; N ₂ O + In; O ₂ + In	E	Undef	Besonagel, S. W.; Dylla, W. F.; Cohen, S. A. AES study of the adsorption of O ₂ , CO, CO ₂ , and N ₂ O on indium. J. Vac. Sci. Technol. 17, 558 (1979) United States
3525	D02 Ar ⁺ + Cu D13 Ar ⁺ + O ₂ + Ni	E T	630 eV	Vinograd, N.; Garrison, B. J.; Fleisch, T.; Belgass, W. M.; Harrison, B. E., Jr. Particle ejection from ion-beam-bombarded clean and reacted single-crystal surfaces. J. Vac. Sci. Technol. 16, 629 (1979) United States
3526	D13 Ar ⁺ + N ₂ + SS; Ar ⁺ + CO + SS; Ar ⁺ + CO ₂ + SS; Ar ⁺ + CH ₄ + SS; e ⁻ + N ₂ + SS; e ⁻ + CO + SS; e ⁻ + CO ₂ + SS; e ⁻ + CH ₄ + SS	E	500-1000 eV	Edwards, B., Jr. Ion and electron desorption of neutral molecules from stainless steel (304). J. Vac. Sci. Technol. 16, 754 (1979) United States
3527	D02 Undef	T	Undef	Andersen, M. N. Abstract: sputtering of multicomponent metal and semiconductor targets. J. Vac. Sci. Technol. 16, 770 (1979) Denmark
3528	D02 Ar ⁺ + Al + Pd + Si	E	1 keV	Lewis, J. E.; Ho, P. S. Abstract: preferred sputtering of binary alloy surfaces of the Al-Pd-Si system. J. Vac. Sci. Technol. 16, 772 (1979) United States
3529	D02 Ar ⁺ + Au + Ni; Ar ⁺ + Au + Cu	E	1 keV	Tomphins, M. G. Preferential sputtering in gold-nickel and gold-copper alloys. J. Vac. Sci. Technol. 16, 778 (1979) United States
3530	D02 Ar ⁺ + Cu; Ar ⁺ + O + Cu; Ar ⁺ + CC + Ni	T	630 eV	Garrison, B. J.; Vinograd, N.; Harrison, B. E., Jr. Ejection of molecular clusters from ion-beam-bombarded surfaces. J. Vac. Sci. Technol. 16, 789 (1979) United States
3531	D02 Ar ⁺ + Ta ₂ O ₅ D17 Ar ⁺ + Ta ₂ O ₅	E	0.5-5.0 keV	Holloway, P. M.; Nelson, G. C. Preferential sputtering of Ta ₂ O ₅ by argon ions. J. Vac. Sci. Technol. 16, 793 (1979) United States
3532	D17 Ar ⁺ + Fe + Cr + Ni; Ar ⁺ + SS	E	3 keV	McIntyre, M. S.; Stanchell, F. W. Preferential sputtering in oxides as metals and reversed by x-ray photoelectron spectroscopy. J. Vac. Sci. Technol. 16, 798 (1979) Canada
3533	D02 Ar ⁺ + Nb D17 Ar ⁺ + NbO	E	15 keV	Tortorelli, P. F.; Altstetter, C. J. Sputtering of two-phase polycrystalline metals. J. Vac. Sci. Technol. 16, 804 (1979) United States
3534	D02 Ar ⁺ + Cu + Ni D17 Ar ⁺ + Ag + Au	E	Undef	Meyer, M. K.; Vehner, G. K. Abstract: sputter yields of bimetal mixtures. J. Vac. Sci. Technol. 16, 808 (1979) United States
3535	A17 H ₂ + H ₂ ; H ₂ + He; He + He; He + He; Ar + Ar	T	Undef	Mulder, F.; van der Avoird, A.; Borsari, P. E. S. Anisotropy of long range interactions between linear molecules: H ₂ -H ₂ and H ₂ -He. Mol. Phys. 37, 155 (1979) The Netherlands
3536	A17 Kr + Kr; N ₂ + N ₂	T	Undef	Ng, K.-C.; Meeth, W. J.; Allnatt, P. R. A reliable semi-empirical approach for evaluating the isotropic intermolecular forces between closed-shell systems. An application to the He-He, Ne-Ne, Ar-Ar, Kr-Kr and H ₂ -H ₂ interactions. Mol. Phys. 37, 237 (1979) Canada
3537	A14 O + CS ₂	E	13-38 kJ/mol	Gorry, P. A.; Novikov, C. V.; Grice, R. Reactive scattering of a supersonic oxygen atom beam: O + CS ₂ . Mol. Phys. 37, 129 (1979) United Kingdom

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
3538	A14 $O + Cl_2$	E	13-31 kJ/mol	Gerry, P. A.; Manikow, C. V.; Grice, R. Reactive scattering of a supersonic oxygen atom beam: $O + Cl_2$. Mol. Phys. 37, 347 (1979) United Kingdom
3539	A17 $H + OF; P + OCl; N + OBr; N + OI$	T	Uninf	Marrelli, J. N.; Carter, S.; Mills, I. N.; Gwost, R. F. Analytical potentials for triatomic molecules from spectroscopic data: V. Application to NOX (X=F, Cl, Br, I). Mol. Phys. 37, 1199 (1979) United Kingdom
3540	E93 $e + C^{3+}; e + Fe^{23+}; e + Na^{23+}; e + U^{91+}$	T	1-1500 Ry	Callaway, J.; Henry, R. J. W.; Mazzano, A. P. Excitation of ions of the lithium isoelectronic sequence in the relativistic Coulomb-Born approximation. Phys. Rev. A 19, 1416 (1979) United States
3541	K93 $O^{7+} + Al; O^{7+} + Al; O^{7+} + Al; O^{7+} + Al; O^{7+} + Al$ A97 $O^{7+} + Al; O^{7+} + Al; O^{7+} + Al; O^{7+} + Al; O^{7+} + Al$ C86 $O^{7+} + Al; O^{7+} + Al; O^{7+} + Al; O^{7+} + Al; O^{7+} + Al$	E	4-46 MeV	Gray, T. J.; Richard, P.; Gault, G.; Housoub, J. Al K x-ray production for incident ^{56}Co ions: the influence of target thickness effects on observed target x-ray yields. Phys. Rev. A 19, 1424 (1979) United States
3542	A93 $H^+ + Rb; H^+ + Sr; H^+ + Y; H^+ + Zr; H^+ + Nb; H^+ + Mo; H^+ + Ru; H^+ + Rh; H^+ + Pd; H^+ + Ag; H^+ + Cd; H^+ + In; H^+ + Sn; H^+ + Sb; H^+ + Te; H^+ + I; H^+ + Cs; H^+ + Ba$ A19 $H^+ + Rb; H^+ + Sr; H^+ + Y; H^+ + Zr; H^+ + Nb; H^+ + Mo; H^+ + Ru; H^+ + Rh; H^+ + Pd; H^+ + Ag; H^+ + Cd; H^+ + In; H^+ + Sn; H^+ + Sb; H^+ + Te; H^+ + I; H^+ + Cs; H^+ + Ba$	E	2.5 MeV	Boyle, B. L.; Shafroth, S. N. $L_1-L_{2,3}$ Coster-Kronig transition thresholds in the region 37 less than or equal to Z less than or equal to 56. Phys. Rev. A 19, 1433 (1979) United States
3543	C82 $He^+ + C; He^+ + Al; He^+ + Cu; He^+ + Ag; He^+ + Au; Li^+ + C; Li^+ + Al; Li^+ + Cu; Li^+ + Ag; Li^+ + Au$	E	50-300 keV	Hartens, P. Electronic stopping cross sections of 50-300-keV He and Li ions. Phys. Rev. A 19, 1442 (1979) West Germany
3544	A66 $D^+ + Mg; D^+ + Ba; D^+ + Ar; P^+ + Mg; H^+ + Ba; H^+ + Ar$ A17 $H + Mg^+; H^+ + Mg; H^- + Mg^{2+}$	E	1-100 keV	Morgan, T. J.; Eriksen, F. J. Single- and double-electron capture by 1-100-keV protons in collisions with magnesium and barium atoms. Phys. Rev. A 19, 1448 (1979) United States
3545	A63 $Na^+ + Ne$ A66 $Na^+ + Ne$ A87 $Na^+ + Ne$ A18 $Na^+ + Ne$	E	0.2-12 keV	Olsen, J. O.; Andersen, T.; Barst, R.; Courbin-Gaussorgues, C.; Sidis, V.; Pannier, J.; Agusti, J.; Andersen, N.; Ruseck, P. Excitation and charge transfer in low-energy Na^+-Ne collisions. Phys. Rev. A 19, 1437 (1979) Denmark
3546	A66 $H^+ + Ne; He^{2+} + Ne; H^+ + Ne; O^{2+} + Ne; F^{2+} + Ne$	T	0.1-200 MeV	Lin, C. D. Double K-shell electron capture for ion-atom collisions at intermediate energies. Phys. Rev. A 19, 1510 (1979) United States

REF. NO.	REACTANTS	EXP. OF TIME	ENERGY RANGE	REFERENCE
3547	<p>A03</p> <p>Si⁷⁺ + Nd; Si⁷⁺ + Ho; Si⁷⁺ + Au; Si⁸⁺ + Nd; Si⁸⁺ + Ho; Si⁸⁺ + Au; Si⁹⁺ + Nd; Si⁹⁺ + Ho; Si⁹⁺ + Au; Si¹⁰⁺ + Nd; Si¹⁰⁺ + Ho; Si¹⁰⁺ + Au; Si¹¹⁺ + Nd; Si¹¹⁺ + Ho; Si¹¹⁺ + Au; Si¹²⁺ + Nd; Si¹²⁺ + Ho; Si¹²⁺ + Au; F⁹⁺ + Nd; F⁹⁺ + Ho; F⁹⁺ + Au; F⁹⁺ + Nd; F¹⁰⁺ + Nd; F¹⁰⁺ + Ho; F¹⁰⁺ + Au; Si¹²⁺ + Nd; Si¹²⁺ + Ho; Si¹²⁺ + Au; Si¹²⁺ + Nd; Si¹²⁺ + Ho; Si¹²⁺ + Au; Cl¹⁰⁺ + Nd; Cl¹⁰⁺ + Ho; Cl¹⁰⁺ + Au</p> <p>A06</p> <p>Si⁷⁺ + Nd; Si⁷⁺ + Ho; Si⁷⁺ + Au; Si⁸⁺ + Nd; Si⁸⁺ + Ho; Si⁸⁺ + Au; Si⁹⁺ + Nd; Si⁹⁺ + Ho; Si⁹⁺ + Au; Si¹⁰⁺ + Nd; Si¹⁰⁺ + Ho; Si¹⁰⁺ + Au; Si¹¹⁺ + Nd; Si¹¹⁺ + Ho; Si¹¹⁺ + Au; Si¹²⁺ + Nd; Si¹²⁺ + Ho; Si¹²⁺ + Au; F⁹⁺ + Nd; F⁹⁺ + Ho; F⁹⁺ + Au; F⁹⁺ + Nd; F¹⁰⁺ + Nd; F¹⁰⁺ + Ho; F¹⁰⁺ + Au; Si¹²⁺ + Nd; Si¹²⁺ + Ho; Si¹²⁺ + Au; Si¹²⁺ + Nd; Si¹²⁺ + Ho; Si¹²⁺ + Au; Cl¹⁰⁺ + Nd; Cl¹⁰⁺ + Ho; Cl¹⁰⁺ + Au</p> <p>A07</p> <p>Si⁷⁺ + Nd; Si⁷⁺ + Ho; Si⁷⁺ + Au; Si⁸⁺ + Nd; Si⁸⁺ + Ho; Si⁸⁺ + Au; Si⁹⁺ + Nd; Si⁹⁺ + Ho; Si⁹⁺ + Au; Si¹⁰⁺ + Nd; Si¹⁰⁺ + Ho; Si¹⁰⁺ + Au; Si¹¹⁺ + Nd; Si¹¹⁺ + Ho; Si¹¹⁺ + Au; Si¹²⁺ + Nd; Si¹²⁺ + Ho; Si¹²⁺ + Au; F⁹⁺ + Nd; F⁹⁺ + Ho; F⁹⁺ + Au; F⁹⁺ + Nd; F¹⁰⁺ + Nd; F¹⁰⁺ + Ho; F¹⁰⁺ + Au; Si¹²⁺ + Nd; Si¹²⁺ + Ho; Si¹²⁺ + Au; Si¹²⁺ + Nd; Si¹²⁺ + Ho; Si¹²⁺ + Au; Cl¹⁰⁺ + Nd; Cl¹⁰⁺ + Ho; Cl¹⁰⁺ + Au</p> <p>A19</p> <p>Si⁷⁺ + Nd; Si⁷⁺ + Ho; Si⁷⁺ + Au; Si⁸⁺ + Nd; Si⁸⁺ + Ho; Si⁸⁺ + Au; Si⁹⁺ + Nd; Si⁹⁺ + Ho; Si⁹⁺ + Au; Si¹⁰⁺ + Nd; Si¹⁰⁺ + Ho; Si¹⁰⁺ + Au; Si¹¹⁺ + Nd; Si¹¹⁺ + Ho; Si¹¹⁺ + Au; Si¹²⁺ + Nd; Si¹²⁺ + Ho; Si¹²⁺ + Au; F⁹⁺ + Nd; F⁹⁺ + Ho; F⁹⁺ + Au; F⁹⁺ + Nd; F¹⁰⁺ + Nd; F¹⁰⁺ + Ho; F¹⁰⁺ + Au; Si¹²⁺ + Nd; Si¹²⁺ + Ho; Si¹²⁺ + Au; Si¹²⁺ + Nd; Si¹²⁺ + Ho; Si¹²⁺ + Au; Cl¹⁰⁺ + Nd; Cl¹⁰⁺ + Ho; Cl¹⁰⁺ + Au</p>	E	33-65 MeV	McDaniel, F. D.; Totem, A.; Peterson, R. S.; Duggan, J. L.; Wilson, S. B.; Grossett, J. E.; Miller, P. D.; Lapich, G. Projectile-charge-state dependence of target L-shell ionization by 1-6-MeV/amu fluorine and silicon ions and 1.0-MeV/amu chlorine ions. Phys. Rev. A 19, 1517 (1979) United States
3548	<p>E11</p> <p>e + Al; e + U</p>	T	5-10 MeV	Tseng, H. K.; Pratt, R. M. Electron bremsstrahlung energy spectra above 2 MeV. Phys. Rev. A 15, 1525 (1975) Taiwan
3549	<p>A07</p> <p>Ne²⁺ + SiH₄; Ne²⁺ + S₂; Ne²⁺ + SF₆; Ne²⁺ + N₂S; Ne²⁺ + KCl; Ne²⁺ + HCl</p> <p>A19</p> <p>Ne²⁺ + Al; Ne²⁺ + Si; Ne²⁺ + Cl; C³⁺ + Al; C³⁺ + Si; C³⁺ + Cl; O³⁺ + Al; Al; O³⁺ + Si; O³⁺ + Cl; Ne⁹⁺ + Al; Ne⁹⁺ + Si; Ne⁹⁺ + Cl</p>	E	6.4-114 MeV	Watson, R. L.; Sonobe, B. I.; Essaref, J. A.; Langenberg, A. Systematics of the average L-shell ionization probability in K-shell ionizing collisions by light ions. Phys. Rev. A 19, 1525 (1975) United States
3550	<p>A06</p> <p>Li²⁺ + H; Be³⁺ + H; B⁴⁺ + H; C⁵⁺ + H</p>	T	2.15-24000 keV	Hyafuku, M.; Watanabe, T. Charge-transfer cross sections for collisions of Li ²⁺ , Be ³⁺ , B ⁴⁺ , and C ⁵⁺ ions with atomic hydrogen. Phys. Rev. A 19, 1538 (1979) Japan
3551	<p>E01</p> <p>Undef</p>	T	Undef	Yates, A. C. High-energy higher-order Born approximations: theoretical development. Phys. Rev. A 19, 1560 (1979) United States
3552	<p>A13</p> <p>Ar⁺ + H₂; H₂⁺ + Ar</p>	T	2.75-0.30 eV	Beer, R.; Bowick, J. A. Electronic transitions in the ion-molecule reaction (Ar ⁺ + H ₂ going to cr cooling from Ar + H ₂ ⁺) + ArH ⁺ + H. Phys. Rev. A 19, 1565 (1975) Israel
3553	<p>E01</p> <p>e + H</p> <p>E12</p> <p>e⁺ + H</p>	T	Undef	Aronson, I.; Blau, R.; Kleinman, C. J.; Rosenbly, L.; Spruch, L. Application of a variational principle for the scattering length for the target wave function imprecisely known. Phys. Rev. A 19, 1568 (1975) United States

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3554	N06 $2h\nu + \text{Ca}; 3h\nu + \text{K}$	T	23550-33240 cm^{-1}	Blatt, S. N.; Lambropoulos, P. Line-profile considerations of resonant multichannel ionization. <i>Phys. Rev. A</i> 19, 1576 (1979) United States
3555	N08 $h\nu + \text{Na}; h\nu + \text{Ba}$	E	Underf	Lewis, D. A.; Tonn, J. F.; Kaufman, S. L.; Greenless, C. W. Photon-burst method in high-resolution laser spectroscopy. <i>Phys. Rev. A</i> 19, 1580 (1979) United States
3556	N08 $h\nu + \text{Li}$	T	35012 cm^{-1}	Diels, J.-C.; Georgas, A. T. Coherent two-photon resonant third- and fifth-harmonic vacuum-ultraviolet generation in metal vapors. <i>Phys. Rev. A</i> 19, 1685 (1979) United States
3557	A11 $\text{Na}^+ + \text{He}; \text{Na}^+ + \text{Ne}; \text{Ba}^+ + \text{Ar}$	E	332 K	Flusberg, A.; Kocher, R.; Moosberg, T.; Hartmann, S. R. Foreign-gas-induced relaxation of Rydberg S and D states in atomic sodium. <i>Phys. Rev. A</i> 19, 1687 (1979) United States
3558	N04 Underf	T	Underf	Kelsey, E. J. Calculation of certain single-photon double-excitation amplitudes of high-Rydberg states in which long-range correlation effects dominate. <i>Phys. Rev. A</i> 19, 1645 (1979) United States
3559	N08 Underf	T	Underf	Mayfeh, N. M.; Mayfeh, A. M. Double resonance with pulsed fields. <i>Phys. Rev. A</i> 19, 1666 (1979) United States
3560	N04 Underf	T	Underf	Rabin, Y.; Ben-Reuven, A. Theory of resonance excitation of M-level atomic systems by strong coherent radiation. <i>Phys. Rev. A</i> 19, 1657 (1979) Israel
3561	E02 $e + \text{He}$	T	0-16 eV	Sinfallian, A. L.; Mosbet, R. K. *Erratum Variational calculations on electron-helium scattering [<i>Phys. Rev. A</i> 6, 2110 (1972)]. <i>Phys. Rev. A</i> 19, 1608 (1979) United States
3562	A17 $\text{Pb} + \text{Pb}; \text{Sn} + \text{Sn}$	T	0-1.5 eV	Marria, J.; Jones, R. O. Bonding trends in the group-IVA dimers C_2, Pb_2 . <i>Phys. Rev. A</i> 19, 1813 (1979) West Germany
3563	E02 $e + \text{He}$ E03 $e + \text{He}$ E17 $e + \text{He}$	T	30-100 eV	Shedro, K.; Callaway, J.; Henry, R. J. W. Electron-impact excitation of $n = 2$ levels of helium at intermediate energies. <i>Phys. Rev. A</i> 19, 1841 (1979) United States
3564	A03 $\text{H}^+ + \text{Cu}; \text{He}^{2+} + \text{Cu}; \text{Li}^{2+} + \text{Cu}; \text{C}^{4+} + \text{Cu}; \text{N}^{5+} + \text{Cu}; \text{O}^{6+} + \text{Cu}; \text{F}^{7+} + \text{Cu}; \text{Al}^{13+} + \text{Cu}; \text{Si}^{14+} + \text{Cu}; \text{S}^{16+} + \text{Cu}; \text{Cl}^{17+} + \text{Cu}; \text{P}^{15+} + \text{Cu}; \text{Ar}^{18+} + \text{Cu}; \text{S}^{12+} + \text{Cu}; \text{S}^{10+} + \text{Cu}; \text{P}^{9+} + \text{Cu}$ A07 $\text{H}^+ + \text{Cu}; \text{He}^{2+} + \text{Cu}; \text{Li}^{2+} + \text{Cu}; \text{C}^{4+} + \text{Cu}; \text{N}^{5+} + \text{Cu}; \text{O}^{6+} + \text{Cu}; \text{F}^{7+} + \text{Cu}; \text{Al}^{13+} + \text{Cu}; \text{Si}^{14+} + \text{Cu}; \text{S}^{16+} + \text{Cu}; \text{Cl}^{17+} + \text{Cu}; \text{P}^{15+} + \text{Cu}; \text{Ar}^{18+} + \text{Cu}; \text{S}^{12+} + \text{Cu}; \text{S}^{10+} + \text{Cu}; \text{P}^{9+} + \text{Cu}$ A19 $\text{H}^+ + \text{Cu}; \text{He}^{2+} + \text{Cu}; \text{Li}^{2+} + \text{Cu}; \text{C}^{4+} + \text{Cu}; \text{N}^{5+} + \text{Cu}; \text{O}^{6+} + \text{Cu}; \text{F}^{7+} + \text{Cu}; \text{Al}^{13+} + \text{Cu}; \text{Si}^{14+} + \text{Cu}; \text{S}^{16+} + \text{Cu}; \text{Cl}^{17+} + \text{Cu}; \text{P}^{15+} + \text{Cu}; \text{Ar}^{18+} + \text{Cu}; \text{S}^{12+} + \text{Cu}; \text{S}^{10+} + \text{Cu}; \text{P}^{9+} + \text{Cu}$	E	1.7-69.5 MeV	Janison, K. A.; Hall, J. R. Cu K x-ray production as a function of projectile atomic number, energy, and incident charge state. <i>Phys. Rev. A</i> 19, 1896 (1979) United States
3565	A17 Positronium + H	T	0.20-0.30 Ry	Drachman, R. J. Autodissociating Rydberg states of positronium hydride. <i>Phys. Rev. A</i> 19, 1900 (1979) United States
3566	E03 $e + \text{H}$ E17 $e + \text{H}$	T	0-1000 eV	Sand, Y. B. Coherent-state multiple resonances in electron-hydrogen impact excitation. <i>Phys. Rev. A</i> 19, 1906 (1979) United States
3567	A06 $\text{O}^{8+} + \text{H}$ A07 $\text{O}^{8+} + \text{H}$	T	1-5000 keV	Salep, A.; Olson, R. E. Electron removal from atomic hydrogen by collisions with fully stripped oxygen ions. <i>Phys. Rev. A</i> 19, 1921 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3568	E85 $e + Y$	E	11-40 keV	Chang, C.-H. L-subshell ionization cross sections for tungsten at low electron energies. Phys. Rev. A 19, 1930 (1979) Taiwan
3569	A86 $H^+ + CH_4; H^+ + Ne; H^+ + Ar; Ne^{2+} + CH_4; Ne^{2+} + Ne; Ne^{2+} + Ar; Li^{2+} + CH_4; Li^{2+} + Ne; Li^{2+} + Ar$ A87 $H^+ + CH_4; H^+ + Ne; H^+ + Ar; Ne^{2+} + CH_4; Ne^{2+} + Ne; Ne^{2+} + Ar; Li^{2+} + CH_4; Li^{2+} + Ne; Li^{2+} + Ar$	E	3.4-21 MeV	Budbro, N.; Pedersen, E. N.; Coeho, C. L.; MacDonald, J. R. Inner-shell-electron capture by H^+ , Ne^{2+} , and Li^{2+} projectiles from CH_4 , Ne, and Ar. Phys. Rev. A 19, 1536 (1979) Denmark
3570	A11 $Na^+ + Na$	E	303 K	Burgmans, A. L. J. Orientation and alignment relaxation of the 3^2P states of sodium measured at high vapor densities. Phys. Rev. A 19, 1554 (1979) The Netherlands
3571	A83 $F^+ + Ne; F^{2+} + Ne; F^{3+} + Ne; F^{4+} + Ne; F^{5+} + Ne; F^{6+} + Ne; F^{7+} + Ne; F^{8+} + Ne; F^{9+} + Ne; F^{10+} + Ne; F^{11+} + Ne; F^{12+} + Ne; F^{13+} + Ne; F^{14+} + Ne; F^{15+} + Ne; F^{16+} + Ne; F^{17+} + Ne; F^{18+} + Ne; F^{19+} + Ne; F^{20+} + Ne; F^{21+} + Ne; F^{22+} + Ne; F^{23+} + Ne; F^{24+} + Ne; F^{25+} + Ne; F^{26+} + Ne; F^{27+} + Ne; F^{28+} + Ne; F^{29+} + Ne; F^{30+} + Ne; F^{31+} + Ne; F^{32+} + Ne; F^{33+} + Ne; F^{34+} + Ne; F^{35+} + Ne; F^{36+} + Ne; F^{37+} + Ne; F^{38+} + Ne; F^{39+} + Ne; F^{40+} + Ne; F^{41+} + Ne; F^{42+} + Ne; F^{43+} + Ne; F^{44+} + Ne; F^{45+} + Ne; F^{46+} + Ne; F^{47+} + Ne; F^{48+} + Ne; F^{49+} + Ne; F^{50+} + Ne; F^{51+} + Ne; F^{52+} + Ne; F^{53+} + Ne; F^{54+} + Ne; F^{55+} + Ne; F^{56+} + Ne; F^{57+} + Ne; F^{58+} + Ne; F^{59+} + Ne; F^{60+} + Ne; F^{61+} + Ne; F^{62+} + Ne; F^{63+} + Ne; F^{64+} + Ne; F^{65+} + Ne; F^{66+} + Ne; F^{67+} + Ne; F^{68+} + Ne; F^{69+} + Ne; F^{70+} + Ne; F^{71+} + Ne; F^{72+} + Ne; F^{73+} + Ne; F^{74+} + Ne; F^{75+} + Ne; F^{76+} + Ne; F^{77+} + Ne; F^{78+} + Ne; F^{79+} + Ne; F^{80+} + Ne; F^{81+} + Ne; F^{82+} + Ne; F^{83+} + Ne; F^{84+} + Ne; F^{85+} + Ne; F^{86+} + Ne; F^{87+} + Ne; F^{88+} + Ne; F^{89+} + Ne; F^{90+} + Ne; F^{91+} + Ne; F^{92+} + Ne; F^{93+} + Ne; F^{94+} + Ne; F^{95+} + Ne; F^{96+} + Ne; F^{97+} + Ne; F^{98+} + Ne; F^{99+} + Ne; F^{100+} + Ne$ A19 $F^+ + Ne; F^{2+} + Ne; F^{3+} + Ne; F^{4+} + Ne; F^{5+} + Ne; F^{6+} + Ne; F^{7+} + Ne; F^{8+} + Ne; F^{9+} + Ne; F^{10+} + Ne; F^{11+} + Ne; F^{12+} + Ne; F^{13+} + Ne; F^{14+} + Ne; F^{15+} + Ne; F^{16+} + Ne; F^{17+} + Ne; F^{18+} + Ne; F^{19+} + Ne; F^{20+} + Ne; F^{21+} + Ne; F^{22+} + Ne; F^{23+} + Ne; F^{24+} + Ne; F^{25+} + Ne; F^{26+} + Ne; F^{27+} + Ne; F^{28+} + Ne; F^{29+} + Ne; F^{30+} + Ne; F^{31+} + Ne; F^{32+} + Ne; F^{33+} + Ne; F^{34+} + Ne; F^{35+} + Ne; F^{36+} + Ne; F^{37+} + Ne; F^{38+} + Ne; F^{39+} + Ne; F^{40+} + Ne; F^{41+} + Ne; F^{42+} + Ne; F^{43+} + Ne; F^{44+} + Ne; F^{45+} + Ne; F^{46+} + Ne; F^{47+} + Ne; F^{48+} + Ne; F^{49+} + Ne; F^{50+} + Ne; F^{51+} + Ne; F^{52+} + Ne; F^{53+} + Ne; F^{54+} + Ne; F^{55+} + Ne; F^{56+} + Ne; F^{57+} + Ne; F^{58+} + Ne; F^{59+} + Ne; F^{60+} + Ne; F^{61+} + Ne; F^{62+} + Ne; F^{63+} + Ne; F^{64+} + Ne; F^{65+} + Ne; F^{66+} + Ne; F^{67+} + Ne; F^{68+} + Ne; F^{69+} + Ne; F^{70+} + Ne; F^{71+} + Ne; F^{72+} + Ne; F^{73+} + Ne; F^{74+} + Ne; F^{75+} + Ne; F^{76+} + Ne; F^{77+} + Ne; F^{78+} + Ne; F^{79+} + Ne; F^{80+} + Ne; F^{81+} + Ne; F^{82+} + Ne; F^{83+} + Ne; F^{84+} + Ne; F^{85+} + Ne; F^{86+} + Ne; F^{87+} + Ne; F^{88+} + Ne; F^{89+} + Ne; F^{90+} + Ne; F^{91+} + Ne; F^{92+} + Ne; F^{93+} + Ne; F^{94+} + Ne; F^{95+} + Ne; F^{96+} + Ne; F^{97+} + Ne; F^{98+} + Ne; F^{99+} + Ne; F^{100+} + Ne$	E	15 MeV	Tavara, N.; Richard, P.; Jamison, B. A.; Gray, T. J.; Neuwirth, J.; Scholtenkamp, C. X-ray production by electron excitation, ionization, and capture for F ($sup q^+$) ($q = 1-9$) ions in collisions with a Ne gas target. Phys. Rev. A 15, 1968 (1979) United States
3572	H06 $h\nu + O; h\nu + S; h\nu + Se; h\nu + Te$	T	2020-870 Å	McGuire, E. J. Photoionization of the $(np)^2 3S_0$ level of the group-VI atoms via autoionizing levels. Phys. Rev. A 19, 1978 (1979) United States
3573	H02 $h\nu + Na$	E	1068-1096 eV	Lavilla, R. E. K absorption-edge spectrum of sodium vapor. Phys. Rev. A 19, 1999 (1979) United States
3574	E11 $e + Al$	E	1408 keV	Ahmad, S.; Power, M. S.; Singh, P. Experimental study of thick-target bremsstrahlung spectrum of $^{22}P \beta$ radiation. Phys. Rev. A 19, 2089 (1979) India
3575	H08 Undef	T	Undef	Neer, C. V.; Sutherland, R. L. Optical properties of photon echoes stimulated by three frequencies. Phys. Rev. A 19, 2026 (1979) United States
3576	A83 $He^+ + Cs$ A86 $He^+ + Cs$ A87 $He^+ + Cs$	E	330 K	de Vries, C. P.; Uskov, M. J. Production of excited cesium ions in helium-cesium afterglows. Phys. Rev. A 19, 2095 (1979) United States
3577	A86 $He^{2+} + He$	T	0.0006-10 eV	Bardoley, J. N.; Cohen, J. S.; Uehara, J. R. Resonant contributions of single charge transfer between He^{2+} and He. Phys. Rev. A 19, 2125 (1979) United States
3578	A83 $F^{+} + Si; F^{2+} + Si; F^{3+} + Si; F^{4+} + Si; F^{5+} + Si; F^{6+} + Si; F^{7+} + Si; F^{8+} + Si; F^{9+} + Si; F^{10+} + Si; F^{11+} + Si; F^{12+} + Si; F^{13+} + Si; F^{14+} + Si; F^{15+} + Si; F^{16+} + Si; F^{17+} + Si; F^{18+} + Si; F^{19+} + Si; F^{20+} + Si; F^{21+} + Si; F^{22+} + Si; F^{23+} + Si; F^{24+} + Si; F^{25+} + Si; F^{26+} + Si; F^{27+} + Si; F^{28+} + Si; F^{29+} + Si; F^{30+} + Si; F^{31+} + Si; F^{32+} + Si; F^{33+} + Si; F^{34+} + Si; F^{35+} + Si; F^{36+} + Si; F^{37+} + Si; F^{38+} + Si; F^{39+} + Si; F^{40+} + Si; F^{41+} + Si; F^{42+} + Si; F^{43+} + Si; F^{44+} + Si; F^{45+} + Si; F^{46+} + Si; F^{47+} + Si; F^{48+} + Si; F^{49+} + Si; F^{50+} + Si; F^{51+} + Si; F^{52+} + Si; F^{53+} + Si; F^{54+} + Si; F^{55+} + Si; F^{56+} + Si; F^{57+} + Si; F^{58+} + Si; F^{59+} + Si; F^{60+} + Si; F^{61+} + Si; F^{62+} + Si; F^{63+} + Si; F^{64+} + Si; F^{65+} + Si; F^{66+} + Si; F^{67+} + Si; F^{68+} + Si; F^{69+} + Si; F^{70+} + Si; F^{71+} + Si; F^{72+} + Si; F^{73+} + Si; F^{74+} + Si; F^{75+} + Si; F^{76+} + Si; F^{77+} + Si; F^{78+} + Si; F^{79+} + Si; F^{80+} + Si; F^{81+} + Si; F^{82+} + Si; F^{83+} + Si; F^{84+} + Si; F^{85+} + Si; F^{86+} + Si; F^{87+} + Si; F^{88+} + Si; F^{89+} + Si; F^{90+} + Si; F^{91+} + Si; F^{92+} + Si; F^{93+} + Si; F^{94+} + Si; F^{95+} + Si; F^{96+} + Si; F^{97+} + Si; F^{98+} + Si; F^{99+} + Si; F^{100+} + Si$ A87 $F^{+} + Si; F^{2+} + Si; F^{3+} + Si; F^{4+} + Si; F^{5+} + Si; F^{6+} + Si; F^{7+} + Si; F^{8+} + Si; F^{9+} + Si; F^{10+} + Si; F^{11+} + Si; F^{12+} + Si; F^{13+} + Si; F^{14+} + Si; F^{15+} + Si; F^{16+} + Si; F^{17+} + Si; F^{18+} + Si; F^{19+} + Si; F^{20+} + Si; F^{21+} + Si; F^{22+} + Si; F^{23+} + Si; F^{24+} + Si; F^{25+} + Si; F^{26+} + Si; F^{27+} + Si; F^{28+} + Si; F^{29+} + Si; F^{30+} + Si; F^{31+} + Si; F^{32+} + Si; F^{33+} + Si; F^{34+} + Si; F^{35+} + Si; F^{36+} + Si; F^{37+} + Si; F^{38+} + Si; F^{39+} + Si; F^{40+} + Si; F^{41+} + Si; F^{42+} + Si; F^{43+} + Si; F^{44+} + Si; F^{45+} + Si; F^{46+} + Si; F^{47+} + Si; F^{48+} + Si; F^{49+} + Si; F^{50+} + Si; F^{51+} + Si; F^{52+} + Si; F^{53+} + Si; F^{54+} + Si; F^{55+} + Si; F^{56+} + Si; F^{57+} + Si; F^{58+} + Si; F^{59+} + Si; F^{60+} + Si; F^{61+} + Si; F^{62+} + Si; F^{63+} + Si; F^{64+} + Si; F^{65+} + Si; F^{66+} + Si; F^{67+} + Si; F^{68+} + Si; F^{69+} + Si; F^{70+} + Si; F^{71+} + Si; F^{72+} + Si; F^{73+} + Si; F^{74+} + Si; F^{75+} + Si; F^{76+} + Si; F^{77+} + Si; F^{78+} + Si; F^{79+} + Si; F^{80+} + Si; F^{81+} + Si; F^{82+} + Si; F^{83+} + Si; F^{84+} + Si; F^{85+} + Si; F^{86+} + Si; F^{87+} + Si; F^{88+} + Si; F^{89+} + Si; F^{90+} + Si; F^{91+} + Si; F^{92+} + Si; F^{93+} + Si; F^{94+} + Si; F^{95+} + Si; F^{96+} + Si; F^{97+} + Si; F^{98+} + Si; F^{99+} + Si; F^{100+} + Si$	E	10-30 MeV	Tavara, N.; Richard, P.; Gray, T. J.; Papuiller, P.; MacDonald, J. R.; Dillingham, A. Comparison of F-shell ionization cross sections of Si in solid and gas targets for F ($sup q^+$) + Si collisions ($q = 4-9$) at 1 and 2 MeV/amu. Phys. Rev. A 19, 2131 (1979) United States
3579	E85 $e + Ar_2; e + ArKr; e + Kr_2; e + Xe_2; e + Xe_3$	E	10-100 eV	Helm, M.; Stephen, R.; Mark, T. E. Electron-impact ionization of Ar_2 , $ArKr$, Kr_2 , $KrXe$, and Xe_2 . Phys. Rev. A 19, 2154 (1979) Austria
3580	A10 $Na^+ + Ne; Na^+ + Ar; Na^+ + Xe$	E	330 K	Gallagher, T. F.; Coeho, V. E. Collisional depopulation of excited Na states by Ne, Ar, and Xe. Phys. Rev. A 19, 2161 (1979) United States

REV. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
3541	AE3 F ⁺ + Ti; F ⁺ + V; F ⁺ + Cr; F ⁺ + Fe; F ⁺ + Co; F ⁺ + Ti; F ⁺ + V; F ⁺ + Cr; F ⁺ + Fe; F ⁺ + Co; F ⁺ + Ti; F ⁺ + V; F ⁺ + Cr; F ⁺ + Fe; F ⁺ + Co; F ⁺ + Ti; F ⁺ + V; F ⁺ + Cr; F ⁺ + Fe; F ⁺ + Co AE7 F ⁺ + Ti; F ⁺ + V; F ⁺ + Cr; F ⁺ + Fe; F ⁺ + Co; F ⁺ + Ti; F ⁺ + V; F ⁺ + Cr; F ⁺ + Fe; F ⁺ + Co; F ⁺ + Ti; F ⁺ + V; F ⁺ + Cr; F ⁺ + Fe; F ⁺ + Co	E	32.1 MeV	Schneidhauß, A.; Gray, T. J.; Doyle, B. L.; Schobel, W. Target and projectile cross sections for F ions on Ti, V, Cr, Fe, and Co: 1.7 MeV/neu. Phys. Rev. A 15, 2167 (1979) United States
3542	AE3 K + CD	E	1.2 eV	Reich, B.; Reuss, W.; Schnepfer, W. Isotope shift in the beige effect of molecular scattering. Phys. Rev. A 19, 2173 (1979) West Germany
3543	AE3 H ⁺ + Ca; H ⁺ + Ar; H ⁺ + Ne	T	17-5000 keV	McGuire, J. M.; Lamb, D. J.; Brunner, J. C.; Bunker, G. Probabilities for 2s-2p excitation ion-atom collisions. Phys. Rev. A 19, 2180 (1979) United States
3544	AE3 H ⁺ + Mg; H ⁺ + Ba AE6 H ⁺ + Mg; H ⁺ + Ba	E	1.5-90 keV	Morgan, T. J.; Erskine, F. Formation of metastable hydrogen atoms by charge exchange of fast protons in magnesium and barium vapors. Phys. Rev. A 19, 2188 (1979) United States
3545	EE3 e + N ₂ ; e + D ₂ ; e + ND EP4 e + N ₂ ; e + D ₂ ; e + ND	E	13 eV	Ryan, S. R.; Spezzano, J. J.; Salmen, O. F.; Lamb, B. E., Jr.; McIntyre, L. C.; Bing, W. H. Time-of-flight study of N(2S) and D(2S) produced by electron impact on N ₂ , D ₂ , and ND: evidence for predissociation. Phys. Rev. A 19, 2192 (1979) United States
3546	EP3 e + Be; e + B ⁺ ; e + C ²⁺ ; e + B ³⁺ ; e + O ⁸⁺	T	10-1000 eV	Cowan, P. S.; Green, A. E. S. Electron-impact excitation of the beryllium isoelectronic sequence. Phys. Rev. A 19, 2197 (1979) United States
3547	AE3 H ⁺ + H ⁺ AE7 H ⁺ + H ⁺	T	0.1-1000 keV	Flannery, R. B.; McCann, A. J. Sequential treatment of excited-atom-excited-atom collisions. Phys. Rev. A 19, 2204 (1979) United States
3548	AE7 Ne ⁺ + Ar; Ne ²⁺ + Ar	E	3.3-2.4 MeV	Toburen, L. M.; Wilson, W. E. Differential cross sections for ionization of argon by 0.3-2-MeV Ne ⁺ and Ne ²⁺ ions. Phys. Rev. A 19, 2214 (1979) United States
3549	AE3 He + He AE7 He + He A11 He + He	T	3.93-30 keV	Shirai, T.; Nakamura, M.; Kobel, Y. Effect of excitation transfer in the ionization collisions between two excited hydrogen atoms. Phys. Rev. A 15, 2225 (1979) Japan
3550	AP2 He + He; He ⁺ + He AE3 He + He; He ⁺ + He A17 He + He; He ⁺ + He A18 He + He; He ⁺ + He	E	3.18-8.140 eV	Brutschy, B.; Hoberland, M. Long-range helium excimer potentials [A ₁ C ⁺ X ⁺ (sub u, g) and a ₁ C ⁺ X ⁺ (sub u, g)] from high-resolution differential cross sections for He (2 ¹ S, 2 ³ S) + He. Phys. Rev. A 16, 2232 (1979) West Germany
3551	HE3 He + Ar; He + Ne; He + N ₂ ; He + Kr; He + I ₂ ; He + N ₂ ; He + CO; He + NO; He + N ₂ C; He + CO ₂ ; He + SF ₆ ; He + CH ₄ ; He + C ₂ H ₆ ; He + C ₃ H ₈ ; He + C ₄ H ₁₀	E	594-337 me	Shavronch, M.; Alayli, Y. Effect of the momentum transfer on the Rayleigh scattering cross section. Phys. Rev. A 19, 2246 (1979) France
3552	HE6 He + CoAr; He + CoKr	E	46.4-430 me	Chelchikova, M. A.; Collins, C. B. Laser spectroscopy of the 4d sigma states of CoAr and CoKr. Phys. Rev. A 19, 2270 (1979) United States
3553	HE5 He + He ₂ ⁺ ; He + Ar ₂ ⁺ ; He + Kr ₂ ⁺ ; He + Xe ₂ ⁺	E	5410-3500 A ⁰	Lee, L. C.; Smith, G. P. Photodissociation cross sections of He ₂ ⁺ , Ar ₂ ⁺ , Kr ₂ ⁺ , and Xe ₂ ⁺ from 3500 to 5400 Å. Phys. Rev. A 19, 2329 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3594	D85 hv + Cu	T	3.5-6.0 eV	Huang, K.-N.; Storace, A. F. An 1s-like treatment of final-state spin-orbit interactions: photoionization of the 6s electron in cesium. <i>Phys. Rev. A</i> 15, 2335 (1979) United States
3595	D87 e + Ar; e + N ₂ M11 hv + e + Ar; hv + e + N ₂	E	M11 117 meV	Wiegerts-Dafer, A.; Clarke, E. M.; Melrose, J. R.; Jung, C. Experiments on multiphoton free-free transitions. <i>Phys. Rev. A</i> 19, 2371 (1979) Canada
3596	D82 e + O ²⁺ ; e + Al ¹³⁺ D83 e + O ²⁺ ; e + Al ¹³⁺ D88 e + C ⁶⁺ ; e + O ²⁺ ; e + Ne ⁹⁺ ; e + N ₅ ⁴⁺ ; e + Al ¹³⁺ ; e + Si ¹³⁺	T	5.11-2000 eV	Griem, H. R.; Bloha, H.; Rappaport, P. C. Stark-profile calculations for Lyman-series lines of one-electron ions in dense plasmas. <i>Phys. Rev. A</i> 19, 2421 (1979) United States
3597	D86 Ar ⁺ + C	E T	undef	Bernigola, R. A. Comment on the determination of charge states of ions moving through solids from the analysis of x-ray spectra. <i>Phys. Rev. A</i> 19, 2476 (1979) Argentina
3598	D86 Ar ⁺ + C	E T	undef	Fortner, R. J.; Garcia, J. B. Characteristic x rays due to projectiles moving through solids. <i>Phys. Rev. A</i> 19, 2474 (1979) United States
3599	D87 N ₂ ⁺ + Ni	E	9.2-2.6 keV	Holland, W.; Bultat, U.; Tagliavini, E. Scattering of molecular and atomic hydrogen ions from single-crystal surfaces. <i>Phys. Rev. B</i> 19, 1677 (1979) West Germany
3600	D85 hv + Se + Ni	T	73-210 eV	Li, C. H.; Tong, S. Y. Analysis of resonance-like peaks in angle-resolved ultraviolet photoemission spectroscopy from adsorbed atoms. <i>Phys. Rev. B</i> 19, 1769 (1979) United States
3601	D87 Na + Cu	T	undef	Garcia, R.; Goodman, F. U.; Celis, V.; Hill, R. A. Theory of elastic scattering of atoms by a hard corrugated surface with an attractive potential. <i>Phys. Rev. B</i> 19, 1808 (1979) United States
3602	D85 hv + Si	E	6.5-7.1 eV	Bauer, M.; Gerhardt, U. Matrix-element effects in the angular-resolved photoemission from (111) silicon. <i>Phys. Rev. B</i> 19, 2109 (1979) West Germany
3603	D84 e + Si	E	53 eV	Bost, P. E. Energy- and angular-dependent secondary-electron emission from a silicon (111) 7 x 7 surface: II. Emission from surface-state resonances. <i>Phys. Rev. B</i> 19, 2246 (1979) United States
3604	D86 e + Cr ₂ O ₃ ; e + NiO; e + Cu	E	530-2000 eV	Joch, T.; Bistefano, T. M. Fine structure in elastic-electron x-ray spectra at transition-metal core energies. <i>Phys. Rev. B</i> 19, 2631 (1979) United States
3605	D85 hv + In; hv + Se; hv + Pb; hv + Bi; hv + InSe; hv + InSb; hv + InS ₂ ; hv + PbTe; hv + BiTe ₂ ; hv + Bi ₂ Te ₃	E	25-60 eV	Margaretto, G.; Rowe, J. E.; Christen, S. B. Photoionization cross section of d-core levels in solids: a synchrotron radiation study of the spin-orbit branching ratio. <i>Phys. Rev. B</i> 19, 2650 (1979) United States
3606	D86 hv + N ₂ + Ni	E	0-22 eV	Nielsen, F. J.; Knapp, J. A.; Leston, D. L. Angle-resolved photoemission study of the electronic structure of chemisorbed hydrogen on Ni (111). <i>Phys. Rev. B</i> 19, 2872 (1979) United States
3607	D84 e + Au; e + AgCl; e + Se; e + CdS; e + PbS; e + Ge; e + PbTe; e + CuI; e + LiF; e + NaCl; e + KCl; e + KBr; e + RbBr; e + NaI; e + KI; e + PbI ₂ ; e + CoI	E T	1407 eV	Monko, B. L.; Liao, J.; Smith, S. B. Soft-x-ray-induced secondary-electron emission from semiconductors and insulators: models and measurements. <i>Phys. Rev. B</i> 19, 3004 (1979) United States

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
3608	D04 $e + Cu$	E	3-5 keV	Siehafoe, E. H.; Eukle, C. Linearized secondary-electron cascades from the surface of metals: III. Line-shape synthesis. <i>Phys. Rev. B</i> 19, 4866 (1979) United States
3609	D07 $H_2 + LiF$	E	Undef	Hill, M. R. Quadrupole interaction in the scattering of H_2 from the surface of LiF: rotational transitions. <i>Phys. Rev. B</i> 19, 4260 (1979) United States
3610	A06 $O^+ + Ag; C^+ + Si$ C06 $O^+ + Ag; O^+ + Si$ C08 $O^+ + Ag; O^+ + Si$ B12 $O^+ + Ag; O^+ + Si$	E	17-40 MeV	Appleton, B. R.; Ritchie, R. H.; Biggsstaff, J. A.; Ruggie, T. S.; Satz, S.; Nash, C. E.; Verbeek, R.; Raviavathi, V. R. Radiative electron capture by oxygen ions in single-crystal channels: experiment and theory. <i>Phys. Rev. B</i> 19, 4347 (1979) United States
3611	C04 Undef	T	Undef	Choi, S. T. Theory of channeling radiation—a comment. <i>Phys. Rev. B</i> 19, 4638 (1979) United States
3612	D07 Undef	T	Undef	Rosiv, Y.; Cohen, M. H. Noble-gas-solid-surface near-scattering spectroscopy in the eV range. Linear channel, formal theory. <i>Phys. Rev. B</i> 19, 4843 (1979) United States
3613	D05 $h\nu + Cu$	E	6-35 eV	Knapp, J. A.; Kinspel, J. J.; Easton, D. E. Experimental energy band dispersions and lifetimes for valence and conduction bands of copper using angle-resolved photoemission. <i>Phys. Rev. B</i> 19, 4962 (1979) United States
3614	D05 $h\nu + Pd$	T	1215 eV	Podlaucký, R.; Lasser, B.; Wimmer, E.; Weinberger, P. Electronic structure of Pd: Compton scattering, soft-x-ray emission and x-ray photoelectron spectra. <i>Phys. Rev. B</i> 19, 4999 (1979) Austria
3615	D05 $h\nu + Ni$	T	5-11 eV	Smith, W. V.; Chiang, S. Photoemission spectra and band structure of d-band metals: VI. Spin polarization of bulk photoemission from ferromagnetic Ni. <i>Phys. Rev. B</i> 19, 5613 (1979) United States
3616	D05 $h\nu + ZnF_2; h\nu + ZnCl_2$	E	15-27 eV	Pong, W.; Ohada, S. K. Ultraviolet photoelectron spectra of ZnF_2 and $ZnCl_2$. <i>Phys. Rev. B</i> 19, 5307 (1979) United States
3617	C02 $H^+ + Si; H^+ + Ge; He^{2+} + Si; He^{2+} + Ge; D^+ + Si; D^+ + Ge$ C08 $H^+ + Si; H^+ + Ge; He^{2+} + Si; He^{2+} + Ge; D^+ + Si; D^+ + Ge$	E	39-1220 MeV	Jarvis, O. B.; Sherwood, A. C.; Whitehead, C.; Lucas, M. W. Channeling of fast protons, deuterons, and α particles. <i>Phys. Rev. B</i> 19, 5669 (1979) United Kingdom
3618	A06 $H^+ + Au$ C04 $H^+ + Au$ B04 $H^+ + Au$	T	247-400 keV	Khan, M. R.; Lucas, M. W. Electron capture into continuum states of fast channelled protons: calculations with Gaussian flux peaking. <i>Phys. Rev. B</i> 19, 5678 (1979) Pakistan
3619	C05 $H^+ + SiO_2; He^+ + SiO_2; H^+ + SiO_2$	E	530-2000 MeV	Schneuw, B.; Abel, F.; Bruneau, M.; Cohen, C.; L'huillier, A.; Bellefleur, G.; Brige, A. V.; Le Rousse, S.; Bontini, G. Multiple scattering of MeV light ions through thin amorphous and SiO ₂ layers formed on silicon single crystals. <i>Phys. Rev. B</i> 19, 5681 (1979) France
3620	D03 Undef D09 Undef	T	Undef	Morshav, J. K.; Lundqvist, B. I. Secondary-ion emission probability in sputtering. <i>Phys. Rev. B</i> 19, 5661 (1979) Denmark
3621	C08 $e^+ + Si$ E12 $e^+ + Si$	T	137-1000 GeV	Konshov, M. A.; Medall, R. Theory of channeling of relativistic particles. <i>Phys. Status Solidi B</i> 92, 45 (1979) Soviet Union

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3622	A10 H + CH; H + NH ₂ A11 H + CH; H + NH ₂	T	Undef	Dixon, R. N.; Field, D. Rotational energy transfer in collisions between orbitally non-degenerate open-shell systems. Proc. Roy. Soc., London A 366, 225 (1975) United Kingdom
3623	A10 NH ₂ + H A11 NH ₂ + H A15 NH ₂ + H	E	293 K	Dixon, R. N.; Field, D. Rotational energy transfer within the A tilde ² A ₁ state of NH ₂ : absolute rate coefficients and the influence of spin exchange in collisions with H atoms. Proc. Roy. Soc., London A 366, 247 (1979) United Kingdom
3624	C08 H ⁺ + Si	T	307 keV	Kemahrov, N. A.; Kührt, E.; Medall, R. The theory of channelling at small depths: III. Radiat. Eff. 41, 1 (1979) Soviet Union
3625	D14 Undef	T	Undef	Martynenko, Y. V. The role of cascades in void generation. Radiat. Eff. 41, 7 (1979) Soviet Union
3625	D15 a + Cu	T	Undef	White, R. J.; Fisher, S. D.; Miller, K. M. The effect of foil surfaces on the loss of point defects from electron irradiated metal foils. Radiat. Eff. 41, 17 (1979) United Kingdom
3627	D15 Undef	T	Undef	White, R. J.; Fisher, S. D. The effect of mutual recombination on dislocation point defect sink strengths. Radiat. Eff. 41, 25 (1979) United Kingdom
3628	C08 Ar ⁺ + Ni D07 Ar ⁺ + Ni	E T	5 keV	Evdokimov, I. N.; van den Berg, J. A.; Armer, D. G. Proper surface channelling of low energy argon ions incident on a nickel (110) crystal. Radiat. Eff. 41, 33 (1979) United Kingdom
3629	C06 Xe ⁺ + Cu C07 Xe ⁺ + Cu C08 Xe ⁺ + Cu	E	83-200 keV	Kudella, F.; Karnov, M.; Medall, R. Enhancements of Xe(N)-radiation during channelling of Xe-ions in copper crystals. Radiat. Eff. 41, 47 (1979) West Germany
3630	D02 O ⁺ + Ni; Ni ⁺ + Ni; Ne ⁺ + Ni; Ne ⁺ + Ni; Ar ⁺ + Ni; Kr ⁺ + Ni; Xe ⁺ + Ni	T	150-3000 eV	Bay, F. L.; Bohdansky, J.; Hecht, E. Low-energy, sputtering yields of nickel as a function of ion mass—a reinvestigation. Radiat. Eff. 41, 77 (1975) West Germany
3631	D14 a + Si; a + Al; Al ⁺ + Al; Ni ⁺ + Ni	T	Undef	Ghoniem, M. M.; Rulcinski, G. L. The use of the fully dynamic rate theory to predict void growth in metals. Radiat. Eff. 41, 81 (1979) United States
3632	C06 H + C; H + Au C07 H + C D09 H ⁺ + C; H ⁺ + Au	E T	230-700 keV	Kinura, K.; Kyoshima, A.; Itoh, J.; Mennegi, M. Neutralization of energetic light ions at a solid surface. Radiat. Eff. 41, 91 (1975) Japan
3633	D15 H ⁺ + Si	E	43 keV	Titov, A. I.; Christodoulides, C. E.; Carter, G.; Nobes, M. J. The depth distribution of disorder produced by room temperature 40 keV H ⁺ ion irradiation of silicon. Radiat. Eff. 41, 107 (1979) United Kingdom
3634	D03 Cu ⁺ + Cu	E	23 keV	Kirishidis, G.; Colligon, J. S.; Chenakin, S. P. Secondary ion mass spectrometric study of self-sputtered copper. Radiat. Eff. 41, 119 (1975) United Kingdom
3635	D09 Undef	T	Undef	Pazderskii, V. A.; Tsiplyukh, B. P. Ionization of an atom near a metal surface. Sov. Phys.-Solid State 20, 1893 (1978) Soviet Union
3636	D02 Undef	T	Undef	Pletnev, V. V. Angular distribution of atoms sputtered from the surface of an amorphous target. Sov. Phys.-Solid State 20, 1906 (1978) Soviet Union

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3637	D03 Ca ⁺ + Ta	E	3-5 keV	Belykh, S. F.; Vokler, V. I.; Evtukhov, B. B.; Kudryashova, L. B.; Tulpingut, B. P. Transient emission of a continuous photon spectrum by products of cathodic sputtering of tantalum bombarded with cesium ion. <i>Sov. Phys.-Solid State</i> 20, 2018 (1978) Soviet Union
3639	D04 Ar ⁺ + Mg; Ar ⁺ + Al; Ar ⁺ + Si	E	0.5-5.0 keV	Vrakking, J. J.; Kroes, A. Ion-induced Auger electron emission of Mg, Al and Si as a function of ion energy. <i>Surface Sci.</i> 84, 153 (1979) The Netherlands
3639	D17 Ar ⁺ + PdAg; N ₂ ⁺ + PdAg	E	520 eV	Slusser, G. J.; Vinograd, M. Surface segregation of PdAg alloys induced by ion bombardment. <i>Surface Sci.</i> 84, 211 (1979) United States
3640	D13 e + O + CdS	E	4-5 keV	Lagowski, J.; Lichtensteiger, P.; Williams, P. R. Electron beam induced desorption of oxygen: CdS. <i>Surface Sci.</i> 84, L223 (1979) United States
3641	D02 Ar ⁺ + Cu	E	3-15 keV	Abatino, C.; Luzzi, G.; Papagno, L. Sputtering yield coefficients of thin copper films bombarded by 3-15 keV Ar ⁺ at an angle of incidence of 30°. <i>Thin Solid Films</i> 56, 251 (1979) Italy
3642	D02 Ar ⁺ + Cu	E	3-12 keV	Baeri, P.; Luzzi, G.; Papagno, L. He ⁺ backscattering and Auger electron spectroscopy study of the ion-induced modification of copper films deposited on single-crystal silicon. <i>Thin Solid Films</i> 56, 349 (1979) Italy
3643	D02 Ar ⁺ + Ag D03 Ar ⁺ + Ag	E	40 keV	Ennoth, B. Photon emission enhancement compared with the sputtering rate during thin film sputtering. <i>Thin Solid Films</i> 57, L11 (1979) Sweden
3644	D12 e + AlN	E	13 keV	Yoshida, S.; Misawa, S.; Gonda, S. Cathodeluminescence of impurity-doped aluminium nitride films produced by reactive evaporation. <i>Thin Solid Films</i> 80, 55 (1979) Japan
3645	D16 Review	E	Undef	Ponte, J. M. Metastable alloy formation by ion implantation. <i>Thin Solid Films</i> 56, 133 (1979) United States
3645	A14 H + I ₂ ; H + HI	E	25°-420 K	Lorenz, K.; Wagner, M. G.; Zellner, R. Rate measurements for the reactions H + I ₂ + HI + I and H + HI + H ₂ + I by Lyman- α fluorescence. <i>Ber. Bunsenges, Phys. Chem.</i> 83, 556 (1979) West Germany
3647	A14 CH ₃ + CH ₃	E	1550-2100 K	Roth, P.; Just, T. Measurements on the high temperature pyrolysis of ethane. <i>Ber. Bunsenges, Phys. Chem.</i> 83, 577 (1979) West Germany
3648	A03 He ⁺ + He	T	5-5000 keV	Ojha, S. P.; Tivari, P. Cross section for the excite ion of helium by protons. <i>Can. J. Phys.</i> 57, 1174 (1979) India
3649	G03 e + H ₂ G05 e + H ₂ G07 e + H ₂ G09 e + H ₂ G10 e + H ₂	E T	1-200 eV	Brunet, M.; Vincent, P. Predicted electron-transport coefficients at high E/N values: I. Hydrogen. <i>J. Appl. Phys.</i> 50, 4700 (1979) France
3650	G03 e + N ₂ G05 e + N ₂ G07 e + N ₂ G09 e + N ₂ G10 e + N ₂	E T	1-200 eV	Brunet, M.; Vincent, P. Predicted electron transport coefficients at high E/N values: II. Nitrogen. <i>J. Appl. Phys.</i> 50, 4708 (1979) France

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3651	D14 $e + Cu$	E	1 MeV	Kerens, R. J.; Simpson, M. N. Amplitude dependence of dislocation damping in high-purity copper after quenching and during 1-MeV electron irradiation. <i>J. Appl. Phys.</i> 50, 4739 (1979) United States
3652	D15 $h\nu + Pd + Si$; $h\nu + Pt + Si$	E	500-4500 Å	Wittmer, H.; von Allmen, R. A study of silicide formation by laser irradiation. <i>J. Appl. Phys.</i> 56, 4766 (1979) Switzerland
3653	E05 $e + He$	E	350-500 eV	Schweissler, H. A.; Holder, C. H., Jr. Investigation of the production of singly charged ions in a rf quadrupole ion trap. <i>J. Appl. Phys.</i> 50, 5110 (1979) United States
3654	D02 $Ar^+ + Ag$; $He^+ + Ag$; $Kr^+ + Ag$; $Xe^+ + Ag$	E, T	0.1-1000 keV	Schwarz, S. A.; Helms, C. R. A statistical model of sputtering. <i>J. Appl. Phys.</i> 50, 5452 (1979) United States
3655	A11 $D_2CO^+ + H_2O$; $D_2CO^+ + Ar$; $D_2CO^+ + SF_6$	E	300 K	Shubnewskaya, G. I.; Bazhin, N. P.; Laurik, N. L.; Sorokin, M. I. The quenching of the fluorescence of D_2CO by impurity gases. <i>J. Appl. Spectrosc.</i> 25, 1339 (1978) Soviet Union
3656	E03 $e + He^+$; $e + Li$ E05 $e + He^+$; $e + Li$	T	Undef	Safronova, U. I.; Senashenko, V. S. Width of self-ionized states in three-electron systems. <i>J. Appl. Spectrosc.</i> 29, 1383 (1978) Soviet Union
3657	A17 $Li + H$; $F + H$; $B + H$; $H + H$; $N + H$; $F + F$; $N^+ + C$	T	Undef	Perevozchikov, V. I.; Gribov, L. A. Use of the approximation of the Morse potential for quantum calculations of force constants of diatomic molecules. <i>J. Appl. Spectrosc.</i> 29, 1401 (1978) Soviet Union
3658	H02 $h\nu + H_2$; $h\nu + Hg_2$	E	2537 Å	Prostetsov, G. F. Taking account of nonatomic absorption in the atomic-absorption cold-vapor determination of mercury. <i>J. Appl. Spectrosc.</i> 29, 1406 (1978) Soviet Union
3659	H02 $h\nu + O_2$ H05 $h\nu + O_2$ H06 $h\nu + O$	E	H02 5-300 eV H05; H06 5-75 eV	Brion, C. E.; Tan, K. H.; van der Bielt, M. J.; van der Leeuw, P. E. Dipole oscillator strengths for the photoabsorption, photoionization and fragmentation of molecular oxygen. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 17, 101 (1979) Canada
3660	A12 $CO_2^+ + CO_2$; $CO_2^+ + N_2$ H02 $h\nu + CO_2$	E	A12 300 K H02 15-10 μ	Eng, R. S.; Mertz, A. W. Tunable cide laser spectroscopy of CO_2 in the 10- to 15- μ m spectral region—lineshape and Q-branch head absorption profile. <i>J. Mol. Spectrosc.</i> 74, 331 (1979) United States
3661	A12 $H_2O^+ + H_2O$; $H_2O^+ + N_2$ H02 $h\nu + H_2O$	E	A12 383 K H02 15-10 μ	Eng, R. S.; Mertz, A. W. Tunable cide laser measurement of water vapor line parameters in the 10- to 15- μ m spectral region. <i>J. Mol. Spectrosc.</i> 74, 328 (1979) United States
3662	H08 $h\nu + CH_4$	E	3390 cm^{-1}	Dang-Phu, N.; Pine, A. S.; Robiette, A. G. Spectral intensities in the ν_3 bands of $^{12}CH_4$ and $^{13}CH_4$. <i>J. Mol. Spectrosc.</i> 77, 57 (1979) France
3663	H02 $h\nu + Ne$; $h\nu + Ar$	E	23 eV	Westerveld, W. B.; Mulder, T. F. A.; van Ech, J. Determination of oscillator strengths from the self-absorption of resonance radiation in rare gases: II. Neon and argon. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 21, 553 (1979) The Netherlands
3664	H02 $h\nu + Na$; $h\nu + Sc$; $h\nu + Ti$; $h\nu + Cr$; $h\nu + Fe$; $h\nu + Co$; $h\nu + Ni$	E	630-200 nm	Brown, R. J.; Persons, M. L. Relative atomic transition probabilities for Na, Sc, Ti, Cr, Fe, Co, and Ni using flame atomic absorption spectroscopy. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 21, 553 (1979) United States
3665	A12 $CO_2^+ + CO_2$	T	4.3 μ	Rinbaum, G. The shape of collision broadened lines from resonance to the far wings. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 21, 557 (1979) United States

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3666	H02 $h\nu + CO_2; h\nu + NH_3$	E	6500-6000 Å	Antonov, E. N.; Berik, E. S.; Kolesnikov, V. G. Intracavity laser detection of ammonia and methane absorption spectra in the region 6000-6500 Å. J. Quant. Spectrosc. Radiat. Transfer 22, 41 (1979) Soviet Union
3667	A12 $CO^+ + Ne; CO^+ + He; CO^+ + Ar; CO^+ + Kr; CO^+ + Xe; NF^+ + Ne; NF^+ + He; NF^+ + Ar; NF^+ + Kr; NF^+ + Xe; HCl^+ + Ne; HCl^+ + He; HCl^+ + Ar; HCl^+ + Kr; HCl^+ + Xe$	T	32° K	de Prieto, A. E.; Rabitz, M. The effect of elastic and reorientation collisions on vibration-rotation lineshapes: a semi-empirical approach. J. Quant. Spectrosc. Radiat. Transfer 22, 61 (1975) United States
3668	A12 $Sr^+ + Ne; Sr^+ + Xe$	E	300 K	Wang, S. Y.; Ch'en, S. Y. Pressure effects of Ne and Xe on the resonance line of strontium. J. Quant. Spectrosc. Radiat. Transfer 22, 87 (1975) United States
3669	A12 $CO_2^+ + CO_2$ H02 $h\nu + CO_2$	E	A12 197-294 K H02 4854 cm ⁻¹	Valero, F. P. J.; Suarez, C. B.; Bese, R. W. Intensities and half-widths at different temperatures for the 201 III cooling from 000 band of CO ₂ at 4854 cm ⁻¹ . J. Quant. Spectrosc. Radiat. Transfer 22, 93 (1979) United States
3670	H06 $h\nu + Li^+$	E	61°4 Å	Kramer, S. D.; Young, J. P.; Hurst, G. S.; Payne, M. G. Resonance ionization spectroscopy of lithium. Opt. Commun. 30, 47 (1979) United States
3671	A02 $Ne + He$	E	43° K	Kechru, R.; Mossberg, T. V.; Hertmann, S. R. Stimulated photon echo study of $Ne(3^2S_{1/2})-CO$ velocity-changing collisions. Opt. Commun. 30, 57 (1979) United States
3672	A11 $HgBr^+ + HgBr_2; HgBr^+ + H_2; HgBr^+ + CO_2; HgBr^+ + CO; HgBr^+ + O_2; HgBr^+ + N_2; HgBr^+ + I_2; HgBr^+ + Er_2$	E	370 K	Malvajian, H.; Wittig, C. Collisional quenching of $HgBr(B^2\Sigma_u^+, \pi^*)$. Opt. Commun. 30, 165 (1979) United States
3673	H05 $nh\nu + SF_6^+$	E	13.6 μ	von Hellfeld, A.; Feldmann, D.; beige, K. H.; Fournier, A. P. Infrared multiple-photon dissociation of ion-molecules in a beam. Opt. Commun. 30, 193 (1979) West Germany
3674	H02 $nh\nu + UF_6$	F	615-635 cm ⁻¹	Lucht, R. A.; Beardall, J. S.; Kennedy, R. C.; Sullivan, G. W.; Rink, J. P. Multiple-photon absorption of 16-μm radiation in UF ₆ at 300 K. Opt. Lett. 4, 216 (1979) United States
3675	H06 $nh\nu + SF_6$	E	87-78 nm	Sudbo, A. S.; Schulz, P. A.; Krajnovich, D. J.; Lee, Y. T.; Shen, Y. R. Photoionization study of multiphoton-excited SF ₆ in a molecular beam. Opt. Lett. 4, 219 (1979) United States
3676	D17 $h\nu + ZnSe; h\nu + ZnO_2; h\nu + CeF_3; h\nu + PrF_3; h\nu + SiO_2; h\nu + MgF_2; h\nu + LiF; h\nu + BaF_2$	E	1.06 μ	Bettis, J. T.; Guenther, A. M.; House, R. A., II. Refractive-index dependence of pulsed-laser-induced damage. Opt. Lett. 4, 266 (1979) United States
3677	B07 $Sr^+ + Ca + h\nu$	E		Green, W. R.; Wright, M. D.; Lukash, J.; Young, J. F.; Harris, S. E. Observation of a laser-induced dipole-quadrupole collision. Opt. Lett. 4, 268 (1979) United States
3678	A11 $Ne^+ + H_2; Ar^+ + H_2; Xe^+ + H_2$	E	330-600 K	Bochkova, O. P.; Ivaeva, L. A. Temperature dependence of the cross sections for the breakdown of the metastable states of Ne, Ar, and Xe by the hydrogen molecule. Opt. Spectrosc. 45, 526 (1979) Soviet Union
3679	A12 $NH_3 + NH_3$	E T	300-600 K	Bulanin, M. G.; Bulichev, V. P.; Ladvischenko, Y. M. Temperature dependence of the ν_2 -broadening coefficient for the $\nu_2 R(1,1)$ line of the ν_2 band of ammonia. Opt. Spectrosc. 45, 530 (1979) Soviet Union
3680	H04 $2h\nu + Ne; 2h\nu + Ar$	T	Undef	Lebedev, I. V.; Yakovlev, M. S. Variational method for calculating probabilities of two-photon excitations in inert gas atoms with consideration of interelectron correlation. Opt. Spectrosc. 46, 3 (1979) Soviet Union

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3681	A12 Na + H ₂ C; Na + HO; Na + CO	E T	33° K	Popov, K. G.; Reznov, V. P.; Selgenik, Y. A.; Sivkov, V. N. Broadening of the A - 589.0-nm Na I resonance line in collisions with dipolar molecules. Opt. Spectrosc. 46, 20 (1979) Soviet Union
3682	H02 hv + CO ₂	E	3.32-3.74 μ	Adikis, T. G. Experimental investigation of the temperature dependence of the induced absorption of gaseous CO ₂ in the 3-4-μm region. Ann. Geophys. 46, 25 (1979) Soviet Union
3683	A12 O ₂ + O ₂	E	293 K	Galkin, V. D. Pressure-induced line shift in the (0,0) b ¹ Σ (sub g) ⁺ - X ³ Σ (sub g) ⁺ band of oxygen. Opt. Spectrosc. 46, 106 (1979) Soviet Union
3684	H02 hv + NaI; hv + NaBr; hv + NaCl; hv + NaF	E	1350-1250 eV	Naiste, A. A.; Raus, R. E. Absorption spectra of sodium halides near the K edge of Na ⁺ . Opt. Spectrosc. 46, 189 (1979) Soviet Union
3685	E12 e ⁺ + H	T	100-200 eV	Gupta, G. P.; Pathur, K. C. Differential cross sections for the elastic scattering of positrons by hydrogen atoms. Phys. Lett. 72A, 322 (1979) India
3686	A07 H ⁺ + H; H ⁺ + He; He ⁺ + H; He ⁺ + He; Li ⁺ + H; Li ⁺ + He; Na ⁺ + H; Na ⁺ + He; Ca ⁺ + H; Ca ⁺ + He; Au ⁺ + H; Au ⁺ + He; Li ²⁺ + H; Li ²⁺ + He; Be ²⁺ + H; Be ²⁺ + He C09 H ⁺ + H; H ⁺ + He; He ⁺ + H; He ⁺ + He; Li ⁺ + H; Li ⁺ + He; Na ⁺ + H; Na ⁺ + He; Ca ⁺ + H; Ca ⁺ + He; Au ⁺ + H; Au ⁺ + He; Li ²⁺ + H; Li ²⁺ + He; Be ²⁺ + H; Be ²⁺ + He	T	3.05-25 MeV/amu	Gillespie, G. N. Collisional ionization of H and He by fast, low-charge-state ions. Phys. Lett. 72A, 325 (1979) United States
3687	D15 In ⁺ + Ne D16 In ⁺ + Ne	E	350 keV	Weldinger, A.; Messner, R.; Wichter, T.; Rehnagel, L. Defect configurations in irradiated indium. Phys. Lett. 72A, 369 (1979) West Germany
3688	A12 N ₂ + HCl; CO + HCl; O ₂ + HCl; HCl + HCl	T	Under	Salesky, E. T.; Korff, D. Calculation of HCl line-widths using a new impact parameter theory. Phys. Lett. 72A, 431 (1979) United States
3689	E11 e ⁺ + H ⁺ + C	T	1765-1895 keV	Jan, G. J.; Perng, C. C.; Liou, P. K. P-14C bremsstrahlung. Phys. Lett. 82B, 25 (1979) Taiwan
3690	A02 H ⁺ + He A18 H ⁺ + He	E	1 GeV	Alkhasov, G. D.; Belostotsky, S. L.; Demashinsky, L. A.; Dolanenko, Y. V.; Donchenkov, U. A.; Karapathin, A. P.; Legrand, D.; Nikulin, V. M.; Prokofiev, O. E.; Shuvaev, M. A.; Volkov, S. S. p ⁺ -He elastic scattering at 1 GeV. Phys. Lett. 82B, 43 (1979) Soviet Union
3691	E11 Under	T	Under	Lebedev, A. K. Bremsstrahlung statistics. I. Sov. Phys. J. 21, 1461 (1976) Soviet Union
3692	C08 e ⁺ + C	E	830 MeV	Vorob'ev, S. A.; Kalinin, B. N.; Kiplin, V. V.; Potylitsyn, A. P. Radiation from a channelled electron in a crystal. Sov. Phys. J. 21, 1463 (1976) Soviet Union
3693	E11 Under	T	Under	Lebedev, A. K. Statistics of bremsstrahlung. II. Sov. Phys. J. 21, 1529 (1976) Soviet Union
3694	H05 Review H06 Review	E T	Under	Velikhov, E. P.; Letokhov, V. S.; Pekarov, A. A.; Kiselev, E. A. Isotope separation by multiphoton dissociation of molecules with high-power CO ₂ laser radiation: I. Practical methods. Sov. J. Quantum Electron. 5, 179 (1979) Soviet Union
3695	B07 Under	T		Zhukova, M. I.; Kazantsev, A. P.; Sobolev, V. P. Bound states of atoms in an optical resonance field. Sov. J. Quantum Electron. 5, 215 (1979) Soviet Union

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3696	A12 Undef	T	Undef	Lisitsa, V. S. Line broadening as light emitter during a collision process. <i>Acta Phys. Pol. A</i> 30, 87 (1979) Soviet Union
3697	A05 $\text{Yb}^+ + \text{Cl}_2$; $\text{Ca}^+ + \text{Cl}_2$; $\text{Sr}^+ + \text{Cl}_2$	E	870-1070 K	Kowalski, A. Cross sections for the collisions of alkaline earth atoms in the 2P excited state with chlorine molecule. <i>Z. Naturforsch. A</i> 34, 459 (1979) Poland
3698	E06 $\text{e} + \text{H}$	E	3.5 eV	Piel, A.; Richter, H. The role of hydrogen molecular lines in the vicinity of H (sub g). <i>Z. Naturforsch. A</i> 34, 516 (1979) West Germany
3699	A12 $\text{Ne}^+ + \text{Ne}$; $\text{Ne}^+ + \text{Ne}$	E	thermal	Stelshi, A.; Borowicki, H.; Szudy, J. Broadening effects of the 632.8 nm HeI line due to a helium-neon mixture. <i>Z. Naturforsch. A</i> 34, 519 (1979) Poland
3700	A05 $\text{H}^+ + \text{Ar} + \text{Xe} + \text{WF}_6$; $\text{H}^+ + \text{Ne} + \text{Xe} + \text{WF}_6$; $\text{H}^+ + \text{Ne} + \text{Xe} + \text{WF}_6$	E	230 keV	Eden, J. C.; Golden, J.; Mahaffey, R. A.; Pasour, J. A.; Vignani, R. W. Efficient HeF laser excited by a proton beam. <i>Appl. Phys. Lett.</i> 35, 133 (1979) United States
3701	B12 $\text{C}^+ + \text{C}$; $\text{C}^+ + \text{Al}$; $\text{C}^+ + \text{Ni}$; $\text{H}^+ + \text{C}$; $\text{H}^+ + \text{Al}$; $\text{H}^+ + \text{Ni}$	E	0.8-1.4 MeV	Burns, E. J. T.; Johnson, D. J.; Fernsworth, A. V., Jr.; Kusaa, G. b.; Douchek, G. A.; Feldman, U. Soft x-ray and vacuum-ultraviolet spectroscopy of ion-beam-heated thin targets. <i>Appl. Phys. Lett.</i> 35, 148 (1979) United States
3702	A17 $\text{Ar} + \text{Ar} + \text{Ar}^+$ B02 $\text{He} + \text{Ar}_2^+$; $\text{He} + \text{Ar}_2^+$	E	737-200 nm	Nichols, M. H.; Hobbs, R. N.; Wright, L. A. Visible photoabsorption by noble-gas trimer ions. <i>Appl. Phys. Lett.</i> 35, 153 (1979) United States
3703	B05 $\text{He} + \text{GaAs}$	E	1.3-2.7 eV	Pierce, D. T.; Tang, C. C.; Coletta, R. J. Face dependence of the spin polarization of photoelectrons from REA GaAs (100) and (110). <i>Appl. Phys. Lett.</i> 35, 228 (1979) United States
3704	B17 $\text{Ar}^+ + \text{Nb} + \text{Si}$	E	55-200 keV	Kanayama, T.; Tanoue, M.; Tsurushima, T. Niobium silicide formation induced by Ar-ion bombardment. <i>Appl. Phys. Lett.</i> 35, 222 (1979) Japan
3705	A05 $\text{H}^+ + \text{Ar} + \text{H}_2$	E	400-450 keV	Wiley, L. G.; Hammer, D. A.; McFarlane, K. A. Laser action at 3577 Å in proton-beam-pumped Ar-H ₂ mixtures. <i>Appl. Phys. Lett.</i> 35, 239 (1979) United States
3706	A07 $\text{H}_2^+ + \text{H}_2$	E	2.5-10 keV	Dagdigian, P. J.; Doering, J. P. Measurement of the rotational energy distribution of ground state H_2^+ ions from $\text{H}_2^+ - \text{H}_2$ collisions by laser-induced fluorescence. <i>Chem. Phys. Lett.</i> 64, 200 (1979) United States
3707	E05 $\text{e} + \text{H}_2$	E	61-100 eV	Allison, J.; Kondov, T.; Zera, R. A. Laser-induced fluorescence measurement of the nascent rotational distribution of H_2^+ ($X^2\Sigma(\text{sub g})^+$) formed by electron impact on H_2 . <i>Chem. Phys. Lett.</i> 64, 202 (1979) United States
3708	A14 $\text{H} + \text{H}_2$	T	0.9-1.1 eV	Bowman, J. M.; Lee, K. T. Sudden rotation calculations of the $\text{H} + \text{H}_2$ ($v=1, j=0$) reaction. <i>Chem. Phys. Lett.</i> 64, 251 (1979) United States
3709	A02 $\text{He} + \text{Hg}$ A10 $\text{He} + \text{Hg}$	E	7.53×10^{-7} a.u.	Duren, R.; Hoppe, M. O.; Fischer, H. Observation of the orbiting backward peak in the differential cross section for He (2P) - Hg collisions. <i>Chem. Phys. Lett.</i> 64, 357 (1979) West Germany
3710	A14 $\text{Hg}_2 + \text{Hg} + \text{H}_2$; $\text{Hg}_2 + \text{H}_2$	E	298 K	Collmer, A. G.; Kendall, D. R. A violet emission from optically excited mercury vapour. Kinetics of the formation and decay of excited dimers and trimers. <i>Chem. Phys. Lett.</i> 64, 401 (1979) United Kingdom

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3711	A11 $O_2^+ + O_2; O_2^+ + N_2; O_2^+ + He$	E	300 K	Chatter, J. P. S.; Arora, P. K.; Ballal Raja, S. M. Y.; Kulkarni, P. B.; Vohra, K. G. Collisional deactivation of $O_2(^1\Sigma \text{ sub } g^+)$. <i>Int. J. Chem. Kinetics</i> 11, 175 (1979) India
3712	A04 $NO + NO$	E	2700-3600 K	Koshi, M.; Asaba, Y. Shock-tube study of thermal decomposition of nitric oxide between 2700 and 3600 K. <i>Int. J. Chem. Kinetics</i> 11, 305 (1979) Japan
3713	A14 $S + OH; SO + OH$	E	230 K	Jourdain, J. L.; Le Bras, G.; Combaut, J. Kinetic study of some elementary reactions of sulfur compounds including reactions of S and SO with OH radicals. <i>Int. J. Chem. Kinetics</i> 11, 569 (1979) France
3714	A14 $I_2 + H_2S$	E	555-595 K	Hwang, R. J.; Benson, S. W. Kinetics of iodination of hydrogen sulfide by iodine and the heat of formation of the SH radical. <i>Int. J. Chem. Kinetics</i> 11, 879 (1979) United States
3715	ME8 $h\nu + O_2$ MI9 $h\nu + O_2$	E	250-230 nm	Kajimoto, O.; Cvitanovic, R. J. Absolute quantum yield of $O(^1D_2)$ in the photolysis of ozone in the Hartley band. <i>Int. J. Chem. Kinetics</i> 11, 605 (1979) Canada
3716	A14 $NO_2 + NO_2$	E	284 K	Cox, R. A.; Patrick, K. Kinetics of the reaction of $NO_2 + NO_2(+M) = HNO_2 + NO_2$ using molecular modulation spectrometry. <i>Int. J. Chem. Kinetics</i> 11, 630 (1979) United Kingdom
3717	A14 $C10 + C10$	E	337 K	Basco, M.; Hunt, J. E. Mutual combination of C10 radicals. <i>Int. J. Chem. Kinetics</i> 11, 649 (1979) Canada
3718	A14 $H + H_2$	T	300-1000 K	Christov, S. G.; Paripenski, M. Quantum effects and isotope effects in chemical kinetics. <i>Int. J. Chem. Kinetics</i> 11, 665 (1979) Bulgaria
3719	A14 $Br + O_2$	E	234-360 K	Michael, J. V.; Payne, V. A. Absolute rate constants for the reaction of bromine atoms with ozone from 234 to 360 K. <i>Int. J. Chem. Kinetics</i> 11, 799 (1979) United States
3720	A11 $NO^+ + NC; CO^+ + CO$	E	330 K	Horiguchi, M.; Tsuchiya, S. Vibrational relaxation of $NO(X^2\Sigma)$ in the states of $v = 2$ difference between 16. <i>Jap. J. Appl. Phys.</i> 18, 1207 (1979) Japan
3721	D11 $H + W + Th$	E	337 K	Kim, M. W.; Okuno, K. Adsorption of thorium and hydrogen on a tungsten surface. <i>Jap. J. Appl. Phys.</i> 18, 1223 (1979) Japan
3722	D03 $He^+ + Mg$ D15 $He^+ + Mg$	E T	2 keV	Arai, O.; Tazawa, Y.; Shimozono, Y.; Kobayashi, K. Isotopic fractionation of magnesium sputtered by 2 keV He ions. <i>Jap. J. Appl. Phys.</i> 18, 1231 (1979) Japan
3723	D02 $H_2^+ + He; He^+ + He$	E	15-40 keV	Okuda, S.; Ahimune, M. Surface erosion of metal molybdenum bombarded with energetic hydrogen or helium ions. <i>Jap. J. Appl. Phys.</i> 18, 1335 (1979) Japan
3724	A14 $H + H_2; F + H_2; H + Cl_2$	T	0.1-0.4 eV	Vila, C. L.; Zvijac, D. J.; Ross, J. Franck-Condon theory of chemical dynamics. VI. Angular distributions of reaction products. <i>J. Chem. Phys.</i> 70, 5342 (1979) United States
3725	A14 $B + O_2; B + SO_2; B + CO_2; B + H_2O$	E	300 K	Sridharan, U. C.; DiGiuseppe, T. G.; McFadden, D. L.; Davidovits, P. Rate constants for the reactions of atomic boron with O_2 , SO_2 , CO_2 , and H_2O . <i>J. Chem. Phys.</i> 70, 5422 (1979) United States
3726	A17 $H^+ + H_2$	T	Under	Garcia, R.; Rossi, A. R.; Russek, A. Dissociating states of the H_2^+ system. <i>J. Chem. Phys.</i> 70, 5463 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3727	A02 F + Ar; F + Xe; Cl + Xe A17 F + Ar; F + Xe; Cl + Xe A18 F + Ar; F + Xe; Cl + Xe	T	0.003-0.5 eV	Becker, C. H.; Casavacchia, P.; Lee, Y. T.; Olson, R. E.; Lester, W. A., Jr. Coupled-channel study of halogen (² P) + rare gas (¹ S) scattering. J. Chem. Phys. 70, 5477 (1979) United States
3728	E02 e + N ₂ ; e + CO; e + BF; e + FH W03 hv + N ₂ ; hv + CO; hv + BF; hv + FH	T	Undef	Epstein, J.; Stewart, R. F. Vibrational averages of x-ray and high energy electron scattering intensities from diatomic molecules. J. Chem. Phys. 70, 5515 (1979) United States
3729	M05 hv + OCS M08 hv + OCS	E	170-142 nm	Black, G.; Sharpless, R. L. Temperature effect on the quantum yield for production of S(¹ S) from OCS. J. Chem. Phys. 70, 5567 (1979) United States
3730	A05 S + He; S + Ar; S + N ₂ ; S + N ₂ ; S + Kr; S + Xe	E	232-425 K	Black, G.; Sharpless, R. L. Temperature effect on the collision-induced emission of S(¹ S) with He, Ar, N ₂ , N ₂ , Kr, and Xe. J. Chem. Phys. 70, 5571 (1979) United States
3731	A11 Se* + OCS ₂ ; Se ₂ * + OCS ₂	E	300 K	Bischel, W. K.; Black, G.; Newlin, R. T.; Kligler, D. J.; Rhodes, C. K. ArF laser photolysis of OCS ₂ . I. Se(¹ S) quenching processes. J. Chem. Phys. 70, 5585 (1979) United States
3732	M02 hv + OCS ₂ M08 hv + OCS ₂	E	M02 953-914 Å M08 193 nm	Bischel, W. K.; Becker, J.; Bullarosa, J.; Rhodes, C. K. ArF laser photolysis of OCS ₂ II. Effect of vibrational excitation on Se(¹ S) quantum yields. J. Chem. Phys. 70, 5593 (1979) United States
3733	A06 Li* + Na	T	1 a.u.	Schmalz, T. G.; Stoeckel, E. B.; Light, J. C. Time independent quantum theory of electron transfer collisions using a nonorthogonal basis and R-matrix propagation. J. Chem. Phys. 70, 5600 (1979) United States
3734	G07 Ar + N ₂	T	Undef	Wood, R. R.; Curtiss, C. F. Angular and rotational energy moments of cross sections in atom-diatom scattering. J. Chem. Phys. 70, 5752 (1979) United States
3735	G02 Ar + N ₂ G09 Ar + N ₂	T	250-650 K	Wood, R. R.; Curtiss, C. F. Effects of rotationally inelastic collisions on gaseous transport coefficients. J. Chem. Phys. 70, 5798 (1979) United States
3736	A14 O + N ₂	E T	300 K	Luntz, A. C.; Schinke, R.; Lester, W. A., Jr.; Gunthard, H. H. Product state distributions in the reaction O(¹ D ₂) + N ₂ → ON + N; comparison of experiment with theory. J. Chem. Phys. 70, 5908 (1979) United States
3737	A14 H + NO ₂	E	300 K	Murphy, E. J.; Brophy, J. R.; Arnold, G. S.; Dimpff, W. L.; Kinney, J. L. Velocity and angular distributions of reactive collisions from Fourier transform Doppler spectroscopy: First experimental results. J. Chem. Phys. 70, 5910 (1979) United States
3738	A11 MCl + HCl; M' + M'	E	215 K	Koura, K. On rotational relaxation of hydrogen halides. J. Chem. Phys. 70, 5913 (1979) Japan
3739	G04 Cl ⁻ + Na; Cl ⁻ + Ar; Cl ⁻ + Kr; Cl ⁻ + Xe	E	0-4 eV	Eisala, F. L.; Thackston, M. G.; Pope, W. R.; Ellis, H. W.; McDaniel, E. V. Longitudinal diffusion coefficients and the generalized Einstein relation for Cl ⁻ ions in Na, Ar, Kr, and Xe. J. Chem. Phys. 70, 5916 (1979) United States
3740	A14 N ₂ + I; H + HI	T	300-1500 K	Gray, J. C.; Gervell, B. C.; Truhlar, D. G. Detailed balance in quasiclassical trajectory calculations of thermal rate constants for chemical reactions. J. Chem. Phys. 70, 5921 (1979) United States
3741	G06 O ₂ * + N ₂ ; NO* + N ₂	E	300-640 K	Eisala, F. L.; Ellis, H. W.; McDaniel, E. V. Temperature dependent mobilities: Cl ₂ * and NO* in N ₂ . J. Chem. Phys. 70, 5924 (1979) United States

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3742	A14 $H + H_2$	T	0.75 eV	Clary, D. C.; Nesbet, R. K. Application of a dynamical S matrix method to the three-dimensional $H + H_2$ exchange reaction. <i>J. Chem. Phys.</i> 71, 1101 (1979) United States
3743	A17 $Zn + Zn; Cd + Cd$	T	Underf	Bender, C. F.; Bessigne, Y. N.; Schaefer, N. F., III; Orrel, A. E. Potential energy curves for diatomic zinc and cadmium. <i>J. Chem. Phys.</i> 71, 1122 (1979) United States
3744	A13 Underf A18 Underf	T	Underf	Beermann, G. N.; Gentry, W. B. Energy dependence of the differential cross sections for simple models of ion-induced dipole capture collisions. <i>J. Chem. Phys.</i> 71, 1128 (1979) United States
3745	M05 $h\nu + CdI_2$	E	350-200 nm	Kawachi, N.; Lee, S. J.; Bersohn, B. The photodissociation of cadmium iodide. <i>J. Chem. Phys.</i> 71, 1235 (1979) United States
3746	A11 $Xe^+ + Cl_2; Xe^+ + ClF; Xe^+ + ICl;$ $Xe^+ + HCl; Xe^+ + SCl_2; Xe^+ + NOCl$	E	300 K	Kelts, J. N.; Velasco, J. E.; Setser, B. b. Reactive quenching studies of $Xe(6s, ^2P_{3/2})$ metastable atoms by chlorine containing molecules. <i>J. Chem. Phys.</i> 71, 1247 (1979) United States
3747	A14 $Xe^+ + Cl_2$	E	300 K	Taniguchi, K.; Kelts, J. N.; Setser, B. b. Vibrational energy disposal by reaction of $Xe(6s, ^2P_{3/2})$ metastable atoms with chlorine containing molecules. <i>J. Chem. Phys.</i> 71, 1264 (1979) United States
3748	A17 $Na + Ar$ M08 $h\nu + NaAr$	E	5000-5000 $\text{\AA}^0$	Tellinghuisen, J.; Ragone, A.; Kim, N. S.; Auerbach, D. J.; Smiley, R. E.; Wharton, L.; Levy, D. N. The dispersed fluorescence spectrum of $NaAr$: ground and excited state potential curves. <i>J. Chem. Phys.</i> 71, 1283 (1979) United States
3749	A11 $I_2^+ + Ne$ M05 $h\nu + I_2Ne; h\nu + I_2Ne_2; h\nu + I_3Ne_2$	E	5500 $\text{\AA}^0$	Sharfin, W.; Johnson, R. E.; Wharton, L.; Levy, D. N. Energy distribution in the photodissociation products of van der Waals molecules: iodine-helium complexes. <i>J. Chem. Phys.</i> 71, 1292 (1979) United States
3750	A17 $Ne + Ne; Be + Be; Mg + Mg; Ca + Ca;$ $Sr + Sr$	T	Underf	Jones, R. O. Molecular bonding in group IIA dimers Be_2, Ba_2 . <i>J. Chem. Phys.</i> 71, 1300 (1979) West Germany
3751	A17 $Ne + Ne; Ne + Ne; Ne + Ar; Ne + Kr;$ $Ne + Xe; Kr + Kr; Kr + Xe; Xe + Xe;$ $Ne + Ne; Ne + Ar; Ne + Kr; Ne + Xe;$ $Ar + Ar; Ar + Kr; Ar + Xe; Li^+ +$ $Ne; Li^+ + Ne; Li^+ + Ar; Li^+ + Kr;$ $Li^+ + Xe; Na^+ + Ne; Na^+ + Ne; Na^+ +$ $Ar; Na^+ + Kr; Na^+ + Xe; K^+ + Ne; K^+$ $+ Ne; K^+ + Ar; K^+ + Kr; K^+ + Xe;$ $Rb^+ + Ne; Rb^+ + Ne; Rb^+ + Ar; Rb^+ +$ $Kr; Rb^+ + Xe; Br^+ + Ne; Br^+ + Ne;$ $Br^+ + Ar; Br^+ + Kr; Br^+ + Xe; F^- +$ $Xe; I^- + Ne; I^- + Ne; I^- + Ar; I^- +$ $Kr; I^- + Xe; Cl^- + Xe; Li + F; Li +$ $Cl; Li + Br; Li + I; Na + F; Na +$ $Cl; Na + Br; Na + I; K + F; K + Cl;$ $K + Br; K + I; Rb + F; Rb + Cl; Rb$ $+ Br; Rb + I$	T	Underf	Waldman, N.; Gordon, R. G. Scaled electron gas approximation for intermolecular forces. <i>J. Chem. Phys.</i> 71, 1325 (1979) United States
3752	A17 $Ne + N_2; Ar + N_2; Ar + HCl$	T	Underf	Waldman, N.; Gordon, R. G. Generalized electron gas-Drude model theory of intermolecular forces. <i>J. Chem. Phys.</i> 71, 1340 (1979) United States
3753	A17 $Li^+ + N_2; Li^+ + N_2$	T	Underf	Waldman, N.; Gordon, R. G. Generalized electron gas-Drude model theory for ion-molecule forces. <i>J. Chem. Phys.</i> 71, 1353 (1979) United States
3754	M06 $nh\nu + NO; nh\nu + I_2$ M06 $nh\nu + HCl; nh\nu + I_2$	E	400 nm	Zandee, L.; Bernstein, R. B. Resonance-enhanced multiphoton ionization and fragmentation of molecular beams: H_2, I_2 , benzene, and butadiene. <i>J. Chem. Phys.</i> 71, 1359 (1979) United States

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3755	A03 Na + H ₂	T	Undef	Hosbet, R. L.; Clary, D. C. Fourier transform method for the classical trajectory problem. <i>J. Chem. Phys.</i> 71, 1372 (1979) United States
3756	A03 Na + H ₂ ; H ₂ + Br ₂ ; Na + HBr; H ₂ + H ₂ A11 Na + H ₂ ; H ₂ + Br ₂ ; Na + HBr; H ₂ + H ₂	T	Undef	Cross, R. J., Jr. The adiabatic semiclassical perturbation theory for vibrationally inelastic scattering: I. Collinear calculations. <i>J. Chem. Phys.</i> 71, 1426 (1979) United States
3757	A03 Na + H ₂ A11 Na + H ₂	T	3.6-5.5 eV	Emo, L.; Ballint-Kurti, G. G. The adiabatic distorted wave infinite order sudden (ADWIOS) approximation for the calculation of inelastic molecular collision cross sections. <i>J. Chem. Phys.</i> 71, 1447 (1979) United Kingdom
3758	A11 Fe + H ₂ B07 Fe + H ₂	T	A11 0.01-0.04 eV	DeVries, P. L.; George, T. F. Quantum-mechanical calculation of three-dimensional atom-diatom collisions in the presence of intense laser radiation. <i>J. Chem. Phys.</i> 71, 1543 (1979) United States
3759	A17 Ca + Ca M05 hv + Ca ₂ M0A hv + Ca ₂	E	5145-4650 Å	Kato, M.; Yoshikawa, K. Laser induced fluorescence, energy transfer, and dissociation of Ca ₂ . <i>J. Chem. Phys.</i> 71, 1585 (1979) Japan
3760	A11 CH ⁺ + Ar	E	303 K	Katayama, D. M.; Miller, T. A.; Bondyboy, V. E. Radiative decay and radiativeless excitation in selectively excited CH. <i>J. Chem. Phys.</i> 71, 1662 (1979) United States
3761	A07 LiH + HCl; LiH + DCl A11 LiH + HCl ⁺ ; LiH + DCl ⁺	E T	0.74 eV	Doddigian, P. J.; Wilcomb, M. E.; Alexander, M. M. LiH state-to-state rotationally inelastic cross sections in collisions with HCl and DCl. <i>J. Chem. Phys.</i> 71, 1670 (1979) United States
3762	A03 LiH + HCl; LiH + DCl A11 LiH + HCl ⁺ ; LiH + DCl ⁺	T	3.78 eV	Alexander, M. M. Sudden theories of rotationally inelastic LiH-HCl and LiH-DCl collisions. <i>J. Chem. Phys.</i> 71, 1683 (1979) United States
3763	M06 hv + CS ₂ ; hv + CS ₂ + CS ₂	E	1292-1005 Å	Trott, M. M.; Biale, M. C.; Walters, E. A. Photoionization of carbon disulfide monomers and dimers in a supersonic molecular beam. <i>J. Chem. Phys.</i> 71, 1692 (1979) United States
3764	A03 CaF + He; CaF + Ne; CaF + Ar; CaF + Kr; CaF + Xe; CaF + H ₂ ; CaF + CO; CaF + CO ₂ ; CaF + H ₂ O; CaF + SF ₆ A11 CaF + He; CaF + Ne; CaF + Ar; CaF + Kr; CaF + Xe; CaF + H ₂ ; CaF + CO; CaF + CO ₂ ; CaF + H ₂ O; CaF + SF ₆	E	830-1000 K	Borkenhagen, U.; Maitz, H.; Toppins, J. P. Molecular beam measurements of inelastic cross sections for transitions between defined rotational states (j,m) of CaF in collisions with He, Ne, Ar, Kr, Xe, CH ₄ , CF ₄ , SF ₆ , C ₂ H ₆ , H ₂ , CO, CO ₂ , H ₂ O, CH ₃ Cl, CH ₃ Br, CF ₃ H, and C ₂ H ₅ Br. <i>J. Chem. Phys.</i> 71, 1722 (1979) West Germany
3765	A03 Cl ⁻ + H ₂ A04 Cl ⁻ + H ₂	E	4-11 eV	Cheung, J. T.; Datz, S. Inelastic scattering of Cl ⁻ ions in collision with H ₂ from 4 to 11 eV. <i>J. Chem. Phys.</i> 71, 1814 (1979) United States
3766	A13 H + H ⁺ B07 H + H ⁺	T	A13 2300 K	Ramaker, D. E.; Peck, J. M. Formation of vibrationally excited diatomic molecules by activated radiative association: theoretical calculations in H ₂ ⁺ . <i>J. Chem. Phys.</i> 71, 1844 (1979) United States
3767	G11 e + I ₂ + H ₂	E	1-50 Td	Brooks, M. L.; Hunter, E. B.; Nygaard, K. J. Temperature dependence of the electron attachment coefficient in iodine. <i>J. Chem. Phys.</i> 71, 1870 (1979) United States
3768	A13 Ar ₂ ⁺ + 2Ar	E	144-217 K	Turner, D. L.; Conway, D. C. Study of the 2Ar + Ar ₂ ⁺ = Ar + Ar ₂ ⁺ reaction. <i>J. Chem. Phys.</i> 71, 1899 (1979) United States

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3769	A07 $H + O$	E	0-22 eV	Ringer, G.; Gentry, W. R. A merged molecular beam study of the endothermic associative ionization reaction $H^+(2S) + O(^3P) \rightarrow HO^+ + e^-$. <i>J. Chem. Phys.</i> 71, 1902 (1979) United States
3770	A07 $H + O$	T	0-10 eV	Nielsen, S. E.; Bakker, J. S. Endothermic chemi-ionization in H-O collisions. <i>J. Chem. Phys.</i> 71, 1510 (1979) Denmark
3771	A17 $NaH^+ + Na$	T	Undef	Neier, P. F.; Hayes, E. F.; Lillioer, F. O. A diatomic-in-molecules (DIR) formalism for the reaction $AM^+ + A \text{ prime} \rightarrow A + A \text{ prime} M^+$: a ground state potential energy surface for collinear Na_2H^+ . <i>J. Chem. Phys.</i> 71, 1948 (1979) United States
3772	A10 $Na^+ + H_2$	T	0-14 eV	McGulre, P.; Bellum, J. C. Electronic-to-vibrational energy transfer in collisions of excited sodium with molecular hydrogen. <i>J. Chem. Phys.</i> 71, 1575 (1979) West Germany
3773	A10 $Na_2^+ + Na$; $Na_2^+ + H_2$; $Na_2^+ + CH_4$; $Na_2^+ + H_2$	E	330 K	Salger, M.; Xi-Agil, I.; Brunner, T. A.; Karp, A. W.; Selth, M.; Pritzkard, D. E. Power law scaling of rotational energy transfer in $Na_2^+(A1) + H_2$, CH_4 , and H_2 . <i>J. Chem. Phys.</i> 71, 1577 (1979) United States
3774	A17 $Li + F$	E	Undef	Worford, E. J.; Engelke, F. The $a^1\Sigma^+$ state of LiF . High resolution spectroscopy using laser-induced fluorescence (LIF). <i>J. Chem. Phys.</i> 71, 1994 (1979) West Germany
3775	A17 $Na + K$ H08 $h\nu + NaK$	E	A17 Undef H08 4970 Å	Elsel, D.; Zavgolis, J.; Dreier, W. Sub-Doppler laser spectroscopy of the NaK molecule. <i>J. Chem. Phys.</i> 71, 2805 (1979) West Germany
3776	A14 $Cl + NO_2 + H$; $ClO + NO_2 + H$	T	Undef	Chang, J. S.; Baldwin, A. C.; Golden, D. R. An explanation of the preferential formation of less stable isomers in three-body reactions: $Cl + NO_2 + H$; $ClO + NO_2 + H$. <i>J. Chem. Phys.</i> 71, 2021 (1979) United States
3777	A05 $C_2^+ + NO$ A11 $C_2^+ + NC$	E	330 K	Reisler, M.; Rengier, M.; Wittig, C. The kinetics of free radicals generated by laser photolysis. I. Reactions of $C_2(^4\Sigma^+g)$ with NC , vinyl cyanide, and ethylene. <i>J. Chem. Phys.</i> 71, 2105 (1979) United States
3778	A17 $Rb^+ + He$; $Rb^+ + Ne$; $Rb^+ + Ar$; $Rb^+ + Kr$; $Rb^+ + Xe$; $Ca^+ + He$; $Ca^+ + Ne$; $Ca^+ + Kr$; $Ca^+ + Xe$; $Ca^+ + Ar$	E	Undef	Inouye, M.; Koda, K.; Kito, S. Repulsive potentials derived from beam scattering of Rb^+ and Ca^+ ions by rare gas atoms. <i>J. Chem. Phys.</i> 71, 2135 (1979) Japan
3779	A17 $Ca + Ca$ H08 $h\nu + Ca_2$	E	A17 Undef H08 4800 Å	Honing, G.; Czajkowski, M.; Stock, M.; Dreier, W. High resolution laser spectroscopy of Ca_2 . I. Ground state constants and potential curves. <i>J. Chem. Phys.</i> 71, 2130 (1979) West Germany
3780	A10 $Fe^+ + H_2$	T	0-80 meV	Mayer, M.-D.; Miller, W. M. Classical models for electronic degrees of freedom: derivation via spin analogy and application to $Fe^+ + H_2 \rightarrow F + H_2$. <i>J. Chem. Phys.</i> 71, 2106 (1979) United States
3781	A03 $H + OH$	T	0-140 K	Shapiro, M.; Kaplan, M. On the theory of $H + OH(^2\Sigma)$ collisions and interstellar OH maser action. <i>J. Chem. Phys.</i> 71, 2162 (1979) Israel
3782	A13 $B^+ + D_2$	E	1-40 eV	Sondergaard, N. A.; Sauer, I.; Jones, A. C.; Kaufman, J. J.; Koshi, M. S. Reactive scattering of $B^+(^2P_{1/2})$ by molecular deuterium. <i>J. Chem. Phys.</i> 71, 2225 (1979) United States
3783	A03 $H + Br_2$; $Ar + Br_2$; $Si + I_2$	T	0-2 eV	Bowman, J. M.; Drolshagen, G.; Tchernis, J. P. A test of the quantum mechanical sudden vibrational approximation for collinear inelastic collisions. <i>J. Chem. Phys.</i> 71, 2270 (1979) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3714	A02 Ar + CO ₂ A17 Ar + CO ₂ A18 Ar + CO ₂	E	1.2 x 10 ⁻¹² erg	Reitzell, G.; Lubbert, A. Analysis of experimental total differential scattering data of nonspherical molecules with anisotropic potentials. Application to Ar-CO ₂ . J. Chem. Phys. 71, 2273 (1979) West Germany
3785	H85 hv + O ₂ ⁻ ; hv + O ₂ ⁻ + H ₂ O H87 hv + O ₂ ⁻ ; hv + O ₂ ⁻ + H ₂ O	E	2.8-3.8 eV	Smith, G. P.; Lee, L. C. Photodissociation spectroscopy of O ₂ ⁻ and O ₂ ⁻ + H ₂ O. 4170-4700 Å. J. Chem. Phys. 71, 2323 (1979) United States
3786	A19 H ₂ + HCl	E	288-2888 K	Hosen, D.; Coughlin, J.; Taylor, R. L. Measurement of vibrational energy exchange rates in the H ₂ /HCl molecular system. J. Chem. Phys. 71, 2328 (1979) United States
3787	H66 2hv + Ca	T	2.3-2.8 eV	Armstrong, L., Jr.; Eberly, J. N. Lower bandwidth effect on two-photon two-channel ionization in caesium. J. Phys. B 12, L291 (1979) United States
3788	H88 hv + Te ₂	E	4579-5145 Å	Verges, J.; d'Incarn, J.; Effantin, C.; Greenwood, B. J.; Barrow, R. F. Laser-excited fluorescence of gaseous Te ₂ studied by Fourier transform spectroscopy. J. Phys. B 12, L301 (1979) France
3769	A06 H ⁰ + H ⁺ Seq A11 H ⁰ + H ⁺ Seq	T	13-1000 keV/amu	Chan, F. T.; Eichler, J. Charge exchange between H(2s) and energetic projectiles. J. Phys. B 12, L305 (1979) West Germany
3790	E03 e + C ²⁺ ; e + H ²⁺ ; e + O ²⁺	T	25-125 Ry	Henry, R. J. W. Cross sections for inner-shell excitation of C ²⁺ , H ²⁺ and O ²⁺ ions. J. Phys. B 12, L309 (1979) United States
3791	A17 C + H ⁺	T	Undef	Wilson, S. Padé approximants and many-body perturbation theory: an application of the C ²⁺ ion. J. Phys. B 12, L623 (1979) United Kingdom
3792	H86 hv + Ne Seq; hv + Ba Seq	T	Undef	Lin, C. B.; Johnson, W. R. Two-channel relativistic random-phase approximation applied to the photoionization of helium- and beryllium-like ions. J. Phys. B 12, L677 (1979) United States
3793	A10 H ⁰ + H ₂ ; H ⁰ + Ne; H ⁰ + Ne; H ⁰ + Ar; H ⁰ + Kr A11 H ⁰ + H ₂ ; H ⁰ + Ne; H ⁰ + Ne; H ⁰ + Ar; H ⁰ + Kr	E	5-26 keV	McKee, J. B. A.; Gadden, J.; Gilbert, H. E. Collisional de-excitation of 5-26 keV metastable hydrogen atoms. J. Phys. B 12, L701 (1979) United Kingdom
3794	E03 e + H Seq	T	33-1000 eV	Sinha, C.; Sili, H. C. First-order Coulomb exchange approximation and electron impact excitation of ground-state hydrogenic ions to an arbitrary n state. J. Phys. B 12, L711 (1979) India
3795	E05 e + H E17 e + H	T	132-250 eV	Smith, J. J.; Winters, K. M.; Bransden, B. H. Triple differential cross sections for the ionization of atomic hydrogen by electron impact from 100 to 250 eV. J. Phys. B 12, L723 (1979) United Kingdom
3796	E03 e + Ne	T	238-300 eV	Gupta, G. P.; Mathur, K. C. Electron impact excitation of the 2 ¹ S state of helium at intermediate energies. J. Phys. B 12, L733 (1979) India
3797	E03 e + Na E17 e + Na	E	54-218 eV	Beckman, S. J.; Taubner, P. J. O. Differential cross sections for the electron impact excitation of the 2 ² P _{1/2} resonance levels of sodium. J. Phys. B 12, L741 (1979) Australia
3798	H02 hv + H	E	Undef	Eckert, M. J.; Baldwin, K. G. H. The width of H(2s) in an atomic hydrogen atmosphere. J. Phys. B 12, L719 (1979) Australia

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3799	A03 S ²⁺ + Ar; S ³⁺ + Ar; S ⁴⁺ + Ar; S ⁵⁺ + Ar; Ar; S ²⁺ + Ar; S ³⁺ + Ar; S ⁴⁺ + Ar; S ²⁺ + Ar; S ³⁺ + Ar	E	32 MeV	Volpp, J.; Schuch, R.; Holte, G.; Schmidt-Bocking, H. $K(\text{sub } a \text{ sup } h)/K(\text{sub } a \text{ sup } e)$ branching ratios of S and Ar in dependence on S projectile-charge state. J. Phys. B 12, L225 (1979) West Germany
3800	D07 Undef	T		Hittelman, H. H. Resonant laser induced negative ion production. J. Phys. B 12, 1701 (1979) United States
3801	H05 h ν + H ₂ H06 h ν + H ₂	E	23-41 eV	Stratmore, S.; Browning, R. Dissociative photoionization of H ₂ : proton kinetic energy spectra. J. Phys. B 12, 1709 (1979) United Kingdom
3802	A07 He ⁺ + H A11 He ⁺ + H	E T	0.95 eV	Margner, H.; Niehaus, A. Experimental and theoretical study of the Penning ionization of h atoms by He metastables. J. Phys. B 12, 1065 (1979) West Germany
3803	A06 He ⁺ + Co; He ⁺ + Ba; He ⁺ + Ba A07 He ⁺ + Co; He ⁺ + Ba; He ⁺ + Ba	E	2-1000 eV	Multzsch, W.; Kromast, W.; Niehaus, A.; Huf, M. W. Investigation of the spontaneous ionization mechanism in slow collisions of He ⁺ with Co and Ba, and of He ⁺ with Ba. J. Phys. B 12, 1041 (1979) West Germany
3804	A07 Undef	T	1 MeV/mm	Gleason, R. E. Multiple-ionization cross sections for highly stripped ions colliding with He, h ν and Ar. J. Phys. B 12, 1043 (1979) United States
3805	A03 Kr ⁺ + Te; Kr ⁺ + U; Kr ⁺ + Pt; Kr ⁺ + Au; Kr ⁺ + Pb; Kr ⁺ + Bi; Kr ⁺ + Th; Kr ⁺ + U	E	3-6 MeV	Waltz, C.; Nagmann, S.; Kraft, G.; Knodow, W. X-ray measurements of K-L level matching in heavy ion collisions. J. Phys. B 12, 1051 (1979) France
3806	E03 e + He	T	21-200 eV	Fon, b. C.; Berrington, K. A.; Burke, P. G.; Kingston, A. E. The 115-245 and 115-245 excitation of helium by electron impact. J. Phys. B 12, 1061 (1979) United Kingdom
3807	E05 e + He ⁺ ; e + Li ²⁺ ; e + Be ²⁺ E17 e + He ⁺ ; e + Li ²⁺ ; e + Be ²⁺	T	Undef	Dimitrijevic, M. S.; Grujic, P. V. On mutual angle and energy distributions near ionization thresholds for electron-ion collisions. J. Phys. B 12, 1073 (1979) Yugoslavia
3808	A03 Undef	T	Undef	Freitsch, W.; Wille, U. On the theory of molecular-orbital x-rays. J. Phys. B 12, L335 (1979) West Germany
3809	A03 H ⁺ + H; H ⁺ + H ₂ A06 H ⁺ + H; H ⁺ + H ₂	E	1.5-25 keV	Hill, J.; Gaddes, J.; Glibody, M. E. Improved measurements of cross sections for H(2s) formation in electron capture by 1.5-25 keV protons in H and H ₂ . J. Phys. B 12, L341 (1979) United Kingdom
3810	A06 He ⁺ + H; H + H A07 He ⁺ + H; H + H A08 He ⁺ + H; H + H	T	35-1000 keV	Bocher, R. L.; Packellar, A. D. Classical four-body calculations of He ⁺ + H and H + H collisions. J. Phys. B 12, L345 (1979) United States
3811	E02 e + CO E17 e + CO	T	100-800 eV	Khare, S. P.; Raj, D. Elastic scattering of intermediate energy electrons by heteronuclear molecules. J. Phys. B 12, L351 (1979) India
3812	E03 e + HF; e + HCl; e + HBr E17 e + HF; e + HCl; e + HBr	T	0.4-4.0 eV	Domcke, W.; Cederbaum, L. S.; Kasper, F. Threshold phenomena in electron-molecule scattering: a non-adiabatic theory. J. Phys. B 12, L359 (1979) West Germany
3813	E03 Undef E04 Undef E08 Undef	T	Undef	Schneider, B. I.; LeDourneuf, M.; Burke, P. G. Theory of vibrational excitation and dissociative attachment: an R-matrix approach. J. Phys. B 12, L365 (1979) France
3814	E03 e + C ₂ H ₂ E17 e + C ₂ H ₂	E	5 eV	Wilden, D. G.; Comer, J. High-resolution electron energy-loss spectroscopy of ethylene: analysis of vibrational structure of the triplet ($v + v'$) state. J. Phys. B 12, L371 (1979) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3015	M96 $h\nu + \text{Sn}; h\nu + \text{Te}; h\nu + \text{As}; h\nu + \text{Pb};$ $h\nu + \text{Th}$	E	514-1116 keV	Ranganathiah, C.; Gouda, R.; Sanjeeviah, B. K-shell photoionisation cross sections for 514, 661.6, 760.0 and 1115.5 keV gamma rays. J. Phys. B 12, 1965 (1979) India
3016	A83 $\text{H}^+ + \text{H}_2; \text{H}^+ + \text{O}_2; \text{H}^+ + \text{H}_2\text{O}; \text{H}^+ +$ $\text{He}; \text{O}^+ + \text{H}_2; \text{O}^+ + \text{O}_2; \text{O}^+ + \text{H}_2\text{O}; \text{O}^+ +$ $\text{He}; \text{Ne}^+ + \text{H}_2; \text{Ne}^+ + \text{O}_2; \text{Ne}^+ +$ $\text{H}_2\text{O}; \text{Ne}^+ + \text{He}; \text{Ne}^+ + \text{H}_2; \text{Ne}^+ + \text{C}_2;$ $\text{Ne}^+ + \text{H}_2\text{O}; \text{Ne}^+ + \text{He}; \text{Ne}^+ + \text{H}_2; \text{Ne}^+ +$ $\text{C}_2; \text{Ne}^+ + \text{H}_2\text{O}; \text{Ne}^+ + \text{He}$ A85 $\text{H}^+ + \text{H}_2; \text{H}^+ + \text{O}_2; \text{H}^+ + \text{H}_2\text{O}; \text{H}^+ +$ $\text{He}; \text{O}^+ + \text{H}_2; \text{O}^+ + \text{O}_2; \text{O}^+ + \text{H}_2\text{O}; \text{O}^+ +$ $\text{He}; \text{Ne}^+ + \text{H}_2; \text{Ne}^+ + \text{O}_2; \text{Ne}^+ +$ $\text{H}_2\text{O}; \text{Ne}^+ + \text{He}; \text{Ne}^+ + \text{H}_2; \text{Ne}^+ + \text{C}_2;$ $\text{Ne}^+ + \text{H}_2\text{O}; \text{Ne}^+ + \text{He}; \text{Ne}^+ + \text{H}_2; \text{Ne}^+ +$ $\text{C}_2; \text{Ne}^+ + \text{H}_2\text{O}; \text{Ne}^+ + \text{He}$ A87 $\text{H}^+ + \text{H}_2; \text{H}^+ + \text{O}_2; \text{H}^+ + \text{H}_2\text{O}; \text{H}^+ +$ $\text{He}; \text{O}^+ + \text{H}_2; \text{O}^+ + \text{O}_2; \text{O}^+ + \text{H}_2\text{O}; \text{O}^+ +$ $\text{He}; \text{Ne}^+ + \text{H}_2; \text{Ne}^+ + \text{O}_2; \text{Ne}^+ +$ $\text{H}_2\text{O}; \text{Ne}^+ + \text{He}; \text{Ne}^+ + \text{H}_2; \text{Ne}^+ + \text{C}_2;$ $\text{Ne}^+ + \text{H}_2\text{O}; \text{Ne}^+ + \text{He}; \text{Ne}^+ + \text{H}_2; \text{Ne}^+ +$ $\text{C}_2; \text{Ne}^+ + \text{H}_2\text{O}; \text{Ne}^+ + \text{He}$ A18 $\text{H}^+ + \text{H}_2; \text{H}^+ + \text{O}_2; \text{H}^+ + \text{H}_2\text{O}; \text{H}^+ +$ $\text{He}; \text{O}^+ + \text{H}_2; \text{O}^+ + \text{O}_2; \text{O}^+ + \text{H}_2\text{O}; \text{O}^+ +$ $\text{He}; \text{Ne}^+ + \text{H}_2; \text{Ne}^+ + \text{O}_2; \text{Ne}^+ +$ $\text{H}_2\text{O}; \text{Ne}^+ + \text{He}; \text{Ne}^+ + \text{H}_2; \text{Ne}^+ + \text{C}_2;$ $\text{Ne}^+ + \text{H}_2\text{O}; \text{Ne}^+ + \text{He}; \text{Ne}^+ + \text{H}_2; \text{Ne}^+ +$ $\text{C}_2; \text{Ne}^+ + \text{H}_2\text{O}; \text{Ne}^+ + \text{He}$	E	250-700 keV	Luz, H.; Seckmann, S.; Lutz, M. C. Impact parameter dependence of K-shell excitation in slow ion-atom collisions. J. Phys. B 12, 1973 (1979) West Germany
3017	A03 $\text{I}^+ + \text{I}$ A05 $\text{I}^+ + \text{I}$	E	81 MeV	Stott, W. R.; Maddington, J. C. Double K-shell vacancies produced in near-symmetric collisions with 2 approximately 53. J. Phys. B 12, 1995 (1979) Canada
3018	A06 $\text{H}^+ + \text{He}; \text{H}^+ + \text{Ne}; \text{H}^+ + \text{Ar}; \text{H}^+ + \text{Kr};$ $\text{H}^+ + \text{Xe}$	T	13-500 keV	Roy, B. N.; Rai, D. K. Modified binary-encounter calculations for electron capture from noble-gas atoms by protons. I. J. Phys. B 12, 2015 (1979) India
3019	A06 $\text{He}^+ + \text{He}; \text{He}^+ + \text{Ne}; \text{He}^+ + \text{Ar}; \text{He}^+ +$ Kr	T	20-1000 keV	Kumar, A.; Roy, B. N. Modified binary-encounter calculations for electron capture from noble-gas atoms by He^+ ions: II. J. Phys. B 12, 2025 (1979) India
3020	E05 $e + \text{He}$	E	50-63 eV	Baxter, J. A.; Comer, J.; Hicks, P. J.; McConkey, J. W. Studies of post-collision interactions for electrons ejected from autoionising levels of helium excited by low-energy electrons. J. Phys. B 12, 2031 (1979) United Kingdom
3021	F04 $e + \text{H}_2^+; e + \text{H}_3^+; e + \text{H}_4^+$	E	22-450 eV	Mather, D.; Hasted, J. B.; Khan, S. U. Collision processes of electrons with molecular hydrogen ions. J. Phys. B 12, 2043 (1979) United Kingdom
3022	M06 $2h\nu + \text{Cs}$	E	4440 Å	Kaminski, M.; Kessler, J.; Kollath, K. J. The 6s-6d quadrupole resonances in two-photon ionisation of caesium. Measurement of ion asymmetry and spin polarisation. J. Phys. B 12, L382 (1979) West Germany
3023	A16 $\text{H}^+ + \text{He}; \text{H}^+ + \text{Ar}$	T	1-10 ⁶ eV	Gauyacq, J. P. A simple approximation for low-energy total detachment cross sections. J. Phys. B 12, L387 (1979) France
3024	A03 $\text{Cu}^{2+} + \text{Kr}; \text{Cu}^{10+} + \text{Kr}; \text{Cu}^{20+} + \text{Kr};$ $\text{Cu}^{21+} + \text{Kr}$ A05 $\text{Cu}^{2+} + \text{Kr}; \text{Cu}^{10+} + \text{Kr}; \text{Cu}^{20+} + \text{Kr};$ $\text{Cu}^{21+} + \text{Kr}$	E	55 MeV	Hagmann, S.; Coshe, C. L.; Justiniano, E.; MacDonald, J. R.; Scholdt-Bocking, M. Impact-parameter dependence of K-vacancy production in $\text{Cu}(\text{exp } q^+)-\text{Ar}$ collisions. J. Phys. B 12, L396 (1979) United States
3025	E07 $e + \text{He}^+$ E08 $e + \text{He}^+$	T	Under	Grujic, P. V.; Koledin, D. Low-energy electron-excited-atom scattering: quasi-degenerate case. J. Phys. B 12, L399 (1979) Yugoslavia

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3626	H06 3hv + Ca; 4hv + Ca	T	9643-14414 eV ⁻¹	Gontier, Y.; Trahin, M. Multiphoton ionisation and light statistics: application to the caesium atom. J. Phys. B 12, 2123 (1979) Soviet Union
3627	H02 hv + SF ₆ H05 hv + SF ₆	E	5-63 eV	Nitchcock, A. P.; van der Wiel, R. J. Absolute oscillator strengths (5-63 eV) for photoabsorption and ionic fragmentation of SF ₆ . J. Phys. B 12, 2153 (1979) Canada
3628	A07 He ⁺ + H A11 He ⁺ + H	E	Thermal	Morgner, M. Penning ionisation of atomic hydrogen by metastable neon atoms. J. Phys. B 12, 2171 (1979) West Germany
3629	A07 H ⁺ + Au; H ⁺ + Ag; H ⁺ + PERT	T	1-15 MeV	Zoran, V. Simple relativistic correction of the scaling parameter for K-shell Compton ionisation. J. Phys. B 12, 2179 (1979) Romania
3630	A03 I ⁺ + Au A05 I ⁺ + Au	E	6-25 MeV	Hartung, M.; Fricke, B.; Morovic, T.; Sapp, W. D.; Rosen, A. Interpretation of the anisotropy of 1 MeV radiation in slow I on Au collisions. J. Phys. B 12, 2193 (1979) West Germany
3631	E02 e ⁺ + H; e ⁺ + He; e ⁺ + Li E12 e ⁺ + H; e ⁺ + He; e ⁺ + Li	T	13-500 eV	Nukherjee, A.; Sural, D. P. An integral approach to the second-order potential method: electron and positron scattering by hydrogen, helium and lithium. J. Phys. B 12, 2201 (1979) India
3632	E02 e ⁺ + H ₂ E17 e ⁺ + H ₂	T	51-200 eV	Dhal, S. S.; Srivastava, B. B.; Shingal, R. Elastic scattering of electrons by a hydrogen molecule at intermediate energies using optical eikonal theory. J. Phys. B 12, 2211 (1979) India
3633	E02 e ⁺ + He E13 e ⁺ + He	T	15-19 eV	Noro, T.; Sasaki, F.; Tatewaki, M. R-matrix study of resonance spectra of the neon atom. J. Phys. B 12, 2217 (1979) Japan
3634	E03 e ⁺ + He E05 e ⁺ + He	T	53-1000 eV	Belashov, V. V.; Gran-Grazhmalio, A. M.; Kabachnik, M. N.; Wagnonov, A. I.; Strakhova, S. A. Excitation of autoionising states in noble-gas atoms by fast electrons: neon. J. Phys. B 12, 2233 (1979) Soviet Union
3635	H04 hv + Cd H05 hv + Cd	T	27 eV	Klar, M. Analysis of alignment produced by photoionisation of Cd. J. Phys. B 12, L409 (1979) West Germany
3636	H06 hv + Ba	E	21-25 eV	Potts, A. W.; Lee, E. P. F. The He I II Sp ⁻¹ photoelectron spectrum of Ba. J. Phys. B 12, L413 (1979) United Kingdom
3637	H06 hv + N ₂ ; hv + CO	T	0.1-10 Ry	Wallace, S.; Dill, D.; Dehaer, J. L. Spectral variation of molecular photoelectron angular distributions: valence shells of N ₂ and CO. J. Phys. B 12, L417 (1979) United States
3638	E03 e ⁺ + O; e ⁺ + O ₂ E17 e ⁺ + O; e ⁺ + O ₂	E	130-500 eV	Kheok, M. A.; Howell, W. R.; Smith, A. C. M. Inelastic electron scattering from atomic oxygen. J. Phys. B 12, L425 (1979) United Kingdom
3639	E05 e ⁺ + He; e ⁺ + C; e ⁺ + O; e ⁺ + N	E	20-150 eV	Mark, T. D.; de Haer, F. J. Comment on a recent fast beam measurement of the electron impact ionisation cross sections of He, C, O and N atoms. J. Phys. B 12, L429 (1979) The Netherlands
3640	E05 e ⁺ + He; e ⁺ + C; e ⁺ + N; e ⁺ + O	E	23-150 eV	Harrison, M. F. A.; Smith, A. C. M.; Brook, E. Electron energy calibration in the Culham crossed-beams experiments: a reply to the letter of Mark and de Haer. J. Phys. B 12, L433 (1979) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3841	B07 Under	T		Ferrante, G.; Nuzzo, S.; Zaccaro, P. Charged-particle potential scattering in the simultaneous presence of a magnetic and a laser field. <i>J. Phys. B</i> 12, L437 (1979) Italy
3842	H02 hv + Ca H06 hv + Ca	T	Under	Geiger, J. The oscillator strength density of the $4s^2-4snp$, $3dnp$, 1P_1 , 3P_1 series of calcium as a two-channel case in quantum defect theory. <i>J. Phys. B</i> 12, 2277 (1979) West Germany
3843	H06 Under	T	Under	McClean, M. A.; Swain, S. The time dependence of two-photon ionisation. <i>J. Phys. B</i> 12, 2291 (1979) United Kingdom
3844	H02 hv + SiC	E	700-1500 Å	Balg, M. A.; Connerade, J. P. Rydberg series in the vacuum ultraviolet absorption spectrum of silicon monoxide. <i>J. Phys. B</i> 12, 2309 (1979) United Kingdom
3845	B07 Under	T		Ferrante, G.; Leone, C.; Lo Cascio, L. Eikonal theory of charged particle potential scattering in the presence of a low frequency laser field. <i>J. Phys. B</i> 12, 2319 (1979) Italy
3845	A03 Na ²⁺ + Na; Na ²⁺ + He	T	2.5-100 e.u.	Kolke, F.; Matsuzawa, N.; Hara, S.; Itikawa, Y.; Nakamura, H.; Sato, H.; Shimamura, I. Scaling for two-electron excitation in symmetric ion-atom collisions: two-electron systems and two-hole systems. <i>J. Phys. B</i> 12, 2325 (1979) Japan
3847	A06 Li ⁺ + Li A18 Li ⁺ + Li	E	0.5-1 keV	Kita, S.; Inouye, M. Charge-exchange reactions in collisions of Li ⁺ -Li. <i>J. Phys. E</i> 12, 2339 (1979) Japan
3849	E03 e + H Seq	T	100-1000 eV	Singh, S. N.; Kumar, S.; Srivastava, M. K. Electron impact excitation of hydrogenic ions in a modified Coulomb-Glauber approximation. <i>J. Phys. B</i> 12, 2351 (1979) India
3849	E02 e + LiF E03 e + LiF E17 e + LiF	T	2-20 eV	Bend, Y. B. Electron-polar-molecule scattering: quasiclassical close-coupling approximation. <i>J. Phys. B</i> 12, 2359 (1979) Israel
3850	E04 Under E09 Under E17 Under	T	Under	Klar, M.; Morgner, M. Angular distribution of negative ions formed in dissociative attachment. <i>J. Phys. B</i> 12, 2369 (1979) West Germany
3851	C07 C ⁺ + C	E	100-20000 keV	Andersen, B.; Jensen, S. B.; Rasmussen, P. S.; Vejre, E. A study of the beam-foil excitation mechanism using carbon projectiles. <i>Phys. Scripta</i> 20, 65 (1979) Denmark
3852	H06 hv + Ti; hv + Cr; hv + Fe; hv + Ni	E	15-27 keV	Ahopelto, J.; Kontavuori, E.; Keski-Ahkonen, O. K α (super h) hypersatellite spectra in photon excitation and K shell double photoionization cross section for transition metals Ti, Cr, Fe and Ni. <i>Phys. Scripta</i> 20, 71 (1979) Finland
3853	A08 Br ⁺ + N ₂ C A10 Br ⁺ + N ₂ O; N ₂ O ⁺ + N ₂ O A11 N ₂ O ⁺ + He; N ₂ O ⁺ + Ne; N ₂ O ⁺ + Ar; N ₂ O ⁺ + Rr; N ₂ O ⁺ + Xe; N ₂ O ⁺ + SF ₆	E	337 K	Kushawaha, V. S. Electronic to vibrational energy transfer from Br(sup x) to N ₂ O. <i>Phys. Scripta</i> 20, 75 (1979) United States
3854	H02 hv + Au H06 hv + Au	E	1450-950 Å	Jannitti, E.; Centu, A. M.; Grisendi, T.; Pettini, R.; Toggi, G. P. Absorption spectra of Au I in the vacuum ultraviolet. <i>Phys. Scripta</i> 20, 116 (1979) Italy

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3855	A12 He + He H03 He + He	E	A12 390 K H03 5145 Å	LeDuff, Y. Collision-induced scattering in helium. Phys. Rev. A 20, 48 (1979) France
3856	C06 D ⁺ + Mg; D ⁺ + Ca; D ⁺ + Sr; D ⁺ + Ba	E	1.25-100 keV	Morgan, T. J.; Stone, J.; Mayo, M.; Ixer, J. D ⁺ production by multiple charge-transfer collisions in alkaline-earth-metal vapors. Phys. Rev. A 20, 54 (1979) United States
3857	E02 e + He E17 e + He G09 e + He	T	0-19.6 eV	Mesbet, R. K. Variational calculations of accurate e ⁻ -He cross sections below 19 eV. Phys. Rev. A 20, 58 (1979) United States
3858	E03 e + He; e + Ne; e + Ar; e + Kr; e + Xe	E	10-300 eV	Schwane, J. A.; Terr, S. M.; Freund, R. S. Electron-impact excitation of the rare-gas atoms to high-Rydberg states. Phys. Rev. A 20, 71 (1979) United States
3859	A06 He ²⁺ + He; He ²⁺ + Ne; Ar ²⁺ + He; Kr ²⁺ + He; Xe ²⁺ + He; He ²⁺ + Ne; He ²⁺ + Ne; Ar ²⁺ + Ne; Kr ²⁺ + Ne; Xe ²⁺ + Ne; He ²⁺ + Ar; He ²⁺ + Ar; Ar ²⁺ + Ar; Kr ²⁺ + Ar; Xe ²⁺ + Ar; He ²⁺ + Kr; He ²⁺ + Kr; Ar ²⁺ + Kr; Kr ²⁺ + Kr; Xe ²⁺ + Kr; He ²⁺ + Xe; He ²⁺ + Xe; Ar ²⁺ + Xe; Kr ²⁺ + Xe; Xe ²⁺ + Xe A07 He ²⁺ + He; He ²⁺ + Ne; Ar ²⁺ + He; Kr ²⁺ + He; Xe ²⁺ + He; He ²⁺ + Ne; He ²⁺ + Ne; Ar ²⁺ + Ne; Kr ²⁺ + Ne; Xe ²⁺ + Ne; He ²⁺ + Ar; He ²⁺ + Ar; Ar ²⁺ + Ar; Kr ²⁺ + Ar; Xe ²⁺ + Ar; He ²⁺ + Kr; He ²⁺ + Kr; Ar ²⁺ + Kr; Kr ²⁺ + Kr; Xe ²⁺ + Kr; He ²⁺ + Xe; He ²⁺ + Xe; Ar ²⁺ + Xe; Kr ²⁺ + Xe; Xe ²⁺ + Xe A11 Kr ²⁺ + He; Xe ²⁺ + He; Xe ²⁺ + Ne	E	300 K	Johnsen, R.; Biondi, M. A. Thermal-energy charge transfer, quenching, and association reactions of doubly charged ions in the rare gases. Phys. Rev. A 20, 87 (1979) United States
3860	A07 Ni ⁺ + C; Ni ⁺ + Ni; Ni ⁺ + Ag; Ni ⁺ + Au; Ni ⁺ + KBr; Br ⁺ + C; Br ⁺ + Ni; Br ⁺ + Ag; Br ⁺ + Au; Br ⁺ + KBr	E	40-120 MeV	McClintock, J. A.; Lee, T. K.; Madansky, L. Production of electrons in heavy-ion-atom collisions at 40 to 120 MeV. Phys. Rev. A 20, 58 (1979) United States
3861	A06 C ⁶⁺ + H; PERT + H; PERT + He	T	237-150000 keV	Eichler, J.; Chan, F. T. Approach to electron capture into arbitrary principal shells of energetic projectiles. Phys. Rev. A 20, 104 (1979) West Germany
3862	A01 Undef	T	Undef	Russek, A. Diffraction and angular momentum effects in semiclassical atomic scattering theory. Phys. Rev. A 20, 113 (1979) United States
3863	A06 He ²⁺ + Ti; He ²⁺ + Ar; He ²⁺ + Cu; C ⁶⁺ + Cu; O ⁶⁺ + Cu	T	2.5-96 MeV	Reading, J. F.; Ford, A. L.; Swafford, G. L.; Fitchard, J. R. Inner-shell charge transfer in asymmetric low-velocity collisions. Phys. Rev. A 20, 130 (1979) United States
3864	E12 e ⁺ + He; e ⁺ + Ne	E	2-50 eV	Coleman, P. G.; McNutt, J. G.; Diers, L. A.; Burciaga, J. R. Scattering of low-energy positrons by helium and neon atoms. Phys. Rev. A 20, 145 (1979) United States
3865	A07 He ⁺ + He; Au ⁺ + Au; Pb ⁺ + Pb; U ⁺ + Th; Ta ⁺ + Sn; Ta ⁺ + Sn; Ta ⁺ + Mo; Ta ⁺ + Ta; Ta ⁺ + Au; Ta ⁺ + Pb; Ta ⁺ + Th A19 He ⁺ + He; Au ⁺ + Au; Pb ⁺ + Pb; U ⁺ + Th; Ta ⁺ + Sn; Ta ⁺ + Sn; Ta ⁺ + Mo; Ta ⁺ + Ta; Ta ⁺ + Au; Ta ⁺ + Pb; Ta ⁺ + Th	E	17-60 MeV	Meyerhof, W. F.; Rustich, A.; Stoller, C.; Stockli, M.; Volff, W. L-vacancy production in near-symmetric heavy-ion collisions (Z greater than or approximately equal to 35). Phys. Rev. A 20, 124 (1979) United States
3866	A07 U + Cf; Pb + Pb; Pb + U; U + U; Pb + Ag; Pb + Sn; Pb + Sn; Xe + Pb; Xe + U	T	977-1600 MeV	Soff, G.; Grainer, W.; Retz, W.; Müller, B. Electrons in superheavy quasimolecules. Phys. Rev. A 20, 165 (1979) United States

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3867	EC1 e + N ₂ EC2 e + N ₂ EC3 e + N ₂ EC7 e + N ₂ EC17 e + N ₂	T	8.5-4.5 eV	Dube, L.; Herzberg, A. Absolute cross sections from the boomerang model for resonant electron-molecule scattering. <i>Phys. Rev. A</i> 20, 154 (1979) United States
3868	D08 H ⁺ + Si; H ⁺ + Cu; H ⁺ + Ge; H ⁺ + Mo; H ⁺ + Ta; H ⁺ + Pt	E	6.5-12.5 keV	Mileo, Y.-T. R.; Amer, R. C. Lyman- α emission from proton bombardment of Si, Cu, Ge, Po, Ta, and Pt surfaces. <i>Phys. Rev. A</i> 20, 214 (1979) United States
3869	G06 He ⁺ + He; He ²⁺ + He; Ar ⁺ + He; Ar ²⁺ + He; Kr ⁺ + He; Kr ²⁺ + He; Xe ⁺ + He; Xe ²⁺ + He; Xe ³⁺ + He; Xe ⁴⁺ + He	E	5-10 eV	Johansen, R.; Biondi, M. A. Mobilities of singly and doubly charged rare-gas ions in helium and in neon. <i>Phys. Rev. A</i> 20, 221 (1979) United States
3873	A12 HF ⁺ + Ar; HF ⁺ + Kr HC2 hv + HF	E	A12 333 K H34 2.2-3.3 μ	Belgong, R.; Litfin, G.; Schneider, B. Line shapes and half widths of pure- and foreign-gas-broadened 2.5- μ m HF absorption spectra. <i>Phys. Rev. A</i> 20, 229 (1979) West Germany
3874	BC7 Under	T		Rosenberg, L. Generalized low-frequency approximation for scattering in a laser field: II. <i>Phys. Rev. A</i> 20, 275 (1979) United States
3872	H07 hv + H ⁻ ; hv + Li ⁻ ; hv + K ⁻ ; hv + Cs ⁻ ; hv + C ⁻ ; hv + O ⁻ ; hv + I ⁻ ; hv + Na ⁻ ; hv + Rb ⁻ ; hv + F ⁻ ; hv + Cl ⁻ ; hv + Br ⁻	T	1.5-4.0 eV	Staham, R. M.; Woo, S. B. Zero-order-contribution model and its application to photodetachment of atomic negative ions. <i>Phys. Rev. A</i> 20, 281 (1979) United States
3873	H06 hv + K ⁺ ; hv + Ca ²⁺ ; hv + Sc ³⁺ ; hv + Ti ⁴⁺	T	43-200 eV	Chang, T. M. Effect of the multiphenel configuration interaction on the photoionization of K II, Ca III, Sc IV, and Ti V. <i>Phys. Rev. A</i> 20, 251 (1979) United States
3874	H12 hv + e	T	Under	Chen, Y. U.; Tsai, W. L. Classical theory of scattering of an electron beam by a laser standing wave. <i>Phys. Rev. A</i> 20, 254 (1979) Japan
3875	C07 He ⁺ + C	E	230 keV	Burns, D. J.; Night, R. D.; Greene, C. M. Alignment and orientation of the 3p ² P state in He I as a function of foil tilt angle. <i>Phys. Rev. A</i> 20, 404 (1979) United States
3876	E03 e + N ²⁺	E	4-50 eV	Gregory, D.; Dunn, G. M.; Phaneuf, R. A.; Crandall, D. M. Absolute cross sections for 2s-2p excitation of N ²⁺ by electron impact. <i>Phys. Rev. A</i> 20, 410 (1979) United States
3877	AC7 H + H Seq	T	Under	Shirai, T.; Nami, Y.; Nakamura, M. Ionization collisions between hydrogen and hydrogenlike atoms at high energies. <i>Phys. Rev. A</i> 20, 421 (1979) Japan
3878	E12 e ⁺ + e ⁻	T	Under	Drachman, R. J.; Sucher, J. Annihilation in positron-atom collisions: a new approach. <i>Phys. Rev. A</i> 20, 442 (1979) United States
3879	F05 e + Ca; e + Sm; e + Dy; e + Yb; e + U; e + Pu; e + Pb; e + Rn; e + Th; e + Po; e + Cm; e + Cf; e + Hg; e + Ge; e + Cu ⁺ ; e + Ba; e + Ba ²⁺ ; e + Au; e + Ti; e + Ti ²⁺ ; e + Na; e + Ar; e + Ni ⁺ ; e + Ni ²⁺ ; e + Ni ³⁺ ; e + Ni ⁴⁺ ; e + Ni ⁵⁺ ; e + Ni ⁶⁺ ; e + Ni ⁷⁺ ; e + Ni ⁸⁺ ; e + Ni ⁹⁺ ; e + Ni ¹⁰⁺ ; e + Ni ¹¹⁺ ; e + Ni ¹²⁺ ; e + Ni ¹³⁺ ; e + Au ²⁺ ; e + Au ³⁺ ; e + Au ⁴⁺ ; e + Au ⁵⁺ ; e + Au ⁶⁺ ; e + Au ⁷⁺ ; e + Au ⁸⁺ ; e + Au ⁹⁺ ; e + Au ¹⁰⁺ ; e + Au ¹¹⁺ ; e + Au ¹²⁺	T	5-10 ⁴ eV	McGuire, E. J. Scaled electron ionization cross sections in the Born approximation for atoms with Z less than or equal to Z less than or equal to 102. <i>Phys. Rev. A</i> 20, 445 (1979) United States
3880	BC7 Under	T		Rosenberg, L. Coulomb scattering in a laser field. <i>Phys. Rev. A</i> 20, 457 (1979) United States

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3881	A86 H ⁺ + PERT; D ⁺ + PERT A87 H ⁺ + PERT; D ⁺ + PERT	T	0.1-40 MeV	Brandt, W.; Lapich, G. L-shell Coulomb ionization by heavy charged particles. Phys. Rev. A 20, 465 (1979) United States
3882	A87 He ⁺ + He	T	Under	Lapich, G.; Losonsky, W. Coulomb deflection in ion-atom collisions. Phys. Rev. A 20, 481 (1979) United States
3883	E83 e + H ₂ E17 e + H ₂	T	3.4-6.7 eV	Levin, D. A.; Filifiet, A. W.; McRoy, V. Low-energy, rotational and vibrational-rotational excitation cross sections for H ₂ by electron impact. Phys. Rev. A 20, 491 (1979) United States
3884	C82 He ⁺ + Be; He ⁺ + C; He ⁺ + Al; He ⁺ + Ti; He ⁺ + Ni; He ⁺ + Ge; He ⁺ + Zr; He ⁺ + Ag; He ⁺ + Eu; He ⁺ + Ta; Be ⁺ + He; Be ⁺ + C; Be ⁺ + Al; Be ⁺ + Ti; Be ⁺ + Ni; Be ⁺ + Ge; Be ⁺ + Zr; Be ⁺ + Ag; Be ⁺ + Eu; Be ⁺ + Ta; C ⁺ + Be; C ⁺ + C; C ⁺ + Al; C ⁺ + Ti; C ⁺ + Ni; C ⁺ + Ge; C ⁺ + Zr; C ⁺ + Ag; C ⁺ + Eu; C ⁺ + Ta; Al ⁺ + Be; Al ⁺ + C; Al ⁺ + Ti; Al ⁺ + Ni; Al ⁺ + Ge; Al ⁺ + Zr; Al ⁺ + Ag; Al ⁺ + Eu; Al ⁺ + Ta; Ti ⁺ + Be; Ti ⁺ + C; Ti ⁺ + Al; Ti ⁺ + Ni; Ti ⁺ + Ge; Ti ⁺ + Zr; Ti ⁺ + Ag; Ti ⁺ + Eu; Ti ⁺ + Ta; Ni ⁺ + Be; Ni ⁺ + C; Ni ⁺ + Al; Ni ⁺ + Ti; Ni ⁺ + Ni; Ni ⁺ + Ge; Ni ⁺ + Zr; Ni ⁺ + Ag; Ni ⁺ + Eu; Ni ⁺ + Ta	T	Under	Cruz, S. A.; Cisneros, C.; Alvarez, I. *Erratum Individual orbital contribution to the electronic stopping cross section in the low-velocity region [Phys. Rev. A 17, 132 (1978); 18, 2369 (1978)]. Phys. Rev. A 20, 626 (1979) Mexico
3885	D85 hv + Pd	E	12-41 eV	Dahlbeck, M.; Nilsson, P. O.; Pense, M. Ultraviolet photoemission from Pd(111). Phys. Rev. B 19, 5561 (1979) Sweden
3886	D13 e + O + He	E	150-200 eV	Yu, M. L. Observation of positive and negative oxygen ions during electron bombardment of oxygen-covered Ni (100) surfaces. Phys. Rev. B 19, 5955 (1979) United States
3887	D85 hv + Ag	E	6-32 eV	Wahner, P. S.; Williams, R. S.; Rehan, S. L.; Denley, D.; Shirley, D. A. Valence-band structure of silver along A from angle-resolved photoemission. Phys. Rev. B 19, 6164 (1979) United States
3888	D85 hv + Cu	T	4-10 eV	Jepsen, D. W. Calculation of the angle-resolved photoemission from copper. Phys. Rev. B 20, 482 (1979) United States
3889	D11 Under	T	Under	Goodman, F. G.; Garcia, M. Sticking coefficients of atoms on solid surfaces at low temperatures. Phys. Rev. B 20, 813 (1979) United States
3890	C88 Under	T	Under	Pathek, A. P. Simplicity considerations in interatomic potential for channeling calculations. Phys. Status Solidi B 53, K181 (1979) India
3891	C82 H ⁺ + V; H ⁺ + Ge D87 H ⁺ + V; H ⁺ + Ge	E T	3.1-6.3 MeV	Chudakov, V. Y.; Izraelov, S. Z.; Fokhil, G. V.; Strotinin, E. I.; Tulinov, A. F. On the determination of energy losses by charged particles from the backscattered energy spectra. Phys. Status Solidi A 53, 51 (1979) Soviet Union
3892	D15 He ⁺ + Al; D ⁺ + Al	E	3.4-1.8 MeV	Svensson, M. L.; Howe, L. M. Channeling measurements of the trapping efficiencies of solute atoms for self-interstitial atoms in metals. Radiat. Eff. 41, 129 (1979) Canada
3893	D87 Ar ⁺ + Ni	E	6 keV	Kerpuzov, D. S.; Armour, D. G.; Ivcolomov, I. M. Simulation of ion reflection from a single crystal at grazing angles. Radiat. Eff. 41, 141 (1979) United Kingdom

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3894	D02 Ar ⁺ + CdS; Ar ⁺ + CdTe; Ar ⁺ + Cu ₂ As; Ar ⁺ + KCl; Ar ⁺ + NaCl; Ar ⁺ + KBr; Ar ⁺ + SiC; Ar ⁺ + GaSb; Mg ⁺ + Cu ₂ As	T	1-15 keV	Jimenez-Rodriguez, J. J.; Rodriguez-Bidal, N.; Valles-Aberca, J. A. Sputtering yield calculation for binary target. <i>Radiat. Eff.</i> 41, 165 (1979) Spain
3895	DE2 H ⁺ + SS	E	1 keV	Matton, D. H.; Sharp, D. J. Surface morphology of low energy hydrogen ion eroded stainless steel. <i>Radiat. Eff.</i> 41, 185 (1979) United States
3896	D07 He ⁺ + Pt	E	13-35 keV	Mashkova, E. S.; Molchanov, V. A.; Pavlova, A. E.; Seiser, V. A. Reflection of helium ions from polycrystalline platinum. <i>Radiat. Eff.</i> 41, 187 (1979) Soviet Union
3897	E03 α + Fe ²⁰⁺	T	22-150 Ry	Rason, M. L.; Doschek, G. A.; Feldman, U.; Bhatia, A. K. Fe XXI as an electron density diagnostic in solar flares. <i>Astron. Astrophys.</i> 73, 74 (1979) United Kingdom
3898	E03 α + CH ⁺ ; α + HeH ⁺	T	3.007-2 eV	Flower, D. R. Electron collisional excitation of rotational transitions in CH ⁺ and HeH ⁺ . <i>Astron. Astrophys.</i> 73, 237 (1979) France
3899	E08 α + Ar ⁺	E	12° K	Rodriga, G.; Ruch, H. J. The Stark width of the Ar I-line 3949 Å in a medium electron density plasma. <i>Astron. Astrophys.</i> 75, 182 (1979) West Germany
3900	E08 α + Fe	T	3.1-10 keV	Pozdnyakov, L. A.; Sobol, I. N.; Sanyoov, R. A. The profile evolution of x-ray spectral lines due to Comptonization. Monte Carlo computations. <i>Astron. Astrophys.</i> 75, 214 (1979) Soviet Union
3901	H11 hv + H ⁻	T	3.27-1.3 keV	John, T. L. Polarization effects on the free-free transitions of H ⁻ . <i>Astron. Astrophys.</i> 75, 249 (1979) United Kingdom
3902	A03 H ⁺ + C ²⁺	T	$5 \times 10^3 - 10^5$ Å	Hussbauer, W.; Schild, H. C III observable with IUE. <i>Astron. Astrophys.</i> 75, L17 (1979) Switzerland
3903	B07 Under	T		Durrant, C. J. The effect of waves on spectral line analysis of the Fourier domain. <i>Astron. Astrophys.</i> 76, 268 (1979) West Germany
3904	E11 Under	T	Under	Gould, R. J. Compton and synchrotron processes in spherically-symmetric non-thermal sources. <i>Astron. Astrophys.</i> 76, 306 (1979) United States
3905	A02 H ⁺ + Ca ²⁺ ; H + Ca ²⁺ ; H ⁺ + Na; H + H ⁺ ; H ⁺ + He ²⁺ ; H + He ⁺	T	10 ⁴ -10 ⁶ cm/s	Ozenies, J. Non-LTE line transfer with convective transport of excited atoms. <i>Astron. Astrophys.</i> 76, 312 (1979) Belgium
3906	F03 α + O ²⁺	T	0.5-6 Ry	Bhatia, A. K.; Doschek, G. A.; Feldman, U. New atomic data for O ²⁺ . <i>Astron. Astrophys.</i> 76, 359 (1979) United States
3907	B07 Under E11 Under	T	E11 10-100 keV	Borner, G.; Messaros, P. Approximate formulae for electron scattering in a strong magnetic field. <i>Astron. Astrophys.</i> 77, 1/8 (1979) West Germany
3908	A13 CH ₃ ⁺ + H ₂ A14 O + CH ₃	T	Thermal	Green, S.; Herbst, E. Metastable isomers: a new class of interstellar molecules. <i>Astrophys. J., Part 1</i> 229, 121 (1979) United States
3909	A02 H + CO A05 H + CO	E	87° K	Caracciolo, G.; Lillo, F. M.; Este, G. O.; Ruffolo, A.; Scolas, G.; Valbusa, U. Scattering experiments with hydrogen atoms II. A system of astrophysical interest: H + CO. <i>Astrophys. J., Part 1</i> 226, 451 (1979) Canada
3910	A14 H ₂ + OH; H ₂ + O; H + OH; H + O ₂ ; H + H ₂ O H05 hv + H ₂ C	T	A14 $2 \times 10^3 - 10^5$ K HF5 1570 Å	Fitzner, M. A dynamical explanation for the high water abundance detected in Orion. <i>Astrophys. J., Part 1</i> 229, 360 (1979) United States

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3911	A17 Zr + O; Cu + N	T	839-1600 eV	Galles, J. A. C.; Franke, R. E.; Griensson, H. P.; Chakraborty, B. P. The influence of vibration-rotation interaction on bond intensity parameters for ZrO and CuN. <i>Astrophys. J.</i> , Part 1 229, 451 (1979) Brazil
3912	E06 e + C ²⁺ ; e + O ²⁺ ; e + Al ³⁺ ; e + Fe ²⁺ ; e + Ar ¹⁰⁺ H06 He + C ²⁺ ; He + O ²⁺ ; He + Al ³⁺ ; He + Fe ²⁺ ; He + Ar ¹⁰⁺	T	E06 2.3-3.8 keV H06 2.1-105 keV	Barfield, W. D. Partial photoionization cross sections and radiative recombination rate coefficients for lithium-like ions. <i>Astrophys. J.</i> , Part 1 229, 856 (1979) United States
3913	E03 e + H ⁺ E05 e + H ⁺ ; e + H ²⁺ E06 e + H ⁺ ; e + H ²⁺	T	1 st K	Flannery, B. P.; Rybicki, G. B.; Sarazin, C. L. Ultraviolet pumping on H ⁺ fine-structure levels. <i>Astrophys. J.</i> , Part 1 229, 1057 (1979) United States
3914	A03 H + O ²⁺ ; H + O ²⁺ ; H + Fe ²⁺ A06 H ⁺ + Fe; Fe ²⁺ + H; Fe ²⁺ + He; Fe ²⁺ + C; Fe ²⁺ + N; Fe ²⁺ + O; Fe ²⁺ + Ne; Fe ²⁺ + Mg; Fe ²⁺ + Si; Fe ²⁺ + S; Fe ²⁺ + Fe A08 Fe ²⁺ + H; Fe ²⁺ + H; Fe ²⁺ + H; Fe ²⁺ + H; Fe ²⁺ + H; Fe ²⁺ + H; O ²⁺ + H; O ²⁺ + H; O ²⁺ + H; O ²⁺ + H; O ²⁺ + H C06 O ²⁺ + H; O ²⁺ + H; O ²⁺ + H; O ²⁺ + H; O ²⁺ + H; Fe ²⁺ + H; Fe ²⁺ + H; Fe ²⁺ + H; Fe ²⁺ + H; Fe ²⁺ + H; Fe ²⁺ + H; Fe ²⁺ + H; Fe ²⁺ + H; Fe ²⁺ + H; Fe ²⁺ + H; Fe ²⁺ + H	T	A03 0.5-6 MeV/amu A06 4-40 MeV A08 1-10 ³ MeV; 0.1-10 ² MeV C06 0.5-10 MeV/amu	Rule, D. W.; Guldvar, K. Charge equilibrium and radiation of low-energy cosmic rays passing through interstellar medium. <i>Astrophys. J.</i> , Part 1 229, 1150 (1979) United States
3915	D02 H + C; H + C; O + C	T	1 eV	Draine, B. T. On the chemisputtering of interstellar graphite grains. <i>Astrophys. J.</i> , Part 1 230, 106 (1979) United States
3916	A06 C ²⁺ + H; C ²⁺ + H E07 e + C ²⁺ ; e + C ²⁺ ; e + N ²⁺ H06 He + He ⁺ ; He + C ²⁺	T	A06 10 ² -10 ³ eV E07 1.5 x 10 ² K H06 1 K	Shuder, J. M.; MacAlpine, G. M. A photoionization model analysis of QSO ultraviolet emission lines. <i>Astrophys. J.</i> , Part 1 230, 342 (1979) United States
3917	E03 e + He ⁺ ; e + He ²⁺ ; e + He ³⁺ ; e + Ne ⁺ ; e + Ne ²⁺ ; e + Ne ³⁺ ; e + Ne ⁴⁺ ; e + Ne ⁵⁺ ; e + Ne ⁶⁺ ; e + Ne ⁷⁺ ; e + Mg ²⁺ ; e + Mg ³⁺ ; e + Mg ⁴⁺ ; e + Mg ⁵⁺ ; e + Mg ⁶⁺ ; e + Mg ⁷⁺ ; e + Mg ⁸⁺ ; e + Mg ⁹⁺ ; e + Mg ¹⁰⁺ ; e + Mg ¹¹⁺ ; e + Si ⁺ ; e + Si ²⁺ ; e + Si ³⁺ ; e + Si ⁴⁺ ; e + Si ⁵⁺ ; e + Si ⁶⁺ ; e + Si ⁷⁺ ; e + Si ⁸⁺ ; e + Si ⁹⁺ ; e + Si ¹⁰⁺ ; e + Si ¹¹⁺ ; e + Si ¹²⁺ ; e + Si ¹³⁺ ; e + Si ¹⁴⁺ ; e + Si ¹⁵⁺ E05 e + He ⁺ ; e + He ²⁺ ; e + He ³⁺ ; e + Ne ⁺ ; e + Ne ²⁺ ; e + Ne ³⁺ ; e + Ne ⁴⁺ ; e + Ne ⁵⁺ ; e + Ne ⁶⁺ ; e + Ne ⁷⁺ ; e + Mg ²⁺ ; e + Mg ³⁺ ; e + Mg ⁴⁺ ; e + Mg ⁵⁺ ; e + Mg ⁶⁺ ; e + Mg ⁷⁺ ; e + Mg ⁸⁺ ; e + Mg ⁹⁺ ; e + Mg ¹⁰⁺ ; e + Mg ¹¹⁺ ; e + Si ⁺ ; e + Si ²⁺ ; e + Si ³⁺ ; e + Si ⁴⁺ ; e + Si ⁵⁺ ; e + Si ⁶⁺ ; e + Si ⁷⁺ ; e + Si ⁸⁺ ; e + Si ⁹⁺ ; e + Si ¹⁰⁺ ; e + Si ¹¹⁺ ; e + Si ¹²⁺ ; e + Si ¹³⁺ ; e + Si ¹⁴⁺ ; e + Si ¹⁵⁺ E06 e + He ⁺ ; e + He ²⁺ ; e + He ³⁺ ; e + Ne ⁺ ; e + Ne ²⁺ ; e + Ne ³⁺ ; e + Ne ⁴⁺ ; e + Ne ⁵⁺ ; e + Ne ⁶⁺ ; e + Ne ⁷⁺ ; e + Mg ²⁺ ; e + Mg ³⁺ ; e + Mg ⁴⁺ ; e + Mg ⁵⁺ ; e + Mg ⁶⁺ ; e + Mg ⁷⁺ ; e + Mg ⁸⁺ ; e + Mg ⁹⁺ ; e + Mg ¹⁰⁺ ; e + Mg ¹¹⁺ ; e + Si ⁺ ; e + Si ²⁺ ; e + Si ³⁺ ; e + Si ⁴⁺ ; e + Si ⁵⁺ ; e + Si ⁶⁺ ; e + Si ⁷⁺ ; e + Si ⁸⁺ ; e + Si ⁹⁺ ; e + Si ¹⁰⁺ ; e + Si ¹¹⁺ ; e + Si ¹²⁺ ; e + Si ¹³⁺ ; e + Si ¹⁴⁺ ; e + Si ¹⁵⁺	T	10 ² -10 ³ K	Jacobs, V. L.; Davie, J.; Rogers, J. E.; Bieha, M. Dielectronic recombination rates, ionization equilibrium, and radiative energy-loss rates for neon, magnesium, and sulfur ions in low-density plasmas. <i>Astrophys. J.</i> , Part 1 230, 627 (1979) United States

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3918	E11 $e + H^+$	T	10^4 K	Moyn, P.; Melrose, D. B.; Adams, J. C. Relaxation and bremsstrahlung of thick-target electron streams: a simple application of the Legendre expansion method. <i>Astrophys. J., Part 1</i> 230, 556 (1979) United States
3919	M12 $h\nu + e$	T	0.75-5 MeV	Gould, R. J. Soft-photon emission effects and radiative corrections for electromagnetic processes at very high energies. <i>Astrophys. J., Part 1</i> 230, 967 (1979) United States
3920	A13 $NO^+ + H_2; CH_3^+ + H_2; C^+ + H_2; CH_2^+ + H_2; CH_3^+ + H_2O; CH_3^+ + CO; NH_3^+ + CO; NH_3^+ + C$	T	10^4 K	Huntriss, W. T., Jr.; Mitchell, G. F. The synthesis of complex molecules in interstellar clouds. <i>Astrophys. J., Part 1</i> 231, 456 (1979) United States
3921	A06 $C^{2+} + H; N^{2+} + H$	T	0.771-4 eV	Vetson, W. D.; Christensen, R. B. Quantal calculations for charge transfer in collisions of C^{2+} and N^{2+} with H atoms. <i>Astrophys. J., Part 1</i> 231, 627 (1979) United States
3922	A17 $Fe + H; Fe + D$	T	$1570\text{ cm}^{-1}; 1270\text{ cm}^{-1}$	Dandramis, A.; van Zee, R. J.; Welton, W., Jr. The FeH molecule at 4 K. <i>Astrophys. J., Part 1</i> 231, 622 (1979) United States
3923	H05 $h\nu + MgH$	T	4-4.7 eV	Kirby, L.; Saxon, R. P.; Liu, B. Oscillator strengths and photodissociation cross sections in the $X + A$ and $X + B$ (prime) band systems in MgH. <i>Astrophys. J., Part 1</i> 231, 637 (1979) United States
3924	E03 $e + C^+$	T	10^4 - 10^5 K	Flannery, B. P.; Press, W. M. An ionization-coupled acoustic instability of the interstellar medium. <i>Astrophys. J., Part 1</i> 231, 688 (1979) United States
3925	A03 $H^+ + CF^+; H^+ + N^+; H^+ + O^+; H^+ + Mg^{2+}; H^+ + Si^{2+}; H^+ + Ar^{2+}; H^+ + Ca^{2+}; H^+ + S^{2+}; H^+ + Fe^{2+}; H^+ + Fe^{3+}$	T	50 - 12×10^4 eV	Landman, D. A.; Brown, T. Proton collisional excitation in the lowest-lying $2P$ terms of ions in the Be and Mg isoelectronic sequences. <i>Astrophys. J., Part 1</i> 232, 636 (1979) United States
3926	A13 Review	E T	30^4 K	Schliff, M. I.; Bohme, D. R. An ion-molecule scheme for the synthesis of hydrocarbon-chain and organonitrogen molecules in dense interstellar clouds. <i>Astrophys. J., Part 1</i> 232, 740 (1979) Canada
3927	M12 $h\nu + e$	T	7-50 keV	Langer, S. M. A further study of the Comptonization of x-rays by low-temperature electrons. <i>Astrophys. J., Part 1</i> 232, 891 (1979) United States
3928	E05 $e + Fe^{10+}; e + Mo^{21+}; e + Pd^{2+}; e + Pt^{2+}$	T	10 -5000 eV	Cowan, R. D.; Mann, J. B. Contribution of autoionization to total ionization rates. <i>Astrophys. J., Part 1</i> 232, 940 (1979) United States
3929	A03 $H_2 + NH_3^+$ A11 $H_2 + NH_3^+$	T	0.5 - 10^4 K	Schwartz, P. R. Estimation of collisionally induced transition rates of interstellar molecules from laboratory data. <i>Astrophys. J., Part 2</i> 229, L46 (1979) United States
3930	A03 $H + OH$	T	10 - 120 K	Kepler, M.; Shapiro, M. The role of $H + OH$ collisions in pumping the OH 16 centimeter laser lines. <i>Astrophys. J., Part 2</i> 229, L51 (1979) Israel
3931	E03 $e + He^+$	T	1-11 eV	Tully, J. A.; Summers, J. P. On the rate coefficient for electron impact excitation of the $2^3S \rightarrow 2^3P$ transition in helium. <i>Astrophys. J., Part 2</i> 229, L113 (1979) United Kingdom
3932	A04 $O^{2+} + H; Ne^{2+} + H$	T	10^4 K	Nutler, S. E.; Bender, G. F.; Dalgaard, A. Charge transfer of O^{2+} and Ne^{2+} with H. <i>Astrophys. J., Part 2</i> 230, L59 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3933	E03 $e + H^+$	T	undef	Blah, B. M.; Prud'homme, M.; van Regenmortel, M. The calculation of oscillator strengths and multipole radial integrals in the Condon approximation. <i>Astrophys. J., Part 2</i> 230, 1127 (1979) France
3934	A03 $H + H_2$	T	100-5000 K	Green, S.; Trehlar, D. C. Rotational excitation of hydrogen molecules by collisions with hydrogen atoms. <i>Astrophys. J., Part 2</i> 231, 1101 (1979) United States
3935	E06 $e + H^+ \text{ Seq}$	T	10^2-10^4 eV	Salom, M.; Brochier, M. A table of departure coefficients from thermodynamic equilibrium [b (oub a) factors] for hydrogenic ions. <i>Astrophys. J., Suppl. Ser.</i> 30, 633 (1979) United Kingdom
3936	E03 $e + Ar^{12+}; e + Ca^{10+}; e + Ar^{12+}; e + Ca^{10+}$ E07 $e + Ar^{12+}; e + Ca^{10+}; e + Ar^{12+}; e + Ca^{10+}$	T	13-100 Ry	Boro, K. P.; Mason, M. E.; Vidling, E. G.; Shetty, A. K. XUV electron density diagnostics for solar flares. <i>Astrophys. J., Suppl. Ser.</i> 40, 341 (1979) United Kingdom
3937	E05 $e + C^+; e + C^{2+}; e + C^{3+}; e + C^{4+}; e + C^{5+}; e + N^+; e + N^{2+}; e + N^{3+}; e + N^{4+}; e + O^+; e + O^{2+}; e + O^{3+}; e + O^{4+}; e + O^{5+}; e + O^{6+}; e + Ne^+; e + Ne^{2+}; e + Ne^{3+}; e + Ne^{4+}; e + Ne^{5+}; e + Ne^{6+}; e + Mg^+; e + Mg^{2+}; e + Mg^{3+}; e + Mg^{4+}; e + Mg^{5+}; e + Si^+; e + Si^{2+}; e + Si^{3+}; e + Si^{4+}; e + Si^{5+}; e + S^+; e + S^{2+}; e + S^{3+}; e + S^{4+}; e + S^{5+}; e + Fe^+; e + Fe^{2+}; e + Fe^{3+}; e + Fe^{4+}; e + Fe^{5+}; e + Fe^{6+}; e + Fe^{7+}; e + Fe^{8+}; e + Fe^{9+}; e + Fe^{10+}; e + H^+$ E06 $e + C^+; e + C^{2+}; e + C^{3+}; e + C^{4+}; e + C^{5+}; e + N^+; e + N^{2+}; e + N^{3+}; e + N^{4+}; e + N^{5+}; e + O^+; e + O^{2+}; e + O^{3+}; e + O^{4+}; e + O^{5+}; e + O^{6+}; e + Ne^+; e + Ne^{2+}; e + Ne^{3+}; e + Ne^{4+}; e + Ne^{5+}; e + Ne^{6+}; e + Mg^+; e + Mg^{2+}; e + Mg^{3+}; e + Mg^{4+}; e + Mg^{5+}; e + Si^+; e + Si^{2+}; e + Si^{3+}; e + Si^{4+}; e + Si^{5+}; e + S^+; e + S^{2+}; e + S^{3+}; e + S^{4+}; e + S^{5+}; e + Fe^+; e + Fe^{2+}; e + Fe^{3+}; e + Fe^{4+}; e + Fe^{5+}; e + Fe^{6+}; e + Fe^{7+}; e + Fe^{8+}; e + Fe^{9+}; e + Fe^{10+}; e + H^+$	T	$10^{-5}-10^7$ eV	Joselyn, J. A.; Munro, R. H.; Balzer, T. E. The validity of ionization equilibrium in highly ionized astrophysical plasmas. <i>Astrophys. J., Suppl. Ser.</i> 46, 793 (1979) United States
3938	H02 $h\nu + \text{PERT}$	T	0-5000 eV	Reilman, R. F.; Manson, S. T. Photoabsorption cross sections for positive atomic ions with Z greater than or equal to 30. <i>Astrophys. J., Suppl. Ser.</i> 40, 810 (1979) United States
3939	C02 undef	T	130-10000 keV/amu	Infrate, G. J.; Ziegler, J. F. Numerical evaluation of Lindhards theory of stopping power for a charged particle in a free-electron gas. <i>J. Appl. Phys.</i> 60, 5579 (1979) United States

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3940	H62 $3h\nu + \text{CdS}; 3h\nu + \text{PbI}_2$	E	5130-5140 Å	Catalano, I. N.; Ciapolanti, A. Three-photon absorption coefficient determination by means of nonlinear luminescence experiments. <i>J. Appl. Phys.</i> 50, 5638 (1979) Italy
3941	C98 Undef	T	51-20000 MeV	Kheifets, S.; Knight, T. Full average radiation of electrons and positrons channelled between the planes of a crystal. <i>J. Appl. Phys.</i> 50, 5927 (1979) United States
3942	D17 $e + \text{SiO}_2$	E	7-15 keV	Ichimura, S.; Shimizu, R. Observation of electron beam damage in thin-film SiO_2 on Si with scanning Auger electron microscope. <i>J. Appl. Phys.</i> 50, 6020 (1979) Japan
3943	A83 $\text{Na}^0 + \text{He}$	E	33° K	Sage, F.; Lemoigne, J. P.; Lucier, D. Optical pumping of the $2p_{3/2} \rightarrow 3p_{3/2}$ state of $^{23}\text{Na}(1-2/2)$: g factor and metastability exchange cross section. <i>Opt. Commun.</i> 30, 332 (1979) France
3944	A83 $\text{Pb}^0 + \text{He}; \text{Pb}^0 + \text{Ne}; \text{Pb}^0 + \text{K}; \text{Pb}^0 + \text{Ar}; \text{Pb}^0 + \text{N}_2; \text{Pb}^0 + \text{NH}_3; \text{Pb}^0 + \text{CH}_4; \text{Pb}^0 + \text{CO}_2; \text{Pb}^0 + \text{H}_2; \text{Pb}^0 + \text{H}_2\text{O}$	E	553-656 eV	Boishev, N. A.; Zybin, A. V.; Koloschukov, V. G. Measurement of the cross section for $3p_{3/2} \rightarrow 3p_{3/2}$ transition in lead under collisions with atoms and molecules of buffer gases. <i>Opt. Spectrosc.</i> 46, 233 (1979) Soviet Union
3945	A83 $\text{Na}^0 + \text{Na}; \text{K}^0 + \text{K}; \text{Rb}^0 + \text{Rb}; \text{Cs}^0 + \text{Cs}$	T	0.001 a.u.	Dashkovskaya, E. I. Effect of short-range forces and of twisting on intramultiplet mixing in collisions of alkali-metal atoms. <i>Opt. Spectrosc.</i> 46, 236 (1979) Soviet Union
3946	A17 $\text{Na}_2^{2+}; \text{Ba}_2^{2+}; \text{Ca}_2^{2+}; \text{C}_2^{2+}; \text{Ne}_2^{2+}$	T	Undef	Penkine, N. N.; Rabane, T. K. Determination of the potential curves of homonuclear molecular ions. <i>Opt. Spectrosc.</i> 46, 253 (1979) Soviet Union
3947	H66 $2h\nu + \text{H}$	T	20-2800 Å	Klarsfeld, G.; Raquet, A. Analytic continuation of Sturman expansions for two-photon ionization. <i>Phys. Lett.</i> 73A, 180 (1979) France
3948	A63 $\text{Na}^0 + \text{H}_2$ A67 $\text{Na}^0 + \text{H}_2$	E	33° K	Tuffin, F.; Le Coz, G.; Perreau, J. Etude de l'énergie des électrons éjectés au cours de l'ionisation Penning de l'hydrogène moléculaire par les états métastables 2^1S et 2^3S de l'hélium. <i>Phys. Lett.</i> 73A, 163 (1979) France
3949	D68 $\text{H} + \text{Cs} + \text{Na}$	E	3300 K	Graham, W. G. Negative hydrogen ion production by low energy hydrogen atom bombardment of surfaces. <i>Phys. Lett.</i> 73A, 166 (1979) United States
3950	E05 $e + \text{Au}$ E15 $e + \text{Au}$	E	3.5-100 MeV	Genz, H.; Hoffmann, D. H. M.; Low, H.; Richter, A. L-shell ionization by relativistic electrons and energy dependence of the $L\beta/L\alpha$ branching ratio. <i>Phys. Lett.</i> 73A, 313 (1979) West Germany
3951	H62 Undef H64 Undef	T	Undef	Knight, P. L. The role of transients in resonant multiphoton absorption. <i>J. Phys. B</i> 12, L449 (1979) United Kingdom
3952	H64 $h\nu + \text{H}_2$ H65 $h\nu + \text{H}_2$ H66 $h\nu + \text{H}_2$	E	620-350 Å	Glass-Maujean, P.; Kolimann, R.; Ito, K. Upper limit of the cross section for photodissociation of H_2 into excited atoms in the range 620-350 Å. <i>J. Phys. B</i> 12, 1453 (1979) France
3953	D68 $\text{He}^0 + \text{Undef}; \text{H}^0 + \text{Undef}$	T	3.15-0.5 a.u.	Carlsch, L. W.; Lane, M. F. Atomic excitations in He^0 and H^0 reflection from a metal surface. <i>J. Phys. B</i> 12, L457 (1979) United States
3954	A63 $\text{K} + \text{He}$	E	3.07-0.4 eV	Cuvellier, J.; Berlande, J.; Menolt, C.; Perrin, M. Y.; Hestdagh, J. M.; de Mesmay, J. Crossed-beam determination of energy dependence of fine-structure transitions in $\text{K}(4P)\text{-He}$ collisions. <i>J. Phys. B</i> 12, L461 (1979) France

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3955	E89 e + HCl E84 e + HCl	E	6-12 eV	Tronc, M.; Azria, R.; Le Cost, Y.; Simon, D. Differential cross section for dissociative attachment in HCl: H ⁻ formation. J. Phys. E 12, L467 (1979) France
3956	A03 Li ⁺ + He; Li ⁺ + CH ₄ ; Be ⁺ + He; Be ⁺ + CH ₄ ; B ⁺ + He; B ⁺ + CH ₄ ; C ⁺ + He; C ⁺ + CH ₄ A07 Li ⁺ + He; Li ⁺ + CH ₄ ; Be ⁺ + He; Be ⁺ + CH ₄ ; B ⁺ + He; B ⁺ + CH ₄ ; C ⁺ + He; C ⁺ + CH ₄	E	100-500 keV	Redbro, M.; Bruch, R.; Binsgaard, P. High-resolution projectile Auger spectroscopy for Li, Be, B and C excited in single gas collisions I. Line energies for prompt decays. J. Phys. B 12, 2413 (1979) Denmark
3957	N06 hv + N	T	1-3 Ry	Le Dourneuf, M.; Lan, V. K.; Zeilpen, C. J. The photoionisation of the "5" ground state of atomic nitrogen. J. Phys. F 12, 2449 (1979) France
3958	N06 hv + He; hv + Ne; hv + Ar; hv + Kr; hv + Xe	E	50-200 eV	Holland, D. M.; Codling, K.; West, J. B.; Marr, C. V. Multiple photoionisation in the rare gases from threshold to 200 eV. J. Phys. B 12, 2465 (1979) United Kingdom
3959	N04 hv + H ₂ N06 hv + H ₂	T	Undef	Komarov, I. V.; Ostrovsky, V. A. Production of excited hydrogen by photodissociation of the H ₂ molecule near threshold. J. Phys. B 12, 2485 (1979) Soviet Union
3960	A17 Na + He	T	Undef	Philippe, M.; Nazou-Secours, F.; Valiron, P. Model-potential method for the calculation of atom-rare-gas interactions: application to the Na-He system. J. Phys. B 12, 2493 (1979) France
3961	A11 Rb ⁺ + He; Rb ⁺ + Ne; Rb ⁺ + Ar; Rb ⁺ + Kr; Rb ⁺ + Xe; Na ⁺ + He; Na ⁺ + Ne; Na ⁺ + Ar; Rb ⁺ + He; Rb ⁺ + Ne; Rb ⁺ + Ar; Rb ⁺ + Kr; Rb ⁺ + Xe; Rb ⁺ + H ₂	T	Thermal	de Prunelle, E.; Pascale, J. Theoretical study of the collision of high Rydberg atoms with neutral atoms or molecules. J. Phys. B 12, 2511 (1979) France
3962	A03 Mg ⁺ + He; Mg ⁺ + Ne; Mg ⁺ + Ar A18 Mg ⁺ + He; Mg ⁺ + Ne; Mg ⁺ + Ar	E	3-15 keV	Andersen, N.; Andersen, T.; Cocke, C. L.; Pejtersen, E. N. Differential-excitation studies of quasi-one-electron systems II. Mg II 3 ² P alignment and orientation in Mg ⁺ -He, Ne, Ar collisions. J. Phys. B 12, 2541 (1979) Denmark
3963	A03 C ⁺ + He A06 C ⁺ + He	E	500-2000 eV	Douek, D.; Krutein, J.; Teitelman, U.; Fayeton, J.; Barat, M. Collision spectroscopy of open-shell systems I. C ⁺ -He collisions. J. Phys. B 12, 2557 (1979) France
3964	A06 H ⁺ + He A07 H ⁺ + He	T	Undef	Briggs, J. S.; Taulbjerg, K. Charge transfer by a double-scattering mechanism involving target electrons. J. Phys. B 12, 2565 (1979) United Kingdom
3965	E03 e + He	E	60-150 eV	Westerfeld, W. B.; Kets, P. M.; Heideman, H. G. M.; van Lee, J. Electron impact excitation of the (2P ²) ² P doubly excited state of helium. J. Phys. B 12, 2571 (1979) The Netherlands
3966	E05 e + He F17 e + He	E	230-3600 eV	Stefani, G.; Camillioni, R.; Giardiello Guidoni, A. Absolute (e, 2e) coplanar symmetric cross sections measured for valence orbitals of He. J. Phys. B 12, 2583 (1979) Italy
3967	A03 Pb + Pb	T	615-1200 MeV	Theis, J.; Kinkelhardt, J.; Muller, E. How good is the adiabatic basis in heavy ion collisions. J. Phys. B 12, L479 (1979) West Germany
3968	A06 He + Ar	T	2-2000 keV	Lin, C. D.; Tunnell, L. M. Subshell electron capture cross sections of argon atoms by protons. J. Phys. B 12, L485 (1979) United States
3969	A06 H ⁺ + Ar A07 H ⁺ + Ar	T	1-12 MeV	Ford, A. L.; Becker, R. L.; Swafford, G. L.; Reedings, J. F. Proton impact argon inner-shell charge transfer and ionisation: importance of couplings to target-centred d states. J. Phys. B 12, L491 (1979) United States

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3970	D03 H	T		Danburg, R. J.; Kolesov, V. V. A hydrogen atom in a uniform electric field III. J. Phys. B 12, 2837 (1979) Soviet Union
3971	D03 H	T		Brodky, A. M. The behaviour of hydrogen-like atoms in an intense long-wave field. J. Phys. B 12, 2873 (1979) Soviet Union
3972	A11 Rb ⁺ + He; Rb ⁺ + Ar; Rb ⁺ + Xe; Rb ⁺ + Rb	E	Thermal	Hugon, M.; Gounand, F.; Fournier, F. R.; Berlande, J. Collisional properties of highly excited rubidium atoms. J. Phys. B 12, 2707 (1979) France
3973	A06 He ⁺ + Ar; He ⁺ + Ar A13 He ⁺ + Ar; He ⁺ + Ar	E	320 K	Jones, J. D. C.; Lister, D. G.; Iddley, M. D. Charge-transfer reaction rate coefficients for He ⁺ and He ⁺ with Ar at 300 K. J. Phys. B 12, 2723 (1979) United Kingdom
3974	E02 e + CH ₄ E17 e + CH ₄	T	500-820 eV	Dhal, S. S.; Srivastava, B. D.; Shingai, E. Elastic scattering of electrons by methane molecules at intermediate energies. J. Phys. B 12, 2727 (1979) India
3975	E13 e + C ⁻ ; e + O ⁻	E	15-1000 eV	Peart, B.; Forrest, R. A.; Dolan, K. A search for structure in cross sections for detachment from C ⁻ and O ⁻ ions by electron impact. J. Phys. B 12, 2735 (1979) United Kingdom
3976	E02 e + Li ₂	T	Undef	Dixon, D. A.; Eades, R. A.; Truhlar, D. G. Ab initio SCF polarisabilities and electron-molecule adiabatic polarisation potentials II. Li ₂ . J. Phys. B 12, 2741 (1979) United Kingdom
3977	E02 e + Cs E17 e + Cs	E	13.5-25 eV	Klewer, M.; Beerlage, M. J. M.; van der Wiel, M. J. Polarisation and angular distribution of electrons elastically scattered from caesium atoms at 13-25 eV. J. Phys. B 12, L525 (1979) The Netherlands
3978	E04 e + H ₂ ⁺ E06 e + H ₂ ⁺	T	2-13 eV	Derkito, C.; Hardsley, J. M.; Wadehra, J. M. Dissociative recombination in e-H ₂ ⁺ collisions. J. Phys. B 12, L529 (1979) United States
3979	D08 He ⁺ + Pb	E	700-2000 eV	Tagliauer, E.; Helland, U.; MacDonald, R. J.; Tolk, R. M. The excitation of He scattered from Pb. J. Phys. B 12, L533 (1979) West Germany
3980	H06 hv + Hg	T	17-400 eV	Keller, F.; Farnoux, F. C. Photoionisation of Hg in the soft x-ray energy range. J. Phys. B 12, L821 (1979) France
3981	H02 nhv + CC H04 nhv + CC	T	2197-2179 cm ⁻¹	Molosey, J. V.; Faisal, F. M. M. Computation of multiphoton IR spectra of small molecules: application to CO. J. Phys. B 12, 2825 (1979) West Germany
3982	A11 He ⁺ + Ar H06 He ⁺ + Ar A17 He ⁺ + Ar ⁺	T	3.04-0.2 eV	Hoffmann, V.; Morgner, H. Interpretation of the angular distribution of electrons emitted in Penning ionisation of argon by metastable helium. J. Phys. B 12, 2857 (1979) West Germany
3983	A03 H + H; H + H ₂	E	2-25 keV	Mill, J.; Godden, J.; Gilbody, M. B. 1s-2s excitation of fast hydrogen atoms in collisions with atomic and molecular hydrogen. J. Phys. B 12, 2875 (1979) United Kingdom
3984	A06 H ⁺ + He; H ⁺ + Ne; H ⁺ + Ar; H ⁺ + H ₂	E	15-1500 keV	Rodbro, N.; Andersen, F. D. Charge transfer to the continuum for 15 to 1500 keV H ⁺ in He, Ne, Ar and H ₂ gases under single-collision conditions. J. Phys. B 12, 2883 (1979) Denmark
3985	A06 H ⁺ + Ar A07 H ⁺ + Ar	T	2.5-9 MeV	Ford, A. L.; Reading, J. F.; Becker, R. L. Charge transfer and ionisation in collisions of 2.5 to 9 MeV protons with argon. J. Phys. B 12, 2905 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
3986	E12 $e^+ + N_2$; $e^+ + Ne$	T	6-200 eV	Mandal, P.; Guha, S.; Sil, N. C. Positronium formation in positron scattering from hydrogen and helium atoms: the distorted-wave approximation. J. Phys. B 12, 2513 (1979) India
3987	E02 $e + NO$	E	5-7 eV	Gresteau, F.; Hall, R. I.; Huetz, A.; Vichon, D.; Mazeau, J. Decay of Feshbach resonances in NO: I. Energy dependence of the electronic coupling to the ground state. J. Phys. B 12, 2521 (1979) France
3988	E02 $e + NO$	E	5-7.5 eV	Gresteau, F.; Hall, R. I.; Huetz, A.; Vichon, D.; Mazeau, J. Decay of Feshbach resonances in NO: II. Dynamic coupling to Rydberg states. J. Phys. B 12, 2937 (1979) France
3989	A03 $He^+ + O_2$ A04 $He^+ + O_2$ A05 $He^+ + O_2$	E	330 K	Lister, D. G.; Sakshit, A. B.; Tichy, M.; Birkinshaw, K.; Tully, M. D. Production of metastable O_2^+ in the reaction between He^+ and O_2 at 300 K. J. Phys. B 12, 2947 (1979) United Kingdom
3993	H06 $nh\nu + H$	T	Under	Klarfeld, S.; Maquet, A. Fade approximations and multiphoton ionization of atomic hydrogen. J. Phys. B 12, L553 (1979) France
3991	A14 $Na + Na$	E	3.007 eV	de Jong, A.; van der Valk, J. Associative ionization of laser-excited sodium in an atomic beam. J. Phys. B 12, L561 (1979) The Netherlands
3992	A03 $H^+ + H$ A06 $H^+ + H$ A10 $H^+ + H$	T	1-7 keV	Crothers, D. S. F.; Hughes, J. G. Differential and total cross sections in 1-7 keV proton-hydrogen-atom collisions. J. Phys. B 12, L567 (1979) United Kingdom
3993	AC3 $He^{2+} + H$ A06 $He^{2+} + H$	T	1-70 keV	Hutton, G. J.; Lane, M. F.; Winter, T. G. Charge transfer for He^{2+} on H using molecular bases with plane-wave translational factors. J. Phys. B 12, L571 (1979) United States
3994	A03 $Ar^{2+} + He$; $Ar^{2+} + He$; $Ar^{2+} + Ar$; $Ar^{2+} + Kr$; $Ar^{2+} + Xe$ A06 $Ar^{2+} + He$; $Ar^{2+} + He$; $Ar^{2+} + Ar$; $Ar^{2+} + Kr$; $Ar^{2+} + Xe$	E	237 keV	El-Sherbini, T. M.; Salop, A.; Bloemen, E.; de Meer, F. J. Target dependence of excitation resulting from electron capture in collisions of 200 keV Ar^{2+} ions with noble gases. J. Phys. B 12, L579 (1979) The Netherlands
3995	E03 $e + Na$	E	130 eV	Buchanan, S. J.; Teubner, P. J. U. Electron-polarised-photon coincidence parameters for the sodium D lines. J. Phys. E 12, L583 (1979) Australia
3996	E05 $e + Ag$; $e + Au$ E17 $e + Ag$; $e + Au$	E	337 keV	Kompe, M.; Nabel, W. Doubly differential cross section for K-shell ionisation of silver and gold and for 300 keV electron impact. J. Phys. B 12, L587 (1979) West Germany
3997	H06 $h\nu + C$	T	1100-330 Å	Burke, P. G.; Taylor K. T. Photoionization of carbon atoms. J. Phys. B 12, 2971 (1979) United States
3998	H06 $h\nu + Cu$; $h\nu + Ag$; $h\nu + Au$; $h\nu + Cr$; $h\nu + Mn$	E	22.1 eV	Dyke, J. M.; Fayad, N. K.; Morris, A.; Trichie, I. R. Gas-phase He I photoelectron spectra of some transition metals: Cu, Ag, Au, Cr and Mn. J. Phys. B 12, 2985 (1979) United Kingdom
3999	A07 $H^+ + Kr$; $H^+ + Ar$ E03 $e + Kr$; $e + Ar$	T	13.6-1370 eV	Berezkhov, E. G.; Kabachnik, M. M. A new type of coincidence experiment for the study of inner atomic shells. J. Phys. B 12, 2993 (1979) Soviet Union
4000	A02 $Li^+ + N_2$; $Li^+ + CO$; $Li^+ + N_2$ A14 $Li^+ + N_2$; $Li^+ + CO$; $Li^+ + N_2$	T	0.4-2.47 eV	Dickinson, A. S.; Richards, D. Classical small-angle anisotropic potential scattering. J. Phys. B 12, 3005 (1979) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4001	A01 Under	T	Under	Matsuzawa, R.; Mitsuoka, S.; Inohuti, N. Integrals of the squared atomic form factor over the momentum transfer. <i>J. Phys. B</i> 12, 3033 (1979) Japan
4002	A03 Ba + He	T	3-100 eV	Courbin-Gaussergues, C.; Mahmen, P.; Barot, M. Theoretical study of Ba(3p) excitation in He-He collisions. <i>J. Phys. B</i> 12, 3047 (1979) France
4003	A03 H ⁺ + H A06 H ⁺ + H	T	125-500 eV	Crothers, E. S. F.; Hughes, J. G. Large- and small-angle peaks in slow H ⁺ -H collisions. <i>J. Phys. B</i> 12, 3063 (1979) United Kingdom
4004	E02 e + He E12 e + He	T	100-200 eV	Gupta, G. P.; Nathur, K. C. Differential cross section for the elastic scattering of electrons and positrons by helium atoms at intermediate energies. <i>J. Phys. B</i> 12, 3071 (1979) India
4005	E02 e + K E03 e + K E17 e + K	T	54-210 eV	Buchanan, S. J.; Noble, C. J.; Toubser, P. J. U. Intermediate energy electron scattering from potassium. <i>J. Phys. B</i> 12, 3077 (1979) Australia
4006	E03 e + He ⁺ E05 e + He ⁺	T	6-5000 eV	Taylor, I. R.; Kingston, A. E.; Bell, K. L. Electron ionisation of 2 ⁺ S helium. <i>J. Phys. B</i> 12, 3093 (1979) United Kingdom
4007	G05 e + He; e + H ₂ ; e + H ₂	T	75-293 K	Dallacasa, V. The drift of thermal electrons in dense gases. <i>J. Phys. B</i> 12, 3125 (1979) Italy
4008	A11 CO ⁺ + CC E03 e + CO	E	A11 33° K E33 9-14 eV	Twist, J. K.; Paske, W. C.; Hynes, T. O.; Haddad, G. M.; Golden, D. E. Low energy electron impact excitation of the b ² I ⁺ state of CO. <i>J. Chem. Phys.</i> 71, 2345 (1979) United States
4009	A14 NO ₂ + NO; NO ₂ + CO; NO ₂ + H ₂ O	E	232-403 K	Howard, C. J. Temperature dependence of the reaction NO ₂ + NO → NO + NO ₂ . <i>J. Chem. Phys.</i> 71, 2362 (1979) United States
4010	H06 hv + He	T	50-950 eV	Martin, R. L.; Dasch, W. R.; Davidson, E. R. An L ² calculation of the 1s and 2s photoionization cross sections of He. <i>J. Chem. Phys.</i> 71, 2375 (1979) United States
4011	H05 hv + O ₂ ⁺	E	Under	Pernot, C.; Durup, J.; Ozeane, J.-L.; Beswick, J. A.; Cooby, P. C.; Moseley, J. T. Angular distributions and separation energies of predissociation photofragments of O ₂ ⁺ [α ² I(sub g) ⁺ , v' = 4, N', f']. <i>J. Chem. Phys.</i> 71, 2387 (1979) France
4012	A17 H ₂ + O	T	Under	Howard, R. E.; McLean, A. D.; Lester, W. A., Jr. Extended basis first-order CI study of the 'A', 'A'', 'A'', and B(difference) 'A' potential energy surfaces of the O(³ P, ¹ D) + H ₂ [¹ I(sub g) ⁺] reaction. <i>J. Chem. Phys.</i> 71, 2412 (1979) United States
4013	G02 He + Ar; He + H ₂ ; He + O ₂ ; He + CO ₂	E	331-323 K	Arora, P. S.; Dunlop, P. J. The pressure dependence of the binary diffusion coefficients of the systems He-Ar, He-H ₂ , He-O ₂ , and He-CO ₂ at 300 and 323 K: tests of Thorne's equation. <i>J. Chem. Phys.</i> 71, 2430 (1979) Australia
4014	A05 F ₂ + Si; F ₂ + SiH ₄ ; F ₂ + SiD ₄	E	331 K	Armstrong, R. A.; Davis, S. J. Spectroscopic studies of the reactions Si + F ₂ , SiH ₄ + F ₂ , and SiD ₄ + F ₂ . <i>J. Chem. Phys.</i> 71, 2433 (1979) United States
4015	A10 N ₂ ⁺ + CC	T	77-500 K	Deperesinska, I.; Beswick, J. A.; Tremey, A. A distorted wave calculation for electronic energy transfer in molecular collisions. Application to the N ₂ (A' ² (sub g) ⁺) + CO(X ¹ _g ⁺) → N ₂ (X ¹ _g ⁺) + CO(A' ² _g) system. <i>J. Chem. Phys.</i> 71, 2477 (1979) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4016	H06 $\text{h}\nu + \text{LiF}; \text{h}\nu + \text{LiF}_2; \text{h}\nu + \text{LiCl}; \text{h}\nu + \text{LiCl}_2; \text{h}\nu + \text{LiBr}; \text{h}\nu + \text{LiBr}_2; \text{h}\nu + \text{LiI}; \text{h}\nu + \text{LiI}_2$	E	21 eV	Berkowitz, J.; Batson, C. H.; Goodson, G. L. PES of higher temperature vapors: lithium halide monomers and dimers. <i>J. Chem. Phys.</i> 71, 2624 (1975) United States
4017	A17 $\text{He} + \text{Ar}$	E	Under	Aziz, R. A.; Riley, P. W.; Buch, U.; Maneke, G.; Schlemmer, J.; Scoles, G.; Valters, U. On the question of the wall depth of the He-Ar interatomic potential. <i>J. Chem. Phys.</i> 71, 2627 (1975) Canada
4018	A14 $\text{K} + \text{NaCl}; \text{H} + \text{ICl}$	T	3-42 kcal/mol	Duff, J. W.; Brumer, P. Exponentiating trajectories and statistical behavior: three dimensional $\text{K} + \text{NaCl}$ and $\text{H} + \text{ICl}$. <i>J. Chem. Phys.</i> 71, 2693 (1975) Canada
4019	A11 $\text{NO}^+ + \text{NO}; \text{NO}^+ + \text{O}_2; \text{NO}^+ + \text{N}_2; \text{NC}^+ + \text{SO}_2$	E	300 K	Asscher, M.; Heas, Y. Efficient quenching of nitric oxide Rydberg states: a two photon excitation study. <i>J. Chem. Phys.</i> 71, 2724 (1975) Israel
4020	A02 $\text{He} + \text{Na}_2$ A03 $\text{He} + \text{Na}_2$	E	0-1 eV	Bergmann, K.; Engelhardt, R.; Hefter, U.; Witt, J. State-to-state differential cross sections for rotational transitions in $\text{Na}_2 + \text{He}$ collisions. <i>J. Chem. Phys.</i> 71, 2726 (1975) West Germany
4021	A13 $\text{S}^+ + \text{O}_2; \text{S}^+ + \text{NO}$	E	0.4-2.0 eV	Dotan, I.; Fehsenfeld, F. C.; Albritton, D. L. Reactions of $\text{S}^+(\text{}^4\text{S}^{\circ})$ ions with O_2 and NO at relative kinetic energies from 0.4 to 2 eV. <i>J. Chem. Phys.</i> 71, 2728 (1979) United States
4022	H06 $\text{h}\nu + \text{Rb}$	E	41 eV	Suzer, S. Photoemission from atomic Rb 4p and 4d levels. <i>J. Chem. Phys.</i> 71, 2736 (1979) Turkey
4023	A13 $\text{Kr}^{2+} + \text{Ne}; \text{Kr}^{2+} + \text{Ar}; \text{Kr}^{2+} + \text{Kr}; \text{Kr}^{2+} + \text{Xe}; \text{Kr}^{2+} + \text{N}_2; \text{Kr}^{2+} + \text{O}_2; \text{Kr}^{2+} + \text{H}_2; \text{Xe}^{2+} + \text{Ne}; \text{Xe}^{2+} + \text{Ar}; \text{Xe}^{2+} + \text{Kr}; \text{Xe}^{2+} + \text{Xe}; \text{Xe}^{2+} + \text{N}_2; \text{Xe}^{2+} + \text{O}_2; \text{Xe}^{2+} + \text{H}_2; \text{C}^{2+} + \text{Ar}; \text{C}^{2+} + \text{Kr}; \text{C}^{2+} + \text{Xe}; \text{C}^{2+} + \text{N}_2; \text{C}^{2+} + \text{O}_2; \text{C}^{2+} + \text{H}_2$	E	330 K	Vigglano, A. A.; Howorka, F.; Futrell, J. H.; Davidson, J. A.; Dotan, I.; Albritton, D. L.; Fehsenfeld, F. C. Reactions of Kr^{2+} , Xe^{2+} , and C^{2+} with atoms and molecules at 300 K. <i>J. Chem. Phys.</i> 71, 2734 (1975) United States
4024	A17 $\text{I} + \text{Cl}$	T	Under	Gordon, R. D.; Innes, K. K. Predissociations in the $b\text{ }^3\Pi_g$ state of I^{2+}Cl and I^{2+}Cl . <i>J. Chem. Phys.</i> 71, 2824 (1975) Canada
4025	A10 $\text{N}_2^+ + \text{Cd}; \text{N}_2^+ + \text{Zn}; \text{N}_2^+ + \text{Sr}$	E	331 K	Fahay, D. W.; Parks, W. F.; Scheerer, L. E. Excitation of Cd, Zn, and Sr by a beam of active nitrogen. <i>J. Chem. Phys.</i> 71, 2840 (1979) United States
4026	A10 $\text{O} + \text{Ne}; \text{O} + \text{Ar}; \text{O} + \text{Kr}; \text{O} + \text{Xe}$ A17 $\text{O} + \text{Ne}; \text{O} + \text{Ar}; \text{O} + \text{Kr}; \text{O} + \text{Xe}$	T	3.701-10 eV	Cohen, J. S.; Wadt, W. H.; May, F. J. Spin-orbit coupling and inelastic transitions in collisions of (K^{10}D) with Ar, Kr, and Xe. <i>J. Chem. Phys.</i> 71, 2955 (1979) United States
4027	A10 $\text{H}_2 + \text{H}_2; \text{CN} + \text{CN}$	T	133-300 K	Shin, M. K. A solution of the perturbed wave equation for vibration-vibration energy transfer. <i>J. Chem. Phys.</i> 71, 3006 (1979) United States
4028	E09 $\text{e} + \text{N}_2\text{D}; \text{e} + \text{N}_2\text{D} + \text{CO}_2$	E	294 K	Shimazaki, M.; Fessenden, H. W. Electron attachment to N_2D at pressures near one atmosphere. <i>J. Chem. Phys.</i> 71, 3009 (1979) United States
4029	A17 $\text{H}_2; \text{PH}_2$	T	Under	Agmon, N.; Levine, R. D. Empirical triatomic potential energy surfaces defined over orthogonal bond order coordinates. <i>J. Chem. Phys.</i> 71, 3034 (1979) Israel
4030	A04 $\text{He}^+ + \text{CO}_2$ A06 $\text{He}^+ + \text{CO}_2$	E	9-200 eV	McMillan, R. R.; Coplan, M. A. Dissociation of He^+-CO_2 , dissociative charge exchange. <i>J. Chem. Phys.</i> 71, 3063 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4031	H05 hv + LiI; hv + NaI; hv + KI; hv + RbI; hv + CsI	E	266 nm	Su, T.-M. R.; Riley, S. J. Alkali halide photofragment spectra. I. Alkali iodide bond energies and excited state symmetries at 266 nm. J. Chem. Phys. 71, 3194 (1979) United States
4032	A17 NO*	T	Undef	Albritton, D. L.; Schmeltekopf, A. L.; Zare, R. N. Potential energy curves for NO*. J. Chem. Phys. 71, 3271 (1979) United States
4033	A06 NO** + SO ₂ ; NO** + CO ₂ ; NO** + CH ₄ ; NO** + N ₂ ; NO** + Ar; NO** + H ₂ ; NO** + D ₂ ; NO** + O ₂ A11 NO** + SO ₂ ; NO** + CO ₂ ; NO** + CH ₄ ; NO** + N ₂ ; NO** + Ar; NO** + H ₂ ; NO** + D ₂ ; NO** + O ₂ A13 NO** + SO ₂ ; NO** + CO ₂ ; NO** + CH ₄ ; NO** + N ₂ ; NO** + Ar; NO** + H ₂ ; NO** + D ₂ ; NO** + O ₂	E	0.04-2.5 eV	Dotan, I.; Fehsenfeld, F. C.; Albritton, D. L. Rate constants for the reactions of metastable NO*(a ² Σ ⁺) ions with SO ₂ , CO ₂ , H ₂ , Ar, N ₂ , I ₂ , and O ₂ at relative kinetic energies 0.04-2.5 eV. J. Chem. Phys. 71, 3280 (1979) United States
4034	A06 Ar* + NC; NO* + Ar	E	333 K	Dotan, I.; Fehsenfeld, F. C.; Albritton, D. L. On the product ratios of the reactions of Ar* with NO and NO*(a ² Σ ⁺) with Ar at 300 K. J. Chem. Phys. 71, 3285 (1979) United States
4035	A13 N* + O ₂	E	333 K	Albritton, D. L.; Viggiano, A. A.; Dotan, I.; Fehsenfeld, F. C. Production of NE*(a ² Σ ⁺) ions in the reaction of N* ions with O ₂ at 300 K. J. Chem. Phys. 71, 3295 (1979) United States
4035	A11 HCN* + HCN; HCN* + Ar; HCN* + N ₂ ; HCN* + CO; HCN* + CO ₂	E	298 K	Petersen, A. B.; Smith, I. W. M. Relaxation of HCN (001) using stimulated electronic beam scattering Co vapor as a tunable infrared source. J. Chem. Phys. 71, 3346 (1979) United Kingdom
4037	A11 Na* + N ₂ ; Na* + O ₂ ; Na* + CO; Na* + NO	E	720 :	Silver, J. A.; Blais, M. C.; Kwei, G. M. Crossed beam studies of the dynamics of electronic energy transfer: quenching of Na(3p ² P _{3/2}) atoms by N ₂ , O ₂ , CO, and NO molecules. J. Chem. Phys. 71, 3412 (1975) United States
4038	A17 H ₂ + H ₂ ; N ₂ + N ₂	T	Undef	Coulon, P.; Lucas, R.; Lekkerkerker, H. M. W. Dispersion forces between linear molecules. J. Chem. Phys. 71, 3462 (1979) Belgium
4039	G03 e + Ar G05 e + Ar	T	Undef	Lin, E. L.; Robson, R. E.; Mason, E. A. Moment theory of electron drift and diffusion in neutral gases in an electrostatic field. J. Chem. Phys. 71, 3483 (1975) United States
4040	F03 e + N ₂	E	Undef	Tachibana, K.; Phelps, A. V. Excitation of the C ² [(sub u)] state of N ₂ by low energy electrons. J. Chem. Phys. 71, 3544 (1979) United States
4041	A03 Na* + Cd	E	0.1-3 keV	Aquilanti, V.; Casavecchia, P.; Grimaldi, G. Cross sections for excitation of Ca(3 ² P ₁) and Cd(5 ¹ P ₁) and of their magnetic sublevels in Na*-Cd collisions. J. Chem. Phys. 71, 3546 (1975) Italy
4042	K01 Review K02 Review K03 Review	E T	Undef	Bates, D. R. Other men's flowers. Phys. Reports 35, 305 (1978) United Kingdom
4043	K01 Review K02 Review K03 Review K04 Review K05 Review	E T	Undef	Lorenz, A. Atomic and molecular data for controlled thermonuclear fusion. Invited papers at IALA advisory meeting, Vienna, November 1976. Phys. Reports 37, 53 (1978) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4044	A06 $H^+ + H; H^+ + He; H^+ + H_2; H^+ + H^-;$ $He^{2+} + H; He^{2+} + He; He^+ + H$	T	0-1 MeV	Basu, B.; Mukherjee, S. C.; Sarm, S. P. Electron capture processes in ion-atom collisions. Phys. Reports 42, 145 (1978) India
4045	E02 $e + H; e + F_2; e + O; e + N$ E03 $e + H; e + He; e + O; e + N$	T	0-100 eV	Callaway, J. The variational method in atomic scattering. Phys. Reports 45, 89 (1978) United States
4046	E03 $e + CO; e + HCl; e + H_2O; e + C_2F_6$ G09 $e + CO; e + HCl; e + H_2O; e + C_2F_6$	T	0.01-10 eV	Itikawa, Y. Electron scattering by polar molecules. Phys. Reports 46, 117 (1978) Japan
4047	E02 $e + H; e + He; e + Li; e + Be^+; e + C^{2+}; e + N^{2+}; e + Na; e + Mg^+; e + K; e + Rb; e + Ca; e + Ca^+; e + Sr^+; e + Ba^+; e + Mg; e + Ca; e + Sr; e + Ba; e + O; e + N; e + C; e + Ne; e + Ar; e + Kr; e + Xe$ E03 $e + H; e + He; e + Li; e + Be^+; e + C^{2+}; e + N^{2+}; e + Na; e + Mg^+; e + K; e + Rb; e + Ca; e + Ca^+; e + Sr^+; e + Ba^+; e + Mg; e + Ca; e + Sr; e + Ba; e + O; e + N; e + C; e + Ne; e + Ar; e + Kr; e + Xe$	E T	0-1 keV	Bransden, B. H.; McDowell, R. S. C. Electron scattering by atoms at intermediate energies: II. Theoretical and experimental data for light atoms. Phys. Reports 46, 249 (1978) United Kingdom
4048	C02 Undef C08 Undef	T	0.5 MeV	Fedyunin, V. K.; Govrilenko, G. N. Thermalization of beams of highly energetic charged particles in channeling in crystals. Phys. Lett. 73A, 420 (1978) Soviet Union
4049	A12 $He + He; He + He$ A17 $He + He; He + He$	E T	330 K	Bielski, A.; Bierz, S.; Bystro, K.; Dohurno, W. Pressure broadening of the $2p^23p-2p^23s$ neon spectral lines. Physica B+C 97, 249 (1978) Poland
4050	A17 $He + Li_2; He + Na_2; He + K_2; He + Ca_2$ G02 $He + Li_2; He + Na_2; He + K_2; He + Ca_2$	T	0.01-0.1 eV	Isakbay, I. T.; Polishchuk, A. V.; Shpil'sin, L. E. The influence of an anisotropy of the interaction potential atom-molecule on the transport cross sections. Physica B+C 97, 299 (1978) Soviet Union
4051	E06 $e + Mg^+; e + Al^{2+}; e + Si^{2+}; e + Cl^{2+}; e + Ca^{2+}; e + Yb^{2+}$	T	2-1000 eV	Nitel, H. P.; Nersis, U. Dielectronic recombination in sodium iso-electronic sequences. Physica B+C 97, 305 (1978) India
4052	E03 $e + Ar$	E	23-37 eV	Morchand, P.; Cardinal, J. Metastable yield of argon between 23 and 37 eV by electron impact. Can. J. Phys. 57, 1624 (1979) Canada
4053	H06 $Shv + Li$	E	1.76 eV	Wagner, G.; Isener, N. R. Multilayer ionization of Li at the ruby laser wavelength. Can. J. Phys. 57, 1770 (1979) Canada
4054	A06 Undef	T	Undef	Damon, E. L.; Men'shikov, L. I. Radiative capture of an electron of a target atom by multiply charged ions. Sov. Phys.-Doklady 24, 116 (1979) Soviet Union
4055	E03 Review	T	0.1-10 eV	Lutskhov, V. S. Selective action of laser radiation on matter. Sov. Phys.-Usp. 21, 401 (1978) Soviet Union
4056	E11 $e + N_2$	T	8000 K	Kas'yanov, V. A.; Starostin, A. R. Bremsstrahlung in resonant scattering in a molecular gas. Sov. J. Plasma Phys. 4, 67 (1978) Soviet Union
4057	E11 $e + Ar; e + Fe; e + Fe^{2+}; e + Fe^{3+}; e + Cu; e + Cu^{2+}; e + Cu^{3+}; e + Kr; e + Kr^{2+}; e + Kr^{3+}; e + Mo; e + Mo^{2+}; e + Mo^{3+}; e + Ag; e + Ag^{2+}; e + Xe; e + Xe^{2+}; e + U; e + U^{2+}; e + Pb; e + Pb^{2+}$	T	0.4-5 keV	Zhdanov, V. P. Bremsstrahlung spectra of electrons at 0.4-5 keV in collisions with neutral and weakly ionized atoms. Sov. J. Plasma Phys. 4, 71 (1978) Soviet Union

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
4358	B12 $e + Sc; e + Ti; e + V; e + Cr; e + Mn; e + Fe; e + Co; e + Ni$	E	Undef	Murak, K. Theory for the $L_{2,3}$ soft x-ray appearance potential spectra for the 3d transition metals. J. Phys. F 9, 1321 (1979) Sweden
4859	D07 $H^+ + Si$	E T	350 keV	Riethe, K.; Schiebel, U.; Neufert, A.; Clausenitz, G. Small angle scattering of 350 keV protons in silicon at grazing incidence. Nucl. Instrum. Methods 164, 183 (1979) West Germany
4860	A08 $I^{100} + H_2; I^{100} + H_2; I^{100} + H_2;$ $I^{100} + H_2; I^{100} + H_2; I^{100} + H_2;$ $I^{100} + H_2; I^{100} + H_2; I^{100} + H_2;$ $I^{100} + H_2; I^{100} + H_2; I^{100} + H_2;$ $I^{100} + H_2; I^{100} + H_2; I^{100} + H_2;$ $I^{100} + H_2; I^{100} + H_2; I^{100} + H_2;$ $I^{100} + H_2; I^{100} + H_2; I^{100} + H_2;$	T	2×10^{-2} to 2×10^{-10} cm/s	Baitinov, I. S.; Zakhov, V. P.; Iskhakov, Y. A. A semiempirical method for determining the cross sections for the loss of electrons by fast multiply charged ions. Nucl. Instrum. Methods 164, 329 (1979) Soviet Union
4861	A07 $H^+ + Ca; H^+ + Sc; H^+ + Ti; H^+ + V;$ $H^+ + Cr; H^+ + Mn; H^+ + Fe; H^+ + Co;$ $H^+ + Ni; H^+ + Cu; H^+ + Zn; H^+ + Ga;$ $H^+ + Ge; H^+ + As; H^+ + Se; H^+ + Br;$ $H^+ + Kr; H^+ + Rb; H^+ + Sr; H^+ + Y;$ $H^+ + Zr; H^+ + Nb; H^+ + Mo; H^+ + Ru;$ $H^+ + Rh; H^+ + Pd; H^+ + Ag; H^+ + Cd;$ $H^+ + In; H^+ + Sn$	T	0.1-2.0 MeV	Lopes, J. S.; Jesus, A. P.; Gomes, S. C. Fitted inner-shell proton ionization cross sections from Ca to Sn for 0.1-2.0 MeV incident energy. Nucl. Instrum. Methods 164, 369 (1979) Portugal
4862	C06 $D_2^+ + Au; D_2^+ + Au$	F	350-1200 keV	Xir, E.; Augenstreif, M.; Nann, A.; Sommer, B.; Liren, S. Correlations in the motion of molecular fragments traversing thick foils. Nucl. Instrum. Methods 164, 553 (1979) Israel
4863	A17 $Ku + He; Na + He; Ba + Kr; Wa + Xe;$ $Ca + Ar; Ar + K; Ar + Li; Ar + Rb$	T	Undef	Czuchaj, E. Collisionally induced transition dipole moments of alkali-rare gas atoms systems. Z. Phys. A 292, 109 (1979) Poland
4864	A03 $H^+ + C; H^+ + N; H^+ + O; H^+ + He;$ $He^{2+} + C; He^{2+} + N; He^{2+} + O; He^{2+} + He;$ $N^{2+} + N; N^{2+} + O$ A07 $H^+ + C; H^+ + N; H^+ + O; H^+ + He;$ $He^{2+} + C; He^{2+} + N; He^{2+} + O; He^{2+} + He;$ $N^{2+} + N; N^{2+} + O$	E	1.5-2.5 MeV	Kobayashi, N.; Irie, T.; Maeda, N.; Kajima, N.; Akamatsu, S.-I.; Sakabe, M. Angular distributions of K-shell Auger electrons from carbon, nitrogen, oxygen and neon excited by energetic ions. J. Phys. Soc., Jap. 47, 234 (1979) Japan
4865	E03 $e + H_2O$ E04 $e + H_2O$	T	50-500 eV	Fujita, T.; Iwai, T.; Ogura, K.; Motomizu, S.; Matsunaga, Y. Dissociative excitation of water molecule by electron impact: IV. The effect of multiple scattering. J. Phys. Soc., Jap. 47, 240 (1979) Japan
4866	A06 $H^+ + H^+$	T	$1.4 \cdot 10^6$ eV	Toshima, N. Charge transfer processes involving highly excited hydrogen atoms: III. The perturbed stationary state method. J. Phys. Soc., Jap. 47, 257 (1979) Japan
4867	A12 $Na + He$	E	Thermal	Yabuzaki, T.; Manabe, T.; Ogawa, T. Alignment destroying cross sections of the $2p$, state of neon for collisions with Na^+ and He^+ . J. Phys. Soc., Jap. 47, 340 (1979) Japan
4868	A06 $H^+ + H$	T	0.1-1000 MeV	Weiswitsch, B. L.; Stockman, S. C. Electron capture at relativistic energies. J. Phys. B 12, L591 (1979) United Kingdom
4869	A17 $H^+ + H$	T	Undef	Bishop, D. M.; Cheung, L. M. Static higher polarizabilities of H_2^+ . J. Phys. B 12, 3139 (1979) Canada
4870	HC6 $hw + PERT$	T	1.6-1.5 keV	Bond, I. M.; Sosichev, V. I.; Trzhaskovskaya, N. B. The influence of the hole and exchange terms in the Dirac-Hartree potential on the photoionization cross sections and internal conversion coefficients. J. Phys. B 12, 3187 (1979) Soviet Union
4871	H06 Undef	T	Undef	Swin, S. A simple model for multiphoton ionisation. J. Phys. L 12, 3201 (1979) United Kingdom

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4072	H06 nhr + H	T	Undef	Zakman, M. K. Threshold behaviour of multiphoton ionization of hydrogenic atoms. J. Phys. B 12, 3225 (1979) Italy
4073	A17 H ⁺ + H	T	Undef	Nucias, A.; Riera, A. Stark effect for the electronic levels of diatomic molecules. Variational and perturbational approaches. J. Phys. B 12, 3235 (1979) Spain
4074	A06 H ⁺ + Li; H ⁺ + Li ⁺ ; H ⁺ + Li ²⁺	T	3.2-10 MeV	Banyard, K. E.; Shirecliffe, G. W. Electron capture from lithium and its ions by high-energy protons. J. Phys. B 12, 3247 (1979) United Kingdom
4075	E03 e + Li Seq E05 e + Li Seq	T	1.0-5.3 threshold	Simpson, D. H.; Clark, R. E. H.; Parks, A. B. Intermediate coupling collision strengths for inner-shell excitation of highly charged Li-like ions. J. Phys. B 12, 3257 (1979) United States
4076	E03 e + Se E05 e + Se	E	330-600 keV	Palinkas, J.; Schlenk, B.; Vaich, A. Experimental investigation of the angular distribution of characteristic x-radiation following electron impact ionisation. J. Phys. B 12, 3272 (1979) Hungary
4077	E03 e + N ₂ E17 e + N ₂	E	15-50 eV	Filipat, A. W.; McKay, V.; Ruscigac, T. W. Cross sections for excitation of the B ² _g (sub g), C ² _g (sub g) and E ² _g (sub g) states of N ₂ by low-energy electron impact in the distorted-wave approximation. J. Phys. B 12, 3281 (1979) United States
4078	H04 hv + Cs	E	Undef	Fandriil, L. B.; Delande, B.; Gay, J. C. Quantum defect and fine-structure measurements of P, D, F, and G Rydberg states of atomic caesium. J. Phys. B 12, L603 (1979) France
4079	E03 e + Hg E05 e + Hg	E	3.5 keV	Breuckmann, B. The K-Auger spectrum of free Hg atoms, including K-LM and K-MN transitions. J. Phys. B 12, L609 (1979) West Germany
4080	H06 Undef	T	Undef	Brandt, M. S.; Davidovich, L. Atomic ionisation by strong coherent radiation. J. Phys. B 12, L615 (1979) Brazil
4081	A03 He ⁺ + Ca; He ⁺ + Sr; He ⁺ + Ba A07 He ⁺ + Ca; He ⁺ + Sr; He ⁺ + Ba A11 He ⁺ + Ca; He ⁺ + Sr; He ⁺ + Ba	E	Thermal	Fahay, D. W.; Parks, W. F.; Schaefer, L. D. The Hanle effect in Penning-excited ions. J. Phys. B 12, L615 (1979) United States
4082	A06 Ca ⁺ + Ca ⁺ A07 Ca ⁺ + Ca ⁺	E	42-200 keV	Dunn, K. F.; Angel, G. C.; Glibody, M. B. An experimental study of charge transfer and ionisation in Ca ⁺ -Ca ⁺ collisions. J. Phys. B 12, L623 (1979) United Kingdom
4083	E06 e + He E17 e + He	E	201-2000 eV	van Vingerden, B.; Kimmann, J. T.; van Tilburg, M.; Weigold, E.; Jochem, C. J.; Piraux, B.; de Meer, F. J. Absolute triple- and double-differential cross sections for ionization of helium by electron impact. J. Phys. B 12, L627 (1979) The Netherlands
4084	E12 e ⁺ + He + He; e ⁺ + He + Ar; e ⁺ + He + Kr; e ⁺ + He + Xe; e ⁺ + He + N ₂ ; e ⁺ + He + N ₂ ; e ⁺ + He + O ₂ ; e ⁺ + He + CO; e ⁺ + He + CO ₂ ; e ⁺ + He + CCl ₄ ; e ⁺ + He + C ₆ H ₁₀	E	10-21 eV	Charlton, M.; Griffith, T. C.; Hayland, G. R.; Lines, K. S. Cross sections for positronium formation in gases. J. Phys. B 12, L633 (1979) United Kingdom
4085	H06 hv + He ⁺ ; hv + He ²⁺ ; hv + He ³⁺	T	331-90 Å	Pradhan, A. K. Close-coupling calculations for photoionisation cross sections of neon ions: Ne II, He III, and He IV. J. Phys. B 12, 3217 (1979) United Kingdom
4086	C06 Cl + PERT; Br + PERT; I + PERT	T	23-500 keV	Baudinet-Robinet, Y.; Lemotte, D. Statistical analysis of equilibrium charge-state distributions of heavy ions in gaseous targets. J. Phys. B 12, 3425 (1979) Belgium

REF. NO.	REACTANTS	EXP OR THEOP	ENERGY RANGE	REFERENCE
4087	A06 $H + H; H + H_2; H^+ + H; H^+ + H_2$ A07 $H + H; H + H_2; H^+ + H; H^+ + H_2$ A11 $H + H; H + H_2; H^+ + H; H^+ + H_2$	E	5-26 keV	Hill, J.; Godden, J.; Gilbody, M. E. Electron capture, loss and collisional destruction of 5-26 keV metastable and ground-state hydrogen atoms in collisions with atomic and molecular hydrogen. <i>J. Phys. B</i> 12, 3341 (1979) United Kingdom
4088	EP2 $e + H$ E12 $e^+ + H$	T	0.1-0.7 a.u.	Abdel-Raouf, M. A. Tests of the least norm variational principle with upper and lower bounds for the S-wave phase shifts. <i>J. Phys. B</i> 12, 3349 (1979) West Germany
4089	EP2 $e + He$	T	30-200 eV	Scott, T.; Taylor, M. S. Elastic electron-helium scattering: I. A theoretical approach. <i>J. Phys. B</i> 12, 3367 (1979) United States
4090	EP2 $e + He$	T	33-200 eV	Scott, T.; Taylor, M. S. Elastic electron-helium scattering: II. Application of many-body theory. <i>J. Phys. B</i> 12, 3365 (1979) United States
4091	EP3 $e + He$ E17 $e + He$	T	43-200 eV	Nadlam, D. M. Sensitivity of differential cross sections and angular correlation parameters to scattering parameters. <i>J. Phys. B</i> 12, 3399 (1979) United States
4092	EP3 $e + He^{++}$	T	0-3.6 Ry	Wise, E.; Jackson, A. R. G.; Pradhan, A. K. Electron impact excitation of He^{++} and energy levels of He^{++} . <i>J. Phys. B</i> 12, 3415 (1979) United Kingdom
4093	EP2 $e + H_2$ EP3 $e + H_2$	T	3.09-9.9 Ry	Ficocelli-Varracchio, E. Effective potential theory of $e^- - H_2$ rotational excitation. <i>J. Phys. B</i> 12, 3427 (1979) Italy
4094	EP4 $e + H_2^+$ EP9 $e + H_2^+$	E	2-13 eV	Paart, B.; Forrest, R. A.; Dolan, E. Measured cross sections for the formation of H^+ by collisions between H_2^+ ions and electrons. <i>J. Phys. B</i> 12, 3441 (1979) United Kingdom
4095	SES $e + He$	T	56-1000 eV	Halpern, A. M.; Thomas, B. K. Physically sound orthogonality procedures for atomic physics calculations. <i>Phys. Rev. Lett.</i> 42, 33 (1979) United States
4096	A06 $Ca^+ + Sr$ B07 $Ca^+ + Sr + h\nu$	E	A16 840 K	Gram, W. B.; Wright, M. D.; Young, J. F.; Harris, S. E. Laser-induced charge transfer to an excited ionic state. <i>Phys. Rev. Lett.</i> 43, 124 (1979) United States
4097	A07 Under	T	Under	Olson, R. E. Ionization cross sections for Rydberg-atom-Rydberg-atom collisions. <i>Phys. Rev. Lett.</i> 43, 126 (1979) United States
4098	D03 $Ar^+ + O + Ca$	E	1570 eV	Holland, S. P.; Garrison, B. J.; Winegrad, M. Surface structure from angle-resolved secondary-ion mass spectrometry: oxygen on Cu(001). <i>Phys. Rev. Lett.</i> 43, 229 (1979) United States
4099	D17 $h\nu + TiCl_2$	E	16-38 eV	Kretsch, M. L.; Jones, V. O.; Rehn, V. Photon-stimulated desorption of ions. <i>Phys. Rev. Lett.</i> 43, 300 (1979) United States
4100	A07 $D^+ + H_2$	E	6-12 keV	Koch, P. M. Electron scattering resonances in fast D(high n)- H_2 collisions. <i>Phys. Rev. Lett.</i> 43, 432 (1979) United States
4101	A06 $H^+ + He$	E	105 keV	Burgdorfer, J. Calculation of s-p coherence in hydrogen after electron capture. <i>Phys. Rev. Lett.</i> 43, 50 (1979) West Germany
4102	A06 $H^+ + H$	T	4-70 keV	Moruhn-Rezumic, V.; Grün, M.; Erfeld, W. Numerical solution of the time-dependent Schrödinger equation and application to $H^+ - H$. <i>Phys. Rev. Lett.</i> 43, 812 (1979) West Germany

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4103	A66 Na ⁺ + Na; Na ⁺ + K; Na ⁺ + Rb; Na ⁺ + Cs	E	13 ⁺ -1500 eV	Raymond, C.; Pommer, J.; Tsou, Y. H.; Barst, R. Composition of the metastable beams (formed by charge exchange in Na ⁺ -alkali-metal collisions) at medium energy. <i>Phys. Rev. Lett.</i> 43, 575 (1979) France
4104	A63 Na ₂ ⁺ + Xe	E	45 ⁺ -2460 K	Smith, M.; Brunner, T. A.; Karg, A. W.; Pritchard, E. E. Velocity dependence of rotational energy transfer rates in Na ₂ ⁺ -Xe. <i>Phys. Rev. Lett.</i> 43, 653 (1979) United States
4105	B10 He + C	T	Undef	Carles, M. E.; Cole, R. W. Anisotropic He-C pair interaction for a He atom near a graphite surface. <i>Phys. Rev. Lett.</i> 43, 697 (1979) United States
4106	M66 hv + CO	E	13-27 eV	Stechbauer, R.; Cole, R. E.; Edwards, B. L.; West, J. B.; Parr, A. C.; Dehmer, J. L. Effects of shape resonances on vibrational intensity distributions in molecular photoionization. <i>Phys. Rev. Lett.</i> 43, 757 (1979) United States
4107	D07 Na ⁺ + Cu; Na ⁺ + Pt; Na ⁺ + Rh	E	0.8-1.0 MeV	French, P. P.; Appleton, B. R.; Holland, G. W.; Wilson, S. R. Anomalous yield enhancement for highly collimated 100° scattering of Na ⁺ in amorphous and polycrystalline materials. <i>Phys. Rev. Lett.</i> 43, 775 (1979) United States
4108	D03 e + CO + W	E	3-2 keV	French, R.; Henze, D. Adsorbate core ionization as primary process in electron- and photon-stimulated desorption from metal surfaces. <i>Phys. Rev. Lett.</i> 43, 865 (1979) West Germany
4109	D03 Na ⁺ + SiH; Ar ⁺ + SiH; Kr ⁺ + SiH; Xe ⁺ + SiH	E	3-30 keV	Wittmann, K. Ionization mechanism of H ⁺ sputtered from hydrogenated silicon. <i>Phys. Rev. Lett.</i> 43, 872 (1979) United States
4110	D07 3He + H M66 3He + H	T	M36 Undef	Luc-Koenig, E.; Bechler, A. Interpretation of electric-field-induced oscillations in the cross section of a cne-electron atom above the ionization limit. <i>Phys. Rev. Lett.</i> 43, 521 (1979) France
4111	D05 hv + Ni	E	5.2-6.2 eV	Kisher, E.; Gadot, M.; Campagna, M.; Kuhlmann, E.; Hopster, H.; Moore, I. D. Crossover from negative to positive spin polarization in the photoyield from Ni(111) near threshold. <i>Phys. Rev. Lett.</i> 43, 546 (1979) West Germany
4112	M66 hv + H ₂	T	0-40 eV	Dehmer, J. L.; Dill, D.; Wallace, I. Shape-resonance-enhanced nuclear-reaction effects in molecular photoionization. <i>Phys. Rev. Lett.</i> 43, 1065 (1979) United States
4113	D04 Na ⁺ + K ⁺ + Ni	E	13 eV	Hagstrum, M. D. Excited-atom deexcitation spectroscopy using incident ions. <i>Phys. Rev. Lett.</i> 43, 1050 (1979) United States
4114	D07 Xe + Pt	E	875-1615 K	Morst, J. E.; Becker, C. A.; Cowin, J. P.; Janda, R. C.; Wharton, L.; Auerbach, D. J. Observation of direct inelastic scattering in the presence of trapping-desorption scattering: Xe on Pt(111). <i>Phys. Rev. Lett.</i> 43, 1175 (1979) United States
4115	E02 e + CO ₂ E03 e + CO ₂	T	0-100 eV	Dill, D.; Welch, J.; Dehmer, J. L.; Siegel, J. Shape-resonance-enhanced vibrational excitation at intermediate energies (10-40 eV) in electron-molecule scattering. <i>Phys. Rev. Lett.</i> 42, 1236 (1979) United States
4116	D02 Ar ⁺ + Al + Pd; Ar ⁺ + Si + Pd; Ar ⁺ + Al + Si D17 Ar ⁺ + Al + Pd; Ar ⁺ + Si + Pd; Ar ⁺ + Al + Si	E	1 keV	Mo, P. S.; Lewis, J. E.; Chu, W. K. Preferred sputtering on binary alloy surfaces of the Al-Pd-Si system. <i>Surface Sci.</i> 80, 19 (1979) United States

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4117	DC4 He ⁺ + Si; Ar ⁺ + Si; Kr ⁺ + Si; Xe ⁺ + Si	E	2-30 keV	Wittmann, K. Characteristics of ion-excited silicon L-shell Auger spectra. <i>Surface Sci.</i> 60, 69 (1975) United States
4118	DC7 Undef	T	Undef	Adams, J. E.; Miller, W. W. A unified model for diffractive and inelastic scattering of a light atom from a solid surface. <i>Surface Sci.</i> 85, 77 (1979) United States
4119	D13 e + O ₂ + W	E	400-1000 eV	Huck, J. L.; Craig, J. M., Jr.; Lichtman, B. Electron stimulated desorption of O ⁺ and C ⁻ from oxygen chemisorbed on tungsten. <i>Surface Sci.</i> 85, 101 (1979) United States
4120	DC7 He ⁺ + Ag	E	3.4-3.2 keV	Toracic, I.; Ciric, B.; Perovic, E. Scattering of low energy He ⁺ ions from a clean polycrystalline Ag surface. <i>Surface Sci.</i> 85, 145 (1979) Yugoslavia
4121	D13 e + H ₂ + W	E	1300 eV	Huck, J. L.; Craig, J. M., Jr.; Lichtman, B. Negative ion ESD from hydrogen on tungsten. <i>Surface Sci.</i> 85, 1218 (1979) United States
4122	DC7 H + LiF; H + NaF; D + LiF; D + NaF; He + LiF; He + NaF; H + H ₂ O + KCl; He + C	T	Undef	Goodson, F. D.; Garcia, R.; Collis, V. Model of the interaction potential of an atom with a hard corrugated surface incorporating a stationary potential well. <i>Surface Sci.</i> 85, 317 (1975) United States
4123	DC2 Ar ⁺ + Al	E	15 keV	Laty, P.; Seethanan, D.; Degrove, F. Microroughness induced on solids by ion bombardment: I. Experimental results on sputtering of aluminium by Ar ⁺ (15 keV); quantification of microroughness. <i>Surface Sci.</i> 85, 353 (1979) France
4124	D17 Review	E T	Undef	Chamoto, P. R.; Rawn, L. E. Radiation-induced segregation in binary and ternary alloys. <i>J. Nucl. Mater.</i> 8, 2 (1979) United States
4125	D15 e + Cu + Be	E	3 keV	Bartels, A.; Dürschak, F.; Meurer, M.-P.; Abramelt, C.; Vollenberger, H. Be segregation in electron irradiated dilute Cu/Be alloys. <i>J. Nucl. Mater.</i> 82, 24 (1975) West Germany
4126	D15 Ni ⁺ + Ni + Si; Ni + Pt + Mn + Ti + Cr	E	75 keV	Rawlrich, A. B.; Piller, R. C.; Sivell, P. H. Mechanisms of radiation-induced segregation in dilute nickel alloys. <i>J. Nucl. Mater.</i> 82, 35 (1979) United Kingdom
4127	D15 He ⁺ + Ni + Cr	E	151 keV	Piller, R. C.; Rawlrich, A. B. Radiation-enhanced diffusion and segregation in Ni and Ni(Si) alloy: the effects of point-defect trapping. <i>J. Nucl. Mater.</i> 83, 42 (1979) United Kingdom
4128	D15 n + Mo + Ti	E	1 keV	Wagner, A.; Seldman, D. N. Direct observation of solute segregation to voids in a fast-neutron irradiated Mo/1.4 at percent Ti alloy. <i>J. Nucl. Mater.</i> 83, 48 (1979) United States
4129	D15 n + Al	E	3.1 MeV	Farrall, R.; Houston, J. F. Suppression of radiation damage microstructure in aluminum by trace impurities. <i>J. Nucl. Mater.</i> 83, 57 (1979) United States
4130	D15 e + Al + Zn	E	1 keV	Cawlin, R.; Martin, G. Radiation induced homogeneous precipitation in undercooled solid-solutions. <i>J. Nucl. Mater.</i> 83, 67 (1979) France
4131	D15 n + SS; Ni ⁺ + SS	Z	0.1-4.0 MeV	Lee, E. M.; Rowcliffe, A. F.; Hanib, E. A. Effects of Si and Ti on the phase stability and swelling behavior of AlSi 316 stainless steel. <i>J. Nucl. Mater.</i> 83, 75 (1979) United States
4132	D15 n + SS	E	Undef	Porter, D. L.; Wood, E. L. In-reactor precipitation and ferritic transformation in neutron-irradiated stainless steels. <i>J. Nucl. Mater.</i> 83, 98 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4133	D15 Undef	T	Undef	Widersich, H.; Okamoto, P. H.; Lee, H. Q. A theory of radiation-induced segregation in concentrated alloys. J. Nucl. Mater. 83, 98 (1979) United States
4134	D15 Undef	T	Undef	Mansur, L. K. Effects of point defect trapping and solute segregation on irradiation-induced swelling and creep. J. Nucl. Mater. 83, 109 (1979) United States
4135	D15 Undef	T	Undef	Baron, M. A kinetic model for solute redistribution to sinks and void growth in irradiated dilute alloys. J. Nucl. Mater. 83, 128 (1979) United States
4136	D15 Undef	T	Undef	Beggs, M. L.; Blason, C. L.; Blason, W. B. Calculations of the trapping and migration of vacancies and nickel self-interstitials in the presence of rare gases and dislocations. J. Nucl. Mater. 83, 139 (1979) United States
4137	D15 Undef	T	Undef	Johnson, R. A. Effect of trapping on interstitial cluster nucleation at the onset of irradiation. J. Nucl. Mater. 82, 147 (1979) United States
4138	D15 n + v	E	Undef	Wechsler, M. S.; Foster, R. E. A saturable-trap analysis of solute segregation applied to oxygen trapping in neutron-irradiated vanadium. J. Nucl. Mater. 83, 160 (1979) United States
4139	D15 Review	E T	Undef	Wilkes, P. Phase stability under irradiation - a review of theory and experiment. J. Nucl. Mater. 82, 164 (1979) United States
4140	D15 Undef	T	Undef	Russell, K. C. The theory of phase stability under irradiation. J. Nucl. Mater. 83, 176 (1979) United States
4141	D15 Undef	T	Undef	Bocquet, J.-L.; Martin, G. Irradiation-induced precipitation: a thermodynamical approach. J. Nucl. Mater. 83, 186 (1979) France
4142	D15 n + Ni + Cr + Mo + Al + Ti	E	0-1 MeV	Collins, D. S. Solute segregation to point-defect sinks in neutron-irradiated bimetallic Fe-16. J. Nucl. Mater. 83, 200 (1979) United States
4143	D15 Ni* + Ni + Al; Ni* + Ni + Si	E	3-7 MeV	Potter, D. L.; Widersich, H. Mechanisms and kinetics of precipitate restructuring during irradiation. J. Nucl. Mater. 83, 208 (1979) United States
4144	D15 Ni* + SS; n + SS	E	0.1-3.5 MeV	Chang, A. L.; Baron, M. Particle redistribution and phase stability in ion and neutron irradiated gamma prime strengthened Fe-Cr-Ni based alloys. J. Nucl. Mater. 83, 214 (1979) United States
4145	D15 Ni* + Ni + Al + Mg + Si	E	250 keV	Valdys, W. V. Modification of the precipitate interface under irradiation and its effect on the stability of precipitates. J. Nucl. Mater. 83, 220 (1979) West Germany
4146	D15 Review	E	Undef	Schulson, E. R. The ordering and disordering of solid solutions under irradiation. J. Nucl. Mater. 83, 229 (1979) United States
4147	D15 n + SiC; n + C	E	1 MeV	Matheny, R. A.; Corvill, J. C.; Trentino, G. G. Radiation damage in silicon carbide and graphite for fusion reactor first wall applications. J. Nucl. Mater. 83, 313 (1979) United States
4148	D15 Ca** + Fe	E	17-19 MeV	Liu, K.-Y.; Smith, M. V., Jr.; Wilkes, P.; Mulcinshi, G. L. Observations on ordered voids in neodymium. J. Nucl. Mater. 83, 335 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4149	A06 Ne ⁺ + HC; N ₂ ⁺ + NO	E	1-5 keV	Parher, J. E.; Raddad, R. Y. Charge-transfer of nitric oxide with Ne ⁺ and N ₂ ⁺ . <i>Int. J. Mass Spectrom. Ion Phys.</i> 31, 103 (1979) United Kingdom
4150	A02 Ar ⁺ + Cu; Ar ⁺ + CuO	E	5 keV	Kloppel, K. D.; Seidel, W. Investigation of monolayers by secondary ion mass spectroscopy. <i>Int. J. Mass Spectrom. Ion Phys.</i> 31, 151 (1979) West Germany
4151	HE6 he + N ₂ ; he + D ₂ S; he + C ₂ H ₂	E	50-4 me	Eiland, J. R. D. Dissociations of state-selected C ₂ H ₂ ⁺ , N ₂ S ⁺ and D ₂ S ⁺ ions studied by photoelectron-photoion coincidence spectroscopy. <i>Int. J. Mass Spectrom. Ion Phys.</i> 31, 161 (1979) United States
4152	GD4 Ar ⁺ + He; C ⁺ + He; CN ⁺ + He; CH ₂ ⁺ + He GD6 Ar ⁺ + He; C ⁺ + He; CN ⁺ + He; CH ₂ ⁺ + He	E	5-100 Td	Thomas, R.; Barassin, J.; Bortolin, A. Mobilités et coefficients de diffusion longitudinale des ions: Ar ⁺ et CH ₂ ⁺ dans l'hélium. <i>Int. J. Mass Spectrom. Ion Phys.</i> 31, 227 (1979) France
4153	A06 Ar ²⁺ + H ₂	E	3-61 eV	Hoeschefer, D.; Ottinger, C.; Zimmermann, S.; Lindinger, U.; Boverha, F.; Sterl, M. Drift tube and beam studies of reactions of Ar ²⁺ with H ₂ . <i>Int. J. Mass Spectrom. Ion Phys.</i> 31, 345 (1979) West Germany
4154	A10 H ₂ + H ₂	E	23 °C	Chatelet, M.; Vidonlecher, G.; Ohsugawa, B. Etude expérimentale du temps de relaxation vibrationnelle (V-T) de l'hydrogène comprimé à haute densité. <i>Compt. Rend.</i> 287, 195 (1978) France
4155	GD8 e + H ₂ ; e + H	T	13-60 Td	Capitelli, M.; Eleanardo, M. Electron energy distribution functions of hydrogen: the effect of superelastic vibrational collisions and of the dissociation process. <i>Z. Naturforsch. A</i> 34, 585 (1979) Italy
4156	GD4 Undef	T	Undef	Manson, B. L. Ions in water vapour: liquid droplet model failure. <i>J. Phys. D</i> 12, L62 (1979) United States
4157	GD6 Au ⁺ + SF ₆	E		Schmidt, W. F.; Jungblut, W. Ion mobility and recombination in compressed sulphur hexafluoride. <i>J. Phys. D</i> 12, L67 (1979) United Kingdom
4158	A06 K ⁺ + K A07 K + O ₂ GD3 K + O ₂	E	15-40 eV	Ohno, S. Generation of a fast alkali atomic beam by charge-transfer method for ion-pair formation studies. <i>J. Phys. D</i> 12, 625 (1979) Japan
4159	E02 e + Ne; e + Ar; e + H ₂ ; e + SF ₆ E03 e + Ne; e + Ar; e + H ₂ ; e + SF ₆ E05 e + Ne; e + Ar; e + H ₂ ; e + SF ₆ E09 e + Ne; e + Ar; e + H ₂ ; e + SF ₆	E	10-500 eV	Christopher, L. G.; Jones, D. R.; Roth, R. A. On the role of the electron impact ionization and electron scattering cross-section in the breakdown strength of dielectric gases. <i>J. Phys. D</i> 12, 1223 (1979) United States
4160	GD5 e + Cs GD9 e + Cs	E	4-100 Td	Scales, M. T.; Lucas, J. Electron drift velocity and momentum transfer cross-section in caesium vapour. <i>J. Phys. D</i> 12, 1276 (1979) United Kingdom
4161	CH2 e + AlN CH8 e + AlN	T	83 keV	Hessow, C. J.; Whalen, M. J. The orientation dependence of measured inelastic scattering probabilities for fast electrons in single crystals. <i>J. Phys. D</i> 12, 1521 (1979) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4162	A06 $H + H_2; H + He; H + H_2; H + O_2; H +$ $Ne; H + Ar; H + Kr; H + Xe; H + CO;$ $H + NO; H + HI; H + Ag; H + Cu; H +$ $Pb; H^+ + H_2; H^+ + He; H^+ + H_2; H^+ +$ $O_2; H^+ + Ne; H^+ + Ar; H^+ + Kr; H^+ +$ $Xe; H^+ + CH_4; H^+ + NH_3; H^+ + H_2O;$ $H^+ + CO; H^+ + CO_2; H^+ + C_2H_2; H^+ +$ $Li; H^+ + Na; H^+ + Mg; H^+ + K; H^+ +$ $Rb; H^+ + Ca; H^+ + Pb$ A06 $H + H_2; H + He; H + H_2; H + O_2; H +$ $Ne; H + Ar; H + Kr; H + Xe; H +$ $CH_4; H + NH_3; H + H_2O; H + CO; H +$ $NO; H + CO_2; H + HI; H + Ag; H +$ $Cu; H + Pb; H^+ + H_2; H^+ + He; H^+ +$ $H_2; H^+ + O_2; H^+ + Ne; H^+ + Ar; H^+ +$ $Kr; H^+ + Xe; H^+ + CO; H^+ + NO; H^+ +$ $Mg; H^+ + Ca$	E	13-10000 eV	Yasura, H. Cross sections for charge transfer of hydrogen beams in gases and vapors in the energy range 10 eV-10 keV. Atomic Data and Nuclear Data Tables 22, 401 (1978) Japan
4163	E03 $e + He$	T	1-4 threshold	Clark, R. E. N.; Sampson, D. H. Intermediate-coupling collision strengths for P-P and P-E transitions produced by electron impact on highly charged He-like ions. Atomic Data and Nuclear Data Tables 22, 527 (1978) United States
4164	E07 $e + Kr^{20+}; e + Xe^{20+}$	T	5-100 eV	Nazi, A. U.; Rascigno, Y. N.; Orul, A. E. Theoretical study of the deexcitation of KrF and XeF excimers by low-energy electrons. Appl. Phys. Lett. 35, 477 (1979) United States
4165	A06 $H + Br_2$ A14 $H + Br_2$	E	300 K	Miller, D. J.; Shachisford, W. L.; Emanuel, G. Chemical production of vibrationally excited HBr for a continuous wave laser. Appl. Phys. Lett. 35, 586 (1979) United States
4166	M02 $h\nu + He + Xe + HF_3; h\nu + He; h\nu +$ $He + HF_3; h\nu + He + Xe; h\nu + Xe$	E	3511 Å	Champagne, L. F. Temperature-dependent absorption processes in the XeF laser. Appl. Phys. Lett. 35, 516 (1979) United States
4167	M04 Undef	T	Undef	Sarkisyan, N. A.; Ter-Mikaelyan, M. L. Selective atomic excitation by self-induced resonance. Bull. Acad. Sci., USSR, Phys. Ser. 42, 53 (1978) Soviet Union
4168	M05 $h\nu + H_2$ M06 $h\nu + H_2$	T	Undef	Koperev, I. V.; Ostrovskii, V. B. Production of excited hydrogen atoms in photodissociation of the H_2 molecule. Sov. Phys.-JETP Lett. 28, 413 (1978) Soviet Union
4169	E06 $e + K^+$	E	13-26 eV	Alkhazhin, I. S.; Zeposochnyi, A. I.; Iorn, A. I. Observation of dielectronic recombination of the potassium ion. Sov. Phys.-JETP Lett. 28, 831 (1978) Soviet Union
4170	C02 $e + PERT$	T	17 keV	Grazdakov, N.; Bonchev, Y.; Lilihov, V. Depth selective Rutherford spectroscopy I. A study on some processes connected with the passage of low energy electrons through matter. Nucl. Instrum. Methods 168, 231 (1979) Bulgaria
4171	D06 $e + Ni$	E	19 keV	Feldkamp, L. A.; Stearns, M. B.; Shimozaki, S. S. Electronic structure and optical constants of Ni by electron inelastic scattering. Phys. Rev. B 20, 1310 (1979) United States
4172	D04 $e + Ar^9; H^+ + Ar^9; He^+ + Ar^9; He^+ +$ $Ar^9; Cu^+ + Co; Kr^+ + Cu; Xe^+ + Cu$	T	23-400 keV	Malinen, G.; Svensson, B.; Schou, J.; Sigurd, P. Direct and recoil-induced electron emission from ion-beam-irradiated solids. Phys. Rev. B 20, 2247 (1979) Sweden
4173	A01 Undef	T	Undef	Boumeau, M.; Parrood, M.; Winterlitz, P. Relativistic energy-dependent partial-wave analysis for particles with spin. Phys. Rev. D 19, 3413 (1979) Canada

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4174	A02 $\text{Na}^+ + \text{Kr}; \text{Na}^+ + \text{Xe}; \text{Na}^+ + \text{Xe}; \text{Ar}^+ + \text{Xe};$ $\text{Xe}; \text{Zn}^+ + \text{Xe}; \text{Cd}^+ + \text{Xe}; \text{Kr}^+ + \text{Xe};$ $\text{Xe}^+ + \text{Xe}$ A10 $\text{Na}^+ + \text{Kr}; \text{Na}^+ + \text{Xe}; \text{Na}^+ + \text{Xe}; \text{Ar}^+ + \text{Xe};$ $\text{Xe}; \text{Zn}^+ + \text{Xe}; \text{Cd}^+ + \text{Xe}; \text{Kr}^+ + \text{Xe};$ $\text{Xe}^+ + \text{Xe}$	T	25-500 keV	Gartner, K.; Nohl, K. Theoretical description of elastic atom-atom scattering. Phys. Status Solidi B 94, 221 (1979) East Germany
4175	A03 $\text{H}_2 + \text{H}_2$ H05 $\text{h}\nu + \text{H}_2\text{CO}$	E	A23 300 K H25 193 nm	Broadbent, M. S.; Baranavski, A. P.; McDonald, J. R. Photodissociation of H_2CO at 193 nm. H_2CO 's internal energy distribution and reaction rate with H_2 . Chem. Phys. Lett. 64, 421 (1979) United States
4176	H04 $\text{h}\nu + \text{PbF}$	E	454-410 nm	Green, R. B.; Henke, L.; Davis, E. J. Laser induced fluorescence studies of the A $^1\Pi$ state of PbF. Chem. Phys. Lett. 64, 661 (1979) United States
4177	H04 Under	T	Under	Hodgkinson, D. P.; Briggs, J. S. Rate equations for multi-photon excitation in strong fields. Chem. Phys. Lett. 64, 511 (1979) United Kingdom
4178	H06 $\text{h}\nu + \text{H}_2\text{O}$	T	12-50 eV	Hilton, P. R.; Berdholm, S.; Nash, R. S. Photoionization cross section of water by an atomic extrapolation method. Chem. Phys. Lett. 64, 515 (1979) Australia
4179	A03 $\text{BF}^+ + \text{BI}; \text{O}_2^+ + \text{I}$	T	331 K	Steinfeld, J. I.; Sutton, D. G. Surface-hopping model for near-resonant electronic energy transfer. Chem. Phys. Lett. 64, 560 (1979) United States
4180	H05 $\text{h}\nu + \text{Li}_2^+$	T	781-300 nm	Uzer, T.; Delgarno, A. Photodissociation of Li_2^+ ions. Chem. Phys. Lett. 65, 1 (1979) United States
4181	EC3 $e + \text{CO}; e + \text{NO}; e + \text{N}_2$	E	300 eV	van Sprang, H. A.; Brongerode, H. H.; de Moor, F. J. Absolute ionization cross sections for the calibration of optical detection systems in the 120-250 nm range. Chem. Phys. Lett. 65, 55 (1979) The Netherlands
4182	A03 $\text{N}_2^+ + \text{CC}$	E	300 K	Bridoux, M.; Gress, F.; Bortus, L.; Rousseau, O.; Gaudand, P. Long contact effect between active nitrogen and carbon monoxide: a spectroscopic study. Chem. Phys. Lett. 65, 65 (1979) France
4183	A02 $\text{F}^- + \text{Xe}; \text{Cl}^- + \text{Xe}$	E	250-500 eV	de Vreugd, C.; Wijnendts van Rosandt, R. v.; Lee, J. The well depths of XeF^- and XeCl^- from differential scattering measurements. Chem. Phys. Lett. 66, 93 (1979) The Netherlands
4184	A14 $\text{O}^+ + \text{H}_2$	E	300 K	Smith, G. K.; Butler, J. E.; Lin, P. C. The $\text{O}(\text{H}^2, v=0)$ rotational energy distribution in the reaction of $\text{O}(\text{H}^2) + \text{H}_2$. Chem. Phys. Lett. 66, 11b (1979) United States
4185	A06 $\text{Kr}^+ + \text{C}_2$	E	3.5-5.5 keV	Reynolds, R. M.; Tang, S. Y. Coagulation of partially metastable Kr beams. Chem. Phys. Lett. 66, 150 (1979) United States
4186	H05 Under	T	Under	Mold, D. V.; Stine, J. R. Infrared multiphoton dissociation with one and two lasers. Chem. Phys. Lett. 66, 153 (1979) United States
4187	A11 $\text{CF}_2^+ + \text{Ne}; \text{CF}_2^+ + \text{Ne}; \text{CF}_2^+ + \text{H}_2$ $\text{CF}_2^+ + \text{SF}_6$	E	295 K	Ahino, D. L.; King, D. S.; Stephenson, J. C. Vibrational relaxation of A tilde $\text{CF}_2(v_2=1-6)$ in non-reactive collisions. Chem. Phys. Lett. 66, 257 (1979) United States
4188	A04 $\text{H}_2^+ + \text{H}_2$ A06 $\text{H}_2^+ + \text{H}_2$	E	3-4 keV	Curtis, P. M.; Williams, D. V.; Porter, R. F. An experimental study of the energetics of fragmentation of H_2 . Chem. Phys. Lett. 66, 296 (1979) United States

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4189	A14 $H + Br_2; H + HBr$	E	380 K	Riz, S. M. P.; Brandt, D.; Polanyi, J. C. Production of electronically excited atoms. $H + Br_2 + HBr + Br(^2P)$, $H + HBr + H_2 + Br(^2P)$. Chem. Phys. Lett. 65, 399 (1979) Canada
4190	H54 $h\nu + ICH$ H55 $h\nu + ICH$	E	250 m μ	Amato, S. T.; Wienefeld, J. R.; Young, R. H. Efficient production of $I(5^2P_{1/2})$ in the photodissociation of ICH. Chem. Phys. Lett. 65, 402 (1979) United States
4191	H55 $h\nu + ICH$ H56 $h\nu + ICH$	E	1700-1100 Å	Pollakoff, E. D.; Southworth, S. M.; Shirley, D. A.; Jackson, L. M.; Zera, R. H. Polarized fluorescence from photodissociation fragments: a study of ICH photolysis using synchrotron radiation. Chem. Phys. Lett. 65, 407 (1979) United States
4192	A13 $H^+ + N_2$	T	0.23-1.6 eV	Gitting, M. A.; Miret, D. N. Classical trajectory calculations for the reaction $H^+ + N_2 + H_2 + H^+ + N$. Chem. Phys. Lett. 65, 507 (1979) United Kingdom
4193	A11 $CO_2^+ + H_2; CO_2^+ + CO$	E	170-370 K	Taine, J.; Lepoutre, F. A photoacoustic study of the collisional deactivation of the first vibrational levels of CO_2 by H_2 and CO . Chem. Phys. Lett. 66, 254 (1979) France
4194	A10 $HuF + HF; H_2F + HF$	E	500 K	Engelke, F. Chemiluminescence studies of vibrational-to-vibrational energy transfer: $HF + HF$. Chem. Phys. Lett. 65, 564 (1979) West Germany
4195	A07 $H_2^+ + Na; H_2^+ + Na; H_2^+ + Ar; H_2^+ + Kr$ A14 $H_2^+ + Na; H_2^+ + Na; H_2^+ + Ar; H_2^+ + Kr$	E	330 K	Mirrehi, M.; Kondou, T.; Fukuyama, T.; Aoshima, K. Ionizing collisions of long-lived highly excited hydrogen molecules with rare gas atoms. Chem. Phys. Lett. 66, 9 (1979) Japan
4196	A17 $Li^+ + Li$	T	Under	Konowalow, D. D.; Stevens, W. J.; Rosenkrantz, R. E. Long range interactions in low-lying states of Li_2^+ . Chem. Phys. Lett. 66, 24 (1979) United States
4197	A17 $He + He$	T	Under	Krauss, R.; Neumann, D. B.; Stevens, W. J. The dispersion damping functions and interaction energy curves for He-He. Chem. Phys. Lett. 66, 29 (1979) United States
4198	A14 $CH + O_2$	T	290 K	Messing, I.; Sadowski, C. M.; Filseth, S. V. Absolute rate constant for the reaction of CH with O_2 . Chem. Phys. Lett. 66, 95 (1979) Canada
4199	H56 $h\nu + N_2$	T	15-50 eV	Reaume, T. M.; Gervier, A.; McKay, B. V.; Langhoff, P. V. On v-shell photoionization of molecular nitrogen. Chem. Phys. Lett. 66, 116 (1979) United States
4200	A03 $Na^+ + HCN$	T	0.1-10 eV	Bettcher, C. Energy transfer in ion-polar molecule collisions. Chem. Phys. Lett. 66, 126 (1979) United States
4201	H58 $h\nu + Xe_2$	E	1470 Å	Vench, M. D.; Mannain, S. S.; Bhitin, M. R.; Sommer, K.; Zimmerer, G.; Hocke, D. Time and spectrally resolved fluorescence of Xe_2 molecules excited with synchrotron radiation. Chem. Phys. Lett. 66, 130 (1979) West Germany
4202	A10 $H^+ + HF$	T	1000-2000 cm $^{-1}$	Billing, G. D.; Poulsen, L. L. On the use of perturbation theory in the asymptotic region of classical trajectories. Chem. Phys. Lett. 66, 177 (1979) Denmark
4203	E06 $e + He^+; e + O^+$	T	100-1000 eV	Zhdanov, V. P. Dielectronic recombination of electrons in collisions with ions. Sov. Phys. JETP 48, 611 (1978) Soviet Union

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4204	A86 Under	T	2×10^8 cm/s	Chibrikov, N. I. Influence of symmetry on the exchange of one and two electrons in atomic collisions. Sov. Phys.-JETP 48, 615 (1978) Soviet Union
4205	A87 Cs ⁺ + Cs ⁺ A14 Cs ⁺ + Cs ⁺	E	500-700 K	Karchevskii, Y. P. Efficiency of associative ionization in cesium vapor as a function of the quantum state and thermal energy of the interacting atoms. Sov. Phys.-JETP 48, 620 (1978) Soviet Union
4206	C84 e + NaCl	E	15-50 keV	Grachev, B. D.; Godevskikh, V. A.; Kozlovskii, S. S.; Korablevskii, Y. I.; Minov, V. I.; Petrochenko, A. S. Electron penetration in a dielectric. Sov. Phys.-Tech. Phys. 24, 77 (1979) Soviet Union
4207	A67 H ⁺ + He; H ⁺ + Cu; H ⁺ + Ag; He ⁺ + He; He ⁺ + Cu	T	$10^2 \times 10^3$ keV	Komarov, F. F.; Novikov, A. P. Ionization of inner atomic shells by heavy charged particles in the binary collision model: II. Low velocity regime. Sov. Phys.-Tech. Phys. 24, 155 (1979) Soviet Union
4208	C82 Under E85 Under	T	Under	Nedvedev, Y. A.; Khokhlov, V. D. Modified electron-stopping model and the secondary-electron distribution in a weakly ionized gas. Sov. Phys.-Tech. Phys. 24, 161 (1979) Soviet Union
4209	C82 e + Air E85 e + Air	T	$10^{-1}-10^{-6}$ eV	Nedvedev, Y. A.; Khokhlov, V. D. Secondary electron distribution in weakly ionized air. Sov. Phys.-Tech. Phys. 24, 165 (1979) Soviet Union
4210	D12 Ar ⁺ + Mo	E	43 keV	Bazhin, A. I.; Kozel', V. V.; Lutzin, V. G.; Filippov, E. I. Atomic excitation in ion bombardment of metals. Sov. Phys.-Tech. Phys. 24, 258 (1979) Soviet Union
4211	H02 hv + CF ₄	E	3.39 μ m	Ohl, H.; Ahimote, Y. Profile measurements of methane saturated absorption using a methane-stabilized laser spectrometer. Jap. J. Appl. Phys. 18, 1425 (1979) Japan
4212	D62 Na ⁺ + Mo	E	0.5-1.5 keV	Yasuda, R.; Sano, K.; Saideh, M. Surface microstructural effects on angular distribution of molybdenum particles sputtered with low energy He ⁺ ions. J. Nucl. Mater. 84, 101 (1979) Japan
4213	D14 D ⁺ + Cu	E	230 keV	Armstrong, T. R. The onset of radiation-blistering in low-temperature D ⁺ -irradiated copper. J. Nucl. Mater. 84, 116 (1979) New Zealand
4214	D15 n + Zr; n + Zr + Mo	E	0.1 MeV	Gilbert, R. W.; Farrell, K.; Coleman, C. E. Damage structure in zirconium alloys neutron irradiated at 573 to 923 K. J. Nucl. Mater. 84, 137 (1979) Canada
4215	D02 D ⁺ + C; D ⁺ + Si D07 D ⁺ + C; D ⁺ + Si D13 D ⁺ + C; D ⁺ + Si D16 D ⁺ + C; D ⁺ + Si	E	53-100 eV	Staudenmaier, G.; Roth, J.; Behrlich, R.; Bohdenky, J.; Eckstein, O.; Stahl, F.; Matteson, S.; Ernto, S. K. Trapping of deuterium implanted in carbon and silicon: a calibration for particle-energy measurements in the plasma boundary of tokamaks. J. Nucl. Mater. 84, 149 (1979) West Germany
4216	C84 D ⁺ + C C85 D ⁺ + C D07 D ⁺ + C D16 D ⁺ + C	T	20-6700 eV	Cohen, S. A.; McCracken, G. M. A model for hydrogen isotope backscattering, trapping and depth profiles in carbon and amorphous silicon. J. Nucl. Mater. 84, 167 (1979) United States
4217	D14 Under	T	Under	Brailsford, A. E. The vacancy dislocation loop microstructure formed during heavy-particle bombardment. J. Nucl. Mater. 84, 245 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4218	D14 Under	T	Under	Brailsford, A. B. The effect of vacancy dislocation loops on the void swelling rate. <i>J. Nucl. Mater.</i> 84, 269 (1979) United States
4219	D14 $Fe^+ + Fe; Fe^+ + SS; Ni^+ + Fe; Ni^+ + SS; n + Fe; n + SS$	E	2.0-5.0 MeV	Little, E. A. Void-swelling in irons and ferritic steels I. Mechanisms of swelling suppression. <i>J. Nucl. Mater.</i> 87, 11 (1979) United Kingdom
4220	D14 $n + Fe; n + SS$	E	Under	Little, E. A.; Stou, D. A. Void-swelling in irons and ferritic steels: II. An experimental survey of materials irradiated in a fast reactor. <i>J. Nucl. Mater.</i> 87, 25 (1979) United Kingdom
4221	D14 $e + SS$	E	1 MeV	Hayns, M. R.; Wood, R. M. A numerical study of evolving void-size distribution functions. <i>J. Nucl. Mater.</i> 87, 97 (1979) United Kingdom
4222	C86 $He^+ + He$	T	390 K	Sluckin, T. J. Low-temperature motility of positive ions in helium vapour. <i>J. Phys. C</i> 12, L449 (1975) United Kingdom
4223	A77 $I + I$	E	Under	Koffend, J. B.; Bacis, R.; Field, E. W. Continuous wave optically pumped iodine laser. <i>Spectroscopy, and long range analysis of the $X^2I(\text{sub } g)^0$ ground state of I_2</i> . <i>J. Mol. Spectrosc.</i> 77, 202 (1979) United States
4224	H04 $h\nu + He_2$	E	21600-33280 cm^{-1}	Miller, T. A.; Bondybay, V. E. Laser excitation spectra of He_2 . <i>J. Mol. Spectrosc.</i> 70, 120 (1975) United States
4225	H06 Under	E	Under	Brophy, J. W.; Rattner, C. T. Laser two-photon ionization spectroscopy: a new method for real-time monitoring of atmospheric pollutants. <i>Opt. Lett.</i> 4, 337 (1979) United States
4226	H04 $4h\nu + Be$	E	310-561 nm	Mahon, R.; McIlrath, T. J.; Tomkins, F. S.; Kelleher, D. E. Four-wave sum mixing in beryllium around hydrogen Lyman- α . <i>Opt. Lett.</i> 4, 260 (1979) United States
4227	H01 Under	T	Under	Steel, D. G.; Low, J. F. Degenerate four-wave mixing in plasmas. <i>Opt. Lett.</i> 4, 360 (1979) United States
4228	D02 $Ar^+ + Al; Ar^+ + Nb; Ar^+ + Pb; Ar^+ + Ag; Kr^+ + Al; Kr^+ + Nb; Kr^+ + Pb; Kr^+ + Ag; Ne^+ + Al; Ne^+ + Nb; Ne^+ + Pb; Ne^+ + Ag; Kr^+ + Cd$	E	10 keV	Hilderbrandt, D.; Ranne, R. Angular distribution of the kinetic energy re-emitted during ion bombardment. <i>Radiat. Eff.</i> 41, 193 (1979) Sweden
4229	C62 $H^+ + C$ C06 $H^+ + C$ C06 $H^+ + C$	E	0.2-3.0 keV	Overbury, S. M.; Dittner, P. F.; Datz, S.; Thon, R. S. Energy loss, angular distributions and charge fractions of low energy hydrogen transmitted through thin carbon foils. <i>Radiat. Eff.</i> 41, 219 (1979) United States
4230	D07 $Ar^+ + Cu$	T	6 keV	Poelissen, R.; Soers, A. L. A new method for the calculation of ion scattering from single crystals; method and potentialities. <i>Radiat. Eff.</i> 41, 229 (1979) The Netherlands
4231	D16 $C^+ + U$	E	230 keV	Igata, M.; Shibata, K.; Sato, S. Fine observation of defect clusters in tungsten irradiated with 200 keV C^+ ion. <i>Radiat. Eff.</i> 41, 231 (1979) Japan
4232	D16 $e + Cu$	E T	0.65 MeV	Urban, K.; Yoshida, N. The effect of electron diffraction channelling on the displacement of atoms in electron irradiated crystals. <i>Radiat. Eff.</i> 42, 1 (1979) West Germany
4233	D16 Under	T	Under	Butler, E. P. The effects of electron irradiation on the kinetics of order-disorder transformations. <i>Radiat. Eff.</i> 42, 17 (1979) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4234	D12 He* + SiO ₂ ; He* + SiO ₂ ; He* + SiO ₂ ; He* + SiC ₂	E	0.7-2.0 MeV	Chandler, P. J.; Jaques, F.; Townsend, P. Ion beam induced luminescence in fused silica. Radiat. Eff. 42, 45 (1979) United Kingdom
4235	C08 Ar* + Cu D07 Ar* + Cu	T	33 keV	Yamamura, Y.; Takaochi, M. Computer studies of surface semichannelling effects on spatial distributions of reflected ions. Radiat. Eff. 42, 58 (1978) Japan
4236	D12 He* + NaCl; He* + NaCl; He* + NaCl; He* + NaCl	E	1-2 MeV	Chandler, P. J.; Townsend, P. Luminescence of NaCl-H: a search for bi-excitation luminescence. Radiat. Eff. 42, 66 (1979) United Kingdom
4237	C08 Ar* + Ni	T	5 keV	Evdokinov, I. M.; Habb, R.; Armour, D. G.; Karpuzov, D. S. Simplified models for surface hyperchannelling. Radiat. Eff. 42, 83 (1979) Soviet Union
4238	E03 e + Li ⁺ ; e + Be ²⁺ ; e + O ⁺	T	75-87 eV	Das, A. K.; Maiti, M.; Sil, B. C. 2S states of the helium isoelectronic sequence. Phys. Rev. A 20, 635 (1979) India
4239	E06 e + Mo ³⁺	T	0.5-6 keV	Poszman, L. J. Dielectronic recapture rate of Mo XXVIII. Phys. Rev. A 20, 673 (1979) United States
4240	A17 Al + Al; Al + Al ²⁺ ; Al ²⁺ + Al ²⁺	T	3-2.6 keV	Sabelli, M. M.; Bonedek, R.; Gilbert, T. L. Ground-state potential curves for Al ²⁺ and Al ³⁺ in the repulsive region. Phys. Rev. A 20, 677 (1979) United States
4241	E02 e + N ₂ ; e + CO ₂ E12 e* + N ₂ ; e* + CO ₂ E17 e + N ₂ ; e + CO ₂	T	Underf	Morrison, R. A.; May, P. J. Ab initio adiabatic polarization potentials for low-energy electron-molecule and positron-molecule collisions: the e-N ₂ and e-CO ₂ systems. Phys. Rev. A 20, 740 (1979) United States
4242	A07 Cl ¹⁰⁺ + He; Cl ¹⁰⁺ + He; Cl ¹⁰⁺ + Ar; Cl ¹⁰⁺ + He; Cl ¹⁰⁺ + He; Cl ¹⁰⁺ + Ar; Cl ¹⁰⁺ + He; Cl ¹⁰⁺ + He; Cl ¹⁰⁺ + Ar; Cl ¹¹⁺ + He; Cl ¹¹⁺ + He; Cl ¹¹⁺ + Ar; Cl ¹²⁺ + He; Cl ¹²⁺ + He; Cl ¹²⁺ + Ar; Cl ¹³⁺ + He; Cl ¹³⁺ + He; Cl ¹³⁺ + Ar	E	25-45 MeV	Coeke, C. L. Production of highly charged low-velocity recoil ions by heavy-ion bombardment of rare-gas targets. Phys. Rev. A 20, 745 (1979) Denmark
4243	A01 Underf	T	Underf	France, V.; Thomas, D. K. Multiple scattering and charged-particle-hydrogen-atom collisions. Phys. Rev. A 20, 759 (1979) United States
4244	A06 B ²⁺ + He; B ²⁺ + He; B ²⁺ + Ar; B ²⁺ + He; He; B ²⁺ + He; B ²⁺ + Ar; B ²⁺ + He; B ²⁺ + He; B ²⁺ + Ar; B ²⁺ + He; B ²⁺ + Ar; Ar; C ³⁺ + He; C ³⁺ + Ar; C ³⁺ + He; C ³⁺ + Ar; B ²⁺ + He; B ²⁺ + Ar; B ²⁺ + He; He; B ²⁺ + Ar; B ²⁺ + He; B ²⁺ + Ar; B ²⁺ + He; B ²⁺ + Ar; B ²⁺ + He; B ²⁺ + Ar; Ar; O ⁴⁺ + He; O ⁴⁺ + Ar; O ⁴⁺ + He; O ⁴⁺ + Ar; O ⁴⁺ + He; O ⁴⁺ + Ar; O ⁴⁺ + He; He; O ⁴⁺ + Ar	E	10-85 keV	Gardner, L. D.; Bayfield, J. E.; Koch, P. M.; Sells, I. A.; Pegg, D. J.; Peterson, R. S.; Halliery, R. L.; Crandall, D. M. Electron-capture collisions at keV energies of boron and other multiply charged ions with atoms and molecules I. Ar, He, and Ne. Phys. Rev. A 20, 766 (1979) United States
4245	A06 H + H Seq	T	10 ⁻¹⁰ MeV	Shkeshchik, A. Relativistic effects in electron capture from a hydrogenlike atom by a fast-moving bare ion. Phys. Rev. A 20, 779 (1979) United States
4246	A07 He* + H ₂ ; He* + H ₂	E	0-70 keV	Rudd, M. E. Energy and angular distributions of secondary electrons from 2-100-keV-proton collisions with hydrogen and nitrogen molecules. Phys. Rev. A 20, 787 (1979) United States
4247	A03 He* + Li; He* + Li; He* + Li; He* + Li; Li; He* + Li	E	0-1500 eV	Myers, G. D.; Barnett, J. L.; Leventhal, J. J. Excited-state formation in collisions between simple ions and Li atoms. Phys. Rev. A 20, 797 (1979) United States

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4248	A03 Na ⁺ + He	E	2 keV	Kessel, Q. C.; Morgenstern, R.; Muller, R.; Niehaus, A. Angular correlation between autoionization electrons and scattered ions in 2030-eV He ⁺ -He collisions. <i>Phys. Rev. A</i> 20, 804 (1979) West Germany
4249	E02 e + H ₂ ; e + H ₂ ⁻	T	Undef	Polivyay, N.; Corcoran, C. Antionizing states of H ₂ and H ₂ ⁻ using the complex scaling method. <i>Phys. Rev. A</i> 20, 814 (1979) United States
4250	C02 Undef	T	Undef	Morgan, S. N., Jr.; Sung, C. C. Z ³ contribution to the energy loss of heavy charged particles. <i>Phys. Rev. A</i> 20, 818 (1979) United States
4251	A07 H ⁺ + Ar	T	50-5000 keV	Madison, D. H.; Manson, S. T. Dcutly differential cross sections for proton-impact ionization of argon. <i>Phys. Rev. A</i> 20, 825 (1979) United States
4252	A04 H ₂ ⁺ + H ₂ ; H ₂ ⁺ + He; H ₂ ⁺ + N ₂ ; H ₂ ⁺ + Ar; H ₂ ⁺ + CO ₂ ; H ₂ ⁺ + Xe; H ₂ ⁺ + SF ₆ ; HeH ⁺ + H ₂ ; HeH ⁺ + He; HeH ⁺ + N ₂ ; HeH ⁺ + Ar; HeH ⁺ + CO ₂ ; HeH ⁺ + Xe; HeH ⁺ + SF ₆ C01 H ₂ ⁺ + C; HeH ⁺ + C C06 H ₂ ⁺ + C; HeH ⁺ + C	E	..2-3.0 MeV	Kanter, E. P.; Cooney, P. J.; Gannell, D. S.; Groeneveld, K.-O.; Plotsch, W. J.; Rothouski, A. J.; Vager, Z.; Zabransky, S. J. Role of excited electronic states in the interactions of fast (MeV) molecular ions with solids and gases. <i>Phys. Rev. A</i> 20, 834 (1979) United States
4253	E05 e + He ⁰ ; e + Ar ⁰ ; e + Kr ⁰ ; e + Xe ⁰ ; e + Cd ⁰ ; e + Hg ⁰	T	2-100 eV	Hyman, H. A. Electron-impact ionization cross sections for excited states of the rare gases (Ne, Ar, Kr, Xe), cadmium, and mercury. <i>Phys. Rev. A</i> 20, 835 (1979) United States
4254	A03 Xe ⁰ + H ₂ S; Xe ⁰ + H ₂ O; Xe ⁰ + HCl; Xe ⁰ + NH ₃	T	333 K	Matsuzawa, M. State-changing collision of a high-Rydberg atom with a polar molecule. <i>Phys. Rev. A</i> 20, 860 (1979) Japan
4255	A10 Undef B07 Undef	T	A10 Undef	Gay, J. C.; Schneider, V. M. Collisional excitation transfer in high magnetic fields: I. Theory. <i>Phys. Rev. A</i> 20, 879 (1979) France
4256	A10 Hg ⁰ + Hg B07 Hg ⁰ + Hg	T	A10 300 K	Gay, J. C.; Schneider, V. M. Collisional excitation transfer in high magnetic fields: II. Correlation function of the interaction in Hg(6 ³ P ₁)-Hg(6 ³ S ₀) collisions. <i>Phys. Rev. A</i> 20, 849 (1979) France
4257	A10 Na ⁰ + Na B07 Na ⁰ + Na	T	A10 300 K	Gay, J. C.; Schneider, V. M. Collisional excitation transfer in high magnetic fields: III. Potential symmetry rules and correlation function in Na[3 ² P(sub j)]-Na[3 ² S _{1/2}] collisions. <i>Phys. Rev. A</i> 20, 905 (1979) France
4258	E12 e ⁺ + H; e ⁺ + He; e ⁺ + Ne; e ⁺ + Ar; e ⁺ + Kr; e ⁺ + Xe	T	0-25 eV	Schrader, D. M. Semieempirical polarization potential for low-energy positron-atom and positron-atomic-ion interactions: I. Theory; hydrogen and noble gases. <i>Phys. Rev. A</i> 20, 918 (1979) United States
4259	E12 e ⁺ + F; e ⁺ + Cl; e ⁺ + Br; e ⁺ + I	T	0-25 eV	Schrader, D. M. Semieempirical polarization potential for low-energy positron-atom and positron-atomic-ion interactions: II. The halogens. <i>Phys. Rev. A</i> 20, 933 (1979) United States
4260	H04 Undef H05 Undef	T	Undef	Einwohner, T. M.; Wong, J.; Garrison, J. C. Effects of alternative transition sequences on coherent photoexcitation. <i>Phys. Rev. A</i> 20, 940 (1979) United States
4261	H03 hv + Pb	T	0.148-1.33 MeV	Sen Gupta, S. K.; Paul, M. C.; Bose, J.; Choudhuri, A. Atomic Rayleigh scattering of photons in the momentum-transfer range 0-10c. <i>Phys. Rev. A</i> 20, 945 (1979) India

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4262	H06 Undef	T	Undef	Johnson, W. R.; Lin, C. D. Multichannel relativistic random-phase approximation for the photoionization of atoms. <i>Phys. Rev. A</i> 20, 944 (1979) United States
4263	H06 hv + He; hv + Ar; hv + Kr; hv + Xe	T	10-150 eV	Johnson, W. R.; Cheng, K. T. Photoionization of the outer shells of neon, argon, krypton, and xenon using the relativistic random-phase approximation. <i>Phys. Rev. A</i> 20, 970 (1979) United States
4264	A07 W ⁺ + Ar	T	65-112 MeV	Tonuma, T.; Aways, Y.; Kambara, T.; Kunagai, N.; Kohno, I.; Ozeki, S. Argon K α x-ray satellites produced by impact of nitrogen ions in the 4.7-7.0-MeV/amu energy range. <i>Phys. Rev. A</i> 20, 989 (1979) Japan
4265	H06 hv + O; hv + S; hv + Se; hv + Te; hv + F; hv + Cl; hv + Br; hv + I	T	13-100 eV	Hansen, S. T.; Mazzano, A.; Starace, A. F.; Shahabi, S. Photoionization of chalcogen and halogen atoms: cross sections and angular distributions. <i>Phys. Rev. A</i> 20, 1005 (1979) United States
4266	B07 Undef H08 Undef	T	H08 Undef	Zoller, P. ac Stark splitting in double optical resonance and resonance fluorescence by a nonmonochromatic chaotic field. <i>Phys. Rev. A</i> 20, 1019 (1979) United States
4267	B07 Undef	T		Payne, M. G.; Anderson, V. E.; Turner, J. E. Line shapes for laser-induced collisions. <i>Phys. Rev. A</i> 20, 1032 (1979) United States
4268	H02 hv + O ₂ ; hv + CO ₂ ; hv + CO; hv + H ₂ O H06 hv + O ₂ ; hv + CO ₂ ; hv + CO; hv + H ₂ O	E	500-600 eV	Barris, D. N.; Blake, R. L.; Burch, A. J.; Chambers, K. C.; Fegenzer, A. L. K-shell photoabsorption coefficients of O ₂ , CO ₂ , CO, and H ₂ O. <i>Phys. Rev. A</i> 20, 1045 (1979) United States
4269	B03 H ₂ ; D ₂ ; H; D	E		Morgan, T. J.; Barnett, C. F.; Roy, J. A.; Russell, A. Investigation of nonadiabatic effects in molecular-hydrogen Rydberg states by electric field ionization. <i>Phys. Rev. A</i> 20, 1062 (1979) United States
4270	G05 e + CH ₄ G09 e + CH ₄	E	13-3-30 eV	Gea, M.; Freeman, G. R. Density and temperature effects on electron mobility in fluid methane. <i>Phys. Rev. A</i> 20, 1182 (1979) Canada
4271	A12 H ⁺ + ν ; D ⁺ + Ar	E	33° K	Kelicher, D. E.; Konjevic, N.; Vliese, V. L. Test for ion dynamic dependence of plasma red shifts in neutral hydrogen. <i>Phys. Rev. A</i> 20, 1191 (1979) United States
4272	H02 hv + Cs	T	Undef	Moreaux, D. W. Addendum to Photoabsorption by cesium. <i>Phys. Rev. A</i> 20, 1285 (1979) United States
4273	E05 e + H ₂ ; e + CO	T	Undef	Camillon, R.; Stefani, G.; Fantai, R.; Giardini-Guidoni, A. Study of molecular orbitals by means of (e,2e) spectroscopy on oriented molecules. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 17, 209 (1979) Italy
4274	H06 hv + N ₂ ; hv + O ₂ ; hv + H ₂ O; hv + CO ₂ ; hv + C ₂ H ₂	E	59.4-30.4 nm	Katsunata, S.; Achiba, Y.; Kimura, K. Photoelectron angular distribution of simple molecules at 30.4 nm photons. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 17, 229 (1979) Japan
4275	D04 e + Al; e + Cu; e + Au; e + Ag	E	150-2000 eV	Bindi, R.; Lanteri, M.; Restaino, F. Distributions energetiques experimentales des electrons secondaires emis par des cibles evaporees d'aluminium, de cuivre, d'or et d'argent. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 17, 249 (1979) France
4276	H02 Review H04 Review K03 Review	E	20-200 eV	Codling, K. Review. Atomic effects in XUV spectra of solids. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 17, 279 (1979) United Kingdom

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4277	G88 Ar + Fe	E	11000-13000 K	Erenshenko, L. C.; Nechev, V. S.; Ben'yanchuk, A. S. Study of an argon arc in the region near an evaporati. anode. J. Appl. Spectrosc. 30, 1 (1979) Soviet Union
4278	G88 e + CO ₂	E	10000-20000 K	Asharmok, V. V.; Gubkevich, V. A.; Chubrik, N. I.; Shimenovich, V. B. Optical properties of CO ₂ plasma at atmospheric pressure in the spectral range 400-1200 nm at 10 ⁴ -2-10 ⁶ K. J. Appl. Spectrosc. 30, 15 (1975) Soviet Union
4279	M82 hv + CO ₂	E	2200-2400 cm ⁻¹	Bashir, L. P.; Overchenko, Y. V. IR spectroscopic determination of the vibrational level populations of CO ₂ molecules in gasdynamic lasers. J. Appl. Spectrosc. 30, 27 (1979) Soviet Union
4280	M82 hv + Sn	E	286 nm	Marodov, V. G. Measurement of the saturated vapor pressure of tin by the line absorption method. J. Appl. Spectrosc. 30, 154 (1979) Soviet Union
4281	E93 e + Cu	T	3-300 eV	Alekshin, I. S.; Borovik, A. A.; Storoob, V. P.; Shafrajonk, I. I. Excitation of copper atoms by electron impact. J. Appl. Spectrosc. 30, 158 (1975) Soviet Union
4282	A12 Under	T	Under	Tskhai, N. S. Diagram for the determination of the parameters of the Voigt contour of a spectral line. J. Appl. Spectrosc. 30, 230 (1979) Soviet Union
4283	D17 e + GaP + Zn	E	5-25 MeV	Antoshin, A. A.; Gatal'shik, G. V.; Korshunov, F. P. Effect of irradiation with electrons of various different energies on the electroluminescence of GaP:Zn, O p-n junctions. J. Appl. Spectrosc. 30, 235 (1979) Soviet Union
4284	M81 Under	T	Under	Shapolevich, V. V. Stokes relations in optically active media. J. Appl. Spectrosc. 30, 240 (1979) Soviet Union
4285	M10 Under	T	1500 cm ⁻¹	Quack, M. Master equations for photochemistry with intense infrared light. Ber. Bunsenges, Phys. Chem. 83, 757 (1979) West Germany
4286	M82 hv + C ₂	E	540-380 nm	Cooper, D. H.; Jones, J. J. An experimental determination of the cross section of the wings band system of C ₂ . J. Quant. Spectrosc. Radiat. Transfer 22, 281 (1979) United States
4287	M85 hv + NH	T	Under	Smith, W. H.; Hsu, D. K. French-Condor analysis of predissociations in the lower valence states of the NH radical. J. Quant. Spectrosc. Radiat. Transfer 22, 223 (1979) United States
4288	A12 NCl + N ₂	T	296 K	Lin, C. L.; Shaw, J. H.; Colvert, J. G. Least squares analysis of Voigt-shaped lines. J. Quant. Spectrosc. Radiat. Transfer 22, 253 (1979) United States
4289	A12 H ⁺ + N ₂ ; Na ⁺ + N ₂	E	200-1000 eV	Patch, R. W. Method for decomposing observed line shapes resulting from multiple causes; application to plasma charge-exchange-neutral spectra. J. Quant. Spectrosc. Radiat. Transfer 22, 253 (1979) United States
4290	C84 e + Al; e + Cu; e + Pb	T	0.051-10.2 MeV	Vienke, B. R. Electron transport and small angle collisions. J. Quant. Spectrosc. Radiat. Transfer 22, 301 (1979) United States
4291	A12 N ₂ O ⁺ + N ₂ M82 hv + N ₂ O	E	A12 273 K M82 732-715 nm	Wihneron, T. D.; Schwemmer, G.; Gentry, B.; Giver, L. P. Intensities and N ₂ collision-broadening coefficients measured for selected N ₂ O absorption lines between 715 and 732 nm. J. Quant. Spectrosc. Radiat. Transfer 22, 315 (1979) United States

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4292	B01 $5F^{\circ}; 5F^{\circ}$	E		Platin, M.; Popovic, M.; Dimitrijevic, M.; Konjevic, M. Stark broadening of $5(III)$ and $5(IV)$ lines. J. Quant. Spectrosc. Radiat. Transfer 22, 333 (1979) Yugoslavia
4293	H11 $h\nu + Ca$	T	0.1-1000 a.u.	Bozanyi, B. F. Computations of free-free Gaunt factors and conductive opacities in hot matter. J. Quant. Spectrosc. Radiat. Transfer 22, 327 (1979) United States
4294	A12 $CO_2^* + H_2$	E	200-325 K	Planet, W. G.; Tattamr, G. L. Temperature-dependent intensities and widths of H_2 -broadened CO_2 lines at 15 μ from tunable laser measurements. J. Quant. Spectrosc. Radiat. Transfer 22, 346 (1979) United States
4295	H02 $h\nu + H_2C$	E	620-620 nm	Emery, R. J.; Ruffat, P. M.; Morris, L. D. J.; Cobble, M. A. Measurements of atmospheric water vapour using the absorption band at 7200 cm^{-1} . J. Quant. Spectrosc. Radiat. Transfer 22, 401 (1979) United Kingdom
4296	H01 Undef	T	Undef	Cipolla, J. W., Jr.; Morse, I. F. Kinetic effects in an optically excited gas. J. Quant. Spectrosc. Radiat. Transfer 22, 365 (1979) United States
4297	H01 H02 $h\nu + H$	E	H02 122 nm	Flake, K. M. Spectroscopic measurement of the magnetic field in a high density plasma. J. Quant. Spectrosc. Radiat. Transfer 22, 357 (1979) West Germany
4298	C02 Undef C04 Undef	T	Undef	Uchaikin, V. V. Fluctuations in cascade processes of the passage of particles through a substance: II. Sov. Phys. J. 22, 113 (1979) Soviet Union
4299	H12 $h\nu + e$	T	Undef	Bozrikov, P. V.; Tsaregorodtsev, L. I. Splitting of a photon into three by an electron. Sov. Phys. J. 22, 117 (1979) Soviet Union
4300	H12 $h\nu + e$	T	Undef	Lysikov, Y. I. Compton scattering of a spectrally narrow radiation flux by free electrons. Sov. Phys. J. 22, 127 (1979) Soviet Union
4301	C08 $H^+ + NaCl$	E	1.0-3.8 MeV	Kanurin, Y. N.; Yakovlev, V. Y. Effect of preirradiation on proton channeling in NaCl crystals. Sov. Phys. J. 22, 208 (1979) Soviet Union
4302	H05 $h\nu + SF_6$	T	904 cm^{-1}	Kuz'min, M. V.; Sazonov, V. N. Model for the radiative dissociation of polyatomic molecules. Sov. J. Quantum Electron. 9, 321 (1979) Soviet Union
4303	BC7 Undef	T		Apanasovich, P. A.; Mikhovtsev, A. F. Two-photon transition in a colliding particle system. Sov. J. Quantum Electron. 9, 341 (1979) Soviet Union
4304	H04 $4h\nu + Tl$	E	354-530 nm	Lebedev, V. V.; Plyusina, V. N.; Boryshchik, G. M. Four-photon parametric oscillation in thallium vapor. Sov. J. Quantum Electron. 9, 387 (1979) Soviet Union
4305	A12 $He^{\circ} + He$ H05 $h\nu + He_2^{\circ}$	T	A12 Undef H05 61.5 nm	Gudzenko, L. I.; Lakoba, I. S.; Sytyko, Y. I.; Yakovlenko, S. I. Analysis of the feasibility of stimulated emission of vacuum ultraviolet radiation from an electron-beam-pumped helium dimer. Sov. J. Quantum Electron. 9, 422 (1979) Soviet Union
4306	H05 $nh\nu + SF_6$	E	13.6 μ	Baronov, V. Y.; Velikhov, E. P.; Kaganov, M. A.; Kolomishchik, Y. N.; Lashkov, V. S.; Plomenniy, V. D.; Ryabov, E. A.; Starodubtsov, A. I. Isotope separation by multiphoton dissociation of molecules with high-power CO_2 laser radiation: II. Investigation of the process for sulfur isotopes and SF_6 molecules. Sov. J. Quantum Electron. 9, 486 (1979) Soviet Union

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4307	A12 $SF_6 + SF_6$	E	337 K	Vasilenko, L. S.; Shvortsov, N. A.; Shutsova, N. A.; Chebotov, V. P. Investigations of collisions in SF_6 by laser spectroscopy. Sov. J. Quantum Electron. 5, 501 (1979) Soviet Union
4308	B01 Undef	T		Solntsev, G. I.; Shapiro, D. A. Acceleration effects in resonant interaction between intense light fields and ions in a low temperature plasma. Sov. J. Quantum Electron. 9, 516 (1979) Soviet Union
4309	B02 $nh\nu + SF_6$; $nh\nu + BCl_3$ K03 Review	E	13 p	Galochkin, V. T.; Orlovskii, A. A. Characteristics of the absorption of high-intensity infrared radiation by molecules (review). Sov. J. Quantum Electron. 9, 525 (1979) Soviet Union
4310	B02 Undef	T	Undef	Merkus, A. O.; Platonenko, V. T. Saturation of light absorption in molecular gases. Sov. J. Quantum Electron. 9, 543 (1979) Soviet Union
4311	B01 Undef	T	Undef	Andreev, M. F.; Buzalev, V. I.; Kisilev, A. R.; Pasmirsk, G. A. Experimental investigation of the spatial structure of the first Stokes component of stimulated Raman scattering. Sov. J. Quantum Electron. 9, 541 (1979) Soviet Union
4312	A05 $Ar + F_2$; $Ar + Kr + F_2$; $Kr + Xe + F_2$	E	157-500 K	Bosov, N. G.; Danilychev, V. A.; Beiglb, V. A.; Korincev, O. M.; Lobanov, V. S.; Reichenov, A. G. Kinetics of excimer formation in lasers utilizing rare gas-fluorine mixtures. Sov. J. Quantum Electron. 5, 503 (1979) Soviet Union
4313	B05 $nh\nu + SF_6$	E	13 p	Barmine, V. Y.; Velikhov, E. P.; Klenishchik, Y. R.; Lashkov, V. S.; Rix'ev, V. G.; Ili'adunski, V. E.; Ryabov, E. A. Isotope separation by multiphoton dissociation of molecules with high-power CO_2 laser radiation: IV. Enrichment with ^{35}S by irradiation of cooler SF_6 gas. Sov. J. Quantum Electron. 9, 621 (1979) Soviet Union
4314	B08 $he + I_2$	E	578 nm	Kashin, V. M.; Petroshev, G. G.; Yashchev, O. F. Pulsed stimulated emission due to electronic transitions in the I_2 molecule pumped optically by a copper vapor laser. Sov. J. Quantum Electron. 5, 639 (1979) Soviet Union
4315	B11 $CO + Re$; $D_2 + Re$	E	300 K	Gasper, R. P. M.; Green, D. P.; Holt, D. E. Interactions between hydrogen isotopes and carbon monoxide on rhenium. Surface Sci. 84, 249 (1979) United Kingdom
4316	B11 $CO + Fe + K$	T	310 K	Bradley, G.; Gafner, G.; Benzel, H. P. CO adsorption on potassium promoted Fe(110). Surface Sci. 84, 256 (1979) West Germany
4317	B11 $O_2 + W$; $CO + W$; $Xe + W$	E	20-400 K	Hong, C.; Gomer, R. Sticking coefficients of CO , O_2 , and Xe on the (110) and (100) planes of tungsten. Surface Sci. 84, 329 (1979) United States
4318	B09 $Gd + W$; $Tb + W$; $Dy + W$; $Ho + W$	E	2540-3000 K	Floyd, R. L.; Dresser, M. J. The surface ionization of gadolinium, terbium and dysprosium on the tungsten (110) surface. Surface Sci. 84, 387 (1979) United States
4319	B11 $H_2 + Rh$	E	120-400 K	Yates, J. T., Jr.; Thiel, P. A.; Weinberg, W. H. The chemisorption of hydrogen on Rh(111). Surface Sci. 84, 427 (1979) United States
4320	B11 $Cl + Fe$	E	321 K	Douba, P. A.; Jones, R. G. Halogen adsorption on Fe(100): I. The adsorption of Cl_2 studied by AES, LEIS, work function change and thermal desorption. Surface Sci. 84, 449 (1979) United Kingdom

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4321	D13 $e + O + Mo$	E	237 eV	Tu, R. L. Effect of Co on electron stimulated desorption of negative ions. Surface Sci. 84, 149. (1979) United States
4322	D11 $O_2 + Al$	E	337 K	Nichol, R.; Jourdan, C.; Costald', J.; Barrien, J. On the initial interaction of oxygen with the (111) and (100) aluminium surfaces. Surface Sci. 84, 189 (1979) France
4323	D11 $CN_2 + Ni$	E	307 K	Schouten, F. C.; Gijzen, O. L. J.; Bontema, G. A. Interaction of methane with Ni(111) and Ni(100); diffusion of carbon into nickel through the (100) surface: an AES-LEED study. Surface Sci. 87, 1 (1979) The Netherlands
4324	D13 $e + CO + W$	E	1200 eV	Huck, J. L.; Craig, J. M., Jr.; Lichtman, B. A comparative study of EES of positive and negative ions from CO on tungsten. Surface Sci. 87, 31 (1979) United States
4325	D11 $O_2 + Si$	E	307 K	Vieringa, P. E.; van Silfhout, A.; Sparnau, R. J. Reflectometric study of dangling-bond surface states and oxygen adsorption on the clean Si(111)7 x 7 surface. Surface Sci. 87, 43 (1979) The Netherlands
4326	D03 $Ar^+ + Cu; Ar^+ + CuO$	T	620 eV	Garrison, B. J.; Vinograd, N.; Harrison, B. E., Jr. Classical trajectory calculations of the energy distribution of ejected atoms from ion bombarded single crystals. Surface Sci. 87, 101 (1979) United States
4327	D07 Undef	T	Undef	Calli, V.; Garcia, N.; Hutchinson, J.; Interpretation of selective adsorption in atom-surface scattering. Surface Sci. 87, 112 (1979) United States
4328	.34 $e + Al$	T	350 eV	Ganachaud, J. P.; Callier, N.; Aderem, B.; Blanc, L.; Gaubert, C. New theoretical results about the anisotropy of the secondary emission of Al(001) and Al(110). Surface Sci. 87, 125 (1979) France
4329	D11 $Xe + Cu$	E	330 K	Glauch, A.; Rordl, U. Thermodynamics and kinetics of Xe monolayer adsorption on Cu(100) by LEIS and AES. Surface Sci. 87, 187 (1979) France
4330	D11 $N + Fe$	E	307 K	Johnson, D. W.; Roberts, N. W. Nitrogen chemisorption by iron. Surface Sci. 87, L255 (1979) United Kingdom
4331	D13 $e + O + W$	E	10-90 eV	Kirschner, J.; Hanzel, D.; Stolz, P. Electron stimulated desorption of O^+ ions: energy dependence of the desorption efficiency from adsorbed oxygen on metal surfaces and its bearing on the mechanism. Surface Sci. 87, L267 (1979) West Germany
4332	D10 $He + C; H + C; H_2 + C$	T	0.10-9.6 eV	Vidali, G.; Cole, N. W.; Schwartz, C. Asymptotic interaction between He, H, H_2 and a graphite surface. Surface Sci. 87, L273 (1979) United States
4333	D11 $Xe + Pd$	E	350 K	Koppers, J.; Hittachhe, F.; Wendt, R.; Ertl, G. The adsorption of Xe on Pd(110). Surface Sci. 87, 295 (1979) West Germany
4334	D11 $O_2 + Cu; H_2O + Cu$	E	307 K	Hebrahen, F. M. P. M.; Bontema, G. A. The kinetics of the interactions of O_2 and H_2O with a Cu(110) surface and of the reaction of CO with adsorbed oxygen studied by means of ellipsometry, AES and LEIS. Surface Sci. 87, 333 (1979) The Netherlands
4335	D11 $CO + Ru$	E	330 K	Schwarz, J. A.; Kallman, S. R. Adsorption-desorption kinetics of CO from clean and sulfur covered Ru(001). Surface Sci. 87, 510 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4336	H11 $H_2 + Ru$	E	300 K	Schwarz, J. A. Adsorption-desorption kinetics of H_2 from clean and sulfur covered Ru(001). <i>Surface Sci.</i> 87, 525 (1979) United States
4337	H17 $e + NaCl$	E	2300 eV	Friedenberg, A.; Shapiro, Y. Electron induced dissociation of the NaCl(111) surface. <i>Surface Sci.</i> 87, 581 (1979) Israel
4338	H07 $H_2 + C$ H10 $H_2 + C$	E	330 K	Berry, G.; Wesner, D.; Carlen, W.; Frankl, D. R. Selective adsorption of 3He and 4He on the basal plane surface of graphite. <i>Surface Sci.</i> 87, 629 (1979) United States
4339	H07 $Na^+ + HI; Na^+ + NI; Ar^+ + HI$	T	710 eV	Garrison, R. J. Theory of ion scattering from single crystals. <i>Surface Sci.</i> 87, 643 (1979) United States
4340	H12 $hv + e$	T	6563 Å	Poehner, R.; Norlbergh, J. R. The effects of electron scattering on balmer emission lines in Be stars. <i>Astrophys. J., Part 1</i> 233, 259 (1979) Canada
4341	H12 $hv + e$	T	13 ⁹ MeV	Schlickeiser, R. Astrophysical gamma-ray production by inverse Compton interactions of relativistic electrons. <i>Astrophys. J., Part 1</i> 233, 294 (1979) United States
4342	A04 $H + H_2; H + CO$	T	13 ⁹ -10 ⁹ K	Belgarme, A.; Roberge, W. G. Collision-induced dissociation of interstellar molecules. <i>Astrophys. J., Part 2</i> 233, L25 (1979) United States
4343	A17 $C + H$	T	3 eV	Mamalgatti, V. R.; Jyoti, B. G. A note on failure of graphical method in the calculation of r-centroids in (D_2^+ - 1^2I^+) transition of CH molecule. <i>Indian J. Pure Appl. Phys.</i> 16, 564 (1979) India
4344	A17 $Li + F; Li + Cl; Li + Br; Li + I;$ $Na + F; Na + Cl; Na + Br; Na + I;$ $Rb + F; Rb + Cl; Rb + Br; Rb + I;$ $Cs + F; Cs + Cl; Cs + Br; Cs + I; K$ $+ F; K + Cl; K + Br; K + I$	T	1-5 eV	Mohammed, S. M. An interaction potential for alkali halide molecules. <i>Indian J. Pure Appl. Phys.</i> 16, 646 (1979) India
4345	E09 $e + H_2O$	T	0.3 eV	Hara, M. P.; Basal, M. S. Capture of slow electron and rotational excitation of polar molecules. <i>Indian J. Pure Appl. Phys.</i> 16, 705 (1979) India
4346	A12 $He + OCS; Ar + OCS$	T	30-300 K	Mohotra, S. C.; Johri, G. R.; Srivastava, S. L. Collision broadening of rotational lines of OCS by noble gases. <i>Indian J. Pure Appl. Phys.</i> 16, 747 (1979) India
4347	A17 $H + H; H + Li; H + F; H + O; H + N;$ $O + O; C + O; N + O; I + I$	T	0.3-5 eV	Noor Mohammad, S. On the generalization of the Lennett potential. <i>Indian J. Pure Appl. Phys.</i> 16, 752 (1979) India
4348	A03 $OCS + OCS$ A12 $OCS + OCS$	T	9.3 eV	Johri, G. R.; Gupta, S. Comparison of interpolation scheme in the treatment of collisional transfer of rotational energy. <i>Indian J. Pure Appl. Phys.</i> 16, 790 (1979) India
4349	H12 $hv + e$	T	279 keV	Sunay, S. T. P. V. J. Atomic Compton cross-section due to platinum. <i>Indian J. Pure Appl. Phys.</i> 16, 800 (1979) India
4350	H03 $hv + Hg; hv + Pb; hv + Ta; hv + Sn;$ $hv + Zr$	E	279 keV	Satyendra Prasad, N.; Kusa Raja, G.; Narasimha Murthy, K.; Narasimha Murthy, V. A.; Lakshminarayana, V. Elastic scattering of 279 keV gamma rays. <i>Indian J. Pure Appl. Phys.</i> 16, 836 (1979) India
4351	A07 $He^+ + H_2$	T	201-1000 eV	Tiwary, S. N. K shell ionization of H_2 by He^+ ion impact. <i>Indian J. Pure Appl. Phys.</i> 16, 1003 (1979) India

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4352	A17 H + H; H + Zn; H + Cd; H + Hg; H + O; H + F; H + Cl; H + Br; H + I; Li + Li; He + He; K + K; N + N; P + P	T	3 eV	Raghunathi, S. S.; Sharma, L. S. Potential energy function for diatomic molecules. Indian J. Pure Appl. Phys. 16, 1071 (1979) India
4353	A03 He + He ⁺ A11 He + He ⁺ E03 e + He ⁺ E07 e + He ⁺	E	A03; A11 300 K E03; E07 300-3000 K	Dovez, F.; Deslaur, J.; Delpech, J.-F. Transitions between Rydberg levels of helium induced by electron and neutral collisions. J. Phys. (Paris) 40, 215 (1979) France
4354	D15 e + Cr	E	0.40-1.7 MeV	Bigot, R.; Henry, F.; Vajda, P.; Lucmann, A.; Lucmann, P. Atomic displacements in low temperature irradiated chromium crystals. J. Phys. (Paris) 40, 293 (1979) France
4355	C07 He ⁺ + C	E	1 MeV	Denis, A.; Descaudelles, J. Quantum beats study of the "He" beam-carbon foil interaction. J. Phys. (Paris) 40, 437 (1979) France
4356	A11 He + He ⁺ ; He + He ⁺ ; Ar + He ⁺ ; Kr + He ⁺ ; Xe + He ⁺	E	300 K	Flitz, P.; Riedinger-Ordonax, L.; Collin, C.; Jundt, F.; Collin, A. Lifetime of ²³ Ne levels excited by the ⁵⁴ Cr(α, p) ⁵⁷ Fe reaction. J. Phys. (Paris) 40, 511 (1979) France
4357	A11 He + He ⁺ ; He + He ⁺ ; Ar + He ⁺ ; Kr + He ⁺ ; Xe + He ⁺	T	300 K	Grynberg, G.; Giacobino, E.; Biraben, F.; Baroff, R. Relaxation of the sodium atom in the 4D level by collisions with noble gases: II. Theoretical aspects. J. Phys. (Paris) 40, 533 (1979) France
4358	H06 hv + Cl	T	0.9-3 Ry	Leclercq, R.; Combet foreaux, F. Photoionization cross section of the open 3p subshell in atomic chlorine. J. Phys. (Paris) 40, 545 (1979) France
4359	H04 hν + Atom	T	Undef	Grynberg, G. Doppler-free multi-photon excitation: light shift and saturation. J. Phys. (Paris) 40, 667 (1979) France
4360	A06 D ⁺ + Xe; D ₂ ⁺ + Xe A08 D ⁺ + Xe; D ₂ ⁺ + Xe	E	1-16 keV	Blimer, S.; Dausson, S.; Geller, R.; Jacquet, B.; Jacquet, C.; Tschorn, J. Experimental study of the production of negative deuterons by double charge-exchange in xenon. J. Phys. (Paris) 40, 641 (1979) France
4361	A02 HCl + Ar A12 CO + N ₂ ; CO + CO; CO + CO ₂ A17 H + H; C + O	T	A02 298-808 K A12 180-300 K A17 2 eV-1	Robert, D.; Bonamy, J. Short range force effects in semiclassical molecular line broadening calculations. J. Phys. (Paris) 40, 923 (1979) France
4362	A17 Hg + Xe	E	335-2000 cm ⁻¹	Droz, R.; Bouquet, C. Spectral profile of the mercury 1 840 Å absorption line perturbed by noble gases. Hg-Xe interaction potentials derived from temperature effect. J. Phys. (Paris) 40, 945 (1979) France
4363	A10 Hg ⁺ + Cd	E	339 K	Evans, V. B.; Gough, V. Observation of modulation in the transfer of orientation by collisions of the second kind. J. Phys. (Paris) 40, 961 (1979) France
4364	H02 3hν + atom	T	Undef	Grynberg, G. Three-photon absorption: selection rules and line intensities. J. Phys. (Paris) 40, 965 (1979) France
4365	A13 H ₂ ⁺ + HC ₂ N; CH ₂ ⁺ + HC ₂ N; CH ₃ ⁺ + HC ₂ N; H ₂ O ⁺ + HC ₂ N; C ₂ H ₂ ⁺ + HC ₂ N; HCO ⁺ + HC ₂ N; H ₂ N ⁺ + HC ₂ N A06 He ⁺ + H ₂ N; C ⁺ + HC ₂ N; CH ⁺ + HC ₂ N; CO ⁺ + HC ₂ N	E T	360 K	Froesch, C. G.; Harland, P. V.; Reiman, R. J. Laboratory investigation of ion-molecule reactions of HC ₂ N in dense interstellar clouds. Mon. Not. Roy. Astron. Soc. 187, 441 (1979) New Zealand

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4366	ED3 $e + He^{++}$	T	5000-20000 K	Giles, K. Collision strengths for $[He V]$. <i>Ann. Bot. Soc. Astron. Sec.</i> 107, 45p (1979) United Kingdom
4367	H07 $he + H^-$	T	15300-1250 A°	Ushart, A. V. The bound-free photo-detachment cross-section of H^- . <i>Ann. Bot. Soc. Astron. Sec.</i> 107, 50p (1979) United Kingdom
4368	ED3 $e + Fe^{2++}$ ED6 $e + Fe^{3++}$	T	ED3 $1 \times 10^7 - 5 \times 10^7$ K ED6 $1 \times 10^7 - 5 \times 10^7$ K	Gabriel, A. M.; Phillips, K. J. R. Dielectronic satellite spectra for highly charged helium-like ions: IV. Iron satellite lines as a measure of near-thermal electron energy distributions. <i>Ann. Bot. Soc. Astron. Sec.</i> 109, 319 (1979) United Kingdom
4369	A03 $He + OH; He + OD; He + CH; He + CD;$ $He + NH; He + ON; He + OB; He +$ $CH; He + CB; He + NH; He + OH;$ $He + OD; He + CH; He + CB; He +$ $NH; He + ON; He + OB; He + CH; He +$ $CB; He + NH; He + ON; He + OB; He +$ $CH; He + CB; He + NH$	T	10-150 K	Bizan, R. M.; Field, R. A-doublet population inversion in collisions of OH, OD, CH, CD and NH. <i>Ann. Bot. Soc. Astron. Sec.</i> 100, 503 (1979) United Kingdom
4370	A03 $H_2 + CO; H_2 + CS; H_2 + SiO$	T	10-100 K	Varnsholevich, B. A.; Khronovskii, V. K. Rotational-level populations of interstellar molecules. <i>Sov. Astron.-AJ</i> 22, 667 (1978) Soviet Union
4371	H12 $he + e$	T	Undef	Il'chenko, A. S. Relaxation of an electron gas interacting with radiation. <i>Sov. Astron.-AJ</i> 23, 208 (1979) Soviet Union
4372	H02 $he + CH_4$	E	0-12 nm	Bottaglia, A.; Villa, G.; Boudouris, G. Absorption of the 12 and 8 millimeter radiation by the propane vapor under pressure. <i>Rev. Phys. Appl. (Paris)</i> 14, 801 (1979) Italy
4373	H02 $he + He$ H06 $he + He$	T	13.6 p	Gauthier, J.-C.; Galand, J.-P. Laser-induced gas-breakdown model. <i>Rev. Phys. Appl. (Paris)</i> 14, 807 (1979) France
4374	A03 $H + H_2$	T	13° K	Sochkov, A. A.; Shakhinov, V. A. Cooling of hot protogalactic gas by the H_2 molecular ion. <i>Sov. Astron. Lett.</i> 4, 164 (1978) Soviet Union
4375	H12 $he + e$	T	$0.5-10^6$ eV	Pozdnyakov, L. A.; Sobel', I. N.; Syunyaev, R. A. Comptonization and emission spectrum of x-ray sources: Monte Carlo calculations. <i>Sov. Astron. Lett.</i> 5, 175 (1979) Soviet Union
4376	D04 $e + He$ D06 $e + He$	E	0.4-1.5 keV	Gomyazova, N. V.; Zaslavskii, S. I.; Pronin, I. I. Anisotropic ionization loss of electrons in a molybdenum single crystal. <i>Sov. Tech. Phys. Lett.</i> 4, 349 (1978) Soviet Union
4377	ED6 $e + Al + Al_2O_3$	E	10 keV	Kreol'nikov, B. A.; Parfentov, B. M. Coincidence energy spectra for the $(e, 2e)$ reaction in free-standing $Al + Al_2O_3$ films. <i>Sov. Tech. Phys. Lett.</i> 4, 361 (1978) Soviet Union
4378	D03 $Ar^+ + Cu$	E	10-35 keV	Bojashova, L. L.; Borisov, A. R.; Pashova, E. S.; Malchenov, V. A. Blocking effect for fast recoil atoms. <i>Sov. Tech. Phys. Lett.</i> 4, 363 (1978) Soviet Union
4379	D17 $he + Ti$	E	10.6 p	Bench-Brunovich, A. M.; Libe, M. B.; Liberson, M. M.; Robin, V. S.; Pavlov, S. D.; Ivanova, N. R.; Kochergina, N. S. Effect of oxygen diffusion and dissolution on the optical properties of a metal in radiative heating. <i>Sov. Tech. Phys. Lett.</i> 4, 371 (1978) Soviet Union
4380	D04 $Ar^+ + Cu$	E	30 keV	Brusilovskii, B. A.; Malchenov, V. A. Ion-electron emission from a spherical target. <i>Sov. Tech. Phys. Lett.</i> 4, 363 (1978) Soviet Union

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4381	A97 $\text{Ca}^0 + \text{Ca}; \text{H}^+ + \text{H}$	E ?	595 K	Dovdariaia, A. Z.; Kigucharev, A. I.; Lazarenko, A. V.; Shavrov, V. A. Collisional ionization of Rydberg states of alkali atoms. Sov. Tech. Phys. Lett. 4, 486 (1978) Soviet Union
4382	B98 $\text{H}^+ + \text{Cu}; \text{D}^+ + \text{Cu}$	E	2-40 keV	Zhabrov, G. I.; Korotkov, V. A. Negative component in hydrogen and deuterium beams scattered by a copper target. Sov. Tech. Phys. Lett. 4, 429 (1978) Soviet Union
4383	A93 $\text{Na}^+ + \text{He}$	E	220 K	Zhitnikov, R. A.; Kortobshin, V. A.; Kliment'ev, G. V. Determination of the cross sections for metastability exchange in the Na^+-He^+ mixture from coherent transfer in the $2^2S_1/2$ state. Sov. Tech. Phys. Lett. 4, 518 (1978) Soviet Union
4384	B96 $\text{Br}^+ + \text{Ar}$	T	50 eV	Anan'yin, N. Y.; Dolmatov, V. K.; Ivanov, V. E. Giant-resonance reionization in the Ar atom. Sov. Tech. Phys. Lett. 4, 625 (1978) Soviet Union
4385	B17 $\text{B}^+ + \text{VO}_2$	E	50-100 keV	Suvorov, A. V.; Tereshov, E. I. Effect of ion bombardment on the metal-dielectric phase transition in vanadium dioxide. Sov. Tech. Phys. Lett. 4, 637 (1978) Soviet Union
4386	B94 $\text{Ar}^+ + \text{GaAs}; \text{Ar}^+ + \text{InP}$	E	3 keV	Kazantsev, A. A.; Protopopov, G. B. Electron energy spectra in the excitation of GaAs and InP by argon ions. Sov. Tech. Phys. Lett. 5, 40 (1979) Soviet Union
4387	A97 $\text{H}^+ + \text{Cd}; \text{H}^+ + \text{U}; \text{H}^+ + \text{Tl}; \text{H}^+ + \text{U}$	E	5.6-10.1 MeV	Callier, A.; Kantelf, J.; Loontjens, H.; Zipf, J. Determination of ion-induced h-shell ionization cross sections by comparison with nuclear Coulomb excitation. Nucl. Instrum. Methods 163, 221 (1979) Poland
4388	A98 $\text{I}^{1+} + \text{H}_2; \text{I}^{2+} + \text{H}_2; \text{I}^{3+} + \text{H}_2; \text{I}^{4+} + \text{H}_2; \text{I}^{5+} + \text{H}_2; \text{I}^{6+} + \text{H}_2; \text{I}^{7+} + \text{H}_2; \text{I}^{8+} + \text{H}_2; \text{I}^{9+} + \text{H}_2; \text{I}^{10+} + \text{H}_2$	T	3.6-11900 MeV	Baitirov, I. S.; Zelikhov, V. P.; Iskhakov, Y. A. A semiempirical method for determining the cross sections for the loss of electrons by fast multiply charged ions. Nucl. Instrum. Methods 164, 329 (1979) Soviet Union
4389	A97 $\text{I}^+ + \text{Ca}; \text{H}^+ + \text{Sc}; \text{H}^+ + \text{Ti}; \text{H}^+ + \text{V}; \text{H}^+ + \text{Cr}; \text{H}^+ + \text{Mn}; \text{H}^+ + \text{Fe}; \text{H}^+ + \text{Co}; \text{H}^+ + \text{Ni}; \text{H}^+ + \text{Cu}; \text{H}^+ + \text{Zn}; \text{H}^+ + \text{Ga}; \text{H}^+ + \text{Ge}; \text{H}^+ + \text{As}; \text{H}^+ + \text{Se}; \text{H}^+ + \text{Br}; \text{H}^+ + \text{Kr}; \text{H}^+ + \text{Rb}; \text{H}^+ + \text{Sr}; \text{H}^+ + \text{Y}; \text{H}^+ + \text{Zr}; \text{H}^+ + \text{Nb}; \text{H}^+ + \text{Mo}; \text{H}^+ + \text{Ru}; \text{H}^+ + \text{Rh}; \text{H}^+ + \text{Pd}; \text{H}^+ + \text{Ag}; \text{H}^+ + \text{Cd}; \text{H}^+ + \text{In}; \text{H}^+ + \text{Sn}$	E T	0.2-2.0 MeV	Lopes, J. S.; Jewes, A. P.; Ramos, S. C. Fitted inner-shell proton ionization cross sections from Ca to Sn for 0.2-2 MeV incident energy. Nucl. Instrum. Methods 164, 369 (1979) Portugal
4390	B85 Ne^+	E		Broke, G. W. F.; Goldman, S. P.; von Ulfenhardt, A. Ne ⁺ Lamb-shift measurement by the quenching-radiation anisotropy method. Phys. Rev. A 20, 1295 (1979) Canada
4391	A92 Undef	T	Undef	France, V. Theory of direct scattering of neutral and charged atoms. Phys. Rev. A 20, 1327 (1979) United States
4392	A16 $\text{Br}^+ + \text{He}$ A17 $\text{Br}^+ + \text{He}; \text{Br} + \text{He}$	T	5.7-8.4 eV	Gleason, R. E.; Liu, D. Electron detachment in Br ⁺ + He collisions: potential energies for Br ⁺ and BrHe. Phys. Rev. A 20, 1344 (1979) United States
4393	C97 $\text{Fe}^+ + \text{C}$	E	0.3-1.6 MeV	Dumont, P. B.; Sandinet-Robinet, Y.; Garnir, N. P.; Clement, E.; Grovesse, R. Beam-fall lifetime measurements in Fe V and Fe VI. Phys. Rev. A 20, 1347 (1979) Belgium
4394	B97 Undef	T		Rosenberg, L. Sum rule and classical limit for scattering in a low-frequency laser field. Phys. Rev. A 20, 1362 (1979) United States
4395	C93 $\text{H}^+ + \text{He}; \text{H}^+ + \text{He}; \text{e} + \text{He}; \text{e} + \text{He}$	E	3.25-2.6 GeV/c	Sochting, K. Measurement of the specific primary excitation of helium and neon by fast charged particles. Phys. Rev. A 20, 1369 (1979) West Germany

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4396	A06 $H^+ + Hg$ A07 $H^+ + Hg$ A17 $H + Hg^+; H^+ + Hg$	T	0.1-500 eV	Gleason, R. E.; Liu, B. Potential energies and cross sections for HgH^+ . Phys. Rev. A 20, 1366 (1979) United States
4397	A07 $He^+ + Sr$	E	66 meV	Fahs, D. W.; Schearer, L. B.; Ferba, W. F. Alignment of ions in Penning collisions. Phys. Rev. A 20, 1372 (1979) United States
4398	M06 $He + NH_3$	E	10 μ	van Stryland, E. W.; Shoemaker, I. L. Mediated coherent Raman beats. Phys. Rev. A 20, 1376 (1979) United States
4399	E02 $e + N$ Seq E12 $e^+ + He^+ \text{ Seq}$ E17 $e + N$ Seq	T	$400-10^6$ eV	Reitan, A. Relativistic Glauber amplitudes for elastic electron and positron scattering by hydrogen atoms and hydrogenlike ions in the ground state. Phys. Rev. A 20, 1386 (1979) Norway
4400	E03 $e + Li$	E	3-1200 eV	Zajonc, A.; Gallagher, A. Electron excitation of Li S and D states. Phys. Rev. A 20, 1353 (1979) United States
4401	E03 $e + N_2; e + D_2$ E04 $e + N_2; e + D_2$ E09 $e + N_2; e + D_2$	T	2.4-5.0 eV	Bardoley, J. W.; Vadehra, J. W. Dissociative attachment and vibrational excitation in low-energy collisions of electrons with N_2 . Phys. Rev. A 20, 1398 (1979) United States
4402	A06 $He^{2+} + He$	T	15-1000 keV	Thelton, T. C.; McGuire, J. M. Single and double electron capture in the independent-electron approximation at high velocities. Phys. Rev. A 20, 1406 (1979) United States
4403	E03 $e + He; e + Li^+; e + C^{2+}; e + O^{2+}; e + Si^{12+}$	T	65-8000 eV	van Uyngaerden, W. L.; Bhadra, K.; Henry, R. J. W. Excitation of heliumlike ions by electron impact. Phys. Rev. A 20, 1409 (1979) United States
4404	E03 $e + K$	E	2-500 eV	Phelps, J. O.; Solomon, J. E.; Keff, B. F.; Lin, C. C.; Lee, E. T. P. Electron-impact excitation of the potassium atom. Phys. Rev. A 20, 1418 (1979) United States
4405	A18 $Zn^+ + Xe; C^+ + Xe; Ar^+ + Xe; He^+ + Xe; Cd^+ + Xe; Kr^+ + Xe; Xe^+ + Xe$	E T	2.5-400 keV	Loftager, P.; Beenenbocher, F.; Jensen, O. S.; Sorensen, V. S. Experimental study of effective interatomic potentials. Phys. Rev. A 20, 1443 (1979) Denmark
4406	A17 $H^+ + O; He^{2+} + He$	T	Undef	Ziehler, J.; Fritsch, W.; Vllie, W. Molecular-orbital approach to ion-atom collisions with multiply charged projectiles. Phys. Rev. A 20, 1448 (1979) West Germany
4407	E03 $e + H$ E17 $e + H$	T	100-300 eV	Glen, T. T. Excitation of the hydrogen atom in a modified Glauber theory. Phys. Rev. A 20, 1467 (1979) Canada
4408	E05 $e + O$ E17 $e + O$ M06 $He + O$	T	E05; E17 100-2000 eV M06 000-400 A°	Burnett, T.; Reuntnoe, S. P. Differential and total cross sections for electron-impact ionization of atomic oxygen. Phys. Rev. A 20, 1468 (1979) United States
4409	E02 $e + He$	T	Undef	Watson, D. K.; McKay, V. Dipole-to-dipole-function approach to electron-molecule scattering. Phys. Rev. A 20, 1474 (1979) United States
4410	A07 $H^+ + Ti; H^+ + Fe; H^+ + Ni; H^+ + Zn$	E	60-150 keV	Zander, A. R.; Andrews, N. C., III K-shell ionization of Ti, Fe, Ni, and Zn by 60-150-keV protons. Phys. Rev. A 20, 1484 (1979) United States

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4411	A12 He ⁺ + He; He ⁺ + He; He ⁺ + Kr He ⁺ 2He + He	E	A12 337 K He ⁺ 5896-6482 Å	Liao, P. F.; Bjorkholm, J. E.; Bernan, P. R. Study of collisional redistribution using two-photon absorption with a nearly-resonant intermediate state. <i>Phys. Rev. A</i> 20, 1409 (1979) United States
4412	He ⁺ He + OH	E	3000 Å	Vang, C. C.; Killinger, D. K. Effect of rotational excitation on the bond oscillator strength of OH. <i>Phys. Rev. A</i> 20, 1495 (1979) United States
4413	A11 He ⁺ + N ₂	E	337 K	Catherinet, A.; Sy, A. Quenching of the 3p ² atomic-nitrogen state in a low-pressure nitrogen glow discharge. <i>Phys. Rev. A</i> 20, 1511 (1979) France
4414	M11 Under	T		Jung, C. Analysis of the differential sum rule for laser-induced free-free transitions. <i>Phys. Rev. A</i> 20, 1585 (1979) Canada
4415	M06 Under	T	Under	Ritchie, B. Multiple- versus multi-photon absorption in the theory of resonant ionization. <i>Phys. Rev. A</i> 20, 1734 (1979) United States
4416	A17 He + He; N + N	T	0-260 eV	Yeefer, A.; Gross, E. K. U.; Dreizler, R. W. Thomas-Fermi approach to diatomic systems. II. Correlation diagrams for N-N and He-He. <i>Phys. Rev. A</i> 20, 1008 (1979) West Germany
4417	A02 He ²⁺ + He A06 He ²⁺ + He A18 He ²⁺ + He	T	0.2-10.0 keV	Riverola, R. B.; Piccentini, R. B. Differential and total cross sections in He ²⁺ -He collisions. <i>Phys. Rev. A</i> 20, 1816 (1979) Argentina
4418	A03 He ⁺ + He; He ⁺ + He; He ⁺ + Sm; He ⁺ + Sm A07 He ⁺ + He; He ⁺ + Sm; He ⁺ + He; He ⁺ + Sm	E	0.75-9.3 MeV	Kamiya, N.; Kinoshita, Y.; Endo, N.; Kuwano, A.; Ishii, K.; Morita, S. Projectile-energy dependence of intensity ratio of L _α to L _β (sub 1) x rays produced by proton and He impacts on He and Sm. <i>Phys. Rev. A</i> 20, 1820 (1979) Japan
4419	A03 He ¹⁰⁺ + H; Si ¹⁰⁺ + H; Ca ¹⁰⁺ + H A06 He ¹⁰⁺ + H; Si ¹⁰⁺ + H; Ca ¹⁰⁺ + H	T	0.5-4x10 ⁵ keV	Ryufuku, M.; Watanabe, T. Total and partial cross sections for charge transfer in collisions of multicharged ions with atomic hydrogen. <i>Phys. Rev. A</i> 20, 1828 (1979) Japan
4420	E02 e + LiF; e + LiF	T	Under	Collins, L. A.; Robb, W. D.; Norcross, D. W. Low-energy collisions of electrons with highly polar molecules: orthogonalization and adiabatic exchange potentials. <i>Phys. Rev. A</i> 20, 1836 (1979) United States
4421	A03 O ⁸⁺ + H; O ⁸⁺ + He; H ⁺ + H; H ⁺ + He A06 O ⁸⁺ + H; O ⁸⁺ + He; H ⁺ + H; H ⁺ + He	T	30-1600 keV	Chan, F. T.; Eichler, J. Electron capture into arbitrary n,l levels of fast projectiles. <i>Phys. Rev. A</i> 20, 1841 (1979) West Germany
4422	C08 He ⁺ + Au; O ⁷⁺ + Au; Fe ⁺ + Au; C ⁶⁺ + Au	T	Under	Crawford, D. H.; Ritchie, R. W. Atomic physics of channelled ions. <i>Phys. Rev. A</i> 20, 1848 (1979) United States
4423	A02 D ⁺ + D; He ²⁺ + He A18 D ⁺ + D; He ²⁺ + He C08 D ⁺ + D	T	A02; A18 5 eV G06 77-10000 Å	Wadhwa, J. M. Low-energy collisions of D ⁺ with D and He ²⁺ with He. <i>Phys. Rev. A</i> 20, 1855 (1979) United States
4424	E02 e + LiF; e + KCl; e + CaF ₂ ; e + KBr; e + HBr	T	1.6-5.0 eV	Clark, C. W. Electron scattering from diatomic polar molecules: II. Treatment by frame transformations. <i>Phys. Rev. A</i> 20, 1878 (1979) United States
4425	A03 He ⁺ + H	T	Under	Jorav, R. K.; Mihajlov, A. A. Excitation and deexcitation processes in slow collisions of Rydberg atoms with ground-state parent atoms. <i>Phys. Rev. A</i> 20, 1890 (1979) Yugoslavia

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4426	A16 $N^- + He$ A17 $N + He; N^- + He$	T	A16 0.2-2.0 keV A17 0-5 eV	Horzenberg, A.; Ojha, P. Electron detachment in collisions of negative ions: $N^- + He$. Phys. Rev. A 20, 1905 (1979) United States
4427	H08 $h\nu + La$	E	5030 Å	Childs, W. J.; Goodman, L. S. ^{139}La nuclear electric-quadrupole-moment ratio by laser-rf double resonance. Phys. Rev. A 20, 1922 (1979) United States
4428	H06 Undef	T	Undef	Mayfeh, M. N. Collision-induced three-photon ionization. Phys. Rev. A 20, 1927 (1979) United States
4429	H11 $h\nu + e$	T	100-2000 eV	Schlessinger, L.; Wright, J. Inverse-bremsstrahlung absorption rate in an intense laser field. Phys. Rev. A 20, 1934 (1979) United States
4430	A03 Undef	T	Undef	Manabe, T.; Yabuzaki, T.; Ogawa, T. Theory of collisional transfer between orientation and alignment of atoms excited by a single-mode laser. Phys. Rev. A 20, 1546 (1979) Japan
4431	H01 Undef	T	Undef	Shore, B. W.; Cook, R. J. Coherent dynamics of N-level atoms and molecules: IV. Two- and three-level behavior. Phys. Rev. A 20, 1950 (1979) United States
4432	B07 Undef	T	Undef	Mittleman, M. M. Resonant potential scattering in a low-frequency laser field. Phys. Rev. A 20, 1565 (1979) United States
4433	H08 Undef	T	Undef	Mossberg, T. W.; Kachru, R.; Hartmann, S. R.; Flusberg, A. M. Echoes in gaseous media: a generalized theory of rephasing phenomena. Phys. Rev. A 20, 1976 (1979) United States
4434	H08 Undef	T	Undef	Agarwal, G. S.; Feng, D. H.; Marducci, L. R.; Gilmore, R.; Tuft, R. A. Atomic coherent-state representation of the spectrum of scattered light from a cooperative system and numerical results. Phys. Rev. A 20, 2040 (1979) India
4435	H08 Undef	T	Undef	Hanke, F.; King, M.; Schroder, G.; Hauss, J.; Glauber, R. Fluctuations in superfluorescence. Phys. Rev. A 20, 2047 (1979) East Germany
4436	H08 Undef	T	Undef	Hopf, F. A. Phase-wave fluctuations in superfluorescence. Phys. Rev. A 20, 2064 (1979) West Germany
4437	B07 Undef	T	Undef	Seith, C. R.; Jafarpour, M.; Ramano, I. Intense-field quantum electrodynamics in a medium: I. Basic formulation. Phys. Rev. A 20, 2074 (1979) United States
4438	A07 $Ar^+ + Sn; Ni + Sn; Ni + Pb$	E	45-138 MeV	Meyerhof, W. E. Ionization probability of the 3d (small sigma) molecular orbital in heavy-ion collisions. Phys. Rev. A 20, 2235 (1979) United States
4439	H06 $2h\nu + He$	T	5750-5036 Å	Sharma, R. K.; Nathur, K. C. Interference effects in the two-photon ionization of metastable helium. Phys. Rev. A 20, 2241 (1979) India
4440	G02 $Kr + He; Kr + Ne; Kr + Ar; Kr + Xe$	E	350-1200 K	Cain, D.; Taylor, W. L. Diffusion coefficients of krypton-noble gas systems. J. Chem. Phys. 71, 3601 (1979) United States
4441	A07 $Ar^+ + Kr^+$ A14 $Ar^+ + Kr^+$	E	0.01-10 eV	Maynaber, R. M.; Tang, S. Y. Chemi-ionization in collisions of metastable argon with metastable krypton. J. Chem. Phys. 71, 3608 (1979) United States
4442	A11 $O^+ + N_2; O^+ + O_2; O^+ + N_2O; O^+ + CO_2; O^+ + CH_4; O^+ + H_2O$	E	295 K	Arimoto, S. T.; Foran, A. P.; Gulotty, R. G., Jr.; Wisenfeld, J. R. Collisional deactivation of $O(2^1D_2)$ by the atmospheric gases. J. Chem. Phys. 71, 3640 (1979) United States

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4443	A11 $H_2^+ + H_2$ E03 $e + H_2$	E	A11 300 K E03 15-300 eV	Day, R. L.; Anderson, R. J.; Sharpton, F. A. Electron excitation of the singlet-g states of H_2 . J. Chem. Phys. 71, 3683 (1979) United States
4444	A03 $Li^+ + H_2$	E	0.6 eV	Faebel, R.; Tonnies, J. P. Time-of-flight measurements of the rotational excitation of para- and ortho- H_2 by collisions with Li^+ ions: I. Angular dependent transition probabilities for the $j=0 \rightarrow 2, 2 \rightarrow 0, 2 \rightarrow 4$, and $1 \rightarrow 3$ transitions at $E(\text{c.m.}) = 0.6$ eV. J. Chem. Phys. 71, 3778 (1979) West Germany
4445	A11 $OH^+ + H_2$; $OH^+ + O_2$; $OH^+ + H_2O$; $CH^+ + Ar$	E	330 K	Selzer, P. N.; Tang, C. C. Quenching rates and fluorescence efficiency in the A $^2I^+$ state of OH. J. Chem. Phys. 71, 3786 (1979) United States
4446	E03 $e + KOH$	E	43 eV	Vukovic, L.; Trajmar, S. Electron impact study of potassium hydroxide. J. Chem. Phys. 71, 3887 (1979) United States
4447	E09 $e + SF_6$	E	0-1.0 eV	Chen, C. L.; Chantry, P. J. Photon-enhanced dissociative electron attachment to SF_6 and its isotopic selectivity. J. Chem. Phys. 71, 3897 (1979) United States
4448	A17 $Na^+ + Na$; $Na^+ + Ar$; $Na^+ + Kr$; $Na^+ + Xe$	T	undef	Siska, P. E. One-electron model potential calculations of van der Waals forces: I. $Na^+(2^2S, 2^2P) + Na, Ar, Kr, Xe$. J. Chem. Phys. 71, 3942 (1979) United States
4449	A03 $H_2^+ + Li$; $H_2^+ + Na$; $H_2^+ + K$ A06 $H_2^+ + Li$; $H_2^+ + Na$; $H_2^+ + K$	E	50-1000 eV	Barrett, J. L.; Loventhal, J. J. Electron transfer and excitation in low energy H_2^+ -alkali atom collisions. J. Chem. Phys. 71, 4015 (1979) United States
4450	H05 $hv + CO_2^-$; $hv + CO_2^- + H_2O$; $hv + CO_2^-$; $hv + CO_2^- + H_2C$; $hv + HCO_2^-$; $hv + HCCO_2^- + H_2O$ H07 $hv + CO_2^-$; $hv + CO_2^- + H_2O$; $hv + CO_2^-$; $hv + CO_2^- + H_2C$; $hv + HCO_2^-$; $hv + HCCO_2^- + H_2O$	E	5300-3500 A ⁰	Smith, G. P.; Lee, L. C.; Roselley, J. T. Photodissociation and photodetachment of molecular negative ions: VII. Ions formed in $CO_2/O_2/H_2O$ mixtures, 3500-5300 A ⁰ . J. Chem. Phys. 71, 4034 (1979) United States
4451	A14 $F + H_2$	T	300 K	Zimmerman, I. H.; Boer, H.; George, T. F. $F + H_2$ collisions on two electronic potential energy surfaces: quantum-mechanical study of the collisional reaction. J. Chem. Phys. 71, 4132 (1979) United States
4452	A15 $H_2^+ + CC$	E	1.9 eV	Frenniger, F. N.; Bilotto, R. N.; Ferrari, J. M. Crossed-beam study of the reaction $H_2^+(CO, H)HCO^+$ at 1.89 eV. J. Chem. Phys. 71, 4166 (1979) United States
4453	E03 $e + Hg^+$	T	20-1000 eV	Ganas, P. S. Electron-impact excitation cross sections for H III. J. Chem. Phys. 71, 4165 (1979) United States
4454	A13 $H + F_2$; $Cl + HI$; $Cl + DI$; $F + H_2$; $F + D_2$; $F + HD$	T	300 K	Venzl, G.; Fischer, S. F. On the dynamics of exothermic triatomic exchange reactions: semi-classical model for final state VRT distributions. J. Chem. Phys. 71, 4176 (1979) West Germany
4455	A03 $He + Na_2$ A18 $He + Na_2$	T	0.1 eV	Schinke, R.; McGuire, P. Rotational rainbow oscillations in He- Na_2 collisions: comparison between coupled states and infinite order sudden approximations. J. Chem. Phys. 71, 4261 (1979) West Germany
4456	A05 $C^+ + H_2$; $C^+ + D_2$ A13 $C^+ + H_2$; $C^+ + D_2$	E	3-8 eV	Kusunoki, I.; Ottinger, C. Chemiluminescent ion-molecule reactions: rotational-vibrational population distributions of $CH^+(A^1\Sigma)$ and $CD^+(A^1\Sigma)$ from $C^+ + H_2$ and $C^+ + D_2$ collisions. J. Chem. Phys. 71, 4227 (1979) Japan
4457	E02 $e + CO_2$; $e + OCS$; $e + CS_2$	T	0-100 eV	Lynch, M. G.; Dill, D.; Siegel, J.; Scherer, J. L. Elastic electron scattering by CO_2 , OCS , and CS_2 from 0 to 100 eV. J. Chem. Phys. 71, 4240 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4458	A17 Hg + Hg; Hg + Hg + Hg; Be + Be; Be + Be + Be	T	Under	Daudey, J. P.; Novaro, O.; Koles, W.; Bertrando, R. Convergence of multibody expansions for alkaline earth metals. Contrast between magnesium and beryllium clusters. J. Chem. Phys. 71, 4297 (1979) Mexico
4459	A03 Ar + N ₂	T	4500 K	Duff, J. W.; Biale, R. C.; Truhler, D. G. Monte Carlo trajectory study of Ar + N ₂ collisions: thermally averaged vibrational transition rates at 4500 K. J. Chem. Phys. 71, 4304 (1979) United States
4460	A10 CO ⁺ + CO ₂	E	330 K	Calodanis, G. E.; Green, S. D.; Murphy, R. E. A study of the vibrational level dependent quenching of CO(v=1-16) by CO ₂ . J. Chem. Phys. 71, 4369 (1979) United States
4461	A17 F + F; Cl + Cl; Li + Cl	T	Under	Christianson, P. A.; Lee, T. S.; Pitzer, K. S. Improved ab initio effective core potentials for molecular calculations. J. Chem. Phys. 71, 4448 (1979) United States
4462	M05 hv + NO ₂ ⁻ ; hv + NO ₂ ⁻ + H ₂ O; hv + NO ₂ ⁻ ; hv + NO ₂ ⁻ + H ₂ O; hv + O ₂ ⁻ + NO; hv + O ₂ ⁻ + NO + H ₂ O M07 hv + NO ₂ ⁻ ; hv + NO ₂ ⁻ + H ₂ O; hv + NO ₂ ⁻ ; hv + NO ₂ ⁻ + H ₂ O; hv + O ₂ ⁻ + NO; hv + O ₂ ⁻ + NO + H ₂ O	E	8250-3500 Å ⁰	Smith, G. P.; Lee, L. C.; Cosby, P. C. Photodissociation and photodetachment of molecular negative ions: VIII. Nitrogen oxides and hydrates, 3500-8250 Å ⁰ . J. Chem. Phys. 71, 4464 (1979) United States
4463	A02 N ₂ + N ₂ ; D ₂ + D ₂ ; ND + ND	E	0-0.01 eV	Johnson, D. L.; Grace, R. S.; Shefferich, J. G. The total scattering cross sections for N ₂ + N ₂ , D ₂ + D ₂ , and ND + ND for relative collision energies below 10 meV. J. Chem. Phys. 71, 4554 (1979) United States
4464	G06 C ⁺ + He; S ⁺ + He; F ⁻ + He	E	Under	Dotan, I.; Fehsenfeld, F. C.; Albritton, D. L. Mobilities of C ⁺ , S ⁺ , and F ⁻ ions in helium. J. Chem. Phys. 71, 4762 (1979) United States
4465	M05 hv + Cl ₂ ⁻ ; hv + ClO ⁻ ; hv + Cl ₂ ⁻ ; hv + BrCl ₂ ⁻ M07 hv + Cl ₂ ⁻ ; hv + ClO ⁻ ; hv + Cl ₂ ⁻ ; hv + BrCl ₂ ⁻	E	7600-3500 Å ⁰	Lee, L. G.; Smith, G. P.; Moseley, J. T.; Cosby, P. C.; Guest, J. A. Photodissociation and photodetachment of Cl ₂ ⁻ , ClO ⁻ , Cl ₂ ⁻ , and BrCl ₂ ⁻ . J. Chem. Phys. 70, 3237 (1979). J. Chem. Phys. 71, 4770 (1979) United States
4466	A14 Al + SO ₂	E	700-1600 K	Fentijn, A.; Felder, W. MFTFR kinetics studies of the Al/SO ₂ reaction from 700 to 1600 K. Implications for D(Al-C). J. Chem. Phys. 71, 4854 (1979) United States
4467	E09 e + O ₂ + CO ₂	E	300 K	Kokubo, Y.; Matsuo, Y.; Shimawari, M.; Fossenden, R. V. Mechanism of thermal electron attachment in O ₂ -C ₂ H ₂ , O ₂ -CO ₂ , and O ₂ -neopentane mixtures. J. Chem. Phys. 71, 4883 (1979) Japan
4468	E03 e + F ₂	E	33-90 eV	Nishimura, M.; Cartwright, D. C.; Trajmar, S. Electron energy-loss spectra in molecular fluorine. J. Chem. Phys. 71, 5039 (1979) United States
4469	M02 hv + He ₂ ⁺ ; hv + Ar ₂ ⁺ ; hv + Kr ₂ ⁺ ; hv + Xe ₂ ⁺	T	850-180 nm	Nichols, M. H.; Hobbs, R. H.; Wright, L. A. Electronic structure of the noble gas dimer ions. II. Theoretical absorption spectra for the Ar ₂ ⁺ (sub u) ⁺ + D ₂ Ar ₂ ⁺ (sub g) ⁺ system. J. Chem. Phys. 71, 5063 (1979) United States
4470	E02 e + N ₂ E03 e + N ₂ E17 e + N ₂ E09 e + N ₂	T	53 eV	Onda, K.; Truhler, D. G. Electron-molecule scattering at intermediate energy. Centrifugal-dominant channel decoupling and the INDOX polarized SCF model applied to N ₂ at 50 eV. J. Chem. Phys. 71, 5057 (1979) United States

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4471	E82 $e + N_2$ E93 $e + N_2$ E17 $e + N_2$ G89 $e + N_2$	T	10-50 eV	Onda, K.; Truhler, D. G. State-to-state cross sections for electron impact on N_2 . Close coupling and polarized Born calculations for rotational and vibrational excitation and pure elastic scattering at nonresonant energies. J. Chem. Phys. 71, 5187 (1979) United States
4472	A14 $ClO + NO_2$	E	235-393 K	Stieflo, R. M.; Perry, R. A.; Howard, C. J. Temperature dependence of the reaction of ClO and NO_2 radicals. J. Chem. Phys. 71, 5182 (1979) United States
4473	A03 $Ar + N_2$	T	Undef	Alexander, M. M. Tensorial factorization and rotationally inelastic collisions. J. Chem. Phys. 71, 5212 (1979) United States
4474	E01 $e + N_2$ E17 $e + N_2$	E	30-50 keV	Fink, M.; Moore, P. G.; Gregory, B. Precise determination of differential electron scattering cross sections: I. The apparatus and the N_2 results. J. Chem. Phys. 71, 5227 (1979) United States
4475	E17 $e + CO_2$; $e + CH_4$; $e + CF_4$	E	53 keV	Fink, M.; Schoedelkamp, C. U.; Gregory, B. Precise determination of differential electron scattering cross sections: II. CH_4 , CO_2 , CF_4 . J. Chem. Phys. 71, 5238 (1979) United States
4476	E17 $e + N_2$; $e + CO_2$; $e + Kr$; $e + CH_4$	T	43 keV	Fink, M.; Schoedelkamp, C. U. Precise determination of differential electron scattering cross sections: III. Exchange corrections (CH_4 , N_2 , CCl_4 , and Kr). J. Chem. Phys. 71, 5243 (1979) United States
4477	A10 $Kr + CO_2$	T	Undef	Schatz, G. C.; Pullenay, T. Collisional energy transfer in polyatomic molecules: a study of anharmonicity effects in $Kr + CO_2$. J. Chem. Phys. 71, 5257 (1979) United States
4478	A17 $H_2O + H_2O$; $H_2O + He$	T	Undef	van Hemert, M.; van der Avoird, A. Ab initio calculation of the first order interaction energy in excited dimers. The H_2O-H_2O and H_2O-He dimers. J. Chem. Phys. 71, 5318 (1979) The Netherlands
4479	A17 $H_2 + H_2$	T	Undef	Ree, F. M.; Bender, C. F. Repulsive intermolecular potential between two H_2 molecules. J. Chem. Phys. 71, 5362 (1979) United States
4480	A12 $Ni + Ni$	E	12.6-91.5 MeV	Vincent, P.; Greenberg, J. S. Collision broadening of continuum radiation from $Ni + Ni$ collisions. J. Phys. B. 12, L641 (1979) United States
4481	A03 $Ne + Kr$	T	0.02-15 MeV	Fritsch, U.; Wille, U. On the use of Nikitin's two-state model in the description of vacancy-sharing processes. J. Phys. B 12, L646 (1979) West Germany
4482	A06 $He^+ + He$; $He^+ + Ne$; $He^+ + Ar$; $He^+ + Kr$ A11 $He^+ + He$; $He^+ + Ne$; $He^+ + Ar$; $He^+ + Kr$	E	4-25 keV	Hill, J.; Godden, J.; Glibody, M. E. H^+ formation in electron capture by 4-25 keV metastable hydrogen atoms in the inert gases. J. Phys. B 12, L653 (1979) United Kingdom
4483	M07 $He + H^-$	T	Undef	Wichert, A. U. The bound-free photodetachment cross section of H^- . J. Phys. B 12, 3511 (1979) United Kingdom
4484	A03 $Ne^+ + He$ A11 $Ne^+ + He$	E	Undef	Webster, M. J.; Shaw, M. J. Excitation transfer in the 2p levels of Ne due to collisions with ground-state He atoms. J. Phys. B 12, 3621 (1979) United Kingdom
4485	A03 $Li_2 + Li$; $Li_2 + He$; $Li_2 + Ne$; $Li_2 + Ar$; $Li_2 + Kr$; $Li_2 + Xe$ A11 $Li_2 + Li$; $Li_2 + He$; $Li_2 + Ne$; $Li_2 + Ar$; $Li_2 + Kr$; $Li_2 + Xe$	E	Undef	Ottlinger, C.; Schroder, M. Rate constants for collision-induced transitions in ground-state Li_2 from two-laser spectroscopy. J. Phys. B 12, 3533 (1979) West Germany

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4486	H85 $\text{He} + \text{HeHe}^+$	T	800-5000 Å	Batta, K. K.; Saha, S.; Barua, A. P. Photodissociation of HeHe^+ and flux deficiency of stellar spectra. J. Phys. B 12, 3553 (1979) India
4487	A83 $\text{H}^+ + \text{H}$	T	50-200 keV	Branden, B. W.; Deuagan, B. P.; Aclie, C. J. The distorted-wave and coupled-channel approaches to the excitation of atomic hydrogen by proton impact. J. Phys. B 12, 3563 (1979) United Kingdom
4488	A83 $\text{C}^+ + \text{C}; \text{N}^+ + \text{N}; \text{O}^+ + \text{O}$	E	20-1500 keV	Sekizuka, M.; Noda, M.; Mori, M.; Kobayashi, H. K-shell excitation in interatomic collisions for carbon, nitrogen and oxygen. I. Mononuclear collisions. J. Phys. B 12, 3565 (1979) Japan
4489	A83 $\text{C}^+ + \text{N}; \text{N}^+ + \text{O}; \text{C}^+ + \text{O}$ A87 $\text{C}^+ + \text{N}; \text{N}^+ + \text{O}; \text{C}^+ + \text{O}$	E	0.4-2.5 MeV	Kobayashi, H.; Noda, M.; Kojima, T.; Yamada, S.; Sekizuka, M. K-shell excitation in interatomic collisions for carbon, nitrogen and oxygen. II. Heteronuclear collisions. J. Phys. B 12, 3579 (1979) Japan
4490	C86 $\text{He}^+ + \text{C}; \text{He}^+ + \text{Al}; \text{He}^+ + \text{Ni}; \text{He}^+ + \text{Ag}; \text{He}^+ + \text{Au}$	E	6-24 MeV	Gladieux, A.; Chateau-Thierry, A.; Eclusey, B. Experimental charge fractions in helium beams emerging from solids. J. Phys. B 12, 3581 (1979) France
4491	A15 $\text{N} + \text{H}$	T	10-10000 K	Shizgal, B. A comparison of He-H and H-H electron spin exchange cross sections. J. Phys. B 12, 3611 (1979) Canada
4492	G82 $\text{Ar} + \text{N}_2; \text{Ar} + \text{CO}_2; \text{He} + \text{H}_2; \text{He} + \text{N}_2\text{O}; \text{Kr} + \text{N}_2\text{O}; \text{He} + \text{NH}_3$	E	300-500 K	Shashkov, A. G.; Zolotukhina, A. F.; Abramenko, T. N.; Rother, B. P.; Senona, S. C. Thermal diffusion factors for binary gas systems: Ar- N_2 , Ar- CO_2 , He- H_2 , He- N_2O , Kr- N_2O and He- NH_3 . J. Phys. B 12, 3619 (1979) Soviet Union
4493	H86 $4h\nu + \text{Cs}$	T	Under	Aymar, M.; Crance, M. Critical discussion of an absolute measurement of multiphotor ionization cross sections in caesium. J. Phys. B 12, L667 (1979) France
4494	H86 $\text{He} + \text{Cd}$	T	Under	Theodosiou, C. E. On the photoelectron angular distributions for the $4d^{10}$ subshell of cadmium I. J. Phys. B 12, L673 (1979) West Germany
4495	H86 $\text{He} + \text{Xe}$	E	90-50 Å	Heinzmann, U.; Schafers, F.; Thinn, K.; Melche, A.; Kessler, J. Polarized photoelectrons produced at xenon atoms by circularly polarized synchrotron radiation. J. Phys. B 12, L679 (1979) West Germany
4496	A83 $\text{H}^+ + \text{H}$ A86 $\text{H}^+ + \text{H}$	T	49-125 keV	Morrison, M. G.; Oph, U. Excitation and charge transfer to the 2s and 2p states in $\text{H}^+ + \text{H}$ collisions in the energy range 49 to 125 keV. J. Phys. B 12, L685 (1979) United Kingdom
4497	A83 $\text{H}^+ + \text{Na}; \text{He}^+ + \text{Na}$ A86 $\text{H}^+ + \text{Na}; \text{He}^+ + \text{Na}$ A87 $\text{H}^+ + \text{Na}; \text{He}^+ + \text{Na}$	E T	5-30 keV	Theodosiou, C. E.; Breuckmann, E.; Breuckmann, B.; Muhlhorn, W. Alignment of the $\text{Na } 2p^2 3d^2 \text{ } ^4P_{3/2}$ state by excitation with slow H^+ and He^+ . J. Phys. B 12, L689 (1979) West Germany
4498	A86 $\text{H}^+ + \text{H}$	T	100-10000 MeV	Meinelvitch, B. L.; Stockman, S. G. Relativistic classical theory of electron capture. J. Phys. B 12, L695 (1979) United Kingdom
4499	E82 $e + \text{H}$ E12 $e^+ + \text{H}$	T	Under	Drechen, R. J. Asymptotic effective potentials for electron-hydrogen scattering. J. Phys. B 12, L699 (1979) United States
4500	H86 $4h\nu + \text{Cs}$	T	Under	Crance, M. Interpretation of short-pulse resonant ionization in Cs I. J. Phys. B 12, 3686 (1979) France
4501	H86 $3h\nu + \text{Cs}^0$	T	Under	Crance, M.; Aymar, M. Three-photon 10p resonant ionization of Cs I. J. Phys. B 12, 3686 (1979) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4502	A11 K ⁺ + He; K ⁺ + Ar; K ⁺ + Ne; K ⁺ + Xe A12 K ⁺ + He; K ⁺ + Ar; K ⁺ + Ne; K ⁺ + Xe	E	Undef	Spilfeldel, A.; Gilbert, B.; Hoeffel, E.; Bontas, F. Broadening and collisional relaxation of the potassium S ² P level perturbed by rare gases: comparison of quantal calculations to semiclassical and experimental results. J. Phys. B 12, 3493 (1975) France
4503	A03 K + He; K + Ne; N + Ar; Zn ⁺ + He; Zn ⁺ + Ne; Zn ⁺ + Ar	E	0.7-500 keV	Andersen, N.; Andersen, T.; Henningsen, P.; Olsen, J. O. Excitation of K and Zn ⁺ in collisions with He, Ne and Ar: measurements of K I and Zn II resonance-line emission and polarization. J. Phys. B 12, 3713 (1979) Denmark
4504	A03 Li + He; Li + Ne; Li + Ar; Be ⁺ + He; Be ⁺ + Ne; Be ⁺ + Ar; He + He; He + Ne; He + Ar; He + Mg ⁺ + Ar; Mg ⁺ + He; Mg ⁺ + Ne; Mg ⁺ + Ar; K + He; K + Ne; K + Ar; Zn ⁺ + He; Zn ⁺ + Ne; Zn ⁺ + Ar	E	0.7-500 keV	Andersen, N.; Andersen, T.; Olsen, J. O. Collision-induced alignment in quasi-one-electron systems: systematic trends in resonance-line polarization. J. Phys. B 12, 3725 (1979) Denmark
4505	A03 H ⁺ + H A06 H ⁺ + H	T	0.25-1 keV	Pence, V. M. Optimized transition factors for low energy proton-hydrogen-atom collisions. J. Phys. B 12, 3731 (1979) Argentina
4506	A03 Na ⁺ + He; Na ⁺ + Ne; Na ⁺ + Ar A11 Na ⁺ + He; Na ⁺ + Ne; Na ⁺ + Ar	T	430 K	Matsuura, M. Thermal collisions between high-Rydberg atoms and rare-gas atoms. J. Phys. B 12, 3743 (1979) Japan
4507	A06 B ⁺ + H; B ⁺ + H ₂ ; B ²⁺ + H; B ²⁺ + H ₂ ; B ³⁺ + H; B ³⁺ + H ₂ ; B ⁴⁺ + H; B ⁴⁺ + H ₂ ; H ₂ ; B ⁵⁺ + H; B ⁵⁺ + H ₂ ; C ⁺ + H; C ⁺ + H ₂ ; C ²⁺ + H; C ²⁺ + H ₂ ; C ³⁺ + H; C ³⁺ + H ₂ ; C ⁴⁺ + H; C ⁴⁺ + H ₂ ; C ⁵⁺ + H; C ⁵⁺ + H ₂ ; C ⁶⁺ + H; C ⁶⁺ + H ₂ ; A07 B ⁺ + H; B ⁺ + H ₂ ; B ²⁺ + H; B ²⁺ + H ₂ ; C ⁺ + H; C ⁺ + H ₂ ; C ²⁺ + H; C ²⁺ + H ₂ ; C ³⁺ + H; C ³⁺ + H ₂	E	10 ⁴ -2500 keV	Coffe, T. V.; Shah, M. B.; Gilbody, M. B. One-electron capture and loss by fast multiply charged boron and carbon ions in H and H ₂ . J. Phys. B 12, 3763 (1979) United Kingdom
4508	E01 e + H E05 e + H	T	33-200 eV	McCarthy, I. E.; McDowell, M. R. C. Total reaction cross sections in the atomic coupled-channels optical model. J. Phys. B 12, 3775 (1979) Australia
4509	E02 e + He	E	100-1400 eV	Unbe, G.; Fornasini, P.; Lozzizzera, I.; Ronleri, G.; Zacco, A. Absolute total cross section measurements for intermediate energy electron scattering. I. He. J. Phys. B 12, 3787 (1979) Italy
4510	E03 e + H ₂ ; e + D ₂ E04 e + H ₂ ; e + D ₂	E	11-16 eV	Bose, N.; Linder, F. Threshold excitation in H ₂ and D ₂ by electron impact and predissociation of triplet states measured by electron-photon coincidences. J. Phys. B 12, 3805 (1979) West Germany
4511	H06 Undef	T	Undef	Dy, N.-B.; van Regenmortel, M. Photoionisation from low or high excited states. J. Phys. E 12, L716 (1975) France
4512	H06 Undef	T	Undef	Armstrong, L., Jr. Distability effects in cooperative multiphoton ionisation. J. Phys. E 12, L719 (1975) United States
4513	A01 Undef	T	Undef	Jahromian, B. M.; Amundson, P. A. Equivalence of the adiabatic approximation and the Born approximation for excitations in slowly colliding asymmetric systems. J. Phys. B 12, L725 (1979) Norway
4514	A07 H ⁺ + Ar; H ₂ ⁺ + Ar; He ⁺ + Ar A18 H ⁺ + Ar; H ₂ ⁺ + Ar; He ⁺ + Ar	E	5-20 keV	Satoke, M.; Uehara, J.; Oda, N. Measurements of double differential cross sections for electrons ejected by 5-20 keV H ⁺ , H ₂ ⁺ and He ⁺ impacts on argon. J. Phys. B 12, L729 (1975) Japan
4515	E03 e + He ⁺	T	3.1-3.25 Ry	Morgan, L. A. Electron impact excitation of the n=2 states of He ⁺ . J. Phys. B 12, L736 (1979) United States

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4516	E02 e + CO ₂ E03 e + CO ₂	T	573 K	Maddad, G. M.; Elford, R. T. Low-energy electron scattering cross sections in carbon dioxide. <i>J. Phys. B</i> 12, L743 (1979) Australia
4517	E12 e ⁺ + Ne	E	20-500 eV	Griffith, T. C.; Heyland, G. B.; Lines, A. S.; Tunney, T. R. Inelastic scattering of positrons by helium atoms at intermediate energies. <i>J. Phys. B</i> 12, L747 (1979) United Kingdom
4518	A03 M1 + F1; He + A1 C07 M1 + M1; He + A1	T	0.3-1.2 MeV	Neyenhof, W. E.; Anholt, R. Recoil effects on molecular-orbital x-ray spectra in solid targets. <i>J. Phys. B</i> 12, 3919 (1979) United States
4519	E02 e + Xe E17 e + Xe	E	5-300 eV	Klewer, M.; Doerflage, W. J. M.; van der Ziel, M. J. The polarization of electrons elastically scattered from neon at energies between 5 and 300 eV. <i>J. Phys. B</i> 12, 3935 (1979) The Netherlands
4520	E03 e + H E17 e + H	T	81-200 eV	Catalan, G.; Roberts, R. J. The form of electron-atom excitation amplitudes at high momentum transfer in the Faddeev-Watson approximation. <i>J. Phys. B</i> 12, 3947 (1979) United Kingdom
4521	E03 e + Li E17 e + Li	E	15-190 eV	Shuttleworth, T.; Burgess, D. E.; Bander, R. A.; Smith, A. C. M. Inelastic scattering of electrons by lithium atoms. <i>J. Phys. B</i> 12, 3967 (1979) United Kingdom
4522	A05 e + Li ⁺ ; e + Na ⁺ ; e + K ⁺	T	83-5000 eV	Kumar, A.; Ray, B. M. Electron impact ionization of alkali metal ions. <i>J. Phys. B</i> 12, 3979 (1979) India
4523	E12 e ⁺ + Ne	T	100-300 eV	Glen, T. T. Total cross sections of positron-helium collisions at intermediate energies. <i>J. Phys. B</i> 12, 3987 (1979) Canada
4524	A12 Cr + Ne; Cr + Ar; Cr + N ₂ ; Cr + N ₂	E	1500-1000 K	Pajol, G.; Meniger, S. Broadening and shift of neutral chromium absorption lines by various perturbing gases. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 22, 145 (1979) France
4525	E03 e + Ga ²⁺ ; e + Kr ²⁺ ; e + Nd ³⁺ ; e + Nd ³⁺ ; e + Nd ³⁺ ; e + Cu ²⁺	T	2-20 threshold	Younger, S. R. Collision strengths and Gaunt factors for highly ionized atoms of the copper isoelectronic sequence. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 22, 155 (1979) United States
4526	E03 e + C ²⁺ ; e + Ne ²⁺ ; e + Ar ¹⁹⁺ ; e + Fe ²⁶⁺ ; e + Ca ¹⁹⁺ ; e + Fe ¹⁸⁺ ; e + Kr ³⁶⁺ ; e + Ne ¹⁰⁺ ; e + Kr ³⁶⁺ ; e + O ⁸⁺ ; e + Ne ¹⁰⁺ ; e + Si ¹⁴⁺ ; e + Si ¹⁴⁺ ; e + Si ¹⁴⁺ ; e + O ⁸⁺ ; e + C ²⁺ ; e + Ar ¹⁸⁺ ; e + Fe ¹⁸⁺ ; e + Kr ³⁶⁺ ; e + Ne ¹⁰⁺ ; e + Kr ³⁶⁺	T	1-20 threshold	Younger, S. R.; Weiss, V. L. An assessment of the effective Gaunt factor approximation. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 22, 161 (1979) United States
4527	A12 NO ⁺ + NO M02 hv + NO	E T	A12 870-2500 K M02 226 nm	Selznann, K. G. P. Expressions for the local spectral absorption coefficient for correlation absorption spectroscopy. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 22, 165 (1979) United States
4528	M10 Under	T	10 ¹⁰ cm ⁻¹	Queck, H. Master equations for photochemistry with intense infrared light. <i>Ber. Bunsenges. Phys. Chem.</i> 9, 757 (1979) West Germany
4529	A17 HCl + HCl; DCl + HCl; Ar + HCl	E	190-400 K	Schramm, B.; Louch, U. Second virial coefficients of HCl, DCl and Ar-HCl mixtures. <i>Ber. Bunsenges. Phys. Chem.</i> 9, 847 (1979) West Germany
4530	Under	T	330 K	Reinhardt, B.; Lowe, A.; Dieler, K. Prediction of the diffusional behaviour of three component systems at heterogeneous gas reactions with the aid of new diagrams. <i>Ber. Bunsenges. Phys. Chem.</i> 9, 866 (1979) West Germany

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4531	B09 CO + CO ₂ + Au; CO + CO ₂ + Pt; CO + CO ₂ + Au + Pt	E	523 K	Calvagno, S.; Parravano, G. Oxygen transfer between CO and CO ₂ catalyzed by supported Au, Pt, and Au-Pt. <i>Ber. Bunsenges., Phys. Chem.</i> 9, 894 (1979) United States
4532	A04 CH ₃ + Ar	E	2150-2850 K	Bath, P.; Berner, U.; Lehr, R. Resonance on the high temperature decomposition of the methyl radical. <i>Ber. Bunsenges., Phys. Chem.</i> 9, 825 (1979) West Germany
4533	A14 D + H ₂ O	E	298 K	Knebe, H.; Wellhausen, U.; Wolfrum, J. Reactions of molecules in defined vibrational states: VII. Absolute rate determination for the reaction of D-atoms with vibrationally excited H ₂ -molecules. <i>Ber. Bunsenges., Phys. Chem.</i> 9, 940 (1979) West Germany
4534	A04 HF* + F ₂ A10 HF* + HF	E	2130-2990 K	Hougen, K. H.; Schumannbeck, W.; Varnatz, J. Formation and relaxation of vibrationally excited HF in H ₂ -F ₂ -Ar flames. <i>Ber. Bunsenges., Phys. Chem.</i> 9, 943 (1979) West Germany
4535	A14 CO + OH	E, T	500-1500 K	Varnatz, J. The structure of freely propagating and burner-stabilized flames in the H ₂ -CO-O ₂ system. <i>Ber. Bunsenges., Phys. Chem.</i> 9, 950 (1979) West Germany
4536	A03 Pb + Xe; Pb + Ca	T	4.7 MeV/n	Reinhardt, J.; Heller, D.; Gröner, W.; Seif, G. Role of outstep processes in heavy-ion inner-shell excitations. <i>Phys. Rev. Lett.</i> 43, 1307 (1979) West Germany
4537	A06 C ⁶⁺ + Ar; C ⁶⁺ + Ar	E	23-30 MeV	Vane, C. R.; Sellin, I. A.; Elston, S. B.; Sater, N.; Thoe, R. S.; Altan, G. D.; Barry, S. D.; Glass, G. A. Coincidence observations of strong correlations between bound- and continuum-state electron capture by fast, highly ionized ions in gases. <i>Phys. Rev. Lett.</i> 43, 1304 (1979) United States
4538	B03 H	T		Silverstone, H. J.; Adams, B. G.; Clack, J.; Otto, P. Stark effect in hydrogen: dispersion relation, asymptotic formulas, and calculation of the ionization rate via high-order perturbation theory. <i>Phys. Rev. Lett.</i> 43, 1498 (1979) United States
4539	A03 H* + H A06 H* + H	T	1-7 keV	Crothers, D. S. F.; Hughes, J. G. H(2s) formation and Lyman-α polarization in 1-7-keV H*-H collisions. <i>Phys. Rev. Lett.</i> 43, 1584 (1979) United Kingdom
4540	A07 Li* + He	E	10 keV	Stolterfoht, H.; Brandt, D.; Frost, H. Energy and angular distribution of autoionization electrons from post-collisionally Stark-mixed states. <i>Phys. Rev. Lett.</i> 43, 1604 (1979) West Germany
4541	H07 hv + H-	E	12.5-12.9 eV	Hase, M. E.; Mason, R. W.; Donabue, J.; Grass, P. A. H.; Pratt, J. C.; Yates, M. A.; Bolton, R. B.; Clark, E. A.; Bryant, M. C.; Frost, C. A.; Smith, W. W. Observation of narrow resonances in the H- photodetachment cross section near the n=3 threshold. <i>Phys. Rev. Lett.</i> 43, 1710 (1979) United States
4542	E03 e + N ₂	T	0-5 eV	Schneider, B. I.; Le Dourneuf, N.; Lam, V. K. Resonant vibrational excitation of N ₂ by low-energy electrons: an ab initio R-matrix calculation. <i>Phys. Rev. Lett.</i> 43, 1626 (1979) France
4543	B07 e + H + hv E03 e + H + hv	T	E13 Undef	Lins de Barros, M. G. P.; Brandt, H. S. Electron-hydrogen atom collision in the presence of a circularly polarized laser field. <i>Can. J. Phys.</i> 57, 1886 (1979) Brazil
4544	G10 e + Ne + Kr	E	Undef	Shattochery, A. K. Measurement of Townsend ionization coefficients and the breakdown potentials for the Penning mixtures of Ne and Kr. <i>J. Appl. Phys.</i> 50, 6107 (1979) United States

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4545	D84 $H^+ + Ca; H^+ + Ca; H + Ca$ D87 $H^+ + Ca; H^+ + Ca; H + Ca$	E	25-2500 K	Ray, J. A.; Barnett, C. F.; Van Zyl, B. Absolute measurement of low-energy H^+ fluxes by a secondary emission detector. <i>J. Appl. Phys.</i> 50, 6516 (1975) United States
4546	C84 $H^+ + Si$	E T	0.7-3 MeV	Habler, G. K.; Reimberg, P. R.; Smith, T. P., III Refractive index profiles and range distributions of silicon implanted with high-energy nitrogen. <i>J. Appl. Phys.</i> 50, 7147 (1979) United States
4547	A85 $Cl + Cl; Br + Br$ A14 $Cl + Cl; Br + Br$ A17 $Cl + Cl; Br + Br$	T	333-4060 K	Karabelliova, G. D.; Shiyepnikov, G. V.; Shestov, I. P. Some reaction mechanisms of photorecombination emission in atomic collisions. <i>Opt. Spectrosc.</i> 46, 479 (1979) Soviet Union
4548	A12 $Rb + Na; Ca + Na; Rb + Na; Ca + Na$	T	Under	Batygin, V. V.; Gornii, M. B.; Motilov, B. G. Calculation of the collisional shifts and broadening of alkali atoms in a atmosphere of light inert gases. <i>Opt. Spectrosc.</i> 46, 572 (1975) Soviet Union
4549	A63 $Na^+ + Na$ A11 $Na^+ + Na$	E T	300 K	Bagonov, S. A.; Gilmont, G. V.; Smirnov, V. B.; Tolmachev, Y. A. Transfer of excitation energy between the upper states of the helium atom. <i>Opt. Spectrosc.</i> 46, 663 (1979) Soviet Union
4550	C82 $Cu + Ar; Cu + CuCl_2$	E	300 C	Pankin, M. P.; Nedko, T. P. Determination of the diffusion coefficients of atoms of difficultly vaporizable elements. <i>Opt. Spectrosc.</i> 46, 609 (1979) Soviet Union
4551	A83 $Na_2^+ + Na; Na_2^+ + K; K_2^+ + K; NaK^+ + K; K + K + h\nu$ A11 $Na_2^+ + Na; Na_2^+ + K; K_2^+ + K; NaK^+ + K; K + K + h\nu$ D87 $Na_2^+ + Na; Na_2^+ + K; K_2^+ + K; NaK^+ + K; K + K + h\nu$	E	A33; A11 280-600 C	Kraulings, E. K.; Yanson, M. L. Atomic excitation processes during the absorption of inner radiation by alkali-metal molecules. <i>Opt. Spectrosc.</i> 46, 629 (1979) Soviet Union
4552	E83 $e + Xe$	E	10-50 eV	Borozdin, V. S.; Smirnov, Y. M. Excitation of Xe I infrared lines by low-energy electrons. <i>Opt. Spectrosc.</i> 46, 634 (1979) Soviet Union
4553	E83 $e + Pb$	E	4-150 eV	Aleksikhin, I. S.; Borovik, A. A.; Starodub, V. P.; Shafrenok, I. I. Effective excitation cross sections for lead atom spectral lines. <i>Opt. Spectrosc.</i> 46, 636 (1979) Soviet Union
4554	A12 $Mg^+ + Ar; Mg^+ + Kr; Mg^+ + Xe; Ba^+ + Ar; Ba^+ + Kr; Ba^+ + Xe$	E T	710-940 K	Zhuravkin, G. V.; Pankin, M. P.; Shebenova, L. M. Absorption cross sections in the tails of magnesium and barium resonance lines in the presence of inert gases. <i>Opt. Spectrosc.</i> 46, 642 (1975) Soviet Union
4555	A12 $Ge^+ + Ar; Ge^+ + Kr; Ge^+ + Xe; In^+ + Ar; In^+ + Kr; In^+ + Xe; Tl^+ + Ar; Tl^+ + Kr; Tl^+ + Xe$	T	930-1400 K	Rebanc, V. M. Calculation of collision broadening and shift of hyperfine components of head lines of the diffuse series of gallium, indium, and thallium atoms. <i>Opt. Spectrosc.</i> 46, 644 (1979) Soviet Union
4556	A12 $Rb^+ + Na; Rb^+ + Ar; Rb^+ + Na; Rb^+ + Kr$	E	320 K	Isotova, S. L.; Kantsarov, A. I.; Frish, M. S. Study of perturbation of hyperfine components of the ^{87}RbI line by inert gases using a compound Fabry-Perot interferometer. <i>Opt. Spectrosc.</i> 46, 646 (1979) Soviet Union
4557	A83 $Na^+ + H_2; Na^+ + H_2; Na^+ + D_2; Na^+ + D_2; Mg^+ + Mg^+$ A84 $Na^+ + H_2; Na^+ + H_2; Na^+ + D_2; Na^+ + D_2$ A87 $Na^+ + Zn; Na^+ + Cd; Na^+ + Mg$ A11 $Na^+ + Zn; Na^+ + Cd; Na^+ + Mg$	E	500 K	Bochkova, O. P.; Tolmachev, Y. A. Excitation and ionization in collisions of heavy particles in a gas discharge plasma. <i>Opt. Spectrosc.</i> 46, 649 (1979) Soviet Union

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4558	A07 Rb ⁺ + Rb A11 Rb ⁺ + Pt A14 Rb ⁺ + Rb	E	50? K	Klyacharov, A. N.; Lazarenko, A. V.; Shvarev, V. A. Collisional ionization processes of rubidium Rydberg states. <i>Opt. Spectrosc.</i> 46, 452 (1979) Soviet Union
4559	A03 H ⁺ + D A11 H ⁺ + D	E	0.16 eV	Fellner, K.; Bergstedt, K. Measurement of the excitation transfer rate between hydrogen isotopes by laser fluorescence. <i>Phys. Lett.</i> 74A, 45 (1979) West Germany
4560	E03 e + H	T	15-400 eV	Sar, S. K.; Sil, N. C. Asymptotic Glauber cross sections for high excitation of hydrogen from the ground state by electron impact. <i>Phys. Lett.</i> 74A, 48 (1979) India
4561	E03 e + CO	T	1-4 eV	Zubek, N.; Smythowski, C. Electron impact vibrational excitation of CO in the range 1-4 eV. <i>Phys. Lett.</i> 74A, 68 (1979) Poland
4562	C08 He ⁺ + Si	T	Under	Coenker, S. G.; Ugh, A. G. On the envelopes of ion trajectories in planar channeling. <i>Phys. Lett.</i> 74A, 94 (1979) India
4563	C08 H ⁺ + HgO	E	0.3 MeV	Mukherjee, S. D.; Palmer, D. W. Temperature dependence of critical angles of axial channeling: protons in HgO. <i>Phys. Lett.</i> 74A, 97 (1979) United Kingdom
4564	A07 H + H ₂ ; H ⁺ + H ₂ ; H ²⁺ + H ₂ ; H ³⁺ + H ₂ ; H ⁴⁺ + H ₂ ; H + He; H ⁺ + He; H ²⁺ + He; H ³⁺ + He; H + Ar; H ⁺ + Ar; H ²⁺ + Ar; H ³⁺ + Ar; H ⁴⁺ + Ar	E	0.5-1.6 MeV	Haron, M.; Moor, D.; Reamer, B. Inner and outer shell contributions to the charge state distribution in heavy ion collisions. <i>Phys. Lett.</i> 74A, 201 (1979) Israel
4565	E03 e + O ²⁺	T	53-1000 eV	Genes, P. S. Electron-impact excitation cross sections for O IV. <i>Phys. Lett.</i> 74A, 307 (1979) United States
4566	A03 He ⁺ + H	T	5-26 keV	Ellner, S.; Selzmann, D. Cross section of ion excitation in ion-ion collision. <i>Phys. Lett.</i> 74A, 398 (1979) Israel
4567	C08 C ⁺ + Si	T	3.1 MeV	Bakylev, V. A.; Zhavago, N. K. Inner-shell vacancy production in collisions of channelled ions with lattice atoms. <i>Phys. Lett.</i> 74A, 443 (1979) Soviet Union
4568	H04 hv + Li H06 hv + Li	E	671 nm	Mariella, R., Jr. The isotope shift in the 2 ² P states of lithium and spatially resolved laser-induced fluorescence. <i>Appl. Phys. Lett.</i> 26, 566 (1979) United States
4569	H12 hv + e	T	1-100 keV	Bonazzola, S.; Meyuerts, J.; Fugot, J. L. Cyclotron line formation by resonant compton-cyclotron scattering in Mercury-II. <i>Astron. Astrophys.</i> 78, 53 (1979) France
4570	H12 hv + e	T	5-50 keV	Yahel, R. Z. Effects of cyclotron absorption in hot strongly magnetized plasmas. <i>Astron. Astrophys.</i> 78, 134 (1979) West Germany
4571	A03 H ²⁺ + H A06 H ²⁺ + H	T	0.10 ⁻⁶ -2.45 eV	McCarroll, R.; Valiron, P. Charge exchange of H ²⁺ ions with atomic hydrogen in the interstellar gas. <i>Astron. Astrophys.</i> 78, 177 (1979) France
4572	A03 H ⁺ + He ²⁺ ; H ⁺ + H ²⁺ E03 e + He ²⁺ ; e + H ²⁺	T	2.5x10 ⁻⁶ -10 ⁻⁸ K	Duffon, P. L.; Boyin, J. G.; Kingston, A. E. The interpretation of H IV and He VII collision line ratios in the sun. <i>Astron. Astrophys.</i> 78, 316 (1979) United Kingdom
4573	A03 He + H ⁺	T	0.05-0.017 eV	Mullaney, M. A.; Truhler, D. G. The use of rotationally and orbitally adiabatic basis functions to calculate rotational excitation cross sections for atom-molecule collisions. <i>Chem. Phys.</i> 39, 91 (1976) United States

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4574	A03 $H_2 + HD; HD + HD$	T	0.35-20 eV	Geib, A.; Alper, J. S. Classical rotational cross sections for H_2 -HD and HD-HD collisions. <i>Chem. Phys.</i> 39, 141 (1979) United States
4575	A14 $F + HBr$	E	300 K	Brandt, D.; Dickson, L. W.; Koon, L. B. Y.; Pinnip, J. C. Energy distribution among reaction products: XII. $F + HBr \rightarrow HF(v \text{ prime less than or equal to 4}) + Br(P_{2,2}, P_{2,2})$. <i>Chem. Phys.</i> 35, 189 (1979) Canada
4576	A14 $F + BH$	T	300 K	Wong, J. K. C.; Brumer, P. Multiple scattering theory: III. Reaction scattering to first order. <i>Chem. Phys.</i> 39, 221 (1979) Canada
4577	A05 $Hg + F_2; Ca + F_2; Sr + F_2; Ba + F_2$	E	335 K	Engelke, F. Crossed-beam chemiluminescence. I. HF dissociation energies from reactions of metastable group IIA metals with fluorine. <i>Chem. Phys.</i> 39, 275 (1979) West Germany
4578	A14 $F + H_2; H + F_2$	T	0.1-1.8 eV	Connor, J. B. L.; Jakubetz, U.; Paz, J.; Whitehead, J. C. On the information theoretic synthesis of three dimensional vibrational reaction probabilities from collisional results. <i>Chem. Phys.</i> 35, 395 (1979) United Kingdom
4579	A02 $Li^+ + CO$ A03 $Li^+ + CC$ A10 $Li^+ + CD$	E	4-7 eV	Easton, W.; Hess, U.; Toennies, J. P. Experimental observation of structure in the distribution of final rotational states in small angle inelastic scattering of Li^+ from $CO(E \text{ (sub eV)} = 4-7 \text{ eV})$. <i>Chem. Phys.</i> 25, 407 (1979) West Germany
4580	A14 $C_2 + O_2$	E	290 K	Donnelly, V. H.; Pasternack, L. Reactions of C_2 [$\alpha^2(\text{sub u})$] with CH_4 , C_2H_2 , C_2H_4 , C_2H_6 , and O_2 using multiphoton UV excimer laser photolysis. <i>Chem. Phys.</i> 31, 427 (1979) United States
4581	A03 $H_2 + H; H_2 + He; H_2 + CS; H_2 + OCS;$ $He + HCl; He + CD; He + NH_3^+; Ar + HCl$	T	66-10000 cm^{-1}	Green, S. Surprised analysis of rotational-translational energy transfer: non-linear versus linear rotors. <i>Chem. Phys.</i> 40, 1 (1979) United States
4582	A11 $H_2^+ + H_2; H_2^+ + He; H_2^+ + Kr; H_2^+ + Ne; H_2^+ + Ar$	E	300-3000 K	Dove, J. E.; Taitelbaum, N. The vibrational relaxation of H_2^+ II. Measured density changes: master equation study of the mechanism of relaxation. <i>Chem. Phys.</i> 40, 87 (1979) Canada
4583	A11 $H_2^+ + Ar$	T	601-12000 K	Ngaland, C.; Billing, G. D. Approximative treatments of rotational relaxation. <i>Chem. Phys.</i> 40, 163 (1979) Denmark
4584	A04 $Li_2^+ + He; Li_2^+ + Ne; Li_2^+ + Ar;$ $Li_2^+ + Kr; Li_2^+ + Xe$	E	330 K	Ennen, G.; Ottinger, C. Collision induced dissociation of laser-excited $Li_2(B^1\pi(\text{sub u}))$. <i>Chem. Phys.</i> 40, 127 (1979) West Germany
4585	E03 $e + H_2; e + HCl; e + HBr; e + H_2O;$ $e + H_2S; e + NH_3$ E04 $e + H_2; e + HCl; e + HBr; e + H_2O;$ $e + H_2S; e + NH_3$	E	0-2000 eV	Nahinann, G. B.; de Haer, F. J. Production of Balmer radiation by electron impact (0-2000 eV) on small hydrogen containing molecules. <i>Chem. Phys.</i> 40, 187 (1979) The Netherlands
4586	A14 $ClO + O$	T	220-1000 K	Jaffe, R. L. Calculated rate constants for the reaction $ClO + O \rightarrow Cl + O_2$ between 220 and 1000 K. <i>Chem. Phys.</i> 40, 166 (1979) United States
4587	A17 $H + H; Li + Li; Na + Na; K + K; Rb + Rb;$ $Ce + Ce; Mo + Mo; Ba + Ba; Mg + Mg;$ $Ca + Ca; Hg + Hg$	T	Under	Reeder, F.; Kutzelnigg, W. Natural states of interacting systems and their use for the calculation of intermolecular forces: IV. Calculation of van der Waals coefficients between one- and two-valence-electron atoms in their ground states, as well as of polarizabilities, oscillator strength sums and related quantities, including correlation effects. <i>Chem. Phys.</i> 42, 55 (1979) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4588	A17 $H + H_2^+$	T	Under	Peyerlehoff, S. B.; Buehler, R. J. An initial RSD-CI potential surfaces for the low-lying states of H_2^+ molecular ion. Chem. Phys. 42, 167 (1979) West Germany
4589	A14 $O + O_2; O_2 + Ar; O_2 + O_2; O_2 + H_2$	E	252-335 K	Arnold, I.; Cones, F. J. Temperature dependence of the reactions $O(^3P) + O_2 + 2O_2$ and $O(^3P) + O_2 + H + O_2 + H$. Chem. Phys. 42, 231 (1979) West Germany
4590	A02 $Cl^- + Na; Cl^- + K; F^- + Na; F^- + K;$ A17 $Br^- + Na; Br^- + K; F^- + Na; F^- + K;$ A18 $Cl^- + Na; Cl^- + K; F^- + Na; F^- + K;$ $Br^- + Na; Br^- + K$	E	5-1000 eV	de Vroom, C.; Bijmolt van Rossett, B. v.; Lee, J.; Smith, D. Y.; Champion, R. L. Differential cross sections for collisions of negative halogen ions and alkali atoms. Chem. Phys. 42, 201 (1979) The Netherlands
4591	A01 $He + He; He + Ar; He + Kr; He_2 + He; He_2 + Ar; He_2 + Kr; Ar + He; Ar + Ar; Ar + Kr; Ar_2 + He; Ar_2 + Ar; Ar_2 + Kr; Kr + He; Kr + Ar; Kr + Kr; Kr_2 + He; Kr_2 + Ar; Kr_2 + Kr$	T	30°-900 K/s	Vehner, H.; Penly, H.; Dehar, P. Comparison of measured total integral cross sections for noble gas dimer-ion systems with TOSCA calculations. Chem. Phys. 42, 389 (1979) West Germany
4592	A17 $He + He$	E	Under	Brunetti, B.; Cappel, R.; Pirani, F.; Vecchiocattivi, F.; Tassolini, R. The interatomic potential of neon from scattering, gaseous and solid state data. Chem. Phys. 42, 367 (1979) Italy
4593	A17 $Li + F; K + F$	T	Under	Boudo, D. G. Pair potentials and polarizabilities for LiF and KF. Chem. Phys. 42, 465 (1979) Canada
4594	A13 $O^- + D_2$ A18 $O^- + C_2$	E, T	4-13 eV	Herbst, E.; Payne, L. G.; Champion, R. L.; Beveridge, L. D. An experimental and trajectory study of the reaction $O^- + D_2 + OD^- + D$. Chem. Phys. 42, 413 (1979) United States
4595	A03 $Li_2 + He$	E	730 K	Ross, M. B.; McCaffery, A. J. Transfer of state multiplicity in excited $A^1\Sigma^+(sub u)^+ Li_2$ following rotationally inelastic collisions with He experiment and theory. Chem. Phys. 43, 35 (1979) United Kingdom
4596	A11 $Cd^+ + H_2; Cd^+ + D_2; Cd^+ + H_2; Cd^+ + CH_4$	E	459 K	Uemoto, M.; Tsumashina, S.; Sato, S. The absolute cross sections for quenching of cadmium 5^2P_1 and 5^2P_2 atoms by methane, nitrogen and isotopic hydrogens. Chem. Phys. 43, 93 (1979) Japan
4597	G04 $Ca^+ + Ar$ G04 $Ca^+ + Ar$	T	Under	Viehland, L. A.; Lin, S. L. Application of the three-temperature theory of gaseous ion transport. Chem. Phys. 43, 135 (1979) United States
4598	A14 $C_2 + H_2; C_2 + O_2; C_2 + CO_2$	E	290 K	Pasternack, L.; McDonald, J. R. Reactions of $C_2[2^1(\sub g)^+]$ produced by multiphoton UV excimer laser photolysis. Chem. Phys. 43, 173 (1979) United States
4599	A06 $Na^+ + Na$	T	1-3 keV	Rai Dastidar, T. K.; Rai Dastidar, K.; Bose, N. Use of an approximate diabatic molecular representation in Na^+Na charge transfer collision. Chem. Phys. 43, 183 (1979) India
4600	A04 $Na_2^+ + Na$ A14 $Na_2^+ + Na$ A17 $Na_2^+ + Na$	T	3-3 eV	Kuntz, P. J.; Doran, M.; Millier, J. M. An initial calculation of the potential energy, surface and cross sections for the reactions $Na_2^+ + Na + NaHe^+ + Na$ and $Na_2^+ + He + Na^+ + Na + Na$. Chem. Phys. 43, 197 (1979) West Germany
4601	A11 $NH_2^+ + NH_2$	E	32° K	Donnelly, V. M.; Baronevski, A. P.; McDonald, J. R. Excited state dynamics and bimolecular quenching processes for $NH_2(A \text{ triide } ^3A_1)$. Chem. Phys. 43, 243 (1979) United States

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4602	E24 $e + CO_2; e + H_2O$ E25 $e + CO_2; e + H_2O$	E	290-930 eV	Hitchcock, A. P.; Brion, C. E.; van der Wiel, N. J. Ionic fragmentation of inner shell excited states of CO_2 and H_2O . <i>Chem. Phys. Lett.</i> 66, 213 (1979) Canada
4603	A11 $NO^+ + O$	E	236 K	Fernando, R. P.; Selth, I. W. R. Vibrational relaxation of NO by atomic oxygen. <i>Chem. Phys. Lett.</i> 66, 216 (1979) United Kingdom
4604	A14 $H_2O + Cl_2O$	E	295 K	Nihl, M.; Møller, P. B.; Savage, C. H.; Braitenberg, L. P. Fourier transform IR spectroscopic determination of the equilibrium constant for $H_2O + Cl_2O$ going to or coming from $2HOC$. <i>Chem. Phys. Lett.</i> 66, 325 (1979) United States
4605	A13 $(CO_2)_2^+ + SO_2$	E	300 K	Rahshit, A. S. The reaction of CO_2 dimer ions with sulfur dioxide. <i>Chem. Phys. Lett.</i> 66, 373 (1979) West Germany
4606	A14 $NO_2 + NO_2$	E	298 K	Throop, B. A.; Wilkinson, J. P. T. Pressure dependence of the rate of reaction between NO_2 radicals. <i>Chem. Phys. Lett.</i> 66, 441 (1979) United Kingdom
4607	A11 $NO^+ + H_2; H_2^+ + He$	E	80-400 K	Barron, C.; Audibert, M. M. Experimental study of the vibrational relaxation of NO in collision with H_2 and He in the range 80-400 K. <i>Chem. Phys. Lett.</i> 66, 483 (1979) France
4608	A11 $H + H_2^+$ A14 $H + H_2^+$	T	0-0.65 eV	Hayne, M. R. Quasiclassical trajectory calculations for $H + H_2(v=1)$ on a new potential energy surface. <i>Chem. Phys. Lett.</i> 66, 487 (1979) West Germany
4609	A14 $H + F_2$	T	0.1 eV	Clary, D. C.; Connor, J. N. L. Application of the vibrationally adiabatic and static distorted wave Born approximations to the reaction $H + F_2(v=0, j=0) \rightarrow HF(v \text{ prime}, j \text{ prime}) + F$. <i>Chem. Phys. Lett.</i> 66, 453 (1979) United Kingdom
4610	A17 $H + NO$	T	Undef	Hosoya, O.; Iwata, S. Potential energy curves of low-lying states on HNO . <i>Chem. Phys. Lett.</i> 66, 523 (1979) Japan
4611	E23 $e + CO_2$	T	0.2-2.0 eV	Morrison, M. A.; Lane, M. F. Threshold structure in the vibrational excitation of CO_2 by low-energy electrons. <i>Chem. Phys. Lett.</i> 66, 527 (1979) United States
4612	NO6 $He + Co$	E	15-25 eV	Lee, E. P. F.; Potts, A. M. Configuration interaction effects in the He I $2p \rightarrow 1s$ photoelectron spectrum of Co. <i>Chem. Phys. Lett.</i> 66, 553 (1979) United Kingdom
4613	E24 $e + N_2; e + O_2$ E25 $e + N_2; e + O_2$	E	60-100 eV	Locht, R.; Monigny, J. Dissociative ionization by low energy electron impact. Energy distribution and appearance energy of doubly ionized fragments from N_2 and O_2 . <i>Chem. Phys. Lett.</i> 66, 574 (1979) Belgium
4614	A14 $NH_3 + HCl$	E	290-305 K	Kurasawa, M.; Lacroix, R. Kinetics of reaction of NH_3 with NO_2 . <i>Chem. Phys. Lett.</i> 66, 66 (1979) France
4615	D64 $e + Nb; e + Nb_2O_5$	E	3-3 keV	Laverde, M.; Bocquet, P.; Septier, A. Variation du coefficient d'émission électronique secondaire de surfaces réelles sous l'effet du bombardement électronique primaire. <i>Compt. Rend.</i> 288, 77 (1979) France
4616	A03 $He + H_2$	T	0.1-1.2 eV	van Dijk, W.; Mazury, M. Collinear collision of an atom with a homonuclear diatomic molecule. <i>Int. J. Quantum Chem.</i> 16, 1249 (1979) Canada
4617	E23 $e + H_2$ E25 $e + H_2$	E	300-500 eV	Iida, T. Measurements of energy-loss cross section for 300, 400, and 500 eV electrons in the continuum of H_2 . <i>Jap. J. Appl. Phys.</i> 18, 1667 (1979) Japan

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4619	D62 Ar ⁺ + Si	E T	3-10 keV	Kang, S. T.; Shimizu, R.; Ohutani, T. Sputtering of Si with keV Ar ⁺ ions. I. Measurement and Monte Carlo calculations of sputtering yield. Jap. J. Appl. Phys. 18, 1717 (1979) Japan
4619	D64 Ar ⁺ + Si; Ar ⁺ + AuSi; Ar ⁺ + NiSi; Ar ⁺ + PdSi; Ar ⁺ + CuSi; Ar ⁺ + SiC; Ar ⁺ + SiN	E	5 keV	Niraki, A.; Kim, S. C.; Isura, T.; Iwami, N. Si(LMM) Auger electron emission from Si-alloys by keV Ar ⁺ ion bombardment, new effect and application. Jap. J. Appl. Phys. 18, 1767 (1979) Japan
4620	D62 Ar ⁺ + Cu	T	23-80 keV	Chose, B. On the angular dependence of sputtering yield. Jap. J. Appl. Phys. 18, 1847 (1979) India
4621	D62 Ar ⁺ + Si	T	5 keV	Kang, S. T.; Shimizu, R.; Ohutani, T. Sputtering of Si with keV Ar ⁺ ions. II. Computer simulation of sputter broadening due to ion bombardment in depth profiling. Jap. J. Appl. Phys. 18, 1907 (1979) Japan
4622	H10 hv + Cl ₂ + O ₂ + N ₂	E	229 K	Cox, R. A.; Dornant, R. G.; Eggleston, A. E. J.; Reid, W. J. Kinetics of chlorine oxide radicals using modulated photolysis. II. ClO and ClOO radical kinetics in the photolysis of Cl ₂ + O ₂ + N ₂ mixtures. J. Chem. Soc., Faraday Trans., 1 75, 1648 (1979) United Kingdom
4623	A14 ClO + NO ₂ + N ₂	E	274-335 K	Cox, R. A.; Lewis, R. Kinetics of chlorine oxide radical reactions using modulated photolysis. I. I. Pressure and temperature dependence of the reaction: ClO + NO ₂ (+N) → ClONO ₂ (+N). J. Chem. Soc., Faraday Trans., 1 75, 2649 (1979) United Kingdom
4624	H02 hv + Rn	E	1900-700 Å	Belg, H. A.; Connerade, J. P.; Neuman, G. M. On the validity of the spectator electron model in the 3s and 4s excitation spectra of Rn I. Proc. Roy. Soc., London A 367, 381 (1979) West Germany
4625	K01 Review	E	Under	Carrington, A. Review lecture. Spectroscopy of molecular ion beams. Proc. Roy. Soc., London A 367, 433 (1979) United Kingdom
4626	C01 Under D01 Under	T	Under	Echenique, P. M.; Ritchie, R. N.; Brandt, W. Spatial excitation patterns induced by swift ions in condensed matter. Phys. Rev. B 20, 2867 (1979) United States
4627	D05 Under	T	Under	Shevchik, N. J. Theory of angle-resolved photoemission from the bulk bands of solids. III. Effects of intra-atomic and interatomic electron-phonon interactions. Phys. Rev. B 20, 3620 (1979) United States
4628	C02 Under C08 Under	T	Under	Berratt, J. M. Potential and stepping-power information from planar-channeling oscillations. Phys. Rev. B 20, 3536 (1979) United States
4629	D04 e + Mo	E	3.5-1.5 keV	Gomoyunova, M. V.; Zaslavskii, S. L.; Pronin, I. I. Anisotropy of secondary electron emission from oblique incidence of electrons on Mo (100). Sov. Phys.-Solid State 20, 2106 (1978) Soviet Union
4630	C08 He ⁺ + PbTi	E	1 MeV	Vedrinshii, R. V.; Mamedov, L. R.; Shipatov, E. T.; Faganho, E. G. Influence of polarization of lead titanate on channeling of helium ions. Sov. Phys.-Solid State 20, 2144 (1978) Soviet Union
4631	D06 e + Si	E	1-200 eV	Bazhanova, N. P. Threshold effects in elastic scattering of slow electrons from (100) face of Si. Sov. Phys.-Solid State 21, 185 (1979) Soviet Union
4632	C08 He ⁺ + GeSb D07 He ⁺ + GeSb	E	1.5 MeV	Borovich, A. S.; Kononovskii, I. I.; Shipatov, E. T. Screening in scattering of He ⁺ ions by atomic chains in GeSb crystal. Sov. Phys.-Solid State 21, 207 (1979) Soviet Union

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4633	D06 $\alpha + \text{Cu}$	T	Undef	Kornyshevskii, Y. D. Backscattering of electrons by solids. <i>Sov. Phys.-Solid State</i> 21, 372 (1979) Soviet Union
4634	C08 Undef	T	Undef	Melyshevskii, V. S. Effect of the discreteness of an atomic chain on the electron dechanneling. <i>Sov. Phys.-Solid State</i> 21, 388 (1979) Soviet Union
4635	D04 $\alpha + \text{BaO}$; $\alpha + \text{LiF}$; $\text{Ar}^+ + \text{BaO}$; $\text{Ar}^+ + \text{LiF}$	E	1.5-20 keV	Dorozhkin, A. A.; Petrov, A. A.; Petrov, N. N. Ion Auger spectroscopy and chemical binding of atoms in a compound. <i>Sov. Phys.-Solid State</i> 21, 545 (1979) Soviet Union
4636	D05 $h\nu + \text{U}$ D06 $\alpha + \text{U}$	T	D05 21-22 eV D06 Undef	Artamonov, O. M.; Terakhov, A. N. Effect of one-electron density of states on the secondary-emission and photoemission properties of a tungsten single crystal. <i>Sov. Phys.-Solid State</i> 21, 640 (1979) Soviet Union
4637	D11 $\text{O}_2 + \text{Mo}$	E	300 K	Bauer, E.; Poppa, M. The interaction of oxygen with the $\text{Mo}(100)$ surface. <i>Surface Sci.</i> 80, 31 (1979) United States
4638	D07 Undef	T	Undef	Levi, A. C.; Suhl, H. Quantum theory of atom-surface scattering; Debye-Waller factor. <i>Surface Sci.</i> 80, 221 (1979) Italy
4639	D04 $\text{Ne}^+ + \text{Al}$; $\text{Ne}^+ + \text{Mg}$; $\text{Ne}^+ + \text{Si}$	E	3 keV	Pepper, S. V.; Ferrante, J. Comments on Auger electron production by Ne^+ bombardment on surfaces. <i>Surface Sci.</i> 80, L1 (1979) United States
4640	D04 $\text{Ne}^+ + \text{H}_2$	E	5-20 keV	Benazeth, C.; Benazeth, M.; Viel, L.; Leonard, C. Reply to Comments on Auger electron production by Ne^+ bombardment of surfaces. <i>Surface Sci.</i> 80, L6 (1979) France
4641	D13 $\alpha + \text{O} + \text{U}$	E	180 eV	Krahl-Urban, B.; Niehus, H. Electron stimulated desorption of oxygen on a stepped $\text{h}(100)$ surface. <i>Surface Sci.</i> 80, L19 (1979) West Germany
4642	D03 $\text{Ar}^+ + \text{Mg} + \text{Al}$; $\text{O}_2^+ + \text{Mg} + \text{Al}$	E	10 keV	Okutani, T.; Shimizu, R. Fundamental studies of the LTE model using secondary ion and ion-induced photoelectron emissions. <i>Surface Sci.</i> 80, L51 (1979) Japan
4643	D07 $\text{K}^+ + \text{Mg}$; $\text{K}^+ + \text{Cu}$	E	0.5-2 keV	Terzic, I.; Neskovic, N.; Ciric, D. Small angle scattering of low energy K^+ ions from the polycrystalline Mg and Cu surfaces. <i>Surface Sci.</i> 80, L71 (1979) Yugoslavia
4644	D05 $h\nu + \text{Ca}$	E	2.5-3.5 eV	Armand, L.; Bouillet, J. L.; Gaudart, L. Photoionization coefficient of thin calcium films. <i>Thin Solid Films</i> 59, 57 (1979) France
4645	D17 $\text{N}_2^+ + \text{Si}$	E	33 keV	Yadav, A. D.; Joshi, M. C. Formation of thin Si_3N_4 films by nitrogen ion implantation into silicon. <i>Thin Solid Films</i> 65, 713 (1979) India
4646	D02 $\text{Ar}^+ + \text{Au}$; $\text{Ar}^+ + \text{SS}$	E	5 keV	Papagno, L.; Luzzi, G.; Neuti, M. Sputtering yields of thin overlayer films by attenuation of the substrate Auger electron signal. <i>Thin Solid Films</i> 60, 307 (1979) Italy
4647	C02 $\text{N}^+ + \text{Cu}$; $\text{Ne}^+ + \text{Cu}$	E	30° K	Martens, P. The influence of the polycrystalline structure of thin copper foils on the energy loss of transmitted 300 keV ions. <i>Thin Solid Films</i> 60, 312 (1979) West Germany
4648	C02 $\alpha + \text{C}$	E	0.5-2.0 keV	Ashley, J. C.; Cowan, J. J.; Ritchie, R. H.; Anderson, V. E.; Hoelzel, J. Straggling and plasmon excitation in the energy loss spectra of electrons transmitted through carbon. <i>Thin Solid Films</i> 60, 361 (1979) United States

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4649	D16 Under	E	Under	Picraux, S. T.; Myers, S. N.; Follstaedt, B. N. Microalloy layer formation by ion implantation. <i>Thin Solid Films</i> 63, 1 (1979) United States
4650	D16 Under	E	Under	Mirvonen, J. K.; Carosello, C. A.; Kent, B. A.; Singer, I.; Vardiman, R.; Rath, B. B. Improvement of metal properties by ion implantation. <i>Thin Solid Films</i> 62, 5 (1979) United States
4651	D16 Cr ⁺ + SS; Mo ⁺ + SS; Ti ⁺ + SS D17 Cr ⁺ + SS; Mo ⁺ + SS; Ti ⁺ + SS	E	75 keV	Wang, Y. F.; Clayton, C. R.; Nubler, G. R.; Luchs, L. M.; Mirvonen, J. K. Applications of ion implantation for the improvement of localized corrosion resistance of H50 bearing steel. <i>Thin Solid Films</i> 63, 11 (1979) United States
4652	D16 Ni ⁺ + SS D17 Ni ⁺ + SS	E	25-75 keV	Agerwal, S. B.; Wang, Y. F.; Clayton, C. R.; Norman, M.; Mirvonen, J. K. Interpretation of electrochemical behavior of nickel implanted type-430 stainless steel using x-ray photoelectron spectroscopy and transmission electron microscopy. <i>Thin Solid Films</i> 63, 19 (1979) United States
4653	D16 H ⁺ + Fe	E	Under	Myers, S. N.; Picraux, S. T.; Stoltz, R. E. Deuterium trapping in iron alloys formed by ion implantation. <i>Thin Solid Films</i> 63, 37 (1979) United States
4654	C05 e + Cu E10 e + Cu	T	23 keV	Ralph, J. E. Photoluminescence of CdS: Cu doped by diffusion. <i>Phys. Status Solidi A</i> 50, 611 (1978) Finland
4655	D15 e + Cu	T	Under	Leffers, T.; Singh, B. N. Loop growth and point-defect profiles during NVEH irradiation. <i>Phys. Status Solidi A</i> 54, 621 (1979) Denmark
4656	D12 e + GaSe	E	35-45 keV	Raino, A.; Mancini, A. M.; Murri, F.; Rizzo, A.; Vasconelli, L. Cathodoluminescence of GaSe single crystals. <i>Phys. Status Solidi A</i> 53, 487 (1979) Italy
4657	D03 Ar ⁺ + Be	E	43 keV	Mladenov, G. M.; Braun, M. Ion bombardment induced line radiation from sputtered beryllium. <i>Phys. Status Solidi A</i> 53, 631 (1979) Sweden
4658	C08 H ⁺ + Nb; H ⁺ + Si; D ⁺ + Nb; D ⁺ + Si; He ⁺ + Nb; He ⁺ + Si D07 H ⁺ + Nb; H ⁺ + Si; D ⁺ + Nb; D ⁺ + Si; He ⁺ + Nb; He ⁺ + Si	T	0.2-10 keV	Chubisov, M. A.; Akhmerov, A. F. Computer simulation of low energy hydrogen and helium ion reflection from monocrystalline surfaces. <i>Phys. Status Solidi A</i> 55, 853 (1979) Soviet Union

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4659	D02 $\text{Ne}^+ + \text{C}; \text{Ne}^+ + \text{Ti}; \text{Ne}^+ + \text{Ni}; \text{Ne}^+ + \text{Cu}; \text{Ne}^+ + \text{Zn}; \text{Ne}^+ + \text{Ge}; \text{Ne}^+ + \text{Nb}; \text{Ne}^+ + \text{Pd}; \text{Ne}^+ + \text{Ag}; \text{Ne}^+ + \text{Sn}; \text{Ne}^+ + \text{V}; \text{Ne}^+ + \text{Re}; \text{Ne}^+ + \text{Bi}; \text{Ne}^+ + \text{Th}; \text{Ne}^+ + \text{C}; \text{Ne}^+ + \text{Ti}; \text{Ne}^+ + \text{Ni}; \text{Ne}^+ + \text{Cu}; \text{Ne}^+ + \text{Zn}; \text{Ne}^+ + \text{Ge}; \text{Ne}^+ + \text{Nb}; \text{Ne}^+ + \text{Pd}; \text{Ne}^+ + \text{Ag}; \text{Ne}^+ + \text{Sn}; \text{Ne}^+ + \text{V}; \text{Ne}^+ + \text{Re}; \text{Ne}^+ + \text{Bi}; \text{Ne}^+ + \text{Th}; \text{Ar}^+ + \text{C}; \text{Ar}^+ + \text{Ti}; \text{Ar}^+ + \text{Ni}; \text{Ar}^+ + \text{Cu}; \text{Ar}^+ + \text{Zn}; \text{Ar}^+ + \text{Ge}; \text{Ar}^+ + \text{Nb}; \text{Ar}^+ + \text{Pd}; \text{Ar}^+ + \text{Ag}; \text{Ar}^+ + \text{Sn}; \text{Ar}^+ + \text{V}; \text{Ar}^+ + \text{Re}; \text{Ar}^+ + \text{Bi}; \text{Ar}^+ + \text{Th}; \text{Kr}^+ + \text{C}; \text{Kr}^+ + \text{Ti}; \text{Kr}^+ + \text{Ni}; \text{Kr}^+ + \text{Cu}; \text{Kr}^+ + \text{Zn}; \text{Kr}^+ + \text{Ge}; \text{Kr}^+ + \text{Nb}; \text{Kr}^+ + \text{Pd}; \text{Kr}^+ + \text{Ag}; \text{Kr}^+ + \text{Sn}; \text{Kr}^+ + \text{V}; \text{Kr}^+ + \text{Re}; \text{Kr}^+ + \text{Bi}; \text{Kr}^+ + \text{Th}; \text{Xe}^+ + \text{C}; \text{Xe}^+ + \text{Ti}; \text{Xe}^+ + \text{Ni}; \text{Xe}^+ + \text{Cu}; \text{Xe}^+ + \text{Zn}; \text{Xe}^+ + \text{Ge}; \text{Xe}^+ + \text{Nb}; \text{Xe}^+ + \text{Pd}; \text{Xe}^+ + \text{Ag}; \text{Xe}^+ + \text{Sn}; \text{Xe}^+ + \text{V}; \text{Xe}^+ + \text{Re}; \text{Xe}^+ + \text{Bi}; \text{Xe}^+ + \text{Th}$ D03 $\text{Ne}^+ + \text{C}; \text{Ne}^+ + \text{Ti}; \text{Ne}^+ + \text{Ni}; \text{Ne}^+ + \text{Cu}; \text{Ne}^+ + \text{Zn}; \text{Ne}^+ + \text{Ge}; \text{Ne}^+ + \text{Nb}; \text{Ne}^+ + \text{Pd}; \text{Ne}^+ + \text{Ag}; \text{Ne}^+ + \text{Sn}; \text{Ne}^+ + \text{V}; \text{Ne}^+ + \text{Re}; \text{Ne}^+ + \text{Bi}; \text{Ne}^+ + \text{Th}; \text{Ar}^+ + \text{C}; \text{Ar}^+ + \text{Ti}; \text{Ar}^+ + \text{Ni}; \text{Ar}^+ + \text{Cu}; \text{Ar}^+ + \text{Zn}; \text{Ar}^+ + \text{Ge}; \text{Ar}^+ + \text{Nb}; \text{Ar}^+ + \text{Pd}; \text{Ar}^+ + \text{Ag}; \text{Ar}^+ + \text{Sn}; \text{Ar}^+ + \text{V}; \text{Ar}^+ + \text{Re}; \text{Ar}^+ + \text{Bi}; \text{Ar}^+ + \text{Th}; \text{Kr}^+ + \text{C}; \text{Kr}^+ + \text{Ti}; \text{Kr}^+ + \text{Ni}; \text{Kr}^+ + \text{Cu}; \text{Kr}^+ + \text{Zn}; \text{Kr}^+ + \text{Ge}; \text{Kr}^+ + \text{Nb}; \text{Kr}^+ + \text{Pd}; \text{Kr}^+ + \text{Ag}; \text{Kr}^+ + \text{Sn}; \text{Kr}^+ + \text{V}; \text{Kr}^+ + \text{Re}; \text{Kr}^+ + \text{Bi}; \text{Kr}^+ + \text{Th}; \text{Xe}^+ + \text{C}; \text{Xe}^+ + \text{Ti}; \text{Xe}^+ + \text{Ni}; \text{Xe}^+ + \text{Cu}; \text{Xe}^+ + \text{Zn}; \text{Xe}^+ + \text{Ge}; \text{Xe}^+ + \text{Nb}; \text{Xe}^+ + \text{Pd}; \text{Xe}^+ + \text{Ag}; \text{Xe}^+ + \text{Sn}; \text{Xe}^+ + \text{V}; \text{Xe}^+ + \text{Re}; \text{Xe}^+ + \text{Bi}; \text{Xe}^+ + \text{Th}$	E	12 keV	Dusterhoft, H. Dependence of secondary ion emission on the mass of the bombarding ions. <i>Phys. Status Solidi A</i> 50, 563 (1978) West Germany
4660	E03 $e + \text{N}_2$ M06 $h\nu + \text{N}_2$	E	M36 40-70 eV E03 Undef	Cole, B. E.; Dexter, R. M. N_2 2P fluorescence from scattering of N_2 2(sigma sub g) photoelectrons. <i>Planet. Space Sci.</i> 27, 313 (1979) United States
4661	C02 $e + \text{CO}_2$ C03 $e + \text{CO}_2$ E03 $e + \text{CO}_2$ E04 $e + \text{CO}_2$ E05 $e + \text{CO}_2$ E09 $e + \text{CO}_2$	T	4-200 eV	Fox, J. L.; Delgarno, A. Electron energy deposition in carbon dioxide. <i>Planet. Space Sci.</i> 27, 451 (1979) United States
4662	E03 $e + \text{O}; e + \text{N}_2$ M04 $h\nu + \text{O}$	E	E03 15-415 eV; 100 eV M02 8600-7900 Å	Zips, E. C.; McLaughlin, R. W.; Gorman, R. A. A study of the excitation and radiative decay of the 3s prime $^2\text{P}^o$ and 3d $^2\text{D}^o$ levels of atomic oxygen. <i>Planet. Space Sci.</i> 27, 719 (1979) United States
4663	D07 Review	E	Undef	Bawn, W. L. Fine features in ion scattering spectra. <i>Appl. Surf. Sci.</i> 1, 81 (1977) United States
4664	D11 $\text{H}_2 + \text{Fe}$	E	300 K	Boxzo, F.; Ertl, G.; Grunze, H.; Weiss, H. Chemisorption of hydrogen on iron surfaces. <i>Appl. Surf. Sci.</i> 1, 103 (1977) West Germany
4666	D13 $e + \text{CO} + \text{Ne}; e + \text{O}_2 + \text{Ne}$	E	Undef	Felter, J. A.; Estrup, P. J. Studies of electron stimulated desorption (ESD) in a LEB system. <i>Appl. Surf. Sci.</i> 1, 120 (1977) United States
4666	D11 $\text{NO} + \text{Rh}$	E	300 K	Campbell, C. T.; White, J. M. Chemisorption and reactions of nitric oxide on rhodium. <i>Appl. Surf. Sci.</i> 1, 347 (1978) United States

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4667	D02 Ar ⁺ + Cu	E	48 keV	Whitton, J. L.; Tanevic, L.; Williams, J. S. The production of regular pyramids on argon ion bombarded surfaces of copper crystals. <i>Appl. Surf. Sci.</i> 1, 408 (1978) Denmark
4668	D17 Ar ⁺ + C; Ar ⁺ + CF; Xe ⁺ + C; Xe ⁺ + CF	E	30-3000 eV	Taylor, J. A.; Lancaster, G. M.; Hobalain, J. W. Surface alteration of graphite, graphite monofluoride and teflon by interaction with Ar ⁺ and Xe ⁺ beams. <i>Appl. Surf. Sci.</i> 1, 583 (1978) United States
4669	D11 CO + Fe	E	77-273 K	Wodler, G.; Colb, K. G.; McElhiney, G.; Heinrich, W. An investigation of the interaction of CO with polycrystalline iron films. <i>Appl. Surf. Sci.</i> 2, 38 (1978) West Germany
4670	D11 CO + Pt	T	573-1073 K	Biberion, J. P.; Smerjai, G. A. On the determination of monolayer coverage by Auger electron spectroscopy. Application to carbon on platinum. <i>Appl. Surf. Sci.</i> 2, 352 (1978) United States
4671	D11 O ₂ + Re; CO + Re	E	363 K	Campbell, C. T.; Shi, S.-K.; White, J. M. The Langmuir-Hinshelwood reaction between oxygen and CO on Rh. <i>Appl. Surf. Sci.</i> 2, 382 (1978) United States
4672	D17 CF ₃ ⁺ + Si	E	52-400 eV	Chuang, T. J.; Winters, M. F.; Ceburn, J. W. An XPS and Auger investigation of CF ₃ ⁺ ion bombardment of silicon. <i>Appl. Surf. Sci.</i> 2, 514 (1978) United States
4673	D11 NO + Re; N ₂ C + Re	E	170-300 K	Alnot, M.; Weber, B.; Ehrhardt, J. J.; Cassuto, A. Etude par spectroscopies d'électrons, émission ionique secondaire et réactivité chimique des modes d'adsorption du monoxyde d'azote et de la vapeur d'eau sur rhénium. <i>Appl. Surf. Sci.</i> 2, 578 (1978) France
4674	D11 NH ₃ + Fe	E	175-340 K	Weise, M.; Ertl, G.; Nitschke, F. Adsorption and decomposition of ammonia on Fe(110). <i>Appl. Surf. Sci.</i> 2, 614 (1978) West Germany
4675	M08 hv + Na	E	5596 Å	Salter, J. M.; Burgess, D. B.; Ebrahim, N. A. Anomalous behaviour in the saturation of the sodium B lines under high power laser illumination. <i>J. Phys. B</i> 12, L759 (1979) United Kingdom
4676	M02 Undef M04 Undef M06 Undef	T	Undef	Salter, J. M. The effect of radiation trapping of high intensity scattered radiation on multiphoton ionisation rates and resonance fluorescence. <i>J. Phys. B</i> 12, L763 (1979) United Kingdom
4677	M04 hv + O ⁺	E	7773 Å	Julien, L.; Descoubes, J. P.; Laloe, F. Optical pumping of metastable ¹⁶ S oxygen. <i>J. Phys. B</i> 12, L769 (1979) France
4678	M04 hv + Ar M06 hv + Ar	E	249-270 eV	Maneshiro, M.; Suzuki, Y.; Sasaki, T.; Mihuni, A.; Takayanagi, T.; Uchiya, K.; Suzuki, M.; Sanjo, A.; Hino, T.; Ohtani, S. Post collision interaction in photoexcited argon LMM Auger processes. <i>J. Phys. B</i> 12, L775 (1979) Japan
4679	E02 a + H	T	30 eV	Ermoolev, A. M.; Walters, N. R. J. Exact second Born amplitude for elastic electron-hydrogen scattering. <i>J. Phys. B</i> 12, L779 (1979) United Kingdom
4680	E03 e + Li Seq E05 e + Li Seq	T	1-50 threshold	Simpson, D. M.; Golden, L. B. Ionisation cross sections for Li-like ions including excitation-autoionisation contributions. <i>J. Phys. B</i> 12, L785 (1979) United States
4681	B03 Undef	T		Austin, E. J. Ionisation of model atoms by intense electromagnetic fields. <i>J. Phys. B</i> 12, 4845 (1979) United Kingdom

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4682	M06 He + SF ₆	E	620-300 eV	Sasunuma, M.; Ishiguro, E.; Nagaike, T.; Masuko, H.; Morikawa, Y.; Nakajima, T.; Nakamura, H. Photoionization of SF ₆ in the XUV region. <i>J. Phys. B</i> 12, 4857 (1979) Japan
4683	A02 Na + Na; Na ⁺ + He A18 Na + Na; Na ⁺ + He	T	Thermal	Masnou-Seeuws, F.; Philippe, M.; Rucoff, E.; Spinkfeldel, A. Differential cross section for thermal Na-He scattering: a comparison of experimental and theoretical results. <i>J. Phys. B</i> 12, 4865 (1979) France
4684	A03 R ⁺ + Xe; R ⁺ + Dy; R ⁺ + Au A07 R ⁺ + Xe; R ⁺ + Dy; R ⁺ + Au	E	250-6000 keV	Jitochin, M.; Kinschoppe, M.; Higgles, M.; Lutz, R. O. L-shell alignment of heavy atoms induced by proton impact ionization. <i>J. Phys. B</i> 12, 4877 (1979) West Germany
4685	A06 R ⁺ + He; D ⁺ + He; R ⁺ + He; D ⁺ + He; R ⁺ + Ar; D ⁺ + Ar; R ⁺ + Kr; D ⁺ + Kr; R ⁺ + Xe; D ⁺ + Xe	E	43-2000 keV	Pedersen, E. N.; Larsen, L. Charge-state distributions of noble-gas atoms after electron capture by protons. <i>J. Phys. B</i> 12, 4885 (1979) Denmark
4686	A07 H + He; H + Xe A08 H + He; H + Xe	E	53-1200 keV	Pedersen, E. N.; Larsen, L. Simultaneous ionization of both collision partners in single collisions between H projectiles and He and Xe targets. <i>J. Phys. B</i> 12, 4899 (1979) Denmark
4687	A13 Underf	T	Underf	Bates, D. R. Ion-molecule association. <i>J. Phys. B</i> 12, 4135 (1979) United Kingdom
4688	A06 He ⁺ + He ²⁺	T	43-24000 eV	Dickinson, A. S.; Hardie, D. J. b. Symmetric resonance charge transfer in He ⁺ (1s)-He ²⁺ collisions. <i>J. Phys. B</i> 12, 4147 (1979) United Kingdom
4689	A06 He ⁺ + He ²⁺	E	0.1-20 keV	Pearl, B.; Dolder, K. Measurements of cross sections for charge exchange between He ⁺ and He ²⁺ ions. <i>J. Phys. B</i> 12, 4155 (1979) United Kingdom
4690	A06 Ba ²⁺ + N; Ba ²⁺ + N ₂ ; Ti ²⁺ + N; Ti ²⁺ + N ₂ ; Mg ²⁺ + N; Mg ²⁺ + N ₂ ; Cd ²⁺ + N; Cd ²⁺ + N ₂ ; Zn ²⁺ + N; Zn ²⁺ + N ₂ ; Kr ²⁺ + N; Kr ²⁺ + N ₂ ; Br ²⁺ + N; Br ²⁺ + N ₂	E	0.6-40 keV	McCullough, R. W.; Hutt, W. L.; Gilbody, A. B. One-electron capture by slow doubly charged ions in N and N ₂ . <i>J. Phys. B</i> 12, 4159 (1979) United Kingdom
4691	E05 e + C ⁺ ; e + N ²⁺	T	24-79 eV	Moore, D. L. The autoionization contribution to the electron impact ionization cross sections of C ⁺ and N ²⁺ at low energies. <i>J. Phys. B</i> 12, 4171 (1979) United Kingdom
4692	G04 H ⁺ + He; D ⁺ + He G06 H ⁺ + He; D ⁺ + He	T	0-1000 K	Lin, S. L.; Gatland, I. R.; Mason, L. A. Mobility and diffusion of protons and deuterons in helium—a runaway effect. <i>J. Phys. B</i> 12, 4179 (1979) United States
4693	A14 NO ₂ + He; NO ₂ + CO ₂ ; NO ₂ + He; NO ₂ + Ar; NC ₂ + Kr; NO ₂ + Xe; NO ₂ + N ₂ ; NO ₂ + O ₂ ; NO ₂ + H ₂ O; NO ₂ + CF ₄ ; CINO + He; CINO + CO ₂ ; CINO + He; CINO + Ar; CINO + Kr; CINO + Xe; CINO + N ₂ ; CINO + O ₂ ; CINO + N ₂ C; CINO + CF ₄ ; O ₂ + He; O ₂ + CO ₂ ; O ₂ + He; O ₂ + Ar; O ₂ + Kr; O ₂ + Xe; O ₂ + N ₂ ; O ₂ + O ₂ ; O ₂ + H ₂ O; O ₂ + CF ₄ ; H ₂ O + He; H ₂ O + CO ₂ ; H ₂ O + He; H ₂ O + Ar; H ₂ O + Kr; H ₂ O + Xe; H ₂ O + N ₂ ; H ₂ O + O ₂ ; H ₂ O + H ₂ O; H ₂ O + CF ₄	E	331-1800 K	Ende, M.; Glensner, K.; Tros, J. Speck wave study of collisional energy transfer in the dissociation of NO ₂ , CINO, O ₂ , and H ₂ O. <i>J. Phys. Chem.</i> 83, 2882 (1979) West Germany
4694	A14 O + H ₂ S	E	227-502 K	Singleton, D. L.; Irwin, R. S.; Big, W. S.; Cvetanovic, R. J. Kinetics and mechanism of the reaction of oxygen atoms with hydrogen sulfide. <i>J. Phys. Chem.</i> 83, 2155 (1979) Canada
4695	A06 Br ₂ + O ₂ F ₂ ; I ₂ + O ₂ F ₂ ; IC1 + C ₂ F ₄ ; HI + O ₂ F ₂	E	331 K	Coombe, R. D.; Horne, R. K. Chemiluminescent reactions of O ₂ F ₂ II. Reactions producing excited Br [*] and I [*] . <i>J. Phys. Chem.</i> 83, 2435 (1979) United States

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4696	A13 $\text{NO}_2 + \text{HC}_2$	E	273-339 K	Cox, S. A.; Barrow, J. P. Kinetics and mechanism of the disproportionation of NO_2 in the gas phase. <i>J. Phys. Chem.</i> 83, 2560 (1979) United Kingdom
4697	A11 $\text{Br}^\bullet + \text{H}_2$; $\text{Br}^\bullet + \text{D}_2$; $\text{Br}^\bullet + \text{CF}_4$	E	333 K	Laufer, A. M. Photochemistry of bromoacetylene. Formation of HBr and quenching of excited $\text{Br}(^2P_{1/2})$. <i>J. Phys. Chem.</i> 83, 2603 (1979) United States
4698	A14 $\text{H} + \text{NO}_2$	E	195-400 K	Michael, J. V.; Nava, D. F.; Payne, W. A.; Lee, J. H.; Stief, L. J. Rate constant for the reaction $\text{H} + \text{NO}_2$ from 195 to 400 K with FP-RF and BI-M techniques. <i>J. Phys. Chem.</i> 83, 2616 (1979) United States
4699	A11 $\text{CO}^\bullet + \text{H}_2$; $\text{CS} + \text{H}_2$; $\text{C}_2 + \text{H}_2$	E	333 K	Marcoux, P. J.; van Sney, N.; Sato, D. W. Vibrational relaxation of $\text{CO}^\bullet(A^2\Pi_{1/2})$, $\text{CS}(A^2\Sigma)$, and $\text{C}_2(A^2\Pi_{g/2})$ in helium. <i>J. Phys. Chem.</i> 83, 3168 (1979) United Kingdom
4700	A14 $\text{OH} + \text{NO}_2 + \text{H}_2$; $\text{OH} + \text{NO}_2 + \text{Ar}$; $\text{OH} + \text{NO}_2 + \text{H}_2$; $\text{OH} + \text{NO}_2 + \text{SF}_6$	E	247-352 K	Wine, P. M.; Kreutter, R. M.; Savitsky, A. R. Flash photolysis-resonance fluorescence kinetics study of the reaction $\text{OH} + \text{NO}_2 + \text{H} + \text{HNO}_2 + \text{H}$. <i>J. Phys. Chem.</i> 83, 3191 (1979) United States
4701	D02 $\text{Ar}^\bullet + \text{Si}$	E	0.5-6.0 keV	Kirschner, J.; Eitzhorn, M. W. Sputtering of amorphous silicon films by 0.5 to 5 keV $\text{Ar}^\bullet$ ions. <i>Appl. Surf. Sci.</i> 3, 251 (1979) West Germany
4702	D17 $\text{Kr}^\bullet + [\text{Fe} + \text{Cr} + \text{Ni}]$	E	2 keV	Mathew, M. J.; Landolt, D. Influence of sputtering on the surface composition of Fe-Cr-Ni alloys. <i>Appl. Surf. Sci.</i> 3, 348 (1979) Switzerland
4703	G02 $\text{N}_2 + \text{N}_2$; $\text{CO} + \text{N}_2$; $\text{CO} + \text{H}_2\text{O}$	T	330 K	Naga, P. Multicomponent diffusion equations for the transition region and their application to the calculation of effective diffusion coefficients. <i>Ber. Bunsenges. Phys. Chem.</i> 83, 574 (1979) West Germany
4704	M05 $\text{nhv} + \text{SF}_6$; $\text{nhv} + \text{CF}_3\text{I}$	E	13 μ	Fab, V.; Schmid, U. C. Properties and analytical application of the isotope selective multiphoton dissociation. <i>Ber. Bunsenges. Phys. Chem.</i> 83, 1148 (1979) West Germany
4705	A03 $\text{I}_2^\bullet + \text{CO}_2$ A11 $\text{I}_2^\bullet + \text{CO}_2$	E	6000 Å	Capote, M. A.; Reiser, M.; Wittig, C. Collisional energy transfer from $\text{I}_2(B^2\Sigma)$ to CO_2 . <i>Chem. Phys. Lett.</i> 67, 48 (1979) United States
4706	A14 $\text{O} + \text{CH}_4$	E	330-1000 K	Felder, W. Fon'ijn, A. High temperature photochemical reaction: a new technique for rate coefficient measurements over wide temperature ranges; initial measurements on $\text{O} + \text{CH}_4$ reaction for 828-1250 K. <i>Chem. Phys. Lett.</i> 67, 83 (1979) United States
4707	A14 $\text{H} + \text{H}_2$; $\text{F} + \text{H}_2$	T	0.5-0.9 eV	Sverdlin, B. I.; Stein, G. P.; Koopfi, G. W. The accuracy of transition state theory in its absolute rate theory and variational formulations. <i>Chem. Phys. Lett.</i> 67, 87 (1979) United States
4708	A03 $\text{He}^\bullet + \text{CS}$ A07 $\text{He}^\bullet + \text{CS}$ A11 $\text{He}^\bullet + \text{CS}$	E	550 K	Wu, K. T.; Yoncho, A. J. $\text{CS}^\bullet(B^2\Pi^\bullet + A^2\Pi_{1/2})$ fluorescence from Penning excitation of CS . <i>Chem. Phys. Lett.</i> 67, 134 (1979) United States
4709	A03 $\text{HCl}^\bullet + \text{HCl}$; $\text{HCl}^\bullet + \text{BCl}$; $\text{HCl}^\bullet + \text{HBr}$ A11 $\text{HCl}^\bullet + \text{HCl}$; $\text{HCl}^\bullet + \text{BCl}$; $\text{HCl}^\bullet + \text{HBr}$	T	200-1000 K	Parmenter, C. S.; Seaver, M. The temperature dependence of collision-induced state changes. <i>Chem. Phys. Lett.</i> 67, 279 (1979) United States
4710	M05 $\text{nhv} + \text{SF}_6$	E	13.6 μ	Koren, G.; Oppenheim, U. P. Collision effects in the multiphoton dissociation of SF_6 . <i>Chem. Phys. Lett.</i> 67, 289 (1979) United States

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4711	A11 $\text{SO}_2^+ + \text{SO}_2$	T	30° K	Takahashi, K. Non-radiative transitions in gaseous molecules: intersystem crossing rates of sulfur dioxide. <i>Chem. Phys. Lett.</i> 67, 364 (1975) United States
4712	A14 $\text{NO}_2 + \text{HC}; \text{DC}_2 + \text{NO}$	E	297 K	Glaschick-Schlopff, I.; Lais, A.; Panhausen, P. B.; Scherath, U.; Becker, K. M.; Fish, E. M. A kinetic study of the reactions of NO_2/CO_2 radicals with nitric oxide using near-infrared chemiluminescence detection. <i>Chem. Phys. Lett.</i> 67, 318 (1975) West Germany
4713	B07 $\text{Cl}_2 + [\text{H}_2 + \text{H}]; \text{Cl}_2 + \text{H}$	E	15 eV	Prince, R. H.; Lambert, R. N. Scattering of molecular chlorine from clean and hydrogen-covered tungsten. <i>Chem. Phys. Lett.</i> 67, 388 (1975) Canada
4714	A02 $\text{He}^+ + \text{H}_2$ A06 $\text{He}^+ + \text{H}_2$	T	1-4 eV	Schneider, F.; Zulicke, L. Approximate diatomic-in-molecules potential energy surfaces and non-adiabatic coupling for $\text{He}^+ + \text{H}_2$. <i>Chem. Phys. Lett.</i> 67, 451 (1979) West Germany
4715	A18 $\text{He} + \text{CO}$	T	63 cm^{-1}	Fitz, D. E.; Kouri, D. J. Computational test of the factorization of differential cross sections in the sudden approximation. <i>Chem. Phys. Lett.</i> 67, 558 (1979) United States
4716	A11 $\text{Br}^+ + \text{O}_2; \text{Br}^+ + \text{NO}$	E	33° K	Gordon, E. B.; Radkhin, A. I.; Setichenko, S. A. Can the strong collisionally induced spin-orbital relaxation of halogen atoms be accounted for by quencher paramagnetism. <i>Chem. Phys. Lett.</i> 68, 57 (1979) Soviet Union
4717	A14 $\text{O}^+ + \text{H}_2$	T	0.9-2.3 eV	Clary, D. C.; Connor, J. N. L.; Edge, C. J. Quantum and quasiclassical study of the collinear reaction $\text{Li}^+\text{F} + \text{H}_2 \rightarrow \text{CH} + \text{H}$ using a LEPS and fitted to initial potential energy surface. <i>Chem. Phys. Lett.</i> 68, 154 (1979) United Kingdom
4718	H05 $\text{He} + \text{H}_2$	E	840-765 Å	Guyon, P. R.; Braton, J.; Glass-Rabjean, R. Predissociation of the $\text{h}(\text{sub } v \text{ sup } 1 \text{ plus } \text{cr sup } 0 \text{ plus } 0 \text{ plus } 0)$ states of H_2 ; measurement of the various dissociation yields. <i>Chem. Phys. Lett.</i> 68, 214 (1975) France
4719	A11 $\text{He}^+ + \text{H}_2$	E	290-600 K	Kono, A.; Kattori, S. Temperature dependence of de-excitation cross sections of $\text{He}(3^1\text{S}, 3^3\text{S}, 3^1\text{P}, 3^3\text{P})$ states by He . <i>Chem. Phys. Lett.</i> 68, 347 (1979) Japan
4720	A03 $\text{CO}_2^+ + \text{Li}^+$	T	1-18 eV	Villalunga, E.; Niche, D. A.; Toennies, J. P. Rotational-vibrational energy transfer in atom-polyatomic collisions: $\text{Li}^+\text{-CO}_2$ in the 1 to 18 eV range. <i>Chem. Phys. Lett.</i> 68, 352 (1979) United States
4721	A04 $\text{H} + \text{H}_2; \text{He} + \text{H}_2$	T	3.57-0.62 eV	Gray, J. C.; Fraser, G. A.; Trohler, D. G. Quasiclassical trajectory studies of vibrational enhancement of collision-induced dissociation in collinear collisions. <i>Chem. Phys. Lett.</i> 68, 359 (1979) United States
4722	A03 $\text{H}_2^+ + \text{H}_2^0$	T	100-1000 K	Shin, M. K.; Allick, P. L. Vibration-vibration energy transfer in hydrogen molecules: $\text{H}_2(1) + \text{H}_2(1) \rightarrow \text{H}_2(2) + \text{H}_2(0)$. <i>Chem. Phys. Lett.</i> 68, 364 (1979) United States
4723	A02 $\text{H} + \text{H}_2$	T	0.5-1.0 eV	Beer, M.; Khare, V.; Kouri, D. J. Integral total reactive cross section calculations within the infinite order sudden approximation. <i>Chem. Phys. Lett.</i> 68, 278 (1979) Israel
4724	A14 $\text{O} + \text{O}_2$	E	300 K	Chikin, S. K.; Gerasimov, V. M.; Bonoplyov, A. V.; Rozenshtein, V. B. Study of the reaction of oxygen atoms with vibrationally excited ozone molecules. <i>Chem. Phys. Lett.</i> 68, 386 (1975) Soviet Union

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4725	A03 Under	T	30° K	Davidovich, N. A.; Knox, R. S. On the rate of triplet excitation transfer in the diffusive limit. <i>Chem. Phys. Lett.</i> 68, 391 (1979) United States
4726	H02 h ν + SF ₆	T	13.6 μ	Schmalzl, U. Energy-dependent absorption cross sections and their use for multichannel absorption modelling. <i>Chem. Phys. Lett.</i> 68, 443 (1979) West Germany
4727	H04 h ν + CO; h ν + CO ₂ H05 h ν + CO; h ν + CO ₂	E	15-29.5 eV	Yu, C.-Y.-R.; Judge, D. L. The atomic oxygen 1304 Å ⁰ emission produced through photodissociation of CO and CO ₂ . <i>Chem. Phys. Lett.</i> 68, 495 (1979) United States
4728	A14 H + Cl ₂	T	0-15 eV	Long, J.K.C.; Brumer, P. The Faddeev equations and Franch-Condon models for chemical reactions. <i>Chem. Phys. Lett.</i> 68, 517 (1979) Canada
4729	A17 C + O	T	2195 cm ⁻¹	Amos, R. D. SCF and CI calculations of the one-electron properties of carbon monoxide as a function of internuclear distance. <i>Chem. Phys. Lett.</i> 68, 536 (1979) United Kingdom
4730	A17 Hg + Hg ⁺ H02 h ν + Hg ₂ ⁺	T	A17 5.67 eV H02 1200-700 nm	Nichols, M. M.; Hobbs, R. M.; Council, J.W.D. Electronic structure and photoabsorption of the Hg ₂ ⁺ dimer ion. <i>Chem. Phys. Lett.</i> 68, 549 (1979) United States
4731	A10 Cd ⁰ + H ₂	E	50° K	Znamenskii, V. B.; Tirsutyev, V. G. Special features of the creation of an inverse population of the levels 6S _{1/2} and 5P _{3/2} of cadmium (λ = 508.5nm) optical excitation of a mixture of its vapor with nitrogen. <i>J. Appl. Spectrosc.</i> 30, 286 (1979) Soviet Union
4732	A14 Cu + C; Au + C; Ag + C	E	1170-2300 K	Katskov, D. A.; Grimshteyn, I. L. Chemical reaction of copper, gold, and silver with carbon by an atomic-absorption method with electrothermal atomizers. <i>J. Appl. Spectrosc.</i> 30, 554 (1979) Soviet Union
4733	H06 h ν + C; h ν + N; h ν + O; h ν + N ₂ ; h ν + N ₂ ; h ν + CO	T	0-44 eV	Hilton, P. R.; Nordholm, S.; Nash, M. S. Ground-state inversion method applied to calculation of molecular photoionization cross-sections by atomic extrapolation; interference effects at low energies. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 18, 161 (1980) Australia
4734	C04 e + Sn; e + Ge; e + Pb	E	700-1200 eV	Cadman, P.; Gossedge, G. W. The inelastic mean free path of group IV elements in the 700-1200-eV range. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 18, 161 (1980) United Kingdom
4735	H06 h ν + PEET	T	2.12-2.98 keV	Yarzhemsky, V. G.; Nefedov, V. I.; Band, I. N.; Trzhashkovskaya, M. B. Relative intensities in x-ray photoelectron spectra. Part V. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 18, 173 (1980) Soviet Union
4736	A11 ZrO ⁺ + He	E	2500 K	Hammer, P. D.; Eavis, S. P. Lifetime of the B ² state of ZrO. <i>J. Mol. Spectrosc.</i> 78, 337 (1979) United States
4737	H04 2h ν + N ₂ ; 2h ν + NO; 2h ν + CO; 3h ν + CO	T	Under	Halpern, J. B.; Zacharias, M.; Mollenstein, R. Rotational line strengths in two- and three-photon transitions in diatomic molecules. <i>J. Mol. Spectrosc.</i> 79, 1 (1980) United States
4738	A05 C ⁺ + N ₂	E	1°-1000 eV	Ishikawa, T.; Inouye, H. Luminescence in collisions of C ⁺ ions with N ₂ molecules. <i>J. Phys. Soc., Jap.</i> 47, 935 (1979) Japan
4739	A19 H ⁺ + Au; H ⁺ + Pb; H ⁺ + Th; H ⁺ + U; D ⁺ + Au; D ⁺ + Pb; D ⁺ + Th; D ⁺ + U	E	0.5-1.25 MeV/amu	Anholt, R.; Wang, D. P.; Liu, Y. C. Coulomb deflection effects on L-vacancy production. <i>J. Phys. Soc., Jap.</i> 47, 1260 (1979) United States
4740	F03 e + He E17 e + He	T	233-300 eV	Gupta, G. P.; Mathur, K. C. Electron impact excitation of Helium to n ² S states (for n = 2,3,4) at intermediate energies. <i>J. Phys. Soc., Jap.</i> 47, 1260 (1979) India

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4741	E03 $e + H$ E17 $e + H$	T	27-500 eV	Saha, B. C.; Saha, M. P.; Sili, M. C. Electron-impact excitation of atomic hydrogen into highly excited states. <i>J. Phys. Soc., Jap.</i> 47, 1634 (1979) India
4742	A12 $He^+ + He$ M02 $He + He$	E T	A12 307 K M02 58.4 nm	Delaboudiniere, J. P. Multiple scattering effects in a cylindrical helium absorption cell operating close to the resonance line at λ 584 Å. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 22, 411 (1979) France
4743	A12 $Hg^+ + Hg$	E	830-1500 K	Laporte, P.; Daussy, M. High density self broadening of the 253.65 nm mercury resonance line. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 22, 447 (1979) France
4744	M02 Under	T	Under	Horizumi, S. J. Comparison of an analytical model with approximate models for total band absorptions and their derivatives. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 22, 467 (1979) United States
4745	M02 $He + H_2^+$	T	1430-2460 cm^{-1}	Regel, J.; Rogovin, D. The effect of centrifugal distortion on water vapor line intensities. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 22, 475 (1979) United States
4746	A12 $Ca^+ + Ar$	E	833 K	Myint, M.; Hill, R. M.; Hindersb, W. R. Measurement of collision broadening of the calcium resonance line by low resolution spectroscopy. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 22, 489 (1979) United States
4747	M01 Review K03 Review	E T	Under	Enslay, G. L. Coherent Raman spectroscopy. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 22, 567 (1979) United States
4748	M01 Under	T		Welshelt, J. C. Photon escape probabilities for Stark-broadened Lyman series lines. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 22, 581 (1979) United States
4749	M01 $H^+; H^+; H^{++}$	E		Kalina, E.; Jones, L. A.; Barnard, P. J. Experimental study of Stark broadening of nitrogen ion lines in a theta pinch plasma. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 22, 589 (1979) United States
4750	M01 H	T		Stamm, R.; Voslember, D. On the role of ion dynamics in the Stark broadening of hydrogen lines. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 22, 595 (1979) France
4751	M05 Under	T	Under	Herman, I. J. Calculation of fluence-dependent dissociation probabilities in infrared multiple-photon photolysis. <i>Opt. Lett.</i> 4, 403 (1979) United States
4752	A10 $D_2O^+ + D_2O; D_2O^+ + O_2; D_2O^+ + H_2;$ $D_2O^+ + CO; D_2O^+ + CO_2; D_2O^+ + D_2;$ $D_2O^+ + H_2O; D_2O^+ + Ar$	E	397 K	Sheffield, R. L.; Boyer, R.; Jovan, A. Study of vibrational and rotational relaxations in D_2O . <i>Opt. Lett.</i> 5, 18 (1980) United States
4753	A10 $D_2CO^+ + D_2CO$	E	293 K	Dry, E. J.; Watt, G. F. Infrared-ultraviolet double resonance in D_2CO vapor. <i>Opt. Lett.</i> 5, 12 (1980) Australia
4754	M05 Under M10 Under	T	Under	Witke, H. R.; Gell, A. J.; Bransge, W. M.; Houdon, C. M. Criteria for the reduction of the effective manifold of states in models of laser-induced dissociation and chemistry. <i>Opt. Lett.</i> 5, 24 (1980) United States
4755	A03 $He^+ + H$ A16 $He^+ + H$	T	20-2000 keV	Franc, V. Collisions between ions or atoms and atomic hydrogen. <i>Phys. Rev. A</i> 20, 2267 (1979) United States
4756	A03 $H^+ + H$ Seq A16 $H^+ + H$ Seq	T	Under	Potter, J. E.; Rieck, J. Low-energy proton-hydrogenlike-ion scattering in the Coulomb-Born approximation. <i>Phys. Rev. A</i> 20, 2302 (1979) United States

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4757	A02 $U^+ + U; U^+ + U^+; U^+ + U^{2+}$ A17 $U^+ + U; U^+ + U^+; U^+ + U^{2+}$ G09 $U^+ + U; U^+ + U^+; U^+ + U^{2+}$	T	0.01-10 ² eV	Cohen, J. S. Interaction potentials and momentum transfer in ionic collisions: uranium. <i>Phys. Rev. A</i> 20, 2318 (1979) United States
4758	A06 $H^{2+} + H; H^{2+} + H$ A17 $H^{2+} + H; H^+ + H^+$	T	Underf	Butler, S. E. Ab initio potential curves and coupling-matrix elements for charge transfer from H to H^{2+} and H^+ . <i>Phys. Rev. A</i> 20, 2317 (1979) United States
4759	A16 $D^+ + He; H^+ + He$	E	0.5-1.35 MeV	Manendez, M. G.; Duncan, W. R. Collisional electron detachment of H^+ by He: a target effect. <i>Phys. Rev. A</i> 20, 2327 (1979) United States
4760	E05 $e + CO_2$	E	50-400 eV	Shyn, Y. W.; Sharp, W. E. Doubly differential cross sections of secondary electrons ejected from gases by electron impact: 50-400 eV on CO_2 . <i>Phys. Rev. A</i> 20, 2332 (1979) United States
4761	A03 $F^{2+} + He$ A07 $F^{2+} + He$	E	12-40 MeV	Tamura, H.; Terasawa, H.; Richard, P.; Gray, T. J.; Papellier, P.; Hall, J.; Rousseau, J. Role of excitation in K-shell vacancy production for $F^{2+} + He$ collisions. <i>Phys. Rev. A</i> 20, 2246 (1979) United States
4762	E02 Underf	T	Underf	McCarthy, C. W.; Roscigno, T. R. Basis-set calculation of Siegert eigenvalues: partial resonance widths. <i>Phys. Rev. A</i> 20, 2346 (1979) United States
4763	E02 $e + H_2$ E17 $e + H_2$	T	75-700 eV	Jain, A.; Tripathi, A. N.; Srivastava, R. K. Elastic scattering of electrons by molecular hydrogen at intermediate and high energies. <i>Phys. Rev. A</i> 20, 2352 (1979) India
4764	B07 $h\nu + Rb$ H06 $h\nu + Rb$	E	H06 2966-2995 Å	Freeman, R. R.; Economou, N. P. Electric field dependence of the photoionization cross section of Rb. <i>Phys. Rev. A</i> 20, 2356 (1979) United States
4765	H06 $h\nu + Na; h\nu + K; h\nu + Rb; h\nu + Cs$	T	0-5.2 eV	Das, V.; Hanson, S. T. Photoelectron angular distributions for the outer shell of the alkali-metal atoms. <i>Phys. Rev. A</i> 20, 2364 (1979) United States
4766	M01 $Kr + Underf$ D01 $Kr + Underf$	E	339 K	Velh, C. M.; Mark, J. G.; Grover, E. C. Spin depolarization of Kr^{2+} . <i>Phys. Rev. A</i> 20, 2381 (1979) United States
4767	M01 Underf	T	Underf	Berman, P. R.; Liao, P. F.; Bjorkholm, J. E. Theory of saturation spectroscopy including collisional effects. <i>Phys. Rev. A</i> 20, 2389 (1979) United States
4768	H02 $h\nu + Br_2$ H06 $h\nu + Br_2$	E	1200 eV	Booben, K. D.; Sahi, M. K.; Ginzewski, J. K.; Chambers, S. A.; Thomas, T. D. Extended-x-ray-absorption fine-structure amplitude attenuation in Br_2 : relationship to satellites in the x-ray photoelectron spectrum. <i>Phys. Rev. A</i> 20, 2401 (1979) United States
4769	A19 $I^+ + Fe$	E	15 ⁰ -167 MeV	Yahn, J. A.; Budich, B.; Kast, J. W.; Rechten, A. R. High-resolution measurement of Fe K α x-ray produced by MeV/u iodine ions. <i>Phys. Rev. A</i> 20, 2440 (1979) United States
4770	H05 $h\nu + SF_6$	E	13-6 p	Alleplov, S. S.; Afanas'ev, N. B.; Kariou, N. V.; Sorokhov, B. G. Collisionless dissociation mechanism and vibrational spectrum structure of degenerate modes of symmetric molecules. <i>Sov. J. Quantum Electron.</i> 5, 699 (1979) Soviet Union
4771	E05 $e + H_2^+$	T	15.5-100 eV	Nikonorov, S. V.; Osipov, A. P.; Rabinov, A. Y. Influence of vibrational excitation of molecules on the electron distribution function in H_2 in a high-power laser radiation field. <i>Sov. J. Quantum Electron.</i> 5, 740 (1979) Soviet Union

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4772	H04 $2h\nu + \text{Na}$	E	Undef	Solomonin, V. S.; Melushko, A. M.; Kravtsov, V. V. Resonant frequency conversion in sodium vapor. <i>Sov. J. Quantum Electron.</i> 9, 776 (1979) Soviet Union
4773	B01 Undef	T		Grishina, L. A. New method for theoretical calculations of the characteristics of an atom in a strong electromagnetic field. <i>Sov. J. Quantum Electron.</i> 9, 827 (1979) Soviet Union
4774	H02 Undef	T	Undef	Doudenko, Z. A. Theory of resonance two-photon absorption. <i>Sov. J. Quantum Electron.</i> 9, 830 (1979) Soviet Union
4775	H06 $h\nu + \text{O}_2 + \text{Xe}; h\nu + \text{CO}_2 + \text{Xe}; h\nu + \text{H}_2 + \text{Xe}$	E	135-100 nm	Bibinov, B. K.; Vilanov, F. I.; Vlasov, I. P.; Mikhov, L. B.; Pavlov, A. N. Determination of the spectral dependence of the absolute quantum yields of $\text{O}_2(^1\text{S})$ by the XeC^+ luminescence method. I. Photolysis of CO_2 and H_2O . <i>Sov. J. Quantum Electron.</i> 9, 838 (1979) Soviet Union
4776	H04 $4h\nu + \text{Na}$	E	0.6-2.2 μ	Solomonin, V. S.; Melushko, A. M. Effective frequency conversion of radiation in sodium vapor. <i>Sov. J. Quantum Electron.</i> 9, 894 (1979) Soviet Union
4777	A02 Undef	T	Undef	Arushanov, G. G.; Golubev, E. G.; Artyukov, I. Z.; Rabinov, M. N. Dependence of average multiplicity on impact parameter and momentum transfer. <i>Sov. Phys. J.</i> 22, 236 (1979) Soviet Union
4778	C08 $\text{H}^+ + \text{Si}$	T	1.5 MeV	Malyshevskii, V. S.; Shipatov, E. I. Analytical model of axial channeling for heavy ions. <i>Sov. Phys. J.</i> 22, 255 (1979) Soviet Union
4779	B01 He	T		Dashin, V. P.; Murav'ev, I. I. Transition probabilities of neon atom in a constant electric field. <i>Sov. Phys. J.</i> 22, 288 (1979) Soviet Union
4780	C08 $e + \text{NaCl}$ B12 $e + \text{NaCl}$	E	0.8-2.5 MeV	Prete, V. A.; Kuz'minykh, V. A.; Plotnikov, S. V.; Razuv, E. I. Orientational dependence of luminescence yield excited by fast electrons. <i>Sov. Phys. J.</i> 22, 286 (1979) Soviet Union
4781	B06 $e + \text{Au}$ B07 $\text{H}^+ + \text{Au}$	E	B06 1 MeV B07 0.67 MeV	Taratina, A. N.; Vorob'ev, S. A. Surface channeling of protons and electrons on reflector by a single crystal. <i>Sov. Phys. J.</i> 22, 255 (1979) Soviet Union
4782	A03 $\text{He}^+ + \text{Xe}^+$ A06 $\text{He}^+ + \text{Xe}^+$	E	Undef	Kurov, V. S.; Murav'ev, I. I. Excitation of the $7s^2P_{1/2,3/2}$ levels of Xe^+ due to charge exchange in the negative glow of a glow discharge in a neon-xenon mixture. <i>Sov. Phys. J.</i> 22, 304 (1979) Soviet Union
4783	B01 e	T		Klimenko, Y. I.; Pavlova, G. S.; Kulish, V. V. Induced radiation of an electron in a plane wave in a magnetic field. <i>Sov. Phys. J.</i> 22, 382 (1979) Soviet Union
4784	B01 Undef	T		Davydovskii, V. Y.; Ushakov, A. S.; Filippov, Y. S. Accuracy of the conservation of the adiabatic invariant of a charged particle in plane waves. <i>Sov. Phys. J.</i> 22, 357 (1979) Soviet Union
4785	B12 $\text{H}_2 + [\text{ZnS} + \text{Te}]$	T	300 K	Iyurin, Y. I.; Styrov, V. V. Ionizational mechanism of heterogeneous chemiluminescence excitation. I. <i>Sov. Phys. J.</i> 22, 409 (1979) Soviet Union
4786	B01 e	T		Bogrov, V. G.; Lavrov, P. N.; Fioletov, G. I. Electron with anomalous moments in an electromagnetic field. <i>Sov. Phys. J.</i> 22, 419 (1979) Soviet Union
4787	E11 Undef	T	Undef	Solov'ov, A. I. Bremsstrahlung of a vector particle in a nuclear field. <i>Sov. Phys. J.</i> 22, 425 (1979) Soviet Union

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4700	D06 Under H04 Under	T	H04 Under	Ernstov, M. K.; Chetverikov, V. N. Excitation of equivalent multilevel systems by an electric field. <i>Sov. Phys. J.</i> 22, 439 (1979) Soviet Union
4709	D05 Under	T	Under	Konov, V. V. Calculation of electron energy distribution in photoemission. <i>Sov. Phys. J.</i> 22, 947 (1979) Soviet Union
4790	E12 $e^- + NaCl$	T	6-5 eV	Varison, A. Z.; Prokopyev, E. P. Scattering of positronic atoms on optical phonons in ionic crystals. Positron thermalization. <i>Sov. Phys. J.</i> 22, 811 (1979) Soviet Union
4791	G00 $e^- + Na$	E	0-60 eV	Ertushenko, G. S.; Volkova, L. M.; Kral'shina, E. A. Determining the energy distribution function of electrons in the negative-luminescence plasma of a glow discharge from the line intensities. <i>Sov. Phys. J.</i> 22, 815 (1979) Soviet Union
4792	H11 Under	T	Under	Salmov, A. I. Inverse bremsstrahlung of a scalar particle. <i>Sov. Phys. J.</i> 22, 846 (1979) Soviet Union
4793	A11 $He^+ + He^+$ C07 $He^+ + ScII$ F07 $e^- + He^+$	T	Under	Matusov, V. I.; Parilis, E. S. Decay of autoionization states in collisions with a charged particle. <i>Sov. Tech. Phys. Lett.</i> 5, 120 (1979) Soviet Union
4794	E03 $e^- + H_2$	T	1-20 eV	Lavrov, B. P.; Ostrovskii, V. N.; Batimov, V. I. Cross sections and rate constants for electron-impact excitation of electronic-rotational molecular states. <i>Sov. Tech. Phys. Lett.</i> 5, 142 (1979) Soviet Union
4795	D08 $Ar^+ + Cu$	E	30 keV	Salashova, L. L.; Borisov, A. P.; Ladunov, A. I.; Mushkova, E. S.; Melchenova, V. A. Effect of surface subchannels on the energy distribution of fast ionized recoil atoms. <i>Sov. Tech. Phys. Lett.</i> 5, 169 (1979) Soviet Union
4795	A14 $CO + H_2O$	E	1500 K	D'yakov, A. S.; Ostrovskiy, N. N.; Tkachenko, B. K. Use of a steady-state chemical reaction between CO and H_2O for vibrational excitation of CO_2 and H_2 . <i>Sov. Tech. Phys. Lett.</i> 5, 230 (1979) Soviet Union
4797	E02 $e^- + He$ E17 $e^- + He$	E	61-100 eV	Kellith, K. J.; Lucas, C. B. The critical position for elastic electron scattering in neon. <i>Z. Phys. A</i> 252, 215 (1979) West Germany
4798	A19 $Pb + Pb$	T	926-1200 MeV	Kirsch, J.; Batz, U.; Reinhardt, J.; Muller, B.; Grainer, V.; Soff, G. The impact parameter dependence of the Pb + Pb K-MO spectrum. <i>Z. Phys. A</i> 292, 227 (1979) West Germany
4799	A03 $K + Ne; K + Ne; K + Ar; K + Kr; K + Xe$ A10 $K + Ne; K + Ne; K + Ar; K + Kr; K + Xe$	E	1 keV	Zehle, L.; Cleopene, E.; Martin, P. J.; Schauble, M.; Kueper, V. Coincidence studies with polarization analysis of the photon emission induced in K-inert gas collisions. <i>Z. Phys. A</i> 292, 235 (1979) West Germany
4800	A10 $Nb + He$ A19 $Nb + He$	E	1.5 MeV/mm	Schuch, R.; Hille, G.; Johnson, B. N.; Jones, K. W. Impact-parameter dependence of K-shell vacancy production in Nb-He collisions. <i>Z. Phys. A</i> 293, 91 (1979) United States
4801	D02 $B^+ + [N + Co]; B^+ + [N + SS]; B^+ + [N + Ni]$	E	1.8 MeV	Begout, J. P.; Nappin, V. Reduction of surface hydrogen on ultra cold neutron container materials by ion bombardment. <i>Z. Phys. B</i> 35, 272 (1979) France
4802	A05 $O + NO$	E	30° K	Sato, H.; Morikawa, T.; Nakamura, F. Absolute rate constant for the chemiluminescent reaction of atomic oxygen with nitric oxide. <i>J. Chem. Phys.</i> 72, 28 (1980) Japan

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4818	All $\text{HgCl}^0 + \text{Ne}; \text{HgCl}^0 + \text{Ne}; \text{HgCl}^0 + \text{Ar};$ $\text{HgCl}^0 + \text{Kr}; \text{HgCl}^0 + \text{Xe}; \text{HgCl}^0 + \text{N}_2;$ $\text{HgCl}^0 + \text{Cl}_2; \text{HgCl}^0 + \text{HCl}; \text{HgBr}^0 +$ $\text{Ne}; \text{HgBr}^0 + \text{Ar}; \text{HgBr}^0 + \text{Xe}; \text{HgBr}^0 +$ $\text{N}_2; \text{HgBr}^0 + \text{Br}_2; \text{HgBr}^0 + \text{HBr}$ MO2 $\text{hv} + \text{Cl}_2; \text{hv} + \text{HCl}; \text{hv} + \text{Br}_2; \text{hv} +$ HBr	E	All 330 K MO2 1900 Å	Nandi, A.; Parks, J. M.; Bexio, C. Collisional quenching kinetics for the HgCl^0 and HgBr^0 ($^1\text{I}/^2$) state. <i>J. Chem. Phys.</i> 72, 504 (1980) United States
4817	All $\text{HgBr}^0 + \text{Ne}; \text{HgBr}^0 + \text{Ne}; \text{HgBr}^0 + \text{N}_2;$ $\text{HgBr}^0 + \text{Ar}; \text{HgBr}^0 + \text{Xe}; \text{HgI}^0 + \text{Ne};$ $\text{HgI}^0 + \text{Ne}; \text{HgI}^0 + \text{N}_2; \text{HgI}^0 + \text{Ar};$ $\text{HgI}^0 + \text{Xe}; \text{HgI}^0 + \text{I}_2$	E	330 K	Bexio, C.; Nandi, A. Quenching kinetics for the HgBr^0 ($^1\text{I}/^2$) and HgI^0 ($^1\text{I}/^2$, $^3\text{P}_{1/2}$, $^3\text{P}_{3/2}$) states. <i>J. Chem. Phys.</i> 72, 541 (1980) United States
4818	A14 $\text{D} + \text{H}_2$	T	0.25-0.50 eV	Yung, Y. Y.; Chai, B. M.; Tang, K. T. Three dimensional quantum mechanical studies of $\text{D} + \text{H}_2 + \text{HD} + \text{H}$ reactive scattering: III. On the adiabatic potential energy surface. <i>J. Chem. Phys.</i> 72, 621 (1980) United States
4819	MO4 $\text{hv} + \text{O}_2$ MO6 $\text{hv} + \text{O}_2$	T	13-78 eV	Gerner, A.; Asaro, C.; McKay, B. V.; Langhoff, P. W. Photoexcitation and ionization in molecular oxygen: theoretical studies of electronic transitions in the discrete and continuous spectral intervals. <i>J. Chem. Phys.</i> 72, 713 (1980) United States
4820	A14 $\text{OH} + \text{H}_2$	T	300-2000 K	Schatz, G. C.; Welch, S. P. An ab initio calculation of the rate constant for the $\text{OH} + \text{H}_2 + \text{H}_2\text{O} + \text{H}$ reaction. <i>J. Chem. Phys.</i> 72, 776 (1980) United States
4821	All $\text{U}^0 + \text{N}_2; \text{U}^0 + \text{O}_2; \text{U}^0 + \text{NO}; \text{U}^0 +$ $\text{CH}_4; \text{U}^0 + \text{H}_2; \text{U}^0 + \text{CC}$	E	330 K	Chen, M.-L.; Borzilleri, C. Collisional relaxation of low lying electronically excited states of uranium: $f^0 d^2(^3\text{K}_g^0)$ and $(^3\text{L}_g^0)$. <i>J. Chem. Phys.</i> 72, 853 (1980) United States
4822	All $\text{U}^0 + \text{Ne}; \text{U}^0 + \text{N}_2; \text{U}^0 + \text{D}_2; \text{U}^0 + \text{He};$ $\text{U}^0 + \text{CH}_4$	E	330 K	Chen, M.-L.; Borzilleri, C. Collisional relaxation of highly excited uranium atoms in gases. <i>J. Chem. Phys.</i> 72, 856 (1980) United States
4823	MO5 $\text{hv} + \text{Sr}_2$ MO10 $\text{hv} + \text{Sr}_2$	E	6124-4759 Å	Bergmann, T.; Liao, P. F. Photoassociation, photoluminescence, and collisional dissociation of the Sr_2 dimer. <i>J. Chem. Phys.</i> 72, 886 (1980) United States
4824	MO5 $2\text{hv} + \text{CO}$	E	193 nm	Bohor, J.; Zavelovich, J.; Rhodes, C. K. Isotope effect in multiphoton ultraviolet photolysis of CO. <i>J. Chem. Phys.</i> 72, 965 (1980) United States
4825	MO2 $\text{Ar}^+ + \text{Cu}; \text{Ar}^+ + [\text{Cu} + \text{O}_2]$	T	630 eV	Foley, K. E.; Garrison, B. J. Mechanism of particle ejection from $\text{Cu}(001)$ induced by the relative orientation of the bombarding primary ion. <i>J. Chem. Phys.</i> 72, 1010 (1980) United States
4826	A13 $\text{NO}_2^- + (\text{H}_2\text{O})_n; \text{NO}_2^- + (\text{HNO}_2)_n; \text{NO}_2^- +$ $(\text{H}_2\text{O})_n; \text{NO}_2^- + (\text{HNO}_2)_n$	E	300-500 K	Lee, H.; Kossow, R. G.; Castleman, A. W., Jr. The properties of clusters in the gas phase: IV. Complexes of H_2C and $\text{HNO}(\text{sub } x)$ clustering on $\text{NO}(\text{sub } x)^-$. <i>J. Chem. Phys.</i> 72, 1089 (1980) United States
4827	MO5 $\text{hv} + \text{I}_2\text{Ne}; \text{hv} + \text{I}_2\text{Ne}; \text{hv} + \text{I}_2\text{NeHe}$	E	Undef	Kenny, J. E.; Johnson, K. E.; Shorff, V.; Levy, D. H. The photodissociation of van der Waals molecules: complexes of iodine, neon, and helium. <i>J. Chem. Phys.</i> 72, 1109 (1980) United States
4828	A03 $\text{K} + \text{N}_2; \text{K} + \text{CO}$ A18 $\text{K} + \text{N}_2; \text{K} + \text{CO}$	T	0.75-2.0 eV	Schinke, R. Quantum effects in rotationally inelastic molecular scattering: $\text{K} + \text{N}_2$ and $\text{K} + \text{CO}$ collisions on simple model surfaces. <i>J. Chem. Phys.</i> 72, 1120 (1980) West Germany
4829	All $\text{CF}_3^0 + \text{Ar}$ GO2 $\text{CF}_3^0 + \text{Ar}$	E	330 K	Blakowski, S. E.; King, D. B.; Stephens, J. C. The determination of mass transport coefficients and vibrational relaxation rates of species formed in laser photolysis experiments. <i>J. Chem. Phys.</i> 72, 1166 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4830	E85 e + B; e + C; e + N; e + O; e + Si; e + Mg; e + Al; e + P; e + Cl; e + K; e + Ca; e + Ti; e + V; e + Cr; e + Co; e + Zn; e + Cu; e + Fe; e + Nb; e + Ag	T	88 keV	Leapman, R. D.; Rez, P.; Meyers, D. F. K. L. and R shell generalized oscillator strengths and ionization cross sections for fast electron collisions. J. Chem. Phys. 72, 1232 (1980) United States
4831	H84 hv + F ₂ H86 hv + F ₂	T	18-70 eV	Orel, A. E.; Rescigno, T. N.; McKoy, D. V.; Langhoff, P. N. Photoexcitation and ionization in molecular fluorine: Stieltjes-Tchebycheff calculations in the static-exchange approximation. J. Chem. Phys. 72, 1265 (1980) United States
4832	A11 Ba ⁺ + Ba	E	730 K	Whitkop, P. G.; Wiesenfeld, J. R. Quenching of electronically excited barium atoms, Ba[5d ² D(sub j)]. J. Chem. Phys. 72, 1297 (1980) United States
4833	A17 OH + H ₂	T	Undef	Valch, S. P.; Dunning, T. N., Jr. A theoretical study of the potential energy surface for OH + H ₂ . J. Chem. Phys. 72, 1303 (1980) United States
4834	E82 e + H ₂ E83 e + H ₂ E17 e + H ₂	T	35 eV	Onda, K.; Truhlar, D. G. Comparison of local-exchange approximations for intermediate-energy electron-molecule differential cross sections. J. Chem. Phys. 72, 1415 (1980) United States
4835	A86 H ⁺ + H	T	10 ² -10 ⁴ K	Butler, S. E.; Calgarno, A. Charge transfer between H ⁺ and H. Astrophys. J., Part 1 234, 765 (1979) United States
4836	H85 hv + CH ⁺	E	3500 A°	Cosby, P. C.; Helm, H.; Moseley, J. T. Observation of predissociated levels of CH ⁺ . Astrophys. J., Part 1 235, 82 (1980) United States
4837	H86 hv + B; hv + C; hv + B; hv + O; hv + F; hv + Na	T	38-10000 eV	Gould, R. J. K-shell photoionization of multielectron atomic systems. Astrophys. J., Part 1 235, 650 (1980) United States
4838	E83 e + Fe ²⁺ E86 e + Fe ²⁺	T	12-80 Ry	Malinowsky, M.; Dubau, J.; Sahel-Brechot, S. Population processes of 3p ⁴ 4s levels of Fe x. Astrophys. J., Part 1 235, 665 (1980) France
4839	A86 Si ²⁺ + H ⁺ ; Si ²⁺ + He ⁺	T	10 ⁴ -10 ⁶ K	Bellunas, S. L.; Butler, S. C. Silicon lines as spectral diagnostics: the effect of charge transfer. Astrophys. J., Part 2 235, L45 (1980) United States
4840	E83 e + Si ²⁺ ; e + S ²⁺ ; e + Ar ¹⁶⁺	T	15-25 Ry	Bhatia, A. K.; Feldman, U.; Doscheck, G. A. New atomic data for Si ²⁺ , S ²⁺ and Ar ¹⁶⁺ . Astron. Astrophys. 80, 22 (1979) United States
4841	H84 hv + OH	T	1720-1612 nm	Bejarrabal, V.; Destombes, J. L.; Guilbert, J.; Merliere-Damuynek, C.; Nguyen-Q-Rieu; Omont, A. Infrared pumping of OH main lines. Astron. Astrophys. 81, 1 (1980) France
4842	A12 Ca ⁰ + He; Ca ⁰ + Ne; Ca ⁰ + Ar	E	2000 K	O'Neill, J. A.; Smith, G. Collisional broadening of spectral lines in laboratory and solar spectra: I. The 6162, 6122, 6102 A° multiplet of neutral calcium. Astron. Astrophys. 81, 100 (1980) United Kingdom
4843	A12 Fe ⁰ + He	E	2000 K	O'Neill, J. A.; Smith, G. Collisional broadening of spectral lines in laboratory and solar spectra: II. Low excitation lines of neutral iron. Astron. Astrophys. 81, 108 (1980) United Kingdom
4844	A83 H ⁺ + O ²⁺ ; H ⁺ + Ne ²⁺ ; H ⁺ + Ne ²⁺ ; H ⁺ + Mg ²⁺	T	0-3 Ry	Faucher, P.; Maennou-Saunders, F.; Prudhomme, H. Proton collisional excitation in the ground configuration of positive ions in the 2p ² isoelectronic series. Astron. Astrophys. 81, 137 (1980) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4845	H84 $h\nu + O^{2+}$	T	0.2-1.8 Ry	Ganes, P. S. Optical oscillator strengths for some astrophysically interesting lines in O III. <i>Astron. Astrophys., Suppl. Ser.</i> 30, 313 (1979) United States
4846	E86 $e + Ca^{2+}; e + Sr^{2+}; e + Mg^{2+}; e + Al^{3+}$ E98 $e + Ca^{2+}; e + Sr^{2+}; e + Mg^{2+}; e + Al^{3+}$	E	Under	Larson, G. F.; Faussel, V. A. Line broadening and radiative recombination background interferences in inductively coupled plasma-atomic emission spectroscopy. <i>Ap. J. Spectrosc.</i> 32, 592 (1979) United States
4847	A17 Hg + Hg	E	3-15000 cm^{-1}	Bousquet, C.; Bras, M. Self-broadening of the mercury 1849 Å line. Hg-Hg interaction potentials. <i>J. Phys. (Paris)</i> 41, 19 (1980) France
4848	H03 $nhr + Ca; nhr + Na$ H06 $nhr + Ca; nhr + H; nhr + Ar; nhr + Na; nhr + Xe; nhr + Kr$	E T	19000-3000 Å	Mainfray, G.; Manes, C. Les transitions multiphotoniques. <i>J. Phys. (Paris) Colloq.</i> C-1, 1 (1978) France
4849	A03 $Na^{2+} + He; Na^{2+} + Ne; Na^{2+} + Ar; Rb^{2+} + He; Rb^{2+} + Ne; Rb^{2+} + Ar; Ca^{2+} + Ca; SF_6^{2+} + Xe$	E	330 K	Pascale, J. Propriétés collisionnelles des atomes très excités. <i>J. Phys. (Paris) Colloq.</i> C-1, 20 (1978) France
4850	A17 $H + H; He + He; C + h; O + C^{+}; N + O$	E	$0-10^3 cm^{-1}$	Jost, R.; Lombardi, M. Anticrossing singlet-triplet ou doublet-quadruplet dans les molécules diatomiques légères. <i>J. Phys. (Paris) Colloq.</i> C-1, 26 (1978) France
4851	A03 Review	T	$10^{-2}-10^{-1}$ eV	Leunay, J. M. Excitation collisionnelle des atomes et des molécules dans le milieu interstellaire. <i>J. Phys. (Paris) Colloq.</i> C-1, 43 (1978) France
4852	A03 $HCN^{2+} + HCN^{2+}; H_2 + HCN^{2+}; D_2 + HCN^{2+}; He + HCN^{2+}$	E	330 K	Brechignas, P. Excitation collisionnelle des molécules. <i>J. Phys. (Paris) Colloq.</i> C-1, 45 (1978) France
4853	A06 $C^{2+} + H; Si^{2+} + H; N^{2+} + H; C^{2+} + H; N^{2+} + H$	T	$10-10^4 K$	McCarroll, R.; Velliron, P. Echange de charge dans le milieu interstellaire. <i>J. Phys. (Paris) Colloq.</i> C-1, 52 (1978) France
4854	H06 Review	T	10-150 eV	Combet Farnoux, F. Recent evolution of theoretical models in inner shell photoionization. <i>J. Phys. (Paris) Colloq.</i> C-1, 64 (1978) France
4855	H03 Review H06 Review	T	2 $^{+}$ -1000 eV	Mull'umier, F. Photoionisation simple et multiple dans les atomes. <i>J. Phys. (Paris) Colloq.</i> C-1, 71 (1978) France
4856	E53 Review	E	$10-10^3 eV$	Read, F. W. Inner shell excitation of atoms and molecules by electron impact with high energy resolution. <i>J. Phys. (Paris) Colloq.</i> C-1, 81 (1978) United Kingdom
4857	H06 $h\nu + C^{2+}; h\nu + Be$	T	3.5-3.5 Ry	Bely-Dubau, F.; Dubau, J. Application des méthodes utilisées en théorie des collisions au calcul des sections efficaces de photoionisation. <i>J. Phys. (Paris) Colloq.</i> C-1, 86 (1978) France
4858	A03 $Be^{2+} + CH_4; B^{2+} + CH_4; He^{2+} + Li; Xe^{2+} + He; Cl^{12+} + He; O^{8+} + He; H^{+} + Na$ A06 $Xe^{2+} + He; Cl^{12+} + He; O^{8+} + He; H^{+} + Na$ A08 $Be^{2+} + CH_4; B^{2+} + CH_4; He^{2+} + Li$	E	A03; A08 200-500 keV A03; A06 6 MeV/amu	Mohrhorn, W. Auger transitions in singly and multiply ionized atoms. <i>J. Phys. (Paris) Colloq.</i> C-1, 91 (1978) West Germany
4859	G05 $e + Ar$	T	150 K	Leyssens, A.; Leroux, J. Transport des électrons en excès dans les fluides diélectriques denses. Une interprétation phénoménologique avec application à un fluide d'argon à une dimension. <i>J. Phys. (Paris) Colloq.</i> C-1, 213 (1978) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4860	NO2 hv + Xe; hv + Br; hv + Ca; hv + Co NO6 hv + Bi	E T	10-350 eV	Combet Farnoux, F. Atomic effects in solids. J. Phys. (Paris) Colloq. C-4, 1 (1978) France
4861	NO6 hv + Ar; hv + Zn; hv + Cd; hv + C; hv + Be; hv + Cl; hv + Na	T	0-10 Ry	Kelly, M. P. Electron correlations in photoionization and vacancy decay processes. J. Phys. (Paris) Colloq. C-4, 16 (1978) United States
4862	ED2 a + N; a + C; a + O ED3 a + C ²⁺ NO6 hv + Ar; hv + Al; hv + O	T	ED2 0-1 Ry ED3 0-12 Ry NO6 0-5 Ry	Burke, P. G. R-matrix method—advantages and applications. J. Phys. (Paris) Colloq. C-4, 27 (1978) United Kingdom
4863	NO6 hv + Na; hv + Ar; hv + Xe; hv + H ₂	E T	0-250 eV	Buhrer, J. L. Angular distributions of photoelectrons and non-thermal photoions from atoms and molecules. J. Phys. (Paris) Colloq. C-4, 42 (1978) United States
4864	ED6 a + Al ¹⁺ NO2 hv + Al ²⁺	T	ED6 100-900 eV NO2 84 Å	Jaegle, P.; Janelot, G.; Corillon, A.; Sureau, A. Main aspects of atomic physics in dense plasmas. J. Phys. (Paris) Colloq. C-4, 75 (1978) France
4865	D05 hv + Cu; hv + Ni; hv + Al	T	2-5 eV	Pandry, J. B.; Hopkinson, J.F.L. Theory of photoionization. J. Phys. (Paris) Colloq. C-4, 142 (1978) United Kingdom
4866	D05 Review	E	2-43 eV	Petroff, Y. Angle resolved photoemission from clean surfaces. J. Phys. (Paris) Colloq. C-4, 149 (1978) France
4867	A03 Li ⁺ + CH ₄ ; Li ⁺ + He	E	200-500 keV	Bingard, P.; Bruch, R.; Rodbro, M. High resolution Auger spectra of Li, Be, B and C excited in single gas collisions. J. Phys. (Paris) Colloq. C-1, 14 (1975) Denmark
4868	A03 Ar ¹²⁺ + He; Ti ¹⁰⁺ + He; Ni ¹⁰⁺ + He; Kr ¹⁰⁺ + He; Xe ¹⁰⁺ + He; Pb ¹⁰⁺ + He A07 Ar ¹²⁺ + He; Ti ¹⁰⁺ + He; Ni ¹⁰⁺ + He; Kr ¹⁰⁺ + He; Xe ¹⁰⁺ + He; Pb ¹⁰⁺ + He	E	1.4 MeV/amu	Bayer, M. F.; Folkmann, F.; Scherzer, K. H. Four-electron states of He produced by 1.4 MeV/amu heavy ion impact. J. Phys. (Paris) Colloq. C-1, 17 (1975) West Germany
4869	NO5 hv + O ₂ ⁺ ; hv + Ar ₂ ⁺	E	7000-5000 Å	Moseley, J. T.; Cosby, P. C.; Buras, J.; Greene, J. B. Photofragment spectroscopy of molecular ions using fast ion beams. J. Phys. (Paris) Colloq. C-1, 46 (1975) United States
4870	NO5 hv + O ₂ ⁺	E	4965 Å	Morani, M.; Bukow, M. M.; Corra, M.; Druetta, M.; Gaillard, M. L. High resolution laser spectroscopy of the predissociated b ² Σ(sub g) ⁻ state of O ₂ ⁺ in a fast ion beam. J. Phys. (Paris) Colloq. C-1, 57 (1975) France
4871	NO7 Review	T	Undef	Drawin, M. W. Atomic, ionic and molecular data in thermonuclear fusion research. J. Phys. (Paris) Colloq. C-1, 72 (1979) France
4872	ED6 a + Fe ²²⁺	E	2.0 x 10 ⁷ K	Steenman-Clark, L.; Bely-Dubau, F.; Dubau, J.; Faucher, P.; Gabriel, A. M.; Louargue, M.; Volonte, S. High dielectronic satellite lines in solar flare spectra. J. Phys. (Paris) Colloq. C-1, 58 (1979) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4673	A06 $H^+ + Ar; O^{2+} + Ar; O^{2+} + Ar; O^{2+} + Ar;$ $O^{2+} + Ar; Si^{12+} + Ar; Si^{12+} + Ar; Si^{12+} + Ar;$ $Ar; C^{2+} + Ar; H^+ + Au; O^{2+} + Au;$ $O^{2+} + Au; O^{2+} + Au; C^{2+} + Au; Si^{12+} + Au;$ $Si^{12+} + Au; Si^{12+} + Au; C^{2+} + Au; H^+ + C;$ $O^{2+} + C; O^{2+} + C; O^{2+} + C; O^{2+} + C;$ $Si^{12+} + C; Si^{12+} + C; Si^{12+} + C; Si^{12+} + C;$ $Si^{12+} + C; Si^{12+} + C; C^{2+} + C; H^+ + Al;$ $O^{2+} + Al; O^{2+} + Al; O^{2+} + Al; O^{2+} + Al;$ $O^{2+} + Al; Si^{12+} + Al; Si^{12+} + Al; Si^{12+} + Al;$ $Si^{12+} + Al; Si^{12+} + Al; Si^{12+} + Al; C^{2+} + Al$ A08 $H^+ + Ar; O^{2+} + Ar; O^{2+} + Ar; O^{2+} + Ar;$ $O^{2+} + Ar; Si^{12+} + Ar; Si^{12+} + Ar; Si^{12+} + Ar;$ $Ar; Si^{12+} + Ar; Si^{12+} + Ar; Si^{12+} + Ar;$ $Ar; C^{2+} + Ar; H^+ + Au; O^{2+} + Au;$ $O^{2+} + Au; O^{2+} + Au; O^{2+} + Au; Si^{12+} + Au;$ $Au; Si^{12+} + Au; Si^{12+} + Au; Si^{12+} + Au;$ $Au; Si^{12+} + Au; C^{2+} + Au; H^+ + C;$ $O^{2+} + C; O^{2+} + C; O^{2+} + C; O^{2+} + C;$ $Si^{12+} + C; Si^{12+} + C; Si^{12+} + C; Si^{12+} + C;$ $Si^{12+} + C; Si^{12+} + C; C^{2+} + C; H^+ + Al;$ $O^{2+} + Al; O^{2+} + Al; O^{2+} + Al; O^{2+} + Al;$ $O^{2+} + Al; Si^{12+} + Al; Si^{12+} + Al; Si^{12+} + Al;$ $Si^{12+} + Al; Si^{12+} + Al; Si^{12+} + Al; C^{2+} + Al$	E	1-4 MeV/amu	Sollis, I. A. Electron cusp spectroscopy of the forward peak in continuum electron capture and loss in gases and solids. <i>J. Phys. (Paris) Colloq.</i> C-1, 225 (1979) United States
4674	A06 $Ne^{20+} + Ne; Ne^{20+} + Ne; Ne^{20+} + CH_4$ A07 $Ne^{20+} + Ne; Ar^{12+} + Ne$	E	A26 10 eV A07 1.4 MeV/amu	Nann, R.; Fohlmann, F. Selective electron capture effects at highly ionized Ne target atoms after 1.4 MeV/amu heavy ion impact. <i>J. Phys. (Paris) Colloq.</i> C-1, 236 (1979) West Germany
4675	A08 $Ba^+ + He; Ba^+ + CH_4$	E	53-56 keV	Slagstad, P.; Bruch, R.; Dehl, P.; Røedre, A. Production of alignment in autoionizing core-excited Ba II states. <i>J. Phys. (Paris) Colloq.</i> C-1, 243 (1979) Denmark
4675	A03 $P^+ + He; P^{2+} + He; He^+ + He; Li^+ + He;$ $C^+ + He; Mg^+ + He; Cl^+ + He$ A07 $P^+ + He; P^{2+} + He; He^+ + He; Li^+ + He;$ $He; C^+ + He; Mg^+ + He; Cl^+ + He$	E	0.1-1.0 MeV	Boving, E. G.; Edlund, K.; Sørensen, G. Quasi-molecular effects in ion-atom collisions at ion energies in the hundred-keV region. <i>J. Phys. (Paris) Colloq.</i> C-1, 246 (1979) Denmark
4677	A06 $S^{2+} + He; S^{2+} + He; S^{2+} + He; S^{2+} + He;$ $He; S^{2+} + Ar; S^{2+} + Ar; S^{2+} + Ar;$ $S^{2+} + Ar; S^{2+} + Kr; S^{2+} + Kr; S^{2+} + Kr;$ $S^{2+} + Kr; S^{2+} + Xe; S^{2+} + Xe;$ $S^{2+} + Xe; S^{2+} + Xe$	E	32-48 MeV	Noor, D.; Roemer, S. Charge exchanging processes in small impact parameter collisions between S^{2+} ions and rare gases. <i>J. Phys. (Paris) Colloq.</i> C-1, 250 (1979) Israel
4679	C06 $C^+ + C; O^{2+} + C; Ne^{20+} + C; S^{2+} + C$ C07 $C^+ + C; O^{2+} + C; Ne^{20+} + C; S^{2+} + C$	E	0.1-28 MeV	Vejle, E. Beam-foil excitation phenomena. <i>J. Phys. (Paris) Colloq.</i> C-1, 263 (1979) Denmark
4679	C07 $Li^+ + C; Ba^+ + C$	E	210-348 keV	Bromander, J.; Hultberg, S.; Jelenkovic, B.; Liljebj, L.; Mannervik, S.; Vejle, E. Relative level excitation in beam-foil excited Li and Ba. <i>J. Phys. (Paris) Colloq.</i> C-1, 269 (1979) Denmark
4680	C06 $Mg^+ + C$ C07 $Mg^+ + C$	E	130-680 keV	Andersen, B.; Vejle, E. Systematics in Rydberg state excitations for beam-foil processes. <i>J. Phys. (Paris) Colloq.</i> C-1, 261 (1979) Denmark
4681	C06 $C^+ + C$ C07 $C^+ + C$	E	0.1-28 MeV	Andersen, B.; Jansen, S. B.; Vejle, E.; Rasmussen, P. S. A study of beam-foil excitation using carbon projectiles. <i>J. Phys. (Paris) Colloq.</i> C-1, 263 (1979) Denmark
4682	C07 $B^{2+} + C; C^{2+} + C; N^{2+} + C; O^{2+} + C$	E	1-18 MeV	Nitsche, W.; Trobert, E.; Neumann, P. H. Relative initial populations of hydrogen-like ions after foil excitation. <i>J. Phys. (Paris) Colloq.</i> C-1, 266 (1979) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4883	CB7 $\text{Ba}^+ + \text{C}; \text{Li}^+ + \text{C}$	E	16-100 keV/nm	Heine, G.; Bohou, M. N.; Buttler, A. v. Relative initial populations of foil-excited helium and lithium at ion energies between 70 keV and 400 keV. J. Phys. (Paris) Colloq. C-1, 269 (1979) West Germany
4884	B08 $\text{Ar}^+ + \text{Cu}$	E	330 keV	Andra, H. J.; Frohling, H.; Pichu, H. J.; Winter, H.; Wittmann, W. Ion surface interaction at grazing incidence. J. Phys. (Paris) Colloq. C-1, 273 (1975) West Germany
4885	B08 $\text{B}^+ + \text{Si}$	E	105 keV	Church, B. A.; Lee, C. S. Fast ion double collision spectroscopy. J. Phys. (Paris) Colloq. C-1, 324 (1979) United States
4886	CB7 $\text{H}^+ + \text{Au}; \text{O}^{2+} + \text{Au}; \text{O}^{2+} + \text{Au}; \text{O}^{2+} + \text{Au}; \text{O}^{2+} + \text{Au}; \text{H}^+ + \text{Ag}; \text{O}^{2+} + \text{Ag}; \text{O}^{2+} + \text{Ag}; \text{O}^{2+} + \text{Ag}; \text{O}^{2+} + \text{Ag}$	E	43 MeV	Batz, S. Atomic collisions of channel ions: resonant coherent excitation. J. Phys. (Paris) Colloq. C-1, 327 (1979) United States
4887	CB7 $\text{H}^+ + \text{C}$	E	2-1000 keV	Gabrielse, G.; Berry, R. G. Measurement of the $n=2$ density operator for hydrogen atoms produced by passing protons through thin carbon targets. J. Phys. (Paris) Colloq. C-1, 338 (1979) United States
4888	CB1 $\text{H}_2^+ + \text{C}; \text{H}_2^+ + \text{C}; \text{HeH}^+ + \text{C}$ CB5 $\text{H}_2^+ + \text{C}; \text{H}_2^+ + \text{C}; \text{HeH}^+ + \text{C}$ CB6 $\text{H}_2^+ + \text{C}; \text{H}_2^+ + \text{C}; \text{HeH}^+ + \text{C}$	E	2 MeV	Galliard, M. J. Interactions of swift H , H_2^+ and He^+ with thin foils. J. Phys. (Paris) Colloq. C-1, 342 (1979) France
4889	A03 $\text{H}^+ + \text{H}_2; \text{H}_2^+ + \text{H}_2$ A08 $\text{H}^+ + \text{H}_2; \text{H}_2^+ + \text{H}_2$	E	1 MeV	Schumann, S.; Frischhorn, M. J.; Kluge, R.; Busch, I.; Schader, J.; Greenwald, K. G. Fast foil- and beam gas-excitation of mono- and di-atomic projectiles. J. Phys. (Paris) Colloq. C-1, 364 (1979) West Germany
4890	G11 $e + \text{F}_2; e + \text{WF}_6; e + \text{Cl}_2; e + \text{I}_2$	E	1-10 eV	Hygaard, K. J.; Brooks, M. L.; Hunter, S. B. Negative ion production rates in rare gas-halide lasers. IEEE J. Quantum Electron. QE-15, 1216 (1979) United States
4891	B06 $2\text{He} + \text{He}^+$	T	3650-6000 Å	Sharma, A. K.; Nathur, K. C. Two-photon ionization of helium from 2^2S and 2^1S states. IEEE J. Quantum Electron. QE-15, 1433 (1979) India
4892	B03 Undef B06 Undef	T	B06 Undef	Amerson, B. I.; Oks, E. A.; Semerov, P. V. Stochastic instability of an oscillator and the ionization of highly-excited atoms under the action of electromagnetic radiation. Sov. Phys.-JETP Lett. 25, 72 (1979) Soviet Union
4893	E03 $e + \text{K}^+$	E	10-200 eV	Zapotochny, A. I.; Alexakhin, I. S.; Zapotochny, I. P.; Iara, A. I. Resonances in the cross section of excitation of a potassium ion by electronic collision. Sov. Phys.-JETP Lett. 29, 207 (1976) Soviet Union
4894	A03 $\text{H}^+ + \text{Ag}$ A07 $\text{H}^+ + \text{Ag}$	E	150-500 keV	Potukhov, V. P.; Romanovskii, E. A.; Ershov, S. V. Polarization of the characteristic x-ray lines excited by proton collisions. Sov. Phys.-JETP Lett. 29, 342 (1979) Soviet Union
4895	D16 $\text{He}^+ + \text{He}$	E	1.5-9 keV	Alliev, V. K.; Goredetski, A. E.; Zakharev, A. P. Helium accumulation and distribution in polycrystalline bombarded by He^+ ions at 1-9 keV. Sov. Phys.-Tech. Phys. 24, 705 (1979) Soviet Union
4896	B03 $\text{Hg}^+ + \text{Ta}; \text{Hg}^+ + \text{V}; \text{Hg}^+ + \text{Nb}; \text{Hg}^+ + \text{Cu}$	E	250-1600 eV	Avakov, A. S.; Veksel, V. I.; Tsipinyuk, B. A. Anomalous in the secondary ion emission of vanadium. Sov. Phys.-Tech. Phys. 24, 746 (1979) Soviet Union
4897	E06 Undef	T	0.1-0.4 eV	Mershenko, V. S.; Yakovlenko, I. I. Recombination of an atomic ion and an electron in the presence of molecules. Sov. Phys.-Tech. Phys. 24, 362 (1979) Soviet Union

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4898	D16 Undef	T	Undef	Titov, V. V. Impurity profiles at high implantation doses. <i>Sov. Phys.-Tech. Phys.</i> 24, 488 (1979) Soviet Union
4899	D02 $Al^{10+} + Si$; $Al^{10+} + Si$; $Al^{10+} + Si$; $Al^{17+} + Si$	T	1-10 keV	Sitenkii, I. S.; Murakhmetov, M. A.; Pavlov, E. S. Sputtering of nonmetals by intermediate-energy multiply charged ion through a Coulomb explosion. <i>Sov. Phys.-Tech. Phys.</i> 24, 618 (1979) Soviet Union
4900	A17 $Cu + Cu$	T	0.07-2 Å	Konzhov, K.; Shen'li-zade, V. E. A slope interatomic potential. <i>Sov. Phys.-Tech. Phys.</i> 24, 620 (1979) Soviet Union
4901	E06 $e + Fe^{23+}$	T	10^7-10^8 K	Bely-Dubau, F.; Gabriel, A. M.; Volante, Z. Dielectronic satellite spectra for highly charged helium-like ions—V. Effect of total satellite contribution on the solar flare iron spectra. <i>Mon. Not. Roy. Astron. Soc.</i> 189, 881 (1979) France
4902	E03 $e + Fe^{23+}$	T	4-336 Ry	Mayes, M. A. Calculation of oscillator strengths and electron impact excitation collision strengths for Fe XXIV. <i>Mon. Not. Roy. Astron. Soc.</i> 189, 88p (1979) United Kingdom
4903	C08 $H^+ + Ta$	E	1.5-3.6 MeV	Bhattacharya, P. K.; Anderson, S. E.; Chevallier, J.; Hertel, H. Experimental setup for transmission channeling of MeV ions to study edge dislocations. <i>Appl. Phys. (Germany)</i> 21, 47 (1980) Denmark
4904	A06 $H_2^+ + H_2$	E	thermal	Zacharias, N.; Schindler, R.; Veiga, K. M. State selective stepwise photo-ionization of H_2 with mass spectroscopic ion detection. <i>Appl. Phys. (Germany)</i> 21, 127 (1980) West Germany
4905	C02 $O^+ + Si$ C04 $O^+ + Si$	E	2-20 MeV	Kappert, W. F.; Heidemann, K. F.; Eichholz, B.; to Kest, E.; Rothmund, W. Range and range straggling of oxygen implanted into silicon at energies between 2 and 20 MeV. <i>Appl. Phys. (Germany)</i> 21, 161 (1980) West Germany
4906	B01 H B03 H	T		Friedman, M.; Rabinovitch, A.; Tisberger, R. Application of the finite-element method to the H_2 hydrogen atom in a box in an electric field. <i>J. Comput. Phys.</i> 33, 359 (1979) Israel
4907	B01 H	T		Tonishima, Y.; Ozaki, J. Monte Carlo solution of Schrodinger's equation for the hydrogen atom in a magnetic field. <i>J. Comput. Phys.</i> 33, 382 (1979) Japan
4908	E03 $e + H_2^+$ E04 $e + H_2^+$	T	0.02-0.30 a.u.	Rai Dastidar, R.; Bose, N.; Rai Dastidar, Y. K. Electron cooling through resonant collisions with H_2^+ molecular ion. <i>J. Phys. Soc., Jap.</i> 47, 1986 (1978) Japan
4909	D13 Undef	E	Undef	Zyman, Z. Z.; Fisher, E. Features of the desorption of inert gases implanted in nonequilibrium titanium condensates. <i>Sov. Phys.-Doklady</i> 24, 396 (1979) Soviet Union
4910	A14 $Br + Br + Ar$	T	350-5000 K	Dsherov, V. I.; Rodman, V. R. Calculation of the recombination rate constant of atomic bromine in argon. <i>Sov. Phys.-Doklady</i> 24, 466 (1979) Soviet Union
4911	C08 $e + C$; $e + Si$; $e + Ni$; $e + Ge$; $e + Au$	T	1 GeV	Bojer, V. M.; Kothov, V. M.; Strakhovenko, V. M. Electron radiation during plane channeling. <i>Sov. Phys.-Doklady</i> 24, 469 (1979) Soviet Union
4912	C07 $Li^+ + C$; $Be^+ + C$; $Mg^+ + C$	E	100-356 keV	Andersen, B.; Møllberg, S.; Jøllekvist, B.; Liljebj, L.; Mannervik, S.; Vajta, Z. A study of relative level populations in beam-foil excited Li, Be, and Mg. <i>Z. Phys. A</i> 293, 181 (1979) Denmark
4913	E18 $e + PERT$	E	15-66 MeV	Hoffmann, D.H.H.; Brandel, C.; Gens, M.; Low, W.; Müller, S.; Richter, A. Inner-shell ionization by relativistic electron impact. <i>Z. Phys. A</i> 263, 187 (1979) West Germany

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4914	H03 He + H ⁺	T	0-20 Ry	Cavilla, N. Rayleigh scattering from n=2 states of atomic hydrogen. <i>Z. Phys. A</i> 292, 269 (1979) The Netherlands
4915	A06 H ⁺ + Na; H ⁺ + Ne; H ⁺ + Ar; H ⁺ + Kr; H ⁺ + Xe	E T	63-200 keV	Nird, B.; Sak, M. C.; All, S. P. Single electron capture by H ₂ ⁺ in rare gas targets between 60 keV and 200 keV. <i>Can. J. Phys.</i> 57, 2678 (1979) Canada
4916	A11 K ⁺ + K	E	Undef	Shallmush, P.; Krause, L. Disorientation of ⁴² K _{1/2} potassium atoms, induced in resonant collisions. <i>Can. J. Phys.</i> 57, 2222 (1979) Canada
4917	D02 Ar ⁺ + Fe; Ar ⁺ + Cr; Ar ⁺ + (Fe + Cr)	E	1.0 keV	Sartwell, B. D. Thin-film sputtering yields for Fe, Cr, and an Fe-Cr alloy measured by proton-induced x-rays. <i>J. Appl. Phys.</i> 50, 7487 (1979) United States
4918	H04 Zn ⁺ + H ⁺ H06 Zn ⁺ + H ⁺ H14 Zn ⁺ + H ⁺	T	480-10600 no	Nano, Y.; Raquet, A.; Schwarcz, P. Resonance-like scattering processes in metastable hydrogenic atoms. <i>J. Appl. Phys.</i> 51, 11 (1980) France
4919	E05 e + Ar; e + Kr; e + Xe G10 e + Ar; e + Kr; e + Xe	E	E25 11.5-19.9 eV G10 297 K	Specht, L. T.; Linton, S. A.; Selespie, T. A. Electron ionization and excitation coefficients for argon, krypton, and xenon in the low E/h region. <i>J. Appl. Phys.</i> 51, 166 (1980) United States
4920	A03 H ⁺ + Cr ²⁰⁺ ; H ⁺ + Cr ¹⁹⁺ ; H ⁺ + Cr ¹⁸⁺ ; H ⁺ + Cr ¹⁷⁺ ; H ⁺ + Cr ¹⁶⁺ ; H ⁺ + Cr ¹⁵⁺ ; H ⁺ + Fe ²²⁺ ; H ⁺ + Fe ²¹⁺ ; H ⁺ + Fe ²⁰⁺ ; H ⁺ + Ni ²⁴⁺ ; H ⁺ + Ni ²³⁺ ; H ⁺ + Ni ²²⁺ ; H ⁺ + Ni ²¹⁺ ; H ⁺ + Ni ²⁰⁺ ; H ⁺ + Ni ¹⁹⁺	T	Undef	Feldman, U.; Doscher, G. A.; Cheng, C.-C.; Sholia, A. K. Spectroscopy and atomic physics of highly ionized Cr, Fe, and Ni for tokamak plasmas. <i>J. Appl. Phys.</i> 51, 150 (1980) United States
4921	D02 Kr ⁺ + PERT; Ar ⁺ + Ag; Ar ⁺ + Cu; Ar ⁺ + Ni; Ar ⁺ + Ti; Ar ⁺ + Al; Ar ⁺ + Si	E	95 keV; 10 keV	Ohashi, Y. Estimation of sputtering rate by bombardment with argon gas ions. <i>J. Appl. Phys.</i> 51, 715 (1980) Japan
4922	D05 He ⁺ + E field	T		Doomin, V. P.; Yancharino, A. N.; Muravov, I. I. Transition probabilities of the helium atom in a constant electric field. <i>Opt. Spectrosc.</i> 47, 3 (1979) Soviet Union
4923	E03 e + K ⁺	E	43-52 eV	Saiznov, Y. M.; Shepochhin, M. B. Transition probabilities and cross sections for direct excitation of several levels of the singly charged potassium ion. <i>Opt. Spectrosc.</i> 47, 6 (1979) Soviet Union
4924	E03 e + H ₂ E04 e + H ₂	E	16-90 eV	Bogdanova, I. P.; Efremova, G. V.; Yakovleva, V. I. Mechanism of the dissociation of the hydrogen molecule by electron collision. <i>Opt. Spectrosc.</i> 47, 17 (1979) Soviet Union
4925	H06 He + He	T	69-105 eV	Vernavshikh, S. M.; Lebzavskii, L. A. Variational method for calculating the double photoionization of a helium atom. <i>Opt. Spectrosc.</i> 47, 24 (1979) Soviet Union
4926	E03 e + Rb ²⁺	E	63-206 eV	Saiznov, Y. M.; Shepochhin, M. B. Electron-impact excitation of the states of a doubly-charged rubidium ion. <i>Opt. Spectrosc.</i> 47, 121 (1979) Soviet Union
4927	H06 He + H ₂ ⁺	T	27-243 eV	Nedezhin, A. D. Calculation of effective cross sections for photoionization. <i>Opt. Spectrosc.</i> 47, 143 (1979) Soviet Union
4928	C02 H ⁺ + Be; H ⁺ + Al; H ⁺ + Ti; H ⁺ + V; H ⁺ + Fe; H ⁺ + Co; H ⁺ + Ni; H ⁺ + Cu; H ⁺ + Zn; H ⁺ + Mo; H ⁺ + Rh; H ⁺ + Ag; H ⁺ + Sn; H ⁺ + Ta; H ⁺ + Pt; H ⁺ + Au	E	6.76 MeV	Ishiwari, R.; Shioei, M.; Sakamoto, M. Stopping powers of Be, Al, Ti, V, Fe, Co, Ni, Cu, Zn, Mo, Rh, Ag, Sn, Ta, Pt and Au for 6.76 MeV protons. <i>Phys. Lett.</i> 75A, 112 (1979) Japan
4929	C06 He + U	T	25-2500 eV	van Gorp, A. A. Channeling calculations for low energy (25-2500 eV) helium in tungsten. <i>Phys. Lett.</i> 75A, 134 (1979) Canada

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4930	C88 $e + C$	E	600-900 MeV	Adichev, Y. N.; Kaplin, V. V.; Petyliteln, A. P.; Voroblov, S. A. Variation of γ -ray spectra with the energy of channeled electrons. Phys. Lett. 75A, 316 (1980) Soviet Union
4931	A02 $H^+ + Cu; H^+ + Ar; H^+ + Si; H^+ + Mg;$ $H^+ + Ne; H^+ + Zr; H^+ + Y; H^+ + Fe;$ $H^+ + Ti$ A18 $H^+ + Cu; H^+ + Ar; H^+ + Si; H^+ + Mg;$ $H^+ + Ne; H^+ + Zr; H^+ + Y; H^+ + Fe;$ $H^+ + Ti$	E	65 MeV	Sekiguchi, M.; Nakamura, N.; Matsuka, K.; Goto, A.; Hara, T.; Ohnishi, F.; Sakamoto, K.; Kobayashi, S. 65 MeV polarized proton elastic scattering and the effective two-body interaction range. Phys. Lett. 89B, 40 (1979) Japan
4932	A02 $O + C; Ne + C; Mg + C; Si + C; S + C$ A18 $O + C; Ne + C; Mg + C; Si + C; S + C$	E	17-35 MeV	Ford, J.L.C., Jr.; Gomez del Campo, J.; Shapiro, D.; Clever, M. R.; DeVries, R. N.; Fulton, B. R.; Ost, S.; Nagure, C. F. Systematics of back angle ^{12}C scattering - the $^{12}C + ^{20}Ne$ and $^{12}C + ^{24}Mg$ systems. Phys. Lett. 89B, 40 (1979) United States
4933	B01 H	T		Hillery, M.; Mohr, P. J. Radiative decay of hydrogenlike atoms in an electric field. Phys. Rev. A 21, 24 (1980) United States
4934	A07 $H^+ + Hf; H^+ + Ta; H^+ + W; He^+ + Hf;$ $He^+ + Ta; He^+ + W$	E	0.6-4.2 MeV	Justiniano, E.L.B.; Nader, A.A.G.; de Castro Faria, B. V.; Barros Leite, C. V.; de Pinho, A. G. L-subshell ionization cross sections for Hf, Ta and W by H^+ and He^+ bombardment. Phys. Rev. A 21, 73 (1980) Brazil
4935	B07 Undef	T		Hittelman, M. N. Electron-atom scattering in the field of a low-frequency laser. Phys. Rev. A 21, 79 (1980) United States
4936	E02 $e + N_2$ E17 $e + N_2$	T	0-1000 eV	Siegel, J.; Dehaer, J. L.; Dill, D. Elastic-electron-scattering cross sections for N_2 from 0 to 1000 eV. Energy-dependent exchange potentials. Phys. Rev. A 21, 85 (1980) United States
4937	A03 $He^+ + He$ A04 $He_2^+ + He$ A10 $He_2^+ + He$ A11 $He^+ + He$ A14 $He_2^+ + He$	E	330 K	Ernie, D. W.; Oshan, M. J. Energy transfer between helium metastable particles and neon. Phys. Rev. A 21, 95 (1980) United States
4938	E03 $e + N_2$	T	0-50 eV	Dehaer, J. L.; Siegel, J.; Welch, J.; Dill, D. Origin of enhanced vibrational excitation in N_2 by electron impact in the 15-35 eV region. Phys. Rev. A 21, 101 (1980) United States
4939	E02 $e + He$ E03 $e + He$ E17 $e + He$	T	250-400 eV	Singh, S. N.; Tripathi, A. N. Elastic and inelastic scattering of electrons by helium atoms based on the Glauber eikonal series. Phys. Rev. A 21, 105 (1980) India
4940	E02 $e + He^+$ M06 $h\nu + He$	T	6-30 eV	Lucchese, R. R.; McKay, V. Application of the Schwinger variational principle to electron-ion scattering in the static-exchange approximation. Phys. Rev. A 21, 112 (1980) United States
4941	A06 Undef	T	Undef	Reading, J. F.; Ford, A. L. K-shell-hole production, multiple-hole production, charge transfer, and antisymmetry. Phys. Rev. A 21, 124 (1980) United States
4942	M06 $h\nu + Yb; h\nu + Ba$	E	Undef	Rosenberg, R. A.; Lee, S.-Y.; Shirley, D. A. Observation of a collective excitation in the ejected-electron spectra of Yb and Ba. Phys. Rev. A 21, 122 (1980) United States

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4943	H06 hv + Ba	E	552 nm	Shinner, C. H.; Kleiber, P. B. Observation of anomalous conical emission from laser-excited barium vapor. <i>Phys. Rev. A</i> 21, 151 (1980) United States
4944	H01 Undef	T	Undef	Rosenberg, L. Infrared radiation in potential scattering. <i>Phys. Rev. A</i> 21, 157 (1980) United States
4945	A15 Kr* + Kr	E	300 K	Brinkmann, B.; Fuhs, B. Nuclear magnetic relaxation of ⁸³ Kr in krypton gas. <i>Phys. Rev. A</i> 21, 163 (1980) Switzerland
4946	H06 Undef	T	Undef	Dixit, S. N.; Lambropoulos, P. Photon correlation effects in resonant multiphoton ionization. <i>Phys. Rev. A</i> 21, 166 (1980) United States
4947	A03 He* + He A07 He* + He A10 He* + He A11 He* + He	E	300 K	Dubreuil, B.; Catharinet, A. Quenching and excitation transfer in the n = 3 helium sublevels in a low-pressure glow discharge. <i>Phys. Rev. A</i> 21, 188 (1980) France
4948	H06 2hv + Na	E	3.68 eV	Hansen, J. C.; Bencauson, J. A., Jr.; Chien, R.-L.; Barry, R. S. Angular distributions of photoelectrons from resonant two-photon ionization of sodium through the 3p ² P _{3/2} intermediate state. <i>Phys. Rev. A</i> 21, 222 (1980) United States
4949	H08 Undef	T	Undef	Agarwal, G. S.; Saxena, R.; Harducci, L. R.; Fang, S. M.; Gilmore, R. Analytical solution for the spectrum of resonance fluorescence of a cooperative system of two atoms and the existence of additional sidebands. <i>Phys. Rev. A</i> 21, 257 (1980) India
4950	H08 uv + I ₂	E	16956 cm ⁻¹	Hong, H. C.; Kano, S. S.; Brewer, S. G. Optical rotary echoes. <i>Phys. Rev. A</i> 21, 260 (1980) United States
4951	G05 Undef	T	Undef	Paranjape, B. V. Field dependence of mobility in gases. <i>Phys. Rev. A</i> 21, 405 (1980) Canada
4952	H11 Undef	T	Undef	Jung, C. Laser pulse-shape independence of the mean energy absorption per electron in multiphoton free-free transitions. <i>Phys. Rev. A</i> 21, 408 (1980) Canada
4953	B01 H ₂ ⁺	T		Pach, J. M.; Katriel, J. Hydrogen molecular ion in a high magnetic field. <i>Phys. Rev. A</i> 21, 413 (1980) United States
4954	H06 hv + H ₂ ⁺	T	Undef	McCurdy, C. W. Complex-coordinate calculation of matrix elements of the resolvent of the Born-Oppenheimer Hamiltonian. <i>Phys. Rev. A</i> 21, 464 (1980) United States
4955	E02 a + H ₂ ; a + H ₂ ; a + LiH; a + CO	T	0-7 eV	Collins, L. A.; Robb, W. D.; Morrison, R. A. Electron scattering by diatomic molecules: iterative static-exchange techniques. <i>Phys. Rev. A</i> 21, 488 (1980) United States
4956	E02 a + He; a + Li ⁺	T	Undef	Wahid, S.; Bhattacharya, A. K.; Tachin, A. Quasi-projection-operator calculation of inelastic resonances in He ⁺ and Li ⁺ . <i>Phys. Rev. A</i> 21, 496 (1980) United States
4957	A07 H + He	E	15-150 keV	Rudd, M. E.; Risley, J. S.; Fryer, J.; Reif, R. G. Angular and energy distribution of electrons from 15- to 150-keV H ⁺ + He collisions. <i>Phys. Rev. A</i> 21, 506 (1980) United States

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4958	C86 $\text{Kr}^+ + \text{C}$	E	1-2 MeV	Carson, B. L.; Cane, M.; Lovell, J. A. Equilibrium charge-state distributions and multiple-scattering angles of 1- and 2-MeV krypton ions in carbon foils. <i>Phys. Rev. A</i> 21, 515 (1980) United States
4959	A83 $\text{O}^+ + \text{O}_2$; $\text{O}^+ + \text{H}_2$	E	0.5-10 eV	Klofl, H. W.; Dorst, W. L.; Fricke, J. Excitation of $\text{O}(^2\text{P})$ resonance radiation in inelastic emission between $\text{O}(^2\text{S})$ metastable and O_2 and H_2 gases. <i>Phys. Rev. A</i> 21, 518 (1980) West Germany
4960	E82 $e + \text{H}_2$ E83 $e + \text{H}_2$ E17 $e + \text{H}_2$	T	40-200 eV	LaGattuta, E. J. Glauber approximation for $e^- + \text{H}_2(\text{gs}) \rightarrow e^- + \text{H}_2^+$ in a Gaussian basis. <i>Phys. Rev. A</i> 21, 247 (1980) United States
4961	E82 $e + \text{H}$	T	53-200 eV	Birman, A.; Rosenzweig, S. Elastic electron-hydrogen scattering in a modified approach to the Glauber approximation. <i>Phys. Rev. A</i> 21, 256 (1980) Israel
4962	E12 $e^+ + \text{Li}$	T	13-500 eV	Goto, S.; Saha, B. C. Positronium formation in highly excited states in $e^+ - \text{Li}$ collisions. <i>Phys. Rev. A</i> 21, 364 (1980) India
4963	A87 $\text{H}^+ + \text{H}_2$	T	0.3-1.0 MeV	Garibotti, C. R.; Niroglio, J. E. Ionization and electron capture to the continuum in the $\text{h}^+ - \text{hydrogen-atom}$ collision. <i>Phys. Rev. A</i> 21, 372 (1980) Argentina
4964	B88 $\text{H}^+ + \text{Cu}$	E	339 keV	Winter, H.; Andra, H. J. Hyperfine structure of ^{63}Cu $2p_{3/2}$ $^2\text{P}_{3/2}$ after ion-beam surface interaction at grazing incidence. <i>Phys. Rev. A</i> 21, 581 (1980) West Germany
4965	H81 $\text{h}\nu + \text{He}$	T	Undef	Coeke, W. E.; Gallagher, T. F. Effects of blackbody radiation on highly excited atoms. <i>Phys. Rev. A</i> 21, 588 (1980) United States
4966	A18 $\text{H}_2^+ + \text{H}_2$ H86 $\text{h}\nu + \text{H}_2$ H88 $\text{h}\nu + \text{H}_2$	E	A18 303 K H86 3.3 eV H88 1938 Å	Kligler, D. J.; Benzer, J.; Rhodes, C. E. Collisional and radiative properties of the H_2 E, F $^1\Sigma(\text{sub } g)^+$ state. <i>Phys. Rev. A</i> 21, 607 (1980) United States
4967	A83 $\text{He}^+ + \text{He}$ A18 $\text{He}^+ + \text{He}$	E	330 K	Catherinet, A.; Dubrouil, B.; Goussot, G. Excitation transfers within the fine structure of the 3^2S helium level in a helium glow discharge. <i>Phys. Rev. A</i> 21, 618 (1980) France
4968	E83 $e + \text{H}_2$ E17 $e + \text{H}_2$	E	Undef	Muetz, A.; Codot, I.; Grestenc, F.; Hall, R. L.; Vichon, D.; Hazeau, J. Formation and decay of the first $^2u(\text{sub } u)$ state of H_2^- . <i>Phys. Rev. A</i> 21, 622 (1980) France
4969	H86 $\text{h}\nu + \text{C}_2$	T	Undef	Ritchie, B. Theory of two strongly interacting resonances in multiphoton ionization. <i>Phys. Rev. A</i> 21, 629 (1980) United States
4970	H18 $\text{h}\nu + \text{NOCl}$; $\text{h}\nu + \text{NOBr}$	E	65°-365 nm	Grinley, A. J.; Houston, P. L. The photochemistry of nitrosyl halides: The $\text{X} + \text{NOX} \rightarrow \text{X}_2 + \text{NO}(\text{v})$ reaction ($\text{X} = \text{Cl}, \text{Br}$). <i>J. Chem. Phys.</i> 72, 1471 (1980) United States
4971	A83 $\text{ND} + \text{He}$ A18 $\text{ND} + \text{He}$	E	31.5 eV	Buch, U.; Meisner, F.; Schleusener, J.; Schaefer, J. Differential cross sections for the $j = 0 \rightarrow 1$ rotational excitation in ND-He collisions and their relevance to the anisotropic interaction. <i>J. Chem. Phys.</i> 72, 1512 (1980) West Germany
4972	A13 $\text{H}_2^+ + \text{CO}$	E	0.7-9 eV	Billet, R. R.; Prouniger, F. R.; Feyer, J. R. Crossed beam study of the reaction $\text{H}_2^+(\text{Cu,H}) + \text{CO}^+$ from 0.74 to 9.25 eV. <i>J. Chem. Phys.</i> 72, 1563 (1980) United States

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4973	003 e + He 005 e + He 007 e + He 008 e + He 009 e + He	T	Underf	Merander, A. Electron thermalization in gases? I. Helium. J. Chem. Phys. 72, 1657 (1980) United States
4974	A14 F + H ₂ ; H + Cl ₂	T	0.07-1.0 eV	Pollak, E.; Child, R. S.; Pechukas, P. Classical transition state theory: a lower bound to the reaction probability. J. Chem. Phys. 72, 1669 (1980) Israel
4975	R10 hv + [Cl ₂ + H ₂ S]; hv + [Cl ₂ + H ₂]	E	300 nm	Heubelt, B. J.; Leone, S. R. Laser-initiated chemical chain reactions. J. Chem. Phys. 72, 1722 (1980) United States
4976	R10 hv + ICH ₃ ; hv + XeF ₂	E	4-12 eV	Pollak, E. B.; Southworth, J. M.; White, M. G.; Thornton, C.; Rosenberg, B. A.; Shirley, B. A. Decay dynamics of the CH ₃ (² I ⁺) and XeF ₂ (² I ⁺) and C ₂ H ₂ (³ Σ _g ⁺) states. J. Chem. Phys. 72, 1784 (1980) United States
4977	A17 Ca + Ca	E	Underf	Vidal, C. B. The molecular constants and potential energy curves of the Ca ₂ A ¹ Σ _g ⁺ -X ¹ Σ _g ⁺ system from laser induced fluorescence. J. Chem. Phys. 72, 1864 (1980) West Germany
4978	E02 e + H ₂ E17 e + H ₂	T	0.100-40 keV	Kohl, B. A.; Arvidson, M. R. Elastic electron scattering: I. Scattering from diatomic potentials. J. Chem. Phys. 72, 1915 (1980) United States
4979	E02 e + F ₂ ; e + SF ₂ E17 e + F ₂ ; e + SF ₂	T	13 keV	Kohl, B. A.; Arvidson, M. R. Elastic electron scattering: II. Scattering from polyatomic potentials. J. Chem. Phys. 72, 1922 (1980) United States
4980	A10 H ₂ + He	T	1.5 eV	Groenboom, A.; Jolicard, G. An analytical approximation for vibrational relaxation. A study of the p-H ₂ + He system. J. Chem. Phys. 72, 2084 (1980) France
4981	A11 H ₂ ⁺ + H ₂ O; H ₂ ⁺ + H ₂ S; H ₂ ⁺ + CH ₄	E	300 K	Bass, M. L.; Pottmann, S. B.; Bener, R.-J. Laser induced fluorescence study of the deactivation of H ₂ ⁺ by H ₂ O, H ₂ S, and CH ₄ . J. Chem. Phys. 72, 2113 (1980) United States
4982	R10 hv + ClF	E	530-660 nm	Hauke, C.; Bengon, B. Photochemistry of the chlorine monofluoride, ClF. Thermal and photochemical reactions with sulfur tetrafluoride SF ₄ . J. Chem. Phys. 72, 2156 (1980) France
4983	E03 e + H ⁺	T	10-1000 eV	Genes, P. S. Electron-impact excitation cross sections for H II. J. Chem. Phys. 72, 2197 (1980) United States
4984	A07 He ⁺ + Cd; He ⁺ + Zn	E	65 meV	Fahay, D. W.; Parke, V. F.; Scherer, L. E. Total Penning ionization cross sections of Cd and Zn for He(2P _{1/2}) atoms. J. Chem. Phys. 72, 2210 (1980) United States
4985	A14 ClO + NO ₂	E	298 K	Leck, T. J.; Cook, J.-E. L.; Birks, J. W. Studies of reactions of importance in the stratosphere: III. Rate constant and products of the reaction between ClO and NO ₂ radicals at 298 K. J. Chem. Phys. 72, 2364 (1980) United States
4986	A11 NH ₃ ⁺ + NH ₃ ; NH ₃ ⁺ + He; NH ₃ ⁺ + Ar; NH ₃ ⁺ + O ₂ ; NH ₃ ⁺ + O ₂ ; H ₂ O ⁺ + H ₂ O; H ₂ O ⁺ + He; H ₂ O ⁺ + Ar; H ₂ O ⁺ + N ₂ ; H ₂ O ⁺ + O ₂ ; H ₂ O ⁺ + CO ₂	E	198-400 K	Havle, F. E.; Moore, C. B. Temperature dependence of vibrational energy transfer in NH ₃ and H ₂ ¹⁸ O. J. Chem. Phys. 72, 2397 (1980) United States
4987	A14 Xe ⁺ + He; Xe ⁺ + Xe + He 002 He ⁺ + He	E	235 K	Vieme, M.; Lemaerts, J. Quenching of excited Xe ⁺ (² P _{1/2} , ² P _{3/2} , ¹ P ₁) states in neon-xenon mixture. J. Chem. Phys. 72, 2768 (1980) Belgium

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
4988	A17 He + He	T	Undef	Storvik, V. V.; Kapyshev, V. K. Interaction between two ground-state helium atoms. J. Chem. Phys. 72, 2713 (1980) Soviet Union
4989	A14 H + FH; H + FD; D + FD	T	0-1.0 eV	Schatz, G. C.; Kuppermann, A. Vibrational deactivation on chemically reactive potential surfaces: an exact quantum study of a low barrier collinear model of H + FH; D + FD, H + FD, and D + FH. J. Chem. Phys. 72, 2737 (1980) United States
4993	A18 Ar + HCl	T	12 ⁻¹⁴ erg	Band, Y. B. Quasiclassical close-coupling approximation: comparison with experimental Ar-HCl differential cross section. J. Chem. Phys. 72, 2801 (1980) Israel
4991	A17 He + ArH ⁺	T	Undef	Pattitt, B. M.; Jacobsen, K.; Hetsche, H. L. Collinear reaction surface for He and ArH ⁺ . J. Chem. Phys. 72, 2892 (1980) United States
4992	A14 O + H ₂	T	300-3000 K	Welch, S. P.; Wagner, A. F.; Dunning, T. M., Jr.; Schatz, G. C. Theoretical studies of the O + H ₂ reaction. J. Chem. Phys. 72, 2894 (1980) United States
4993	A12 Na + Ar	T	thermal	Czechaj, E.; Paul, E. On the contribution of the orientation and velocity relaxation to the atomic line shape: II. Low pressure region. Acta Phys. Pol. A 54, 547 (1979) Poland
4994	A12 Th + H ₂	E	330-750 K	Lisichki, E.; Szudy, J.; Moleskanski, J. The pressure and Doppler line broadening of atomic fluorescence of thallium iodide perturbed by hydrogen. J. Chem. Phys. 84, 557 (1979) Poland
4995	A67 Pb + Pb	T	4.7 MeV/amu	Jakubowski, B. M. Delta-electrons from K- and L-shell ionization in relativistic systems. Z. Phys. A 283, 281 (1979) Denmark
4996	A65 Na ₂ + Ar; Na ₂ + Na; Na ₂ + Kr	E	180 °C	König, F.; Heber, M. G. Atomic and molecular fluorescence with long radiative decay times from inner excited Na ₂ . Z. Phys. A 283, 381 (1979) West Germany
4997	A67 H ⁺ + Ar; H ⁺ + C ₂ H ₂ A16 H ⁺ + Ar; H ⁺ + C ₂ H ₂	E	240 keV	Arnold, V.; Berg, M.; Krause, M. M.; Clausmeyer, G. Determination of electron-loss cross sections for negative hydrogen ions in gases using polarized projectiles. Z. Phys. A 294, 7 (1980) West Germany
4998	A19 Pb + Pb; Pb + Sn; Pb + Cu	T	4.7-5.9 MeV/amu	Soff, G.; Reinhardt, J.; Heller, B.; Greiner, W. Coupled channel analysis of inner-shell vacancy formation in superheavy quasi-molecules. Z. Phys. A 294, 137 (1980) West Germany
4999	A65 Xe ²⁺ + C	E	1-5 MeV	Coetzee, F. J.; van der Westhuizen, P. Radiative lifetimes of some energy levels of doubly ionized xenon. Z. Phys. A 294, 199 (1980) South Africa
5000	A67 Pb + PERT	E	1.4-5.9 MeV/amu	Behrke, M.-W.; Armbrester, P.; Folkmann, F.; Nagmann, S.; Macdonald, J. R.; Mohler, P. H. Erratum: Measurements of K-shell ionization with ¹⁰⁸ Xe and ²⁰⁸ Pb projectiles in the energy range of 1.4-5.9 MeV/u. [Z. Phys. A 289, 333 (1979)]. Z. Phys. A 294, 286 (1980) West Germany
5001	D67 Undef D11 Undef	T	0-10 eV	Bronig, V. On the low energy limit of reflection and sticking coefficients in atom surface scattering: 1. Short range forces. Z. Phys. B 34, 27 (1980) West Germany
5002	D67 Undef	T	0-10 eV	Sedláček, R.; Bronig, V. Inelastic atom-surface scattering: a comparison of classical and quantum treatments. Z. Phys. B 34, 246 (1980) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5003	A12 Na + Na; Na + Na; Na + Ar; Na + Kr; Na + Xe	E	450 K	Chatham, R. N.; Gallagher, A.; Lewis, E. L. Broadening of the sodium D lines by rare gases. <i>J. Phys. B</i> 12, L7 (1980) United States
5004	H06 hv + Na	T	577-579 Å	Johnson, W. R.; Le Dourneuf, M. Analysis of the autoionizing resonances in neon near 575 Å. <i>J. Phys. B</i> 13, L13 (1980) France
5005	H06 hv + Na	T	Underf	Janieson, M. J. Time-dependent Hartree-Fock theory of resonances in sodium. <i>J. Phys. B</i> 13, L15 (1980) United Kingdom
5006	E03 e + Na	E	83 eV	Slevin, J.; Porter, N. Q.; Eslayan, R.; DeFrance, A.; Vassilov, G. Measurements of isotope and chi parameters for excitation of the 2 ³ P state of helium at 80 eV. <i>J. Phys. B</i> 13, L23 (1980) United Kingdom
5007	E01 Underf	T	Underf	Clark, C. W. A new type of symmetry in electron-polar-molecule scattering. <i>J. Phys. B</i> 13, L27 (1980) United States
5008	E03 e + LiF	T	5.44 eV	Clark, C. W.; Siegel, J. Electron-polar-molecule scattering at intermediate values of J: a closed-form treatment. <i>J. Phys. B</i> 13, L31 (1980) United States
5009	H02 hv + SiF ₄	E	130-160 eV	Friedrich, H.; Pittel, B.; Habe, P.; Schwarz, W.H.E.; Sonntag, B. Overlapping core to valence and core to Rydberg transitions and resonances in the XUV spectra of SiF ₄ . <i>J. Phys. B</i> 13, 25 (1980) West Germany
5010	H03 H ⁺	T		Jones, D. A.; Leopold, J. G.; Forcival, I. C. Ionization of highly excited atoms by electric fields: IV. Frequency and amplitude dependence for linearly polarized fields. <i>J. Phys. B</i> 13, 31 (1980) United Kingdom
5011	H06 nhv + Ca; nhv + Sr; nhv + Ba	E	5.8-6.1 eV	Skinner, C. H. Efficient ionization of calcium, strontium and barium by resonant laser pumping. <i>J. Phys. B</i> 13, 65 (1980) United States
5012	H06 3hv + Na	T	5.81 eV	Zoller, P.; Lambropoulos, P. Laser temporal coherence effects in two-photon resonant three-photon ionization. <i>J. Phys. B</i> 13, 69 (1980) United States
5013	H06 nhv + Kr	E	9430 cm ⁻¹	Leopre, L. A.; Mainfray, G.; Manus, C. Multiphoton resonance effects in very high laser fields: twelve-photon ionization of krypton at 10 ¹² W cm ⁻² . <i>J. Phys. B</i> 13, 85 (1980) France
5014	H06 nhv + Ca	E	Underf	France, M. Effective order of non-linearity in resonant multiphoton ionization. <i>J. Phys. B</i> 13, 101 (1980) France
5015	H06 nhv + N; nhv + Na; nhv + Ca	T	3.89-13.6 eV	Geltman, S. Resonant multiphoton ionization with intense monochromatic lasers. <i>J. Phys. B</i> 13, 115 (1980) France
5016	E02 Underf	T	Underf	Vishwamittar, Harinder Two-potential formulation of low-energy scattering in the presence of long-range r ^{-α} interaction. <i>J. Phys. B</i> 13, 141 (1980) India
5017	A01 Underf	T	Underf	Barony, A. Transition probabilities for curve-crossing collisions. <i>J. Phys. B</i> 13, 147 (1980) Sweden
5018	A01 Underf	T	Underf	Turner, R. E.; Dahler, J. S. From the Zwanzig-Feshbach projection method to the Lense-Zener approximation, a systematic time dependent approach. <i>J. Phys. B</i> 13, 161 (1980) United States

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
5019	A16 $O^- + Na; O^- + Ar; O^- + Kr$ A18 $O^- + Na; O^- + Ar; O^- + Kr$	E	3.2-1.0 keV	Esenkov, V. A.; Ganyag, J. P.; Bazarapko, L. B. Experimental investigation of the $Co(3d_{5/2}, (sub m_{1/2}))$ -rare-gas interaction: potential curves and oscillator strength of the dipole-induced transitions. <i>J. Phys. B</i> 13, 193 (1980) France
5020	A09 $O_2^+ + O_2^-$	T	300-3000 K	Bates, D. R. Mutual neutralization of ions in flames. <i>J. Phys. B</i> 13, 205 (1980) United Kingdom
5021	H07 $He + H^-$	T	Undef	Greene, C. M. Interpretation of Feshbach resonances in H^- photodetachment. <i>J. Phys. B</i> 13, L39 (1980) United States
5022	H06 $He + Xe; He + Kr; He + Ar$	E	Undef	Cheng, K. Y.; Huang, K.-M.; Johnson, W. R. Spin polarization of $ns + sp$ photoelectrons from xenon, krypton, and argon atoms. <i>J. Phys. B</i> 13, L45 (1980) United States
5023	E04 Undef E06 Undef	T	Undef	Bates, D. R. Dissociative recombination in an ambient electron gas. <i>J. Phys. B</i> 13, L51 (1980) United Kingdom
5024	A19 $Li^+ + He$	T	0.01 eV	Nikitin, E. E.; Razukhov, A. I. Simple semiclassical calculation of fine-structure transition probability. <i>J. Phys. B</i> 13, L57 (1980) Soviet Union
5025	A16 $H^- + H$ A18 $H^- + H$	T	2 MeV	Genoni, T. C.; Wright, L. A. Differential cross sections for electron detachment from H^- in collisions with atomic hydrogen. <i>J. Phys. B</i> 13, L61 (1980) United States
5026	A08 Undef A18 Undef	T	Undef	Day, R. M. The effect of anisotropy on the detection of electrons ejected from fast ions at small relative velocities. <i>J. Phys. B</i> 13, L65 (1980) United Kingdom
5027	A06 $Kr^{2+} + H_2; Kr^{2+} + H_2; Kr^{2+} + H_2;$ $Kr^{2+} + H_2$	T	1-20 keV	Croizandov, T. P.; Janov, R. K. Electron capture in slow collisions of multiply charged ions with hydrogen molecules. <i>J. Phys. B</i> 13, L67 (1980) West Germany
5028	E03 $e + He$	E	19-22 eV	Spence, D. Measurement of the ratio of the $He\ 2^1S/2^3S$ energy integrated total cross sections from threshold to 0.10 eV. Comparison with theory. <i>J. Phys. B</i> 13, L73 (1980) United States
5029	E03 $e + Ar$	E	55-100 eV	Pochat, A.; Golebart, F.; Perreau, J. Electron-photon coincidence measurements for excitation of argon by low-energy electrons. <i>J. Phys. B</i> 13, L79 (1980) France
5030	H02 Undef H04 Undef	T	Undef	Eberly, J. M.; Kunasz, C. V.; Bodkiewicz, K. Time-dependent spectrum of resonance fluorescence. <i>J. Phys. B</i> 13, 217 (1980) United States
5031	H06 $He + Xe$	E	15-33 eV	Levinson, M. J.; McGovern, I. J.; Gustafsson, T. Photoelectron studies of the xenon $5p$ branching ratio using synchrotron radiation. <i>J. Phys. B</i> 13, 263 (1980) United States
5032	H06 $nHe + Cs$	E	Undef	Gentier, Y.; Trahin, M. Spatio-temporal effects in resonant multiphoton ionization of the caesium atom. <i>J. Phys. B</i> 13, 269 (1980) France
5033	H06 $He + H_2$	E	19-30 eV	Marr, G. V.; Holmes, R. M.; Codling, K. The angular distribution of photoelectrons from molecular hydrogen as a function of photon energy. <i>J. Phys. B</i> 13, 283 (1980) United Kingdom
5034	A17 $H^+ + Na; H^+ + K$ A18 $H^+ + Na; H^+ + K$	T	13-19 eV	Olson, R. E.; Saxon, R. P.; Liu, B. Potential energies and rainbow angle scattering cross sections of NaH^+ and KH^+ . <i>J. Phys. B</i> 13, 297 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5035	A03 Li + He; Li + He; Li + Ar; Li + Kr; Li + Xe	E	53-1000 eV	Staudemayer, B.; Kempter, V. Excitation in collisions of Li with the inert gases at low energies. Emission cross sections and polarisation fractions. <i>J. Phys. B</i> 13, 309 (1980) West Germany
5036	A16 H ⁺ + H; H ⁺ + H ₂	E	1-300 keV	Geddes, J.; Mill, J.; Shah, M. B.; Coffe, T. V.; Glibody, H. B. Electron loss by 1-300 keV H ⁺ ions in H and H ₂ . <i>J. Phys. B</i> 13, 319 (1980) United Kingdom
5037	A03 H ⁺ + H; He ²⁺ + H A06 H ⁺ + H; He ²⁺ + H	T	25-80 keV	Saha, M. P.; Naiti, N.; Sili, M. C. Electron capture in the 3s level by proton and α -particle from atomic hydrogen. <i>J. Phys. B</i> 13, 327 (1980) India
5038	A16 H ⁺ + H ₂ ; H ⁺ + He; H ⁺ + O ₂ ; H ⁺ + N ₂ ; H ⁺ + Ar; F ⁺ + H ₂ ; F ⁺ + He; F ⁺ + O ₂ ; F ⁺ + N ₂ ; F ⁺ + Ar; S ⁺ + H ₂ ; S ⁺ + He; S ⁺ + O ₂ ; S ⁺ + N ₂ ; S ⁺ + Ar; Cl ⁺ + H ₂ ; Cl ⁺ + He; Cl ⁺ + O ₂ ; Cl ⁺ + N ₂ ; Cl ⁺ + Ar; Se ⁺ + H ₂ ; Se ⁺ + He; Se ⁺ + O ₂ ; Se ⁺ + N ₂ ; Se ⁺ + Ar; Br ⁺ + H ₂ ; Br ⁺ + He; Br ⁺ + O ₂ ; Br ⁺ + N ₂ ; Br ⁺ + Ar; I ⁺ + H ₂ ; I ⁺ + He; I ⁺ + O ₂ ; I ⁺ + N ₂ ; I ⁺ + Ar	E	23-70 keV	Lichtenberg, W. J.; Bethge, K.; Scheidt-Becking, H. Electron-loss cross sections for negative ions at high energies. <i>J. Phys. B</i> 13, 343 (1980) West Germany
5039	E18 e + He; e + H ₂	E	15-750 eV	Blaauw, M. J.; Bogenseer, R. W.; Essends, D. M.; de Hear, F. J. Total cross sections for electron scattering from H ₂ and He. <i>J. Phys. B</i> 13, 359 (1980) The Netherlands
5040	E02 e + Ar; e + Kr; e + Xe	T	0-12 eV	Yau, A. W.; McEachran, R. P.; Stanifer, A. C. Electron scattering from noble gases: II. argon, krypton and xenon. <i>J. Phys. B</i> 13, 377 (1980) Canada
5041	E05 e + H ⁺ Seq	T	Undef	Moore, D. L.; Golden, L. B.; Sampson, D. H. Ionisation from the 3p and 3d sublevels of highly charged ions. <i>J. Phys. B</i> 13, 385 (1980) United Kingdom
5042	E05 e + He E17 e + He	E	800-1600 eV	Casillon, R.; Giardini-Guidoni, A.; McCarthy, I. L.; Stefani, G. The optical approximation for the (e, 2e) reaction. <i>J. Phys. B</i> 13, 367 (1980) Italy
5043	H02 hv + Cs + Cs; hv + Rb + Rb; hv + Cs + Rb H06 hv + Cs + Cs; hv + Rb + Rb; hv + Cs + Rb	E	2300-3100 Å ⁰	Motop, R.; Niemes, K. Continuum-and bound-state pair absorption in Cs-Cs, Rb-Rb and Cs-Rb systems. <i>J. Phys. B</i> 13, L93 (1980) France
5044	H06 hv + H ₂	E	15-40 eV	Vest, J. B.; Parr, J. C.; Cole, E. E.; Ederer, D. L.; Stockbauer, R.; Dehaer, J. L. Shape-resonance-induced non-Franck-Condon vibrational intensities in 3 sigma(sub g) photoionisation of H ₂ . <i>J. Phys. B</i> 13, L105 (1980) United States
5045	A11 Rb ⁺ + Rb	E	thermal	Hugon, M.; Gounand, F.; Fournier, F. R. Thermal collisions between highly excited and ground-state alkali atoms. <i>J. Phys. B</i> 13, L101 (1980) France
5046	A03 H ⁺ + He; H ₂ ⁺ + He; He ⁺ + He E03 e + He	T	1-1000 keV	Theodosiou, C. E. Excitation of neon by impact of slow electrons and heavy projectiles. <i>J. Phys. B</i> 13, L113 (1980) West Germany
5047	E05 Undef	T	Undef	Mehhorn, W.; Taubjerg, K. Angular distribution of electrons from autoionising states with unresolved fine structure. <i>J. Phys. B</i> 13, 445 (1980) West Germany
5048	H06 Undef	T	Undef	Parzynski, P. Photoelectron polarisation in two-photon ionisation with two different light beams. <i>J. Phys. B</i> 13, 469 (1980) Poland
5049	H06 Undef	T	Undef	Parzynski, P. Ratio of two-photon ionisation rates for circular and linear polarisation greater than J/2. <i>J. Phys. B</i> 13, 475 (1980) Poland

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5050	A06 He ⁺ + He ⁺ Seq A07 He ⁺ + He ⁺ Seq	T	1-10 a.u.	Olsen, R. V. Ion-Rydberg-atom collision cross sections. <i>J. Phys. B</i> 13, 483 (1980) United States
5051	A03 D ⁺ + Cr; D ⁺ + Fe; B ⁺ + Cu; E ⁺ + Ag; D ⁺ + In; D ⁺ + Sn; D ⁺ + Cr; D ⁺ + Fe; D ⁺ + Cu; D ⁺ + Ag; D ⁺ + In; E ⁺ + Sn	E	5 MeV/amu	Shearer-Izumi, W.; Saegusa, M.; Sato, M.; Ribama, T. E-ray production by 5 MeV/amu deuterons and oxygen ions: projectile Z dependence. <i>J. Phys. B</i> 13, 493 (1980) Japan
5052	A03 Na + Mg; K + Mg; Rb + Mg	E	15-1400 eV	Darm, R.; Krause, U.; Moritz, G. Measurement of integral cross sections for the electronic excitation in alkali-Mg collisions at energies between 15 eV and 1400 eV. <i>J. Phys. B</i> 13, 503 (1980) West Germany
5053	A07 U + U A17 U + U	T	1-10 GeV/amu	Taubner, E.; Terlechi, G.; Grün, H.; Scheid, W. Classical relativistic trajectory method and application to the K-shell ionisation in U-U collisions. <i>J. Phys. B</i> 13, 523 (1980) West Germany
5054	A03 He ²⁺ + H A06 He ²⁺ + H	T	0.1-1 MeV	Datta, S.; Mukherjee, S. C. Charge transfer in He ²⁺ -H(1s) collisions. <i>J. Phys. B</i> 13, 539 (1980) India
5055	A06 Zn ²⁺ + H; Cd ²⁺ + H; B ²⁺ + H; Mg ²⁺ + H; C ²⁺ + H	T	0.01-10 a.u.	Crothers, D.S.F.; Todd, N. A. Electron capture by slow Zn ²⁺ , Cd ²⁺ , B ²⁺ , Mg ²⁺ and C ²⁺ ions in H. <i>J. Phys. B</i> 13, 547 (1980) United Kingdom
5056	E06 e + D ⁺	T	Undef	Belgman, I. L.; Chichkov, N. C. Dielectronic recombination through the forbidden levels. <i>J. Phys. B</i> 13, 565 (1980) Soviet Union
5057	E02 e + Xe E17 e + Xe	E	2-300 eV	Klewer, M.; Beerlage, M.J.M.; van der Wiel, M. J. Angular distributions of electrons elastically scattered from xenon at energies between 2 and 300 eV. <i>J. Phys. B</i> 13, 571 (1980) The Netherlands
5058	E05 e + H; e + He ⁺ ; e + Li ²⁺ ; e + C ²⁺ ; e + N ²⁺ ; e + O ²⁺ ; e + Ne ²⁺ ; e + He ²⁺	T	1-14 threshold	Kunc, J. A. Electron ionisation cross sections of excited atoms and ions. <i>J. Phys. E</i> 13, 587 (1980) United States
5059	E02 e + Ba; e + Mg E03 e + Ba; e + Mg E17 e + Ba; e + Mg	T	3-35 eV	Fabrikant, I. I. Calculation of electron scattering cross sections for magnesium and barium. <i>J. Phys. E</i> 13, 603 (1980) Soviet Union
5060	FP2 e + CH ₄ ; e + H ₂ O; e + H ₂ S	T	0.1-14 eV	Gianturco, F. A.; Thompson, D. G. The scattering of slow electrons by polyatomic molecules. A model study for CH ₄ , H ₂ O and H ₂ S. <i>J. Phys. B</i> 13, 613 (1980) Italy
5061	FP2 Undef	T	Undef	Meier, C. H.; Cederbaum, L. S.; Escho, W. A spherical-box approach to resonances. <i>J. Phys. B</i> 13, L119 (1980) West Germany
5062	A03 N ₂ + K; CO + K; N ₂ + Na	E	0.6-3.0 eV	Buch, H.; Lesner, E.; Pust, D. Seeded molecular beam studies of vibrational + electronic energy transfer near threshold. <i>J. Phys. B</i> 13, L125 (1980) West Germany
5063	A12 Cs + Xe A17 Cs + Xe	E	530 K	Kielkopf, J. F.; Allard, M. F. Determination of Cs(np)-Xe interactions from spectral line profile measurements. <i>J. Phys. B</i> 13, 769 (1980) United States
5064	A03 Undef	T	0-1.9 a.u.	Nemiki, M.; Tagisawa, M.; Nakamura, M. Rotationally induced transitions in atomic collisions: two-state model. <i>J. Phys. B</i> 13, 743 (1980) Japan
5065	A03 I + I; Br + Br	T	5x10 ⁴ -3x10 ⁵ cm/s	Jakubassa, D. M.; Jørgensen, K. K-shell excitation in slow collisions of relativistic atoms. <i>J. Phys. B</i> 13, 757 (1980) Denmark

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5866	A03 $\text{H}^+ + \text{H Seq}$ A06 $\text{H}^+ + \text{H Seq}$	T	Underf	Briggs, J. S.; Dube, L. The second Born approximation to the electron transfer cross section. <i>J. Phys. B</i> 13, 771 (1980) United Kingdom
5867	A03 $\text{He}^{2+} + \text{He}$ A06 $\text{He}^{2+} + \text{He}$	T	10-100 keV	Harrel, C.; Sella, A. Application to OEDM orbitals to many-electron systems: He^{2+} -He collisions. <i>J. Phys. B</i> 13, 785 (1980) France
5868	A06 $\text{He}^+ + \text{He}; \text{Ar}^+ + \text{Ar}; \text{Kr}^+ + \text{Kr}; \text{Xe}^+ + \text{Xe}$	E	300 K	Jones, J.D.C.; Lister, D. G.; Birkinshaw, K.; Tisdale, M. D. Quasi-resonant charge transfer at thermal energies in the rare gases. <i>J. Phys. B</i> 13, 799 (1980) United Kingdom
5869	A03 $\text{Ar}^{2+} + \text{He}; \text{Ar}^{2+} + \text{He}; \text{Ar}^{2+} + \text{Ar}$ A06 $\text{Ar}^{2+} + \text{He}; \text{Ar}^{2+} + \text{He}; \text{Ar}^{2+} + \text{Ar}$	E	200-2000 eV	Huber, B. A. Charge transfer of Ar in He, Ne and Ar. <i>J. Phys. B</i> 13, 809 (1980) West Germany
5870	E03 $e + \text{H}^{++}; e + \text{O}^{2+}$	T	3-6 Ry	Hayes, M. A. A perturbative treatment of exchange in the close-coupling formalism for electron impact excitation of ions. <i>J. Phys. B</i> 12, 819 (1980) United Kingdom
5871	E03 $e + \text{O}^{2+}$	T	1-1.8 Ry	Seluzja, K. L.; Burke, P. G.; Kingston, A. E. Electron impact excitation in semi-forbidden transitions in C III. <i>J. Phys. B</i> 13, 829 (1980) United Kingdom
5872	D04 $e + \text{HgO}; e + \text{Cs} + \text{HgO}; e + \text{Li} + \text{HgO}$	E	0.05-1.8 keV	Bagraev, M. T.; Borimov, V. L. Effect of Cs and Li atom adsorption on HgO: secondary emission and work function. <i>Appl. Surf. Sci.</i> 4, 145 (1980) Soviet Union
5873	E16 $e + \text{Ne} + \text{NF}_3; e + \text{Ar} + \text{NF}_3; e + \text{Xe} + \text{NF}_3$	E	Underf	Rohmi, M.; Jacob, J. M.; Mele, J. C.; Trainor, D. W. The origin of the broadband emission of XeF^+ . <i>Appl. Phys. Lett.</i> 35, 729 (1979) United States
5874	G05 $e + \text{N}_2; e + \text{CO}_2; e + [\text{N}_2 + \text{CO}_2]$	E	0-98 Td	Sierre, R. A.; Brooks, M. L.; Hygaard, K. J. Electron drift velocities in N_2 , CO_2 , and $(\text{N}_2 + \text{CO}_2)$ laser mixtures. <i>Appl. Phys. Lett.</i> 35, 764 (1979) United States
5875	D15 $\text{Ar}^+ + [\text{Pt} + \text{Si}]; \text{Xe}^+ + [\text{Pt} + \text{Si}]$ D16 $\text{Ar}^+ + [\text{Pt} + \text{Si}]; \text{Xe}^+ + [\text{Pt} + \text{Si}]$ D17 $\text{Ar}^+ + [\text{Pt} + \text{Si}]; \text{Xe}^+ + [\text{Pt} + \text{Si}]$	E	150-300 keV	Tsaur, B. Y.; Matteson, S.; Chapman, G.; Lieu, Z. L.; Nicolet, M.-A. Depth dependence of atomic sputtering by ion beams. <i>Appl. Phys. Lett.</i> 35, 825 (1979) United States
5876	C08 $e + \text{Si}$	E	55 MeV	Pantell, R. H.; Swant, R. L. The emission spectrum from planar-channelled electrons. <i>Appl. Phys. Lett.</i> 35, 910 (1979) United States
5877	E04 $e + \text{H}_2; e + \text{D}_2$ E09 $e + \text{H}_2; e + \text{D}_2$	E	0.5-5.0 eV	Madehra, J. M. Rates of dissociative attachment of electrons to excited H_2 and D_2 . <i>Appl. Phys. Lett.</i> 35, 917 (1979) United States
5878	E04 $e + \text{F}_2; e + \text{NF}_3$ E09 $e + \text{F}_2; e + \text{NF}_3$	E	0.3-1.4 eV	Trainor, D. W.; Jacob, J. M. Electron dissociative attachment rate constants for F_2 and NF_3 at 300 and 500° K. <i>Appl. Phys. Lett.</i> 35, 926 (1979) United States
5879	H05 $\text{hv} + \text{HgCl}$	T	1300-2700 cm^{-1}	Julienne, P. S.; Konouslow, D. D.; Krauss, M.; Rosenkrantz, M. E.; Stevens, V. J. Photodissociation of HgCl . <i>Appl. Phys. Lett.</i> 37, 122 (1980) United States
5880	A03 $\text{KrF}^+ + \text{Ar} + \text{Ar}; \text{KrF}^+ + \text{Kr} + \text{Kr};$ $\text{XeF}^+ + \text{He} + \text{He}; \text{XeF}^+ + \text{Ar} + \text{Ar};$ $\text{XeF}^+ + \text{Ne} + \text{Ne}; \text{XeF}^+ + \text{Xe} + \text{Xe};$ $\text{XeF}^+ + \text{Kr} + \text{Kr}; \text{XeF}^+ + \text{Xe} + \text{Xe};$ $\text{XeF}^+ + \text{Xe} + \text{Ar}; \text{XeF}^+ + \text{Xe} + \text{Xe}$ A14 $\text{KrF}^+ + \text{Ar} + \text{Ar}; \text{KrF}^+ + \text{Kr} + \text{Kr};$ $\text{XeF}^+ + \text{He} + \text{He}; \text{XeF}^+ + \text{Ar} + \text{Ar};$ $\text{XeF}^+ + \text{Ne} + \text{Ne}; \text{XeF}^+ + \text{Xe} + \text{Xe};$ $\text{XeF}^+ + \text{Kr} + \text{Kr}; \text{XeF}^+ + \text{Xe} + \text{Xe};$ $\text{XeF}^+ + \text{Xe} + \text{Ar}; \text{XeF}^+ + \text{Xe} + \text{Xe}$	T	300 K	Shul, V. M.; Dazy, C. Theoretical study of formation rates of rare-gas halide trimers. <i>Appl. Phys. Lett.</i> 36, 135 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5981	A03 $N_2 + \text{HgBr}_2$ A04 $N_2 + \text{HgBr}_2$ A14 $N_2 + \text{HgBr}_2$	E	33° eV	Mighee, W. L. Kinetic processes in the electrically excited mercuric-bromide dissociation inner. Appl. Phys. Lett. 36, 173 (1980) United States
5982	E16 $e + \text{KrF}$	E	Undef	Patterson, E. L.; Rice, J. K.; Tlacae, G. C. A master oscillator power amplifier experiment for the determination of the gain coefficient and saturation intensity for an electron-beam-excited KrF amplifier. Appl. Phys. Lett. 36, 180 (1980) United States
5983	A11 $\text{XeCl}^+ + \text{HCl}; \text{XeCl}^+ + \text{Xe}; \text{XeCl}^+ + \text{Ar}; \text{XeCl}^+ + \text{Ne}$	E	33°-375 K	Waynest, R. W.; Eden, J. G. Destruction of ground state XeCl molecules by HCl and rare gas collisions. Appl. Phys. Lett. 36, 262 (1980) United States
5984	E16 $e + \text{Xe} + \text{CCl}_4$	E	530 keV	Tang, K. Y.; Lorents, D. C.; Huestis, D. L. Gain measurements on the triatomic excimer Xe ₂ Cl. Appl. Phys. Lett. 36, 347 (1980) United States
5985	A14 $\text{H} + \text{CH}; \text{C} + \text{CH}$	E	238 K	Howard, M. J.; Smith, I. V. M. Direct rate measurements on the reactions $\text{H} + \text{CH} \rightarrow \text{H}_2 + \text{C}$ and $\text{C} + \text{CH} \rightarrow \text{C}_2 + \text{H}$. Chem. Phys. Lett. 69, 40 (1980) United Kingdom
5985	A05 $\text{B} + \text{O}_2; \text{B} + \text{NO}_2; \text{B} + \text{H}_2\text{O}; \text{B} + \text{O}_3; \text{B} + \text{ClO}_2$	E	33° K	Green, G. J.; Gola, J. L. Contrasting chemiluminescent metal oxide formation in the single collision reactions of boron with O_2 , NO_2 , H_2O , O_3 , and ClO_2 . Chem. Phys. Lett. 69, 45 (1980) United States
5987	A17 $\text{He} + \text{He}$	T	Undef	Verandas, A. J. C. Zeroth-order exchange energy as a criterion for optimized atomic basis sets in interatomic force calculations. Application to He_2 . Chem. Phys. Lett. 69, 222 (1980) Portugal
5988	A03 $\text{K} + \text{N}_2$ A10 $\text{K} + \text{N}_2$ A18 $\text{K} + \text{N}_2$	E	86 eV	Black, G. W.; Fluendy, M. A. D.; Sutton, D. Electronic excitation and energy transfer in $\text{K}-\text{N}_2$ collisions. Chem. Phys. Lett. 69, 260 (1980) United Kingdom
5989	A10 $\text{N}_2^+ + \text{CC}$	E	33° K	Nadler, I.; Rosenwaks, S. Preferential energy transfer from $\text{N}_2(\text{A})$ to specific energy levels of C atoms. Chem. Phys. Lett. 69, 266 (1980) Israel
5990	HC6 $\text{hv} + \text{CO}_2; \text{hv} + \text{H}_2\text{O}$	E	96-90 nm	Heinzmann, U.; Schefers, F.; Hess, B. A. Spin polarized photoelectrons from CO_2 and H_2O . Chem. Phys. Lett. 69, 284 (1980) West Germany
5991	HC8 $\text{hv} + \text{Kr}$ H10 $\text{hv} + \text{Kr}$	E	1450 Å	Bonifield, T. D.; Rambo, F. M. V.; Walters, G. A.; McCasher, M. V.; Lorents, D. C.; Gotchev, R. A. Production and decay of the $\text{U}(\text{out } s)$ and $\text{I}(\text{sub } s)$ states of Kr_2 excited by synchrotron radiation. Chem. Phys. Lett. 69, 290 (1980) United States
5992	A14 $\text{U} + \text{O}_2; \text{U} + \text{NO}; \text{U} + \text{NO}_2; \text{U} + \text{SO}_2; \text{U} + \text{H}_2\text{O}; \text{U} + \text{CO}_2$	E	Undef	Long, M. C.; Stern, R. C.; Finley, M. G. Crossed molecular beams studies of the reactions of uranium with selected oxidizers. Chem. Phys. Lett. 69, 361 (1980) United States
5993	A14 $\text{OH} + \text{SO}_2 + \text{Ar}; \text{OH} + \text{SO}_2 + \text{SF}_6$	E	295-424 K	Harris, G. W.; Atkinson, M.; Pitts, J. N., Jr. Temperature dependence of the reaction $\text{OH} + \text{SO}_2 \rightarrow \text{H} + \text{HSO}_3$ for $\text{H} = \text{Ar}$ and SF_6 . Chem. Phys. Lett. 65, 378 (1980) United States
5994	A03 $\text{hv} + \text{Na} + \text{Xe}; 2\text{hv} + \text{Na} + \text{Xe}$ B07 $\text{hv} + \text{Na} + \text{Xe}; 2\text{hv} + \text{Na} + \text{Xe}$ H04 $\text{hv} + \text{Na} + \text{Xe}; 2\text{hv} + \text{Na} + \text{Xe}$	T	A03; H04 0.02-0.26 eV	DeVries, P. L.; Cheng, C. M.; George, T. F.; Lashowski, B.; Stellcup, J. A. $\text{Na} + \text{Xe}$ collisions in the presence of two nonresonant lasers. Chem. Phys. Lett. 66, 417 (1980) United States

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5095	A11 Br ^o + HCl	E	330 K	Krogh, O. B. Experimental demonstration of electronic to vibrational and rotational energy transfer from Br(4 ² P _{1/2}) to HCl. Chem. Phys. Lett. 69, 452 (1980) United States
5096	A11 Ca ^o + Ba	E	850 K	Whitkop, P. G.; Wiesenfeld, J. R. Collisional deactivation of Ca[4p ² P(sub J)] by barium atoms. Chem. Phys. Lett. 69, 457 (1980) United States
5097	M04 nhr + HCl ₂ ^o M05 nhr + HCl ₂ ^o	E	532 nm	Feldmann, D.; Zacharias, N.; Welge, K. M. IR multiple-photon fluorescence excitation and dissociation of electronically excited HCl ₂ . Chem. Phys. Lett. 69, 466 (1980) West Germany
5098	A14 F + I ₂	E	93 meV	Donovan, R. J.; Fennie, D. P.; Flueady, M.A.B.; Gies, R. M.; Rao, A.G.A.; Wheeler, J. S. Energy partitioning in the reaction F + I ₂ . Chem. Phys. Lett. 69, 472 (1980) United Kingdom
5099	K04 Review	E T	Undef	Kulcinshi, G. L. Fusion reactors: their challenges materials scientists. Contemp. Phys. 20, 417 (1975) United States
5100	K01 Review	E T	Undef	Lattimer, C. J. Experiments with highly excited atoms. Contemp. Phys. 20, 631 (1979) United Kingdom
5101	C04 D ^o + U; D ^o + UO ₂ D16 D ^o + U; D ^o + UO ₂	E	30-85 keV	Lewis, M. B. Deuterium migration and trapping in uranium and uranium dioxide during D ^o implantation. J. Nucl. Mater. 88, 23 (1980) United States
5102	D14 n + Mo; n + [Mo + Ti + Zr]	E	0.1 MeV	Evans, J. M. Void swelling and irradiation-induced void shrinkage in neutron irradiated molybdenum and TZM. J. Nucl. Mater. 88, 31 (1980) United Kingdom
5103	D16 D ^o + Zr	E	13 keV	Moller, U.; Bottiger, J. Retention and precipitation of 10 keV deuterons implanted into zirconium. J. Nucl. Mater. 88, 95 (1980) West Germany
5104	D14 n + SS	E	1 MeV	Williams, T. M.; Arkell, D. R.; Eyre, B. L. The influence of pre-injected helium on void nucleation and growth in FV548 steel irradiated with 1 MeV electrons. J. Nucl. Mater. 88, 111 (1980) United Kingdom
5105	D15 n + Cu; n + Al; n + [Cu + Al]	E	Undef	Thiele, U.; Wollenberger, M. Mobile interstitials produced by neutron irradiation in copper and aluminium. J. Nucl. Mater. 88, 121 (1980) West Germany
5106	D14 Ni ^o + SS	E	45.5 MeV	Williams, T. M. The effect of soluble carbon on void swelling and low dose dislocation structures in Type 316 austenitic stainless steel irradiated with 46.5 MeV Ni ^o ions. J. Nucl. Mater. 88, 217 (1980) United Kingdom
5107	D15 Undef	T	Undef	Padraza, A. J.; Feinstein-Padraza, S. Irradiation growth of zirconium-base alloys: II. annealed material. J. Nucl. Mater. 88, 236 (1980) Brazil
5108	D15 H ^o + Al; H ^o + Cu; H ^o + Nb; H ^o + Ti; H ^o + Si; H ^o + U; H ^o + C; H ^o + Y; H ^o + Ta; H ^o + Mg; H ^o + Al; H ^o + Zr	T	13-10 ⁷ eV	Couiter, C. A.; Parkin, D. M. Damage energy functions in polycrystalline materials. J. Nucl. Mater. 88, 249 (1980) United States
5109	D02 H ^o + SS; D ^o + SS D13 H ^o + SS; D ^o + SS D16 H ^o + SS; D ^o + SS	T	1-10 MeV	Metzger, E. S. A current induced diffusion model of gas sputtering. J. Nucl. Mater. 88, 279 (1980) United Kingdom
5110	D02 Ar ^o + [Ni + Cu]; Ar ^o + [Ni + Mo]; Ar ^o + [Ni + Si] D17 Ar ^o + [Ni + Cu]; Ar ^o + [Ni + Mo]; Ar ^o + [Ni + Si]	T	5 keV	Lam, N. U.; Leaf, G. R.; Wiedersich, M. Sputter-induced surface composition changes in alloys. J. Nucl. Mater. 88, 289 (1980) United States

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5111	D14 $n + SS$	T	Underf	Bulleugh, R.; Morris, D. R.; Haynes, M. R. The effect of stress on the growth of gas bubbles during irradiation. <i>J. Nucl. Mater.</i> 82, 312 (1980) United Kingdom
5112	D14 Underf	T	Underf	Nelson, R. S. Radiation blistering - an interpretation based on radiation-stimulated vacancy migration. <i>J. Nucl. Mater.</i> 88, 322 (1980) United Kingdom
5113	A11 PERT + PERT A14 PERT + PERT	E	330 K	Schofield, K. Critically evaluated rate constants for gaseous reactions of several electronically excited species. <i>J. Phys. Chem. Ref. Data</i> 8, 723 (1979) United States
5114	A17 $O + O$ M02 $h\nu + O_2$	T	A17 Underf M:2 2138-1442 A ^o	Gaberman, S. L.; Galgarno, A. Absorption into the $\Pi(\text{sub } u)$ state of molecular oxygen. <i>J. Geophys. Res.</i> 84, 4437 (1979) United States
5115	A13 $O^{2+} + H_2$; $O^{2+} + O_2$; $C^{2+} + H_2$; $O^{2+} + H_2$ He ; $O^{2+} + He$; $O^{2+} + Ar$; $O^{2+} + Kr$ $O^{2+} + Xe$	E	300 K	Noworha, F.; Viggiano, A. A.; Albritton, D. L.; Ferguson, E. E.; Fehsenfeld, F. C. Laboratory studies of O^{2+} reactions of ionospheric importance. <i>J. Geophys. Res.</i> 84, 5941 (1979) United States
5116	A04 $N^+ + O_2$; $N^+ + H_2$; $N_2^+ + O_2$; $N_2^+ + H_2$ H_2 ; $N_2^+ + He$; $O^+ + N_2$ A06 $N^+ + O_2$; $K^+ + H_2$; $N_2^+ + O_2$; $N_2^+ + H_2$ H_2 ; $N_2^+ + He$; $O^+ + N_2$	E	2.4-24.3 keV	Sheridan, J. R.; Marie, T.; Enzweiler, J. A. Cross sections for asymmetric charge transfer and collisional dissociation reactions of atmospheric ions at keV energies. <i>J. Geophys. Res.</i> 84, 7202 (1979) United States
5117	C08 Underf	T	Underf	Rowlands, G. On the theory of channelling through periodic lattices. <i>J. Phys. C</i> 13, 9 (1980) United Kingdom
5118	C01 Underf	E	0.05-1.2 MeV	Kagan, Y.; Konotets, V. V.; Jurechysov, M. K. On the nature of the central peak in distribution of particles in the break-up of swift diatomic clusters in thin films. <i>J. Phys. C</i> 13, L97 (1980) Soviet Union
5119	A17 $Kr + Kr$	E	Underf	Aiz, R. A. An improved potential for krypton. <i>Mol. Phys.</i> 38, 177 (1979) Canada
5120	A10 $H + H_2$; $H + I_2$; $He + HBr$	T	0-0.5 eV	King, F. W.; Schatz, G. C. Stochastic theory of vibrational energy transfer in collinear atom diatomic collisions: the role of nonharmonic effects. <i>Mol. Phys.</i> 38, 287 (1979) United States
5121	A17 $He^+ + He$	T	Underf	Child, M. S.; Garber, R. B. Inversion of inelastic atom-atom scattering data: recovery of the interaction function. <i>Mol. Phys.</i> 38, 421 (1979) United Kingdom
5122	A14 $Hu + F_2$; $H + F_2$; $D + F_2$; $T + F_2$	T	0-1 eV	Connor, J. M. L.; Leger, J. Quasiclassical dynamics of light + heavy heavy atom reactions: the reaction $H + F_2 \rightarrow HF + F$ ($X = H, D, T$). <i>Mol. Phys.</i> 38, 667 (1979) United Kingdom
5123	M06 $h\nu + SH$	E	21 eV	Dunlop, S. J.; Dyke, J. M.; Fayad, M. A.; Jonathan, N.; Morris, A. Vacuum ultraviolet photoelectron spectroscopy of transient species: Part 18. The $SH(X^2\Sigma^-)$ radical and the $S(^2P)$ atom. <i>Mol. Phys.</i> 38, 729 (1979) United Kingdom
5124	A10 $O^+ + CO$ A11 $O^+ + CO$	T	300 K	Kinnarsly, S. R. A theoretical study of energy transfer in the quenching of $O(^1D_2)$ by $CO(^1\Sigma^+)$. <i>Mol. Phys.</i> 38, 1067 (1979) United Kingdom
5125	E03 $e + Ne$	T	15-1000 eV	Genes, P. S. Electron-impact excitation cross sections for neon. <i>Mol. Phys.</i> 38, 1127 (1979) United States
5126	A03 $Li^+ + H_2$	T	0.5 eV	Kinnarsly, S. R. Accurate body frame approximations for rotationally inelastic $Li^+ + H_2$ scattering. <i>Mol. Phys.</i> 38, 1329 (1979) United Kingdom

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5127	A17 $O^+ + Ar; O^+ + Kr; O^+ + Xe$	T	Undef	Goest, N. F.; Ding, A.; Karlan, J.; Weiss, J.; Miller, L. M. Potential interactions between O^+ and rare gases. <i>Nucl. Phys.</i> 30, 1427 (1975) United Kingdom
5128	A17 $C^+ + H$	T	Undef	Barrell, J. N.; Al-Berzi, A.; Tennyson, J.; Goest, N. F. Potential energy curves of the lower states of CH^+ . <i>Nucl. Phys.</i> 30, 1755 (1979) United Kingdom
5129	A17 $H + CH^+$	T	Undef	Hirst, D. H. Ab initio potential surfaces for the A tilde and B tilde $^2E^+$ states of CH^+ . <i>Nucl. Phys.</i> 32, 2817 (1979) United Kingdom
5130	A12 $He^+ + He$ A17 $He^+ + He$	E	83-300 K	Cahuzac, P.; Deneuchini, R. Pressure broadening studies on the $3^2P_{1/2}-2^2P_{1/2}$ helium line by saturated-absorption techniques. <i>Opt. Commun.</i> 32, 251 (1980) France
5131	E03 $e + Rb^+$	E	38-50 eV	Smirnov, Y. N.; Shapochkin, M. B. Transition probabilities and cross sections for direct excitation of some levels of the singly charged rubidium ion. <i>Opt. Spectrosc.</i> 47, 243 (1975) Soviet Union
5132	M03 $He + Fe; He + Fe^+; He + Fe^{2+}; He + Co^+; He + Ni^{2+}$	T	6.9-22.1 keV	Ionushenko, G. L.; Kuplyushko, A. V.; Kuplyushko, Z. I. Cross section of iron atoms and ions for photon scattering. <i>Opt. Spectrosc.</i> 47, 248 (1979) Soviet Union
5133	E03 $e + Cu^{2+}$	E	53-200 eV	Smirnov, Y. N.; Shapochkin, M. B. Electron-impact excitation of states in doubly charged cesium ion. <i>Opt. Spectrosc.</i> 47, 448 (1975) Soviet Union
5134	A07 $H^+ + PERT; H^+ + Ti; H^+ + Ne; H^+ + Cu; H^+ + Ag; H^+ + Au; He^{2+} + C; He^{2+} + N; He^{2+} + Fe; He^{2+} + Cu$	T	0.1-10 MeV	Paul, H. K-shell ionization by heavy particles: comparison between theoretical cross sections and experiments. <i>Nucl. Instrum. Methods</i> 165, 249 (1984) Austria
5135	A07 $H^+ + Au; H^+ + Ag; H^+ + Pb; H^+ + V; H^+ + Fe; H^+ + Ni; H^+ + Cu; H^+ + Zn; H^+ + Se; H^+ + Zr; H^+ + Mo$	T	1-25 MeV	Trautmann, D.; Rosel, F. On the semiclassical description of Coulomb ionization of inner shells. <i>Nucl. Instrum. Methods</i> 169, 259 (1980) Switzerland
5136	A03 $H^+ + H$ A06 $H^+ + Ar$ A07 $C^{2+} + Ar; C^{2+} + Ar; H^+ + N; H^+ + Cu; H^+ + Ni$	T	6.01-100 MeV	Reading, J. F.; Ford, A. L.; Becker, R. L. Fast numerical calculations of ion-atom collisions. <i>Nucl. Instrum. Methods</i> 169, 273 (1980) United States
5137	A07 $H^+ + Ag; H^+ + Au; H^+ + Cu$	T	0.1-30 MeV	Kochbach, L.; Nusteen, J. M.; Gundersen, B. Review of the SCA method for inner shell ionization - results, limitations and possibilities. <i>Nucl. Instrum. Methods</i> 169, 281 (1980) Norway
5138	A07 $H^+ + Ti; H^+ + Fe; H^+ + Co; H^+ + Se; H^+ + Zr; H^+ + Ag$	E	0.2-2.4 MeV	Laegsgaard, L.; Andersen, J. U.; Hegedal, F. Accurate determination of cross sections for K-shell ionization by proton impact. <i>Nucl. Instrum. Methods</i> 169, 293 (1980) Denmark
5139	A07 $F^+ + Kr; F^+ + Ar; F^+ + Ne$	E	1-30 MeV	Preiser, G.; Scherer, E.; Stahler, J. K-shell ionization in the transition region between strongly asymmetric and nearly symmetric collisions. <i>Nucl. Instrum. Methods</i> 169, 301 (1980) West Germany
5140	A07 $H^+ + Cu; H^+ + Ru; H^+ + Fe; H^+ + Ni; H^+ + Co; H^+ + Zn; H^+ + Se; H^+ + Zr; H^+ + Mo; H^+ + Sn; H^+ + Ru; H^+ + Ag; H^+ + Te; H^+ + Ce; H^+ + Sm; H^+ + Ho; H^+ + Yb; H^+ + Ta; H^+ + Pt; H^+ + Au; H^+ + Pb; H^+ + Bi$	E	7-12 MeV	Dost, M. Ionizing central collisions and nuclear excitation. <i>Nucl. Instrum. Methods</i> 169, 306 (1980) West Germany
5141	A07 $H^+ + Co; H^+ + Ni; H^+ + Cu; H^+ + Zn; H^+ + Ge; H^+ + Se$	E	0.2-2.0 MeV	Lopes, J. S.; Jesus, A. P.; Ramos, S. C. K-shell ionization cross sections for Co, Ni, Cu, Zn, Ge and Se by protons of 0.2-2 MeV. <i>Nucl. Instrum. Methods</i> 165, 311 (1980) Portugal

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5142	A17 Ar + Ar; Kr + Ar; He + Ar; He + Kr; Ar + Xe; He + Xe A18 Ar + Kr; Kr + Ar; He + Ar; He + Kr; Ar + Xe; He + Xe	E	650-3700 eV	Linse, C. A.; van den Biesen, J.J.N.; van Veen, E. h.; van den Heijdenberg, C.J.M. Measurements on the glory structure in the total cross section of noble gas systems: II. He and Ar scattered by Ar, Kr and Xe. <i>Physica A</i> 99A, 166 (1979) The Netherlands
5143	G02 N ₂ + Ar; O ₂ + Ar; N ₂ + O ₂ ; Ar + Kr	E	327-323 K	Shankland, I. R.; Dunlop, P. J. Pressure dependence of the mutual diffusion coefficients of the binary systems N ₂ + Ar, N ₂ + O ₂ , O ₂ + Ar and Ar + Kr at 300 and 323 K. <i>Physica A</i> 100A, 64 (1980) Australia
5144	A17 Kr + Kr; Kr + Xe; Xe + Xe A18 Kr + Kr; Kr + Xe; Xe + Xe	E	650-4000 K	van den Biesen, J.J.N.; Stokvis, F.A.L.; van Veen, E. h.; van den Heijdenberg, C.J.M. Measurements on the glory structure in the total cross section of noble gas systems: III. Ar-Kr, Kr-Kr, Kr-Xe and Xe-Xe: application of the m(x)-6 potential. <i>Physica A</i> 100A, 375 (1980) The Netherlands
5145	G02 Ar* + Ar; Kr* + Kr; Xe* + Xe	E	220-400 K	Wiese, U.; Lonserts, J. Diffusion of metastable atoms in rare gases. <i>Physica B+C</i> 98, 229 (1980) Belgium
5146	E04 e + N ₂ ; e + D ₂ E05 e + N ₂ ; e + D ₂	E	15-19 eV	Boesten, L.G.J.; Haldeman, H.G.M. Dissociative ionization of N ₂ and D ₂ by electron impact near threshold. <i>Physica B+C</i> 98, 242 (1980) The Netherlands
5147	D01 H ⁺ + Cs + U; H ⁺ + Co + Ni; H ⁺ + K + Ni D09 H ⁺ + Cs + U; H ⁺ + C; Ni; H ⁺ + K + Ni	T	1-100 eV	Janev, R. K.; Vojvodic, S. B. Survival probabilities of hydrogen negative ions emerging from sputter-coated U and Ni surfaces. <i>Phys. Lett.</i> 75A, 348 (1980) Yugoslavia
5148	A03 H ⁺ + Cu; H ⁺ + Rb; H ⁺ + Ag; H ⁺ + Au; H ⁺ + Au A07 H ⁺ + Cu; H ⁺ + Rb; H ⁺ + Ag; H ⁺ + Au; H ⁺ + Au	E	23.6-43.6 MeV	Kanal, Z.; McKee, J.S.C.; Ramsey, B. B.; Al-Ghazi, M.S.A.L.; Birchall, J.; Durocher, J.J.G.; Vidale, R. Is the K(sub beta)/K(sub alpha) x-ray intensity ratio dependent upon the energy of an inducing proton. <i>Phys. Lett.</i> 75A, 475 (1980) Canada
5149	A07 He* + Ti; C* + Ti; N* + Ti; O* + Ti; Ti; C* + Ti; N* + Ti	E	6 MeV/amu; 51-100 MeV	Awaga, Y.; Katou, T.; Kunagai, H.; Tomono, T.; Yandou, Y.; Izumo, K.; Nishizume, A.; Tabahashi, T.; Hanada, T. Ratio of single K-shell ionization cross section to double K-shell ionization cross section in heavy-ion-atom collisions. <i>Phys. Lett.</i> 75A, 478 (1980) Japan
5150	E02 e + He E17 e + He	T	53-100 eV	Ohki, H.; Iguchi, K.; Ishihara, T. Calculation of elastic electron-helium scattering at intermediate energies. <i>Phys. Lett.</i> 76A, 34 (1980) Japan
5151	C06 S* + C; Fe* + C; C* + C C* S* + C; Fe* + C; C* + C	E	3.1-1.6 MeV	Baudinet-Robinet, Y.; Garnier, M. P.; Dumont, P. D. Beam-foil level populations and charge-state fractions. <i>Phys. Lett.</i> 76A, 41 (1980) Belgium
5152	E17 e + He	T	30-400 eV	Truhlar, D. G.; Onda, K. Matrix effective potential for electronic response in electron scattering with application to He at 30-400 eV impact energy. <i>Phys. Lett.</i> 76A, 119 (1980) United States
5153	A06 H ⁺ + Ar; He* + Ar; F* + Ar; Ar* + Ar; Ar* + Ar; Ar* + Ar; Ar* + Ar; + Ar; F* + Ar; F* + Ar; Pb* + Ar; + Ar; Br* + Ar; Br* + Ar; U* + Ar; Ar; Xe* + Ar	T	1-17* keV/amu	Janev, R. K.; Presnyakov, L. P.; Shevelko, V. P. One-electron capture from the inner shells in atom-eutricharged ion collisions. <i>Phys. Lett.</i> 76A, 121 (1980) Yugoslavia
5154	C08 He* + PbS; He* + PbSe	E	3.7-2.0 MeV	Kyoshima, A.; Matsushita, H.; Kikura, K.; Mennami, H. Direct scattering of channelling He ions at dislocations. <i>Phys. Lett.</i> 76A, 149 (1980) Japan
5155	A07 C* + N ₂ ; O* + N ₂ ; N* + N ₂ ; N* + N ₂ ; N ₂ ; CO* + N ₂ ; C* + CO ₂ ; O* + CO ₂ ; N* + CO ₂ ; N* + CO ₂ ; CO* + CO ₂	E	3.5-2.3 MeV	Fruehknorn, H. J.; Schumann, S.; Kluge, H.; Greenwald, K. C. Electron spectroscopy of exploding fast molecular ions. <i>Phys. Scripta</i> 21, 63 (1980) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5154	EB1 e + Ne EB2 e + Ne EB3 e + Ne EB5 e + Ne EB7 e + Ne	T	30-200 eV	Brissman, P.; Taylor, M. S.; Scott, I. A survey of many-body theory applied to electron-atom scattering. Phys. Scripta 21, 272 (1980) United States
5157	D05 Underf	T	Underf	Schrieffer, J. R. Inelastic processes in photoemission from adsorbed atoms. Phys. Scripta 21, 472 (1980) United States
5158	H06 hv + C ₂ H ₂ ; hv + H ₂ O	T	Underf	Cederhans, L. S.; Doehke, M.; Schirmer, J.; van Nieuwen, W. Many-body effects in valence and core photoionization of molecules. Phys. Scripta 21, 481 (1980) United States
5159	H04 hv + Ar; hv + K ⁺ ; hv + Ca ²⁺ ; hv + Xe H06 hv + Ar; hv + K ⁺ ; hv + Ca ²⁺ ; hv + Xe	T	15-1000 eV	Hansen, J. E. The similarities between photoabsorption to bound and continuum states. Phys. Scripta 21, 510 (1980) The Netherlands
5160	E03 Underf	T	Underf	Murph, K. Resonances and many-body effects in electron impact excited soft x-ray spectra. Phys. Scripta 21, 519 (1980) Sweden
5161	H06 Underf	T	Underf	Sanjic, M. Solid state effects in x-ray photoemission. Phys. Scripta 21, 561 (1980) Yugoslavia
5162	D05 Underf H06 Underf	T	Underf	Gedzuik, J. W. Hole recoil, vibrational shake-up and photoelectron lineshapes. Phys. Scripta 21, 570 (1980) United States
5163	D05 hv + CO + Cu	T	13 eV	Gunnarsson, O.; Schonhammer, K. Many-body effects in XPS for adsorbed atoms and molecules. Phys. Scripta 21, 575 (1980) West Germany
5164	H06 hv + Xe; hv + I; hv + Te; hv + Sn; hv + Cd; hv + Pt	T	3520-5320 eV	Ohno, M. Strong dynamical effects in the x-ray photoemission spectra of the elements Pd to Xe. Phys. Scripta 21, 585 (1980) Sweden
5165	D15 Cu ⁺ + Cu ₂ Pd; Cu ⁺ + Fe ₂ Al; Au ⁺ + Cu ₂ Pd; Au ⁺ + Fe ₂ Al	E	15-100 keV	Lampfmeier, A.; Wilkens, M. TEM studies of displacement cascades in ion-bombarded Cu ₂ Pd and Fe ₂ Al. Phys. Status Solidi A 55, 457 (1979) West Germany
5166	C04 Kr ⁺ + Cu; Kr ⁺ + Si; Kr ⁺ + SiO ₂ D16 Kr ⁺ + Cu	E	5-50 keV	Luhac, P.; Jozseph, V. Distribution of ion-bombardment implanted ⁸⁶ Kr in Si, Cu, and SiO ₂ . Phys. Status Solidi A 55, 647 (1979) Soviet Union
5167	D06 e + B; e + C; e + Mg; e + Si; e + Ti; e + V; e + Cr; e + Fe; e + Co; e + Ni; e + Cu; e + Zn; e + Ge; e + Zr; e + Ag; e + Cd; e + Sn; e + Sb; e + Te; e + Se; e + Hf; e + Ta; e + U; e + Pt; e + Au; e + Bi; e + U	E	3.9-61.0 keV	Hunger, M.-J.; Ruchler, L. Measurements of the electron backscattering coefficient for quantitative EPMA in the energy range of 4 to 46 keV. Phys. Status Solidi A 56, 845 (1979) East Germany
5168	C08 e + Si	E T	0.5-2.5 MeV	Porov, D. E.; Kaplan, V. V.; Vorobiev, S. A. Flux redistribution of channelled fast electrons. Phys. Status Solidi B 96, 263 (1979) Soviet Union
5169	D12 Underf	T	Underf	Donato, E.; Giuliano, E. S.; Ruggieri, R.; Stancanelli, A. Appearance potential spectroscopy in metals and alloys. Multiple scattering approach. Phys. Status Solidi B 96, 313 (1979) Italy
5170	C08 Underf	T	Underf	Razhkov, V. V. Theory of dechanneling. Phys. Status Solidi B 96, 463 (1979) Soviet Union

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
1171	CW2 e + C; e + Au; e* + C; e* + Au; H* + C; H* + Au CW8 e + C; e + Au; e* + C; e* + Au; H* + C; H* + Au	T	Undef	Kozlov, F. F. Energy loss of relativistic particles in solids. <i>Phys. Status Solidi B</i> 96, 848 (1979) Denmark
5172	D15 n + Pt	E	Undef	Pinn, C.S.B.; Asperling, J. On the existence of two-interstitial species in platinum after thermal-neutron irradiation. <i>Phys. Status Solidi B</i> 96, 817 (1979) South Africa
5173	CE8 e + C; e + Co; e + Cu	T	Undef	Burbinson, S. N.; Ispirian, K. A. On high energy particle channeling. <i>Phys. Status Solidi B</i> 96, 838 (1979) Soviet Union
5174	MB6 hv + Xe	T	3-52 eV	Huang, K.-M.; Starace, A. F. Photoionization of the 5s subshell of xenon: a multichannel <i>B</i> -matrix calculation including spin-orbit interactions. <i>Phys. Rev. A</i> 21, 697 (1980) United States
5175	A03 H + Ar	E	25-2500 eV	van Zyl, B.; Neumann, M.; Rothwell, M. L., Jr.; Anne, R. C. Balmer- α and Balmer- β emission cross sections for H + Ar collisions. <i>Phys. Rev. A</i> 21, 716 (1980) United States
5176	A03 H* + Ar A06 H* + Ar	E	53-2500 eV	van Zyl, B.; Rothwell, M. L., Jr.; Neumann, R. Balmer- α and Balmer- β emission cross sections for H* + Ar collisions. <i>Phys. Rev. A</i> 21, 730 (1980) United States
5177	E02 e + H ₂	T	Undef	Vatson, D. E.; Lucchese, R. N.; McKoy, V.; Roscigno, T. M. Schwinger variational principle for electron-molecule scattering: application to electron-hydrogen scattering. <i>Phys. Rev. A</i> 21, 736 (1980) United States
5178	A06 H* Seq + H; D ³⁺ + H; D ⁴⁺ + H; D ⁵⁺ + H; C ³⁺ + H; C ⁴⁺ + H; C ⁵⁺ + H; H ³⁺ + H; H ⁴⁺ + H; H ⁵⁺ + H; O ³⁺ + H; O ⁴⁺ + H; O ⁵⁺ + H	T	0.1-5.0 keV/amu	Dyufahu, M.; Sasaki, K.; Watanabe, T. Oscillatory behavior of charge transfer cross sections as a function of the charge of projectiles in low-energy collisions. <i>Phys. Rev. A</i> 21, 745 (1980) Japan
5179	A03 H* + H A10 H* + H	E	15-145 keV	Perk, J. T.; Aldag, J. E.; Poacher, J. L.; George, J. M. Angular differential cross sections for excitation of atomic hydrogen to the $n = 2$ level by proton impact. <i>Phys. Rev. A</i> 21, 751 (1980) United States
5180	E03 e + He E17 e + He	E	83 eV	Steph, M. C.; Golden, D. E. Electron-photon angular correlation measurements of He(1 ⁵ S _g -2 ¹ P _g) excitation by electron impact at 80 eV. <i>Phys. Rev. A</i> 21, 759 (1980) United States
5181	A02 He* + H ₂ ; He* + D ₂ ; He + D ₂ A03 He* + H ₂ ; He* + D ₂ ; He + D ₂ A10 He* + H ₂ ; He* + D ₂ ; He + D ₂	E	0.5-3.5 keV	Andersen, M.; Vedder, M.; Russek, A.; Pelliach, E. Energy-loss scaling in 0.5-3.5 keV He* and He collisions with H ₂ and D ₂ . <i>Phys. Rev. A</i> 21, 762 (1980) United States
5182	E03 e + F ₂ E04 e + F ₂ E17 e + F ₂	T	5-40 eV	Fliflet, A. V.; McKoy, V.; Roscigno, T. M. Dissociation of F ₂ by electron impact excitation of the lowest σ (sub σ) electronic state. <i>Phys. Rev. A</i> 21, 768 (1980) United States
5183	A03 He ²⁺ + H A06 He ²⁺ + H	T	1-70 keV	Winter, T. G.; Motton, G. J. Plane-wave-factor, molecular-state treatment of electron transfer in collisions of He ²⁺ ions with H atoms. <i>Phys. Rev. A</i> 21, 753 (1980) United States
5184	FP2 e + Na ⁰	E	0.44-6.0 eV	Jadaviliver, B.; Dang, R.; Weiss, F.; Pedersen, B. Total cross sections for the scattering of low-energy electrons by excited sodium atoms in the 3 ² P _{3/2} (sub j) = plus or minus 3/2 state. <i>Phys. Rev. A</i> 21, 808 (1980) United States

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5185	A07 $M^+ + N; Li^+ + Li; He^+ + Li$	T	0-2.0 eV	Jenev, R. E.; Mihajlov, A. A. Resonant ionization in slow-atom-Rydberg-atom collisions. <i>Phys. Rev. A</i> 21, 819 (1980) Yugoslavia
5186	A06 $Ar^+ + Ar$ A16 $Ar^+ + Ar$	E	177-200 eV	McAfee, K. B., Jr.; Falconer, W. E.; Rozuck, R. S.; McClure, D. J. Fine-structure transitions during charge transfer in argon. <i>Phys. Rev. A</i> 21, 827 (1980) United States
5187	A01 Underf	T	Underf	Kirschbaum, C. L.; Milet, L. Classical many-body model for atomic collisions incorporating the Heisenberg and Pauli principles. <i>Phys. Rev. A</i> 21, 836 (1980) United States
5188	H06 $He + He; He + Ar; He + Kr; He + Xe$	T	26-104 eV	Ong, W.; Wannen, S. T. Dirac-Fock calculations of atomic photoionization: branching ratios and angular distributions in the outer p shells of the noble gases. <i>Phys. Rev. A</i> 21, 842 (1980) United States
5189	B07 $Zn + Ba; Zn + Sr$ H06 $Zn + Ba; Zn + Sr$	E T	H06 41900-45956 cm^{-1}	Fouch, R. J.; Reesler, F. L.; Tracy, B. N.; Tomkins, F. S. Comparison of atomic quasi-Lorentz spectra with semiclassical strong-field-mixing models. <i>Phys. Rev. A</i> 21, 841 (1980) United States
5190	H04 $Zn + U$	E T	5319-6058 $\text{\AA}$	Chang, C. S.; Schlier, R. Two-photon-resonance effect in atomic-uranium experiments. <i>Phys. Rev. A</i> 21, 872 (1980) United States
5191	H04 Underf H06 Underf	T	Underf	Kelusz, M. Two-photon near-resonance scattering of a time-dependent light beam. <i>Phys. Rev. A</i> 21, 902 (1980) Poland
5192	C02 $He^{2+} + Plasma$	T	0.5-4.5 MeV	Payne, G. L.; Perez, J. D. Stopping power of a nonequilibrium plasma. <i>Phys. Rev. A</i> 21, 976 (1980) United States
5193	E04 $e + H_2O^+; e + D_2O^+$ E06 $e + H_2O^+; e + D_2O^+$	E	830-3800 K	Ogura, G. L.; Chang, J.-S.; Hobson, R. M. Dissociative recombination of H_2O^+ and D_2O^+ at elevated electron and gas temperatures. <i>Phys. Rev. A</i> 21, 902 (1980) United States
5194	E05 $e + PERT$	T	2 MeV	Mdefre, J. T.; Willis, J. G.; Melik, F. B. Calculations of the K-shell ionization cross sections by 2-MeV electrons. <i>Phys. Rev. A</i> 21, 1049 (1980) United States
5195	A06 $C^+ + H_2; C^+ + H_2; He^+ + H_2; He^+ + H_2;$ $O^+ + H_2; O^+ + H_2$	E	0.4-3.0 keV	Moran, T. F.; Mathur, B. P. Charge transfer reactions of C^+ , N^+ , and O^+ ions with H_2 and H_2 . <i>Phys. Rev. A</i> 21, 1051 (1980) United States
5196	B03 Underf B06 Underf	T		Ren, A.H.-P.; Lu, K. T. Comments on near-zero-energy resonance in atoms in external fields. <i>Phys. Rev. A</i> 21, 1057 (1980) United States
5197	C07 $He^+ + FeII$	T	230 keV	Ellis, J. G. Comment on tilted-foil excitation of helium P levels. <i>Phys. Rev. A</i> 21, 1061 (1980) United States
5198	D07 $He + C$	E	133 K	Boato, G.; Cantini, P.; Guidi, C.; Teterak, M.; Felcher, G. P. Bound-state resonances and interaction potential of helium scattered by graphite (0001). <i>Phys. Rev. B</i> 20, 1957 (1979) Italy
5199	H06 $He + Ge; He + As; He + Sb; He + Pb;$ $He + Au$	E	42-700 eV	Johansson, L. I.; Lindau, I.; Necht, M.; Goldberg, S. M.; Fedley, C. S. Energy dependence of 3d, 4d, 5d, and 4f photoionization partial cross sections. <i>Phys. Rev. B</i> 20, 4126 (1979) United States
5203	D07 $H_2^+ + Al; He^+ + Al$ D08 $H_2^+ + Al; He^+ + Al$	T	0.15-0.5 MeV	Lucas, A. A. Self-image excitation mechanism for fast ions scattered by metal surfaces at grazing incidence. <i>Phys. Rev. B</i> 20, 4920 (1979) United States

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5201	D07 Undef	T	Undef	Manabe, J. R.; Armand, G. Scattering of atoms by a corrugated potential well of finite height. <i>Phys. Rev. B</i> 20, 5020 (1979) United States
5202	D07 H ⁺ + Ni	T	30 keV	Ohtsuki, Y. M.; Koyama, K.; Yasuura, T. Shipping motion of the surface scattering of ion beams. <i>Phys. Rev. B</i> 20, 5044 (1979) Japan
5203	D01 H ⁻	T		Larsen, B. R. Variational studies of bound states of the H ⁻ ion in a magnetic field. <i>Phys. Rev. B</i> 20, 5217 (1979) United States
5204	D05 hv + CaSe	E	43-80 eV	Williams, G. P.; Lapeyrie, G. J. Resonant enhancement in photoemission from CaSe. <i>Phys. Rev. B</i> 20, 5200 (1979) United States
5205	D05 hv + CuCl	E	8-25 eV	Peng, W.; Ohada, S. K. Ultraviolet photoemission studies of CuCl. <i>Phys. Rev. B</i> 20, 5400 (1979) United States
5206	D04 Undef	T	Undef	Seith, R. A. Excitation of transitions between atomic or molecular energy levels by monochromatic laser radiation: III. Effect of Doppler broadening when phase-destrorying collisions predominate. <i>Proc. Roy. Soc., London A</i> 368, 163 (1979) United Kingdom
5207	C01 Review D06 Review K02 Review K04 Review	E T	Undef	Mumphreys, C. J. The scattering of fast electrons by crystals. <i>Reports Prog. Phys.</i> 42, 1625 (1979) United Kingdom
5208	D05 hv + Ca	E	3.76-4.96 eV	Armand, L.; Boulliet, J. L.; Goucart, L. Photoemission of thin and ultrathin films of calcium. <i>Surface Sci.</i> 86, 75 (1979) France
5209	D02 Undef D13 Undef	T	Undef	Krueger, F. R. Fast ion induced desorption and collective electronic perturbation at the surface. <i>Surface Sci.</i> 86, 246 (1979) West Germany
5210	D07 He ⁺ + Ni; He ⁺ + O + Ni	E	1 keV	Godfrey, B. J.; Woodruff, D. P. Low energy ion scattering study of oxygen adsorption on Ni [100]. <i>Surface Sci.</i> 85, 76 (1979) United Kingdom
5211	D07 He + Pt	E	Undef	Combe, G.; Nachterheimer, G.; Peiseme, B.; Tomoda, S. Direct evidence for terrace bonding from He beam scattering on Pt(997). <i>Surface Sci.</i> 89, 123 (1975) West Germany
5212	D10 H + Al; H + Mg; H + Na; H ₂ + Al; H ₂ + Mg; H ₂ + Na; H ₂ + Cu; H ₂ + Ni; CO + Fe; CO + Ni	T	Undef	Lundqvist, B. I.; Gunnarsson, O.; Hjeltnberg, N.; Norskov, J. K. Theoretical description of molecule-metal interaction and surface reactions. <i>Surface Sci.</i> 85, 196 (1979) Sweden
5213	D11 Undef	T	Undef	Doyen, G. A model for sticking at metal surfaces. <i>Surface Sci.</i> 89, 230 (1979) West Germany
5214	D11 H ₂ + Mg; CO + Fe; CO + K	T	Undef	Norskov, J. K.; Lundqvist, B. I. Correlation between sticking probability and adsorbate-induced electron structure. <i>Surface Sci.</i> 89, 261 (1979) Denmark
5215	D10 Ne + V; Ar + V; Kr + V	T	Undef	Onino, G.; Madonos, A. The polarization of physisorbed inert atoms due to the short range interaction with the metal substrate. <i>Surface Sci.</i> 89, 252 (1979) United Kingdom

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5228	D02 e + Au	E	0.1-1.2 MeV	Cherns, D. Sputtering in the high-voltage electron microscope. Surface Sci. 90, 329 (1979) United Kingdom
5229	D04 e + V; e + Ni	E	0-15 eV	Komolov, S. A.; Chadderton, L. T. Total current spectroscopy. Surface Sci. 90, 389 (1979) Soviet Union
5230	D03 Review K04 Review	E T	Undef	Thomas, G. E. Bombardment-induced light emission. Surface Sci. 90, 381 (1975) The Netherlands
5231	D03 Ar ⁺ + Glass	E	29 keV	Tsong, I.-S.-T.; Yusuf, M. A. Does local thermodynamic equilibrium exist in the exciting process of sputtered atoms. Surface Sci. 90, 417 (1979) United States
5232	A03 Zn ⁺ + Ar C07 Zn ⁺ + C D03 Zn ⁺ + Zn	E	10-190 keV	Snouden, K. J.; Carter, G.; Armour, D. G.; Anderson, B.; Veje, E. A comparison of gas-phase, plasma, sputtering and beam-foil excitations. Surface Sci. 90, 429 (1979) United Kingdom
5233	D03 Undef	T	Undef	Ye, M. L. A comment on the effects of Cu α -photon and secondary ion emission during sputtering. Surface Sci. 90, 442 (1979) United States
5234	D06 H ⁺ + Pb; H ⁺ + Ni	E	3.35-10 keV	Tolk, M. M.; Tully, J. C.; Kraus, J. S.; Holland, M.; Neff, S. M. Elliptic polarization from grazing-incidence collisions of hydrogen ions on polycrystalline and single-crystal surfaces. Surface Sci. 90, 447 (1979) United States
5235	A03 Review K01 Review	E	10-10 ⁶ eV	Kempter, V. Optical emission from low-energy, gas-phase collisions. Surface Sci. 90, 461 (1979) West Germany
5236	A03 Review K01 Review	E	1-10 ⁶ keV	Schartner, K. M. Excitation in gas-phase collisions at intermediate and high velocities. Surface Sci. 90, 482 (1979) West Germany
5237	D03 Review K04 Review	E T	1-150 keV	Blaise, G.; Mourtiar, A. Experimental and theoretical approaches to the ionization process in secondary-ion emission. Surface Sci. 90, 496 (1979) France
5238	D03 Ar ⁺ + Cu; Ar ⁺ + Ni	E	2-5 keV	Lundquist, T. R. Energy dependence of the ionization probability of sputtered Cu and Ni. Surface Sci. 90, 548 (1979) United States
5239	D03 Ne ⁺ + Si; Ar ⁺ + Si; Kr ⁺ + Si; Xe ⁺ + Si	E	1.5-30 keV	Vittmaach, K. Secondary-ion emission from silicon bombarded with atomic and molecular noble-gas ions. Surface Sci. 90, 557 (1979) United States
5240	D03 Ar ⁺ + Be; D ₂ ⁺ + Be D11 O ₂ + Be	E	D03 3 keV D11 300 K	Krauss, A. R.; Gruen, D. M. Secondary-ion emission from oxygen and hydrogen-covered beryllium surfaces. I. Coverage dependence. Surface Sci. 90, 164 (1979) United States
5241	D13 Review	E	Undef	Lichtman, D. Mechanisms of desorption due to electrons or photons. Surface Sci. 90, 579 (1979) United States
5242	D03 Review	E	Undef	Williams, P. The sputtering process and sputtered ion emission. Surface Sci. 90, 588 (1979) United States
5243	D07 Ne ⁺ + Ni D08 Ne ⁺ + Ni	E	2.4-8.0 keV	Buch, T. M.; Wheatley, G. M.; Verheij, L. R. Low-energy neon-ion scattering and neutralization of first and second layers of a Ni(001) surface. Surface Sci. 90, 635 (1979) United States
5244	D07 H ⁺ + Si; He ⁺ + Si D08 H ⁺ + Si; He ⁺ + Si	E	5-15 keV	Agony, S. A.; Robinson, J. L. Energy spectra and charge fractions for keV hydrogen and helium backscattered from silicon. Surface Sci. 90, 648 (1979) Canada

REF. NO.	REACTANTS	EXP OP THECR	ENERGY RANGE	REFERENCE
5245	D02 He ⁺ + CC + Ni; He ⁺ + CO + Ni; Ar ⁺ + CO + Ni; He ⁺ + O + Ti; He ⁺ + O + Ta; He ⁺ + O + W; He ⁺ + O + Ni; He ⁺ + O + Cu; He ⁺ + O + Pd; He ⁺ + O + Pt; He ⁺ + CC + Ti D13 He ⁺ + CO + Ni; He ⁺ + CO + Ni; Ar ⁺ + CO + Ni; He ⁺ + O + Ti; He ⁺ + O + Ta; He ⁺ + O + W; He ⁺ + O + Ni; He ⁺ + O + Cu; He ⁺ + O + Pd; He ⁺ + O + Pt; He ⁺ + CC + Ti D17 He ⁺ + CO + Ni; He ⁺ + CO + Ni; Ar ⁺ + CO + Ni; He ⁺ + O + Ti; He ⁺ + O + Ta; He ⁺ + O + W; He ⁺ + O + Ni; He ⁺ + O + Cu; He ⁺ + O + Pd; He ⁺ + O + Pt; He ⁺ + CC + Ti	E	1-2 keV	Taglauer, E.; Helland, W.; MacDonald, R. J. The study of sputtering effects in oxides and metal-adsorbed-gas systems using combined analytical techniques. Surface Sci. 90, 661 (1979) United States
5246	D11 O + Cu D13 He ⁺ + O + Cu; Ar ⁺ + O + Cu	E	D11 300 K D13 1-6 keV	de Wit, L.G.J.; Bronckers, H.P.M.; Hopkens, T. M.; Fluit, J. M. Investigation of oxygen adsorption on Cu(110) by low-energy ion bombardment. Surface Sci. 90, 676 (1979) The Netherlands
5247	D13 e + TiO ₂ ; e + OH + TiO ₂	E	0-70 eV	Knotek, M. L. Characterization of hydrogen species on TiO ₂ by electron-stimulated desorption. Surface Sci. 91, L17 (1980) United States
5248	D07 Unconf	T	321 K	Doyen, G.; Grimley, T. B. A model hamiltonian for phonon energy transfer in gas-solid collisions. Surface Sci. 91, 51 (1980) West Germany
5249	D12 Unconf	T	Unconf	Kretschmann, L.; Callicott, T. A.; Arakawa, E. T. Theory of emission spectra from metal films irradiated by low energy electrons near normal incidence. Surface Sci. 91, 237 (1980) United States
5250	D12 e + Ag	E	27-1500 eV	Chu, G. M. S.; Callicott, T. A.; Kretschmann, L.; Arakawa, E. T. Radiation from silver films bombarded by low-energy electrons. Surface Sci. 91, 245 (1980) United States
5251	D10 He + C	T	Unconf	Cerius, W. E.; Cole, M. W. Interaction between a He atom and a graphite surface. Surface Sci. 91, 335 (1980) United States
5252	C08 He ⁺ + UO ₂ D07 He ⁺ + UC ₂	E	521 eV	Ellis, W. P.; Taylor, T. M. He ⁺ ion-scattering spectroscopy studies of UO ₂ (Hf) surfaces. Surface Sci. 91, 407 (1980) United States
5253	D03 Ar ⁺ + Be D09 Be ⁺ + Be	E	3 keV	Krauss, A. R.; Gruen, D. M. Secondary-ion emission from clean and oxygen-covered beryllium surfaces: II. Energy dependence. Surface Sci. 92, 14 (1980) United States
5254	D06 e + CO + Cu	T	Unconf	Perason, B.N.J. Inelastic scattering of slow electrons from adsorbed molecules. Surface Sci. 92, 265 (1980) Sweden
5255	D02 Ar ⁺ + {Ag + Au + Cu} D17 Ar ⁺ + {Ag + Au + Cu}	E	1-2 keV	Metz, G. Alloy sputtering. Surface Sci. 92, 283 (1980) Austria
5256	D09 He + W	E	30-500 eV	Gverbecch, E. G.; Hasser, B.; Tenner, A. D.; Los, J. The ionization of hyperthermal sodium atoms on W(110) as a function of temperature. Surface Sci. 92, 316 (1980) The Netherlands
5257	D04 He + Cu	E	27-100 eV	Houssel, J.; Lebail, E. Contamination of a beam of metastable helium atoms by fast neutral atoms; characteristics of the secondary emission of these atoms at low energy (100 eV) in interaction with the surface of a solid. Surface Sci. 92, 561 (1980) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5258	DC2 Ar ⁺ + [Al + Pd]; Ar ⁺ + Si; Ar ⁺ + SiO ₂ D17 Ar ⁺ + [Al + Pd]; Ar ⁺ + Si; Ar ⁺ + SiO ₂	T	1-5 keV	Choe, H. J.; Shafer, M. W. On the phenomenological model of preferred sputtering for SIMS and Auger profiling: a critical analysis. Surface Sci. 92, 601 (1980) United States
5259	DC2 O ₂ ⁺ + B; O ₂ ⁺ + C; O ₂ ⁺ + Mg; O ₂ ⁺ + Al; O ₂ ⁺ + Si; O ₂ ⁺ + Ti; O ₂ ⁺ + V; O ₂ ⁺ + Cr; O ₂ ⁺ + Mn; O ₂ ⁺ + Fe; O ₂ ⁺ + Co; O ₂ ⁺ + Cu; O ₂ ⁺ + Ni; O ₂ ⁺ + Zn; O ₂ ⁺ + Ga; O ₂ ⁺ + Ge; O ₂ ⁺ + Zr; O ₂ ⁺ + Nb; O ₂ ⁺ + Mo; O ₂ ⁺ + Ru; O ₂ ⁺ + Pd; O ₂ ⁺ + Ag; O ₂ ⁺ + Sn; O ₂ ⁺ + Sb; O ₂ ⁺ + Te; O ₂ ⁺ + Hf; O ₂ ⁺ + Ta; O ₂ ⁺ + U O ₂ ⁺ + Pt; O ₂ ⁺ + Bi; O ₂ ⁺ + U	E	5.5 keV	Rudat, M. A.; Morrison, G. H. *Erratum Energy spectra of ions sputtered from elements by O ₂ ⁺ : a comprehensive study [82, 549 (1979)]. Surface Sci. 92, 693 (1980) United States
5261	AG1 Underf	T	Underf	Gelitskii, V. M.; Nishita, E. E.; Svirnov, B. M. Theory of quasiresonant processes in the collision of atomic particles. Sov. Phys.-Usp. 21, 880 (1978) Soviet Union
5261	AG1 Underf	T	Underf	Deshov, Y. M.; Presnyakov, L. F. An asymptotic approach in the theory of atomic collisions. Sov. Phys.-Usp. 21, 881 (1978) Soviet Union
5262	A04 Review	E	0.1-100 keV	Cooks, R. G. Collision-induced dissociation of polyatomic ions. p.357 in Collision spectroscopy, R. G. Cooks, Ed. Plenum, New York, 1978. United States
5263	A06 Review	E, F	1-10 ⁶ eV	Johnson, R. E.; Bouling, J. W. Charge transfer in atomic systems. p.91 in Collision spectroscopy, R. G. Cooks, Ed. Plenum, New York, 1978. United States
5264	A05 H ⁺ + Ar; H ⁺ + Xe; H ⁺ + Kr; H ⁺ + N ₂ ; H ⁺ + O ₂ ; H ⁺ + N ₂ ; H ⁺ + NO; H ⁺ + He	E	4 keV	Appell, J. Double electron transfer and related reactions. p.227 in Collision spectroscopy, R. G. Cooks, Ed. Plenum, New York, 1978. France
5265	A03 Review A18 Review	E, F	0.05-20 keV	Kessel, Q. C.; Pollack, E.; Smith, W. W. Inelastic energy loss: newer experimental techniques and molecular orbital theory. p.147 in Collision spectroscopy, R. G. Cooks, Ed. Plenum, New York, 1978. United States
5266	A04 H ₂ ⁺ + Ar; H ₂ ⁺ + He; H ₂ ⁺ + Ne; H ₂ ⁺ + Ar; H ₂ ⁺ + N ₂ ; H ₂ ⁺ + He; HeH ⁺ + He	E, F	10 keV	Los, J.; Govers, T. P. Collision-induced dissociation of diatomic ions. p.289 in Collision spectroscopy, R. G. Cooks, Ed. Plenum, New York, 1978. The Netherlands
5267	A03 Review	E	1-200 keV	Park, J. T. Collisional excitation of simple systems. p.19 in Collision spectroscopy, R. G. Cooks, Ed. Plenum, New York, 1978. United States
5269	KC1 Review	T	10 ⁻¹⁰ eV	Child, M. S. Semiclassical effects in heavy particle collisions. p.225 in Advances in atomic and molecular physics, Vol.14, D. R. Bates and B. Bederson, Eds. Academic Press, New York, 1978. United Kingdom
5269	A01 Review A03 Review A16 Review	F	0.1-5 keV	Bobashev, S. V. Quasi-molecular interference in elastic scattering. p.341 in Advances in atomic and molecular physics, Vol.14, D. R. Bates and B. Bederson, Eds. Academic Press, New York, 1978. Soviet Union
5271	KC2 Review	F	1-10 eV	Golden, D. E. Resonances in electron atom and molecule scattering. p.1 in Advances in atomic and molecular physics, Vol.14, D. R. Bates and B. Bederson, Eds. Academic Press, New York, 1978. United States
5271	KC5 Review K02 Review	E	10 ⁻¹² 00 eV	Welford, E.; McCerthy, I. L. (e, 2e) collisions. p.127 in Advances in atomic and molecular physics, Vol.14, D. R. Bates and B. Bederson, Eds. Academic Press, New York, 1978. Australia

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5272	R01 Review R07 Review	E T	General	Bates, D. R.; Baderson, B. <i>Advances in atomic and molecular physics</i> , Vol. 13. Academic Press, New York, 1977. United Kingdom
5273	R01 Review R07 Review	T	1-10 ⁶ eV	Bernstein, R. B. <i>Atomic-molecule collision theory: a guide for the experimentalist</i> . Plenum, New York, 1979. United States
5274	E01 $e + H_2; e + H_2^+$	T	1.5-60 eV; 12-50 eV	Kukulin, V. I.; Osipov, A. P.; Chuvpilo'shik, Y. M. Calculation of the cross sections for electron-impact ionization of H_2 from the ground state and H_2^+ from the $A^2\Sigma^+(u, u)^+$ metastable state. <i>Sov. Phys.-Tech. Phys.</i> 24, 883 (1979) Soviet Union
5275	R01 $e + hv$	T		Andreev, Y. A.; Davydovskii, V. T.; Danilenko, V. B. Resonant energy transfer from electrons to a slow electromagnetic wave. <i>Sov. Phys.-Tech. Phys.</i> 24, 885 (1979) Soviet Union
5276	E03 $e + H; e + He$	T	54-680 eV	Burkova, L. A.; Ochkur, V. I. Calculations of inelastic electron scattering from atoms in the second Born approximation. <i>Sov. Phys.-JETP</i> 49, 38 (1975) Soviet Union
5277	E05 Undef	T	Undef	Amus'ya, M. Y.; Kuchiev, M. Y.; Sheinerman, S. A. Near-threshold effects in the ionization of atoms (the post-collision interaction). <i>Sov. Phys.-JETP</i> 49, 238 (1979) Soviet Union
5278	A06 Undef	T	Undef	Duman, C. L.; Men'shikov, L. I.; Salimov, B. M. Destruction of hydrogen atom by collisions with multiply charged ions. <i>Sov. Phys.-JETP</i> 49, 260 (1979) Soviet Union
5279	A07 Undef	T	Undef	Davdariani, A. Z.; Ostrovskii, V. A.; Sebyakhin, Y. N. Characteristics of electron and photon spectra associated with interaction between quasistationary terms. <i>Sov. Phys.-JETP</i> 49, 266 (1979) Soviet Union
5280	E03 $e + Mg$ E09 $e + Mg$	E	4-11 eV	Shpenik, O. B.; Zapesochnyi, I. F.; Kontrash, E. L.; Nepilov, E. I.; Romanyuk, N. I.; Scuter, V. V. Effects of negative-ion formation and post-collision interaction in collisions between magnesium atoms and electrons. <i>Sov. Phys.-JETP</i> 45, 426 (1975) Soviet Union
5281	H06 $hv + He^+$	E	1-1.4 eV	Amus'ya, M. Y.; Afrosimov, V. V.; Belik, V. P.; Bobashev, S. V.; Sheinerman, S. P.; Shnaorch, L. A. Two-step photoionization of helium via the $4p^3P_1$ state. <i>Sov. Phys.-JETP</i> 49, 429 (1979) Soviet Union
5282	H06 $hv + Sr; hv + Eu; hv + Ca$	E	9450 cm ⁻¹	Aleksakhin, I. S.; Delone, N. B.; Zapesochnyi, I. P.; Suran, V. V. Observation and study of two-electron multiphoton ionization of atoms. <i>Sov. Phys.-JETP</i> 45, 447 (1979) Soviet Union
5283	A16 $NO^- + CC_2$	T	230-400 Å	Aleksandrov, M. L. Detachment of a weakly bound electron from a negative ion in a collision with an excited molecule. <i>Sov. Phys.-JETP</i> 49, 627 (1979) Soviet Union
5284	E03 Undef	T	Undef	Lavrov, B. P.; Ostrovskii, V. A.; Ustinov, V. I. Rotational transitions in the excitation of electronic states of molecules by electron impact. <i>Sov. Phys.-JETP</i> 49, 772 (1979) Soviet Union
5285	A06 Undef	T	Undef	Chibisov, N. I. Charge exchange of atoms on multiply charged ions. <i>Sov. Phys.-JETP</i> 49, 562 (1979) Soviet Union
5286	H04 Undef H06 Undef	T	Undef	Andryushin, A. I.; Kazakov, A. E.; Fedorov, M. V. Threshold features of the excitation and ionization of atoms by high-intensity electromagnetic radiation. <i>Sov. Phys.-JETP</i> 49, 986 (1979) Soviet Union

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5287	A06 O ⁻ + H ⁺ + hν; K ⁺ + Na + hν; K ⁺ + Li + hν; Cu ⁺ + Na + hν; Cu ⁺ + Li + hν B07 O ⁻ + H ⁺ + hν; K ⁺ + Na + hν; K ⁺ + Li + hν; Cu ⁺ + Na + hν; Cu ⁺ + Li + hν	T	A06 Undef	Andreev, E. A.; Prostov, A. S. Nonadiabatic electron transitions during collisions between atoms and ions in an electromagnetic field. Sov. Phys.-JETP 49, 998 (1979) Soviet Union
5288	E04 e + H ₂	T	3-5 eV	Pozdnev, S. A. The adiabatic approximation in the problem of the collision of a particle with a bound two-particle system in the case of a separable interaction. Sov. Phys.-JETP 50, 18 (1979) Soviet Union
5289	A07 He ⁺ + H ₂	E	77-400 K	Klement'ev, G. V.; Mel'nikov, V. D.; Kartashkin, V. A. Interaction potential of He(2 ³ S ₁) atoms with H ₂ molecules at thermal energies. Sov. Phys.-JETP 50, 25 (1979) Soviet Union
5290	B07 H + H + hν	T		Agre, M. Y.; Rapoport, L. P. Nonresonant transitions and ionization of atoms in atom collisions in a laser field. Sov. Phys.-JETP 50, 37 (1979) Soviet Union
5291	B01 Undef B07 Undef	T		Gastromkhova, I. I.; Shlyapnikov, G. V. Radiative transitions in collisions of atoms and the photodissociation of vibrationally excited molecules. Sov. Phys.-JETP 50, 245 (1975) Soviet Union
5292	A06 H ₂ ⁺ + H ₂ ; H ₂ ⁺ + H ₂ ; C ₂ ⁺ + O ₂ ; CO ⁺ + CO; NO ⁺ + NC	T	0.1-10000 eV; 0.1-1000 eV	Evseev, A. V.; Radtsig, A. A.; Shtirnev, B. N. Resonance charge exchange of diatomic molecular ions on molecules. Sov. Phys.-JETP 50, 243 (1975) Soviet Union
5293	A01 Undef	T	Undef	Okunevich, A. I. Dependence of the total inelastic collision cross section on the orientation and direction of the relative motion of the colliding atomic particles. Sov. Phys.-JETP 50, 290 (1979) Soviet Union
5294	E03 e + CH ⁺	T	3.004-5 eV	Strahlov, M. L. Vibrational-rotational excitation of polar molecular ions by charged particles. Sov. Phys.-JETP 50, 426 (1979) Soviet Union
5295	A06 Undef	T	Undef	Dusen, E. L.; Men'shikov, L. I. Exchange interaction of an atom with a multiply charged ion. Sov. Phys.-JETP 50, 433 (1979) Soviet Union
5296	A14 Undef	T	Undef	Bogdanov, A. V.; Dubrovskii, G. V.; Fischer-Mjølner, I. Quasiclassical theory of direct chemical reactions in rapid collisions. Sov. Phys.-JETP 50, 440 (1975) Soviet Union
5297	A13 O ⁺ + H ₂ A17 O ⁺ + H ₂	T	Jundef	Gerard-Ain, M. Comment on potential energy surface of H ₂ O ⁺ : linear approach. J. Phys. B 13, L131 (1980) France
5298	M06 hν + Ar; hν + Kr	E	12-41 eV	Heinzmann, U.; Schonhense, G.; Kessler, J. Wavelength dependence of polarization of photoelectrons ejected by unpolarized VUV radiation from argon and krypton atoms. J. Phys. B 13, L153 (1980) West Germany
5299	M06 Undef	T	Undef	Dixit, S. N.; Georges, A. T.; Lambropoulos, P.; Zoller, P. Comments on the short-time behaviour of multiphoton ionisation. J. Phys. B 13, L157 (1980) United States
5300	A04 Ar ²⁺ + H ₂ ; Ar ¹⁺ + H ₂ ; Ar ³⁺ + H ₂ ; Ar ²⁺ + H ₂ ; Ar ¹⁺ + H ₂ ; Ar ³⁺ + H ₂ ; Kr ²⁺ + H ₂ ; Kr ¹⁺ + H ₂ ; Kr ³⁺ + H ₂ ; Kr ²⁺ + H ₂ ; Kr ¹⁺ + H ₂	E	1-10 keV	Huber, B. A.; Kahlert, M. J. Electron transfer from molecular hydrogen to multiply charged Ar and Kr ions. J. Phys. B 13, L159 (1980) West Germany
5301	A03 Li + He M03 Li + W	E	A03 1000 eV D03 500-1000 eV	Hermann, J.; Manner, B.; Reisecker, E.; Zehle, L.; Kemper, V. Application of position-sensitive particle detection techniques to photon-atom coincidence experiments. J. Phys. B 13, L165 (1980) West Germany

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5302	A01 Under	T	Under	Ponomarev, L. I.; Vinitsky, S. I.; Vukajlovic, F. A. Adiabatic representation in the three-body problem with the Coulomb interaction: II. The effective two-level approximation. <i>J. Phys. B</i> 13, 843 (1980) Soviet Union
5303	E05 $e + Na^+$	T	1.4-5.7 Ry	Eisner, W.; Moeres, D. L.; Petrin, D. Autoionizing states $Za2p^2ns$, np of the Na^+ ion. <i>J. Phys. B</i> 13, 891 (1980) United Kingdom
5304	E06 $e + Mo^{2+}; e + Mo^{3+}; e + Mo^{4+}; e + Mo^{5+}; e + Mo^{6+}$ H06 $h\nu + Mo^{2+}; h\nu + Mo^{3+}; h\nu + Mo^{4+}; h\nu + Mo^{5+}; h\nu + Mo^{6+}$	T	6.33-10 keV	Berfield, W. D. Photoionization cross sections and radiative recombination rate coefficients for molybdenum ions. <i>J. Phys. B</i> 13, 931 (1980) United States
5305	H06 $h\nu + CH_4$	E	2-30 eV	Marr, G. V.; Holmes, R. N. The angular distribution of photoelectrons from CH_4 as a function of photon energy from near threshold to 33 eV. <i>J. Phys. B</i> 13, 939 (1980) United Kingdom
5306	H06 $h\nu + CO; h\nu + O_2; h\nu + N_2$	E	15-25 eV	Holmes, R. N.; Marr, G. V. The angular distribution of photoelectrons from N_2 , O_2 and CO as a function of photon energy. <i>J. Phys. B</i> 13, 945 (1980) United Kingdom
5307	A03 $H + He; H + Ne; H + Ar; H + Kr; H + N_2; H + B_2; He + He; He + Ne; He + Ar; He + Kr; He + N_2; He + B_2$ A11 $H + He; H + Ne; H + Ar; H + Kr; H + N_2; H + B_2; He + He; He + Ne; He + Ar; He + Kr; He + N_2; He + B_2$	E	5-26 keV	Hill, J.; Geddes, J.; Glibody, M. L. Excitation of fast metastable hydrogen atoms to the $n = 3$ state in passage through gases. <i>J. Phys. B</i> 13, 951 (1980) United Kingdom
5308	A07 Under	T	Under	Berezko, E. G.; Kabachnik, N. M. Angular distribution of radiation following atomic inner-shell ionization by spin-polarised protons. <i>J. Phys. E</i> 13, 555 (1980) Soviet Union
5309	A03 $H^+ + Au; H^+ + Bi; H^+ + U$	E	0.3-1.8 MeV	Bhattacharya, D.; Bhattacharjee, S. K.; Mitra, S. K. L x-ray production cross sections of Au, Bi and U by protons of energy 0.3 to 1.8 MeV. <i>J. Phys. E</i> 13, 567 (1980) India
5310	E03 $e + He$	T	200-500 eV	Gupta, G. P.; Mathur, K. C. Electron impact excitation of n^2 states ($n = 3, 4$) of helium at intermediate energies. <i>J. Phys. B</i> 13, 581 (1980) India
5311	E03 $e + Ar; e + Kr; e + Xe$ E11 $e + Ar; e + Kr; e + Xe$ E17 $e + Ar; e + Kr; e + Xe$	E	3-15 keV	Aydinli, M.; Hippler, R.; McGregor, I.; Kleinpoppen, H. Angular distribution of x-radiation following electron bombardment of free atoms. <i>J. Phys. B</i> 13, 989 (1980) United Kingdom
5312	E03 $e + N_2; e + NO; e + N_2O$	E	1-5 keV	Tronc, M.; King, G. C.; Read, F. H. Nitrogen K-shell excitation in N_2 , NO and N_2O by high-resolution electron energy-loss spectroscopy. <i>J. Phys. B</i> 13, 559 (1980) United Kingdom
5313	E03 $e + C_2H_2; e + C_2D_2$	E	5-100 eV	Wilde, D. G.; Comer, J. Rydberg states of C_2H_2 and C_2D_2 : assignments using the technique of low-energy electron energy-loss spectroscopy. <i>J. Phys. B</i> 13, 1049 (1980) United Kingdom
5314	B07 $h\nu + Xe$ H02 $h\nu + Xe$	E	H12 1044-1020 Å	Gale, B. L.; Cooper, J. G.; Linder, D. L.; Mahmen, I.; Solomon, E. B. Stark effect on autoionising resonances in the rare gases. <i>J. Phys. B</i> 13, 1175 (1980) United States
5315	H06 $h\nu + Al; h\nu + Ti$	T	Under	Cherepanov, N. A. On the identification of autoionisation resonances. <i>J. Phys. B</i> 13, 1181 (1980) Soviet Union

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5330	A03 $O^+ + Kr; O^+ + Xe$ A11 $O^+ + Kr; O^+ + Xe$	E	0.5-10 eV	Kiefl, M. U.; Fricke, J. De-excitation of $O(^1S)$ metastables in inelastic collisions with noble gases. <i>J. Phys. B</i> 13, 1185 (1980) West Germany
5331	A06 $H^+ + H$	T	0.5-1.5 MeV	Miraglia, J. E.; Ponce, V. M. The emission of energetic electrons from atoms by fast ions considered as a charge-transfer process. <i>J. Phys. B</i> 13, 1195 (1980) Argentina
5332	C06 Under C06 Under	T	Under	Draper, J. E. Selection of charge-changing cross sections to relative population of charge states for fast heavy ions. <i>J. Phys. B</i> 13, 1269 (1980) United Kingdom
5333	E03 $e + He$ E05 $e + He$	E	56-64 eV	Defrance, A. Influence of the autoionising states on the linear polarisation of helium lines excited by electrons with energy between 56 and 64 eV. <i>J. Phys. B</i> 13, 1229 (1980) France
5334	E05 $e + Ne; e + Ne; e + Ar; e + Kr; e + Xe$	E	3.5-5 keV	Nagy, P.; Shullertz, A.; Schmidt, L. Absolute ionisation cross sections for electron impact in rare gases. <i>J. Phys. B</i> 13, 1249 (1980) West Germany
5335	E03 $e + HF$ E17 $e + HF$	T	0.46-2.0 eV	Rudge, M.R.M. Electron scattering by the hydrogen-halides. I. $e-HF$ collisions. <i>J. Phys. B</i> 13, 1269 (1980) United Kingdom
5336	E12 $e^+ + Kr; e^+ + Xe$	E	0-12 eV	McEachran, R. P.; Stauffer, A. O.; Campbell, L.E.M. Positron scattering from krypton and xenon. <i>J. Phys. B</i> 13, 1281 (1980) Canada
5337	H06 $h\nu + CO$	T	0-46 eV	Alchlie, B.; Tanabe, B. P. Photoionisation of CO. <i>J. Phys. B</i> 13, 1225 (1980) United States
5338	H06 $h\nu + CO_2$	T	0.1-30 Ry	Swanson, J. R.; Dill, D.; Dehaer, J. L. Nuclear motion effects in the photoionisation of CO_2 . <i>J. Phys. B</i> 13, 1231 (1980) United States
5339	H02 $h\nu + U$	E	76-150 eV	Connerade, J. P.; Mansfield, M.W.D.; Cuhler, R.; Pantelouris, R. Experimental evidence for the existence of a 5, spion f resonantly localised continuum state in uranium. <i>J. Phys. B</i> 13, 1235 (1980) France
5340	E02 $e + He; e + Ar$	E	2-50 eV	Charlton, M.; Griffith, T. C.; Hayland, G. R.; Towner, T. R. Total scattering cross sections for low-energy electrons in helium and argon. <i>J. Phys. B</i> 13, 1235 (1980) United Kingdom
5341	H02 $h\nu + He^+$	E	5876 Å	Burgess, D. D.; St Q Playford, C. Observations of the collision-induced He I 2^1P-3^1D intercombination line in a laboratory plasma. <i>J. Phys. B</i> 13, 1245 (1980) United Kingdom
5342	H02 $n h\nu + H^+$ H11 $n h\nu + H^+$	T	10000-6000 Å	Gontier, Y.; Poirier, R.; Trahin, P. Multiphoton absorptions above the ionisation threshold. <i>J. Phys. B</i> 13, 1261 (1980) France
5343	A03 $Li^+ + He$ A07 $Li^+ + He$	E	15-70 keV	Blagaard, P.; Olsen, J. O.; Andersen, N. Electron spectroscopy of $Li^{2+}-He$ collisions: velocity dependence of He 2s and 2p vacancy production. <i>J. Phys. B</i> 13, 1403 (1980) Denmark
5344	A03 $Na^+ + C_2H_2; Na^+ + CH_3CHO; Na^+ + C_6H_{10}; K^+ + C_2H_2; K^+ + CH_3CHO; K^+ + C_6H_{10}$ A04 $Na^+ + C_2H_2; Na^+ + CH_3CHO; Na^+ + C_6H_{10}; K^+ + C_2H_2; K^+ + CH_3CHO; K^+ + C_6H_{10}$	E	21-42 keV	Snowdon, E. J.; MacDonald, R. J.; Vajda, E. Projectile, parent molecule and collision environment dependence of the dissociative excitation of $CH_3^+ X^+ X^+$. <i>J. Phys. B</i> 13, 1415 (1980) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5345	A03 H ⁺ + SiC ₂ A07 H ⁺ + SiC ₂	E	300-800 keV	Benke, O. Energy dependence of R(sub beta)/R(sub alpha) intensity ratio of SiO ₂ from proton induced ionisation. J. Phys. B 13, 1425 (1980) Austria
5346	A06 K ⁺ + K	E	thermal	Agagu, A.; Oluwalu, A. F. K-K ⁺ charge-exchange cross section. J. Phys. B 13, 1429 (1980) Nigeria
5347	A03 Ar ¹⁶⁺ + H ₂ A04 Ar ¹⁶⁺ + H ₂ A06 Ar ¹⁶⁺ + H ₂ A07 Ar ¹⁶⁺ + H ₂	E	230-1200 keV	El-Sherbini, F. M.; Saidp, A.; Diekmann, E.; de Moor, F. J. Excitation and ionisation resulting from electron capture in Ar ¹⁶⁺ + H ₂ collisions at ion projectile energies of 200-1200 keV. J. Phys. B 13, 1433 (1980) The Netherlands
5348	E02 e + H ⁺ E17 e + H ⁺	T	250-400 eV	Joachim, C. J.; Winters, K. M. An optical model approach to the elastic scattering of electrons by H(2s). J. Phys. B 13, 1451 (1980) Belgium
5349	E02 e + H E03 e + H E17 e + H	T	13.6-300 eV	Schaub-Shaver, J. A.; Stauffer, A. D. The variable-charge Coulomb-projected Born approximation. J. Phys. B 13, 1457 (1980) Canada
5350	E03 e + O ¹⁶⁺ ; e + Fe ²²⁺ ; e + C ¹²⁺ E05 e + O ¹⁶⁺ ; e + Fe ²²⁺ ; e + C ¹²⁺	E	7.5-50 eV	Cowan, R. D. Resonant-scattering (autoionisation) contributions to excitation rates in O ¹⁶⁺ and similar ions. J. Phys. B 13, 1471 (1980) United States
5351	E02 e + H ₂ E03 e + H ₂	E	0.02-2 eV	Farch, J.; Balch, W.; Schroder, R. Total cross section measurements for electron scattering from molecular hydrogen at very low energies. J. Phys. B 13, 1481 (1980) West Germany
5352	G05 e + H ₂ ; e + CO ₂ ; e + He; e + Ar	E	77-297 K	O'Malley, T. F. Multiple scattering effect on electron mobilities in dense gases. J. Phys. B 13, 1491 (1980) Australia
5353	D15 n + Pt	E	130 keV	Plant, C.S.D.; Aspeling, J. The effect of Au addition on the recovery of Pt after thermal-neutron irradiation. Radiat. Eff. 45, 127 (1980) South Africa
5354	A02 He ⁺ + Al; He ⁺ + Cu; He ⁺ + Ag; He ⁺ + Au A18 He ⁺ + Al; He ⁺ + Cu; He ⁺ + Ag; He ⁺ + Au	E	230-2000 keV	Hautala, M.; Luomaajarvi, M. Correction of the Rutherford scattering cross section in the backscattering analysis. Radiat. Eff. 45, 139 (1980) Finland
5355	D15 Undef	T	Undef	Krishan, K. Exact solutions of models for continuous and pulsed irradiation and implications for stability and fluctuations. Radiat. Eff. 45, 169 (1980) India
5356	D15 n + SS	E	14 MeV	Vandervoort, R. R.; Raymond, E. L.; Echer, C. J. High-energy neutron irradiation effects on the tensile properties and microstructure of 316 stainless steel. Radiat. Eff. 45, 191 (1980) United States
5357	D02 Ne ⁺ + Na; Ne ⁺ + Sn; Ar ⁺ + Na; Ar ⁺ + Sn	E	23 keV	Bruchmüller, R.; Musinsky, M.; Blus, P. Influence of thermal and collisional effects on the sputtering of sodium and samarium targets. Radiat. Eff. 45, 195 (1980) Austria
5358	C02 He ⁺ + U; He ⁺ + U; Ar ⁺ + U; Kr ⁺ + U D07 He ⁺ + U; He ⁺ + U; Ar ⁺ + U; Kr ⁺ + U	E	6 keV	O'Connor, D. J.; MacDonald, R. J. Low energy ion scattering from a W(110) surface. Radiat. Eff. 45, 205 (1980) Australia
5359	D02 Undef	T	Undef	Vasilu, F. Oblique incidence sputtering of triangular microprofiles. Radiat. Eff. 45, 213 (1980) Romania

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5360	D15 $n + Ti$	T	1 MeV	Higashiguchi, Y.; Kayano, M. Twinning deformation at room temperature of fast-neutron irradiated titanium. Radiat. Eff. 45, 225 (1980) Japan
5361	D03 $Kr^+ + LiF; Kr^+ + NaCl$	E, T	12 keV	Dzioba, S.; Auciello, O.; Kelly, R. On the kinetic energies of sputtered excited particles: I. Atoms sputtered from Li, LiF, and NaCl. Radiat. Eff. 45, 235 (1980) Canada
5362	M10 $h\nu + CO + Ar; h\nu + CO + N_2 + Ar$	E	300 K	Rich, J. W.; Bergman, R. C. C_2 and CH formation by optical pumping of CO/Ar and $CO/N_2/Ar$ mixtures at room temperature. Chem. Phys. 44, 52 (1979) United States
5363	A06 $Ar^+ + H_2O$ A14 $Ar^+ + H_2O$	E	330 K	Deral, R.; Faniestein, S.; Gerard-Alm, M.; Govers, L. R.; Marx, R.; Mauclair, G.; Profoss, C. 2.; Sourisseau, C. Thermal-energy charge transfer of Ar^+ with H_2O : internal and kinetic energy of the product H_2O^+ . Chem. Phys. 44, 65 (1975) France
5364	A14 $O + CS; O + CS_2; O + OCS$	E	298 K	Hsu, D.S.-Y.; Shaub, W. W.; Buras, I. L.; Lin, M. C. Dynamics of reactions of $O(^4P)$ atoms with CS , CS_2 , and OCS . Chem. Phys. 44, 143 (1975) United States
5365	A10 $CO^+ + CC; CO^+ + Ar$	T	133-500 K	DePrieto, A. E.; Rabitz, M. A scaling theoretical analysis of vibrational relaxation experiments: rotational effects and long-range collisions. Chem. Phys. 44, 171 (1979) United States
5366	A05 $Hg + F_2; Ca + F_2; Sr + F_2; Ba + F_2$	E	300 K	Engelke, F. Crossed-beam chemiluminescence. II. Kinetics and mechanisms for reactions of group I _A metals in ground and metastable states with fluorine. Chem. Phys. 44, 213 (1979) West Germany
5367	E04 $e + HCl$	E	25-300 eV	Higo, M.; Ogawa, T. Translational energy distribution of the excited hydrogen atoms produced by controlled electron impact on HCl. Chem. Phys. 44, 279 (1975) Japan
5368	M08 $h\nu + SO$	E	260 nm	Clyne, M.A.A.; McDermid, I. S. $A^2\Sigma^+(g)$ and $B^2\Pi^-$ excited states of the SO radical. I. Laser-induced fluorescence study of the A-X system; excitation spectra and lifetimes. J. Chem. Soc., Faraday Trans., II 75, 905 (1979) United Kingdom
5369	M06 $h\nu + LiCl; h\nu + [LiCl]_2; h\nu + LiBr;$ $h\nu + [LiBr]_2; h\nu + LiI; h\nu + [LiI]_2$	E	21.5 eV	Potts, A. W.; Lee, E.P.F. Photoelectron spectra and electronic structure of lithium halide monomers and dimers. J. Chem. Soc., Faraday Trans., II 75, 941 (1979) United Kingdom
5370	A11 $HBr^+ + Br; DBr^+ + Br; HCl^+ + Br$	E	295 K	Fernando, R. P.; Smith, I.W.M. Relaxation of $HBr(v=1)$, $DBr(v=1)$ and $HCl(v=1)$ by bromine atoms. J. Chem. Soc., Faraday Trans., II 75, 1064 (1979) United Kingdom
5371	M10 $h\nu + H_2S$	E	147 nm	Wojciechowski, K.; Baj, M.; Forys, M. Vacuum ultraviolet photolysis of hydrogen sulphide. J. Chem. Soc., Faraday Trans., II 75, 1065 (1979) Poland
5372	A10 $Cl_2 + Cl_2$	E	300 K	Clyne, M.A.A.; McDermid, I. S. Laser-induced fluorescence studies: the B-X transition of Cl_2 ; III. Collisional energy transfer rates in the $B^2\Sigma^+(g)$ state of Cl_2 . J. Chem. Soc., Faraday Trans., II 75, 1313 (1979) United Kingdom
5373	A14 $S + O_2; S + NO_2$	E	296-410 K	Clyne, M.A.A.; Whitefield, P. D. Atomic resonance fluorescence for rate constants of rapid bimolecular reactions: VII. Sulphur atom reactions: $S + C_2 + SC + O$ and $S + NO_2 + SO + NO$ from 250 to 410 K. J. Chem. Soc., Faraday Trans., II 75, 1327 (1979) United Kingdom
5374	A11 $I^+ + HCl$	E	200-400 K	Potakis, C.; Donovan, R. J. Temperature dependence of the quenching of $I(5d_{5/2})$ by HCl. J. Chem. Soc., Faraday Trans., II 75, 1062 (1975) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5375	A02 He + He; He + Ne; He + Ar; He + Kr; He + Xe; He + Na; He + Ba; He + Ar; He + Kr; He + Xe; Ar + Na; Ar + Ne; Ar + Ar; Ar + Kr; Ar + Xe; Kr + Na; Kr + Na; Kr + Ar; Kr + Kr; Kr + Xe A17 He + He; He + Na; He + Ar; He + Kr; He + Xe; He + Na; He + Ba; He + Ar; He + Kr; He + Xe; Ar + Na; Ar + Ne; Ar + Ar; Ar + Kr; Ar + Xe; Kr + Na; Kr + Na; Kr + Ar; Kr + Kr; Kr + Xe	E T	384-1759 M/S	van den Biesen, J.J.H.; van der Poijdenberg, C.J.H. An analysis of available absolute total cross section data for noble gas systems. <i>Physica A</i> 100, 632 (1980) The Netherlands
5376	D08 Ar ²⁺ + Cu	E	10 keV	Luitjens, S. B.; Aigra, A. J.; Sourmeljer, E.P.T.N.; Boers, A. L. The measurements of energy spectra of neutral particles in low energy ion scattering. Apparatus and experiments. <i>Ann. Phys. (Germany)</i> 21, 205 (1980) The Netherlands
5377	D02 H ⁺ + Ni; H ⁺ + W; Na ⁺ + Ni; Na ⁺ + W	E	1-4 keV	Bay, M. L.; Bohdansky, J.; Mofer, H. G.; Both, J. Angular distribution and differential sputtering yields for low-energy light-ion irradiation of polycrystalline nickel and tungsten. <i>Ann. Phys. (Germany)</i> 21, 327 (1980) West Germany
5378	A03 Ar ²⁺ + Na A06 Ar ²⁺ + Na	E	0.2-12 keV	Natsumoto, A.; Tsurubuchi, S.; Iwai, T.; Ohtani, S.; Ohno, K.; Kaneko, Y. Single-electron capture into Ar ²⁺ excited states in Ar ²⁺ + Na collisions below 12 keV: I. Absolute measurement of emission cross-sections. <i>J. Phys. Soc., Jap.</i> 48, 367 (1980) Japan
5379	A03 Ar ²⁺ + Na A06 Ar ²⁺ + Na	E	4-8 keV	Natsumoto, A.; Tsurubuchi, S.; Iwai, T.; Ohtani, S.; Ohno, K.; Kaneko, Y. Single-electron capture into Ar ²⁺ excited states in Ar ²⁺ + Na collisions below 12 keV: II. Relative population distribution in Ar ²⁺ excited states. <i>J. Phys. Soc., Jap.</i> 48, 875 (1980) Japan
5383	A06 He ⁺ + H ₂ ; He ⁺ + He; He ⁺ + H ₂ ; He ⁺ + O ₂ ; He ⁺ + CO ₂ ; He ⁺ + CH ₄ ; He ⁺ + C ₂ H ₆ ; He ⁺ + C ₃ H ₈ ; He ²⁺ + H ₂ ; He ²⁺ + Na; He ²⁺ + He; He ²⁺ + H ₂ ; He ²⁺ + O ₂ ; He ²⁺ + CO ₂ ; He ²⁺ + CH ₄ ; He ²⁺ + C ₂ H ₆ ; He ²⁺ + C ₃ H ₈	E	0.7-2.0 MeV	Itoh, A.; Asari, M.; Fukuzawa, F. Charge-changing collisions of 0.7-2.0 MeV helium beam in various gases: I. Electron capture. <i>J. Phys. Soc., Jap.</i> 48, 943 (1980) Japan
5381	A06 He ²⁺ + He ⁺	T	17-10000 eV	Duman, E. L.; Evseev, A. V. Charge exchange with allowance for Coulomb scattering of colliding ions. <i>Sov. Phys.-Doklady</i> 24, 754 (1979) Soviet Union
5382	X01 Undef	E	Undef	Leonov, V. B. New methods in molecular beam studies. <i>Sov. Phys.-Usp.</i> 22, 109 (1979) Soviet Union
5383	E11 e + Au	E	127.75 keV	Ashlig, A. The production of roentgen-bremsstrahlung by transversely polarized electrons. <i>Z. Phys. A</i> 294, 291 (1979) West Germany
5384	C02 He ²⁺ + Si C05 He ²⁺ + Si	E	Undef	Dopfelde, D.; Rosendahl, E. W.; Potholke, J.; Calculation of energy-loss and multiple-scattering of non-channeled α -particles in Si-single-crystals. <i>Z. Phys. A</i> 294, 309 (1979) West Germany
5385	A07 F ⁺ + Si; F ⁺ + S; F ⁺ + Ar; F ⁺ + Kr; F ²⁺ + Si; F ²⁺ + S; F ²⁺ + Ar; F ²⁺ + Kr; F ³⁺ + Si; F ³⁺ + S; F ³⁺ + Ar; F ³⁺ + Kr; F ⁴⁺ + Si; F ⁴⁺ + S; F ⁴⁺ + Ar; F ⁴⁺ + Kr; F ⁵⁺ + Si; F ⁵⁺ + S; F ⁵⁺ + Ar; F ⁵⁺ + Kr; F ⁶⁺ + Si; F ⁶⁺ + S; F ⁶⁺ + Ar; F ⁶⁺ + Kr; F ⁷⁺ + Si; F ⁷⁺ + S; F ⁷⁺ + Ar; F ⁷⁺ + Kr; F ⁸⁺ + Si; F ⁸⁺ + S; F ⁸⁺ + Ar; F ⁸⁺ + Kr	E	1-25 MeV	Presser, G.; Scherer, E.; Stahler, J. Inner-shell ionization created by fluorine ions in nearly symmetric collisions. <i>Z. Phys. A</i> 295, 27 (1980) West Germany
5386	D02 D ⁺ + SS D07 D ⁺ + SS D16 D ⁺ + SS	E	0.02-1.0 keV	Thomas, E. W. Retention and re-emission of 0.128-1-keV deuterium in stainless steel. <i>J. Appl. Phys.</i> 51, 1170 (1980) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5387	C84 H + Au; He + Au D87 H + Au; He + Au D16 H + Au; He + Au	T	0.5-10.0 keV	Eckstein, W.; Verbeek, H.; Bierbach, J. P. Computer simulation of the backscattering and implantation of hydrogen and helium. <i>J. Appl. Phys.</i> 51, 1194 (1980) West Germany
5388	C82 e + Ag C84 e + Ag H86 hv + Ag	T	10-10 ⁵ eV	Lin, C. L.; Strickland, D. J. Photoionization cross sections, electron-impact inverse mean free paths, and stopping powers for each subshell of silver. <i>J. Appl. Phys.</i> 51, 1286 (1980) United States
5389	E83 e + Ti ¹⁰⁺ ; e + Ti ¹⁰⁺ ; e + Ti ¹⁷⁺ ; e + Ti ¹⁰⁺ ; e + Ti ¹⁰⁺ ; e + Ti ¹⁰⁺ ; e + Ti ¹⁰⁺	T	4-25 Ry	Bhatia, A. K.; Feldman, U.; Deschek, G. A. Atomic data and level populations of highly ionized Ti for tokamak plasmas. <i>J. Appl. Phys.</i> 51, 1464 (1980) United States
5390	D14 Ne ⁺ + Be; Ne ⁺ + Cu; Ne ⁺ + Nb	E	23 keV	Terreault, B.; Boss, G.; St.-Jacques, R. G.; Veilleux, G. Evidence that helium irradiation blisters contain high-pressure gas. <i>J. Appl. Phys.</i> 51, 1491 (1980) Canada
5391	D87 H ⁺ + Au; He ⁺ + Au	E	5-16 keV	Verbeek, H.; Eckstein, W.; Bhattacharya, R. S. Angular and energy distributions of H and He atoms backscattered from gold. <i>J. Appl. Phys.</i> 51, 1783 (1980) West Germany
5392	G86 Undef	E	1 eV	Sennhauser, E. S.; Armstrong, D. A. Ion mobilities and collision frequencies in gaseous C ₂ Cl ₂ , HCl, HBr, H ₂ S, NO, and SF ₆ : effects of polarity of the gas molecules. <i>Can. J. Chem.</i> 58, 231 (1980) Canada
5393	H82 hv + Ne + Kr; hv + Ar + Kr; hv + Ar + Xe; hv + Kr + Xe	E	2.3 cm ⁻¹	Dagg, I. R.; Leckie, W. D.; Read, L. P. A. Collision-induced microwave absorption in gaseous mixtures of various rare gases at 2.3 cm ⁻¹ . <i>Can. J. Phys.</i> 58, 633 (1980) Canada
5394	H81 Review K83 Review	E T	Undef	Harrison, R. G.; Butcher, S. R. Multiple photon infrared processes in polyatomic molecules. <i>Contemp. Phys.</i> 21, 19 (1980) United Kingdom
5395	E89 e + NF ₃ + N ₂ ; e + NF ₃ + Ne; e + NF ₃ + Ar	E	3.71-20 eV	Lakdawala, V. K.; Moruzzi, J. L. Measurements of attachment coefficients in NF ₃ -nitrogen and NF ₃ -rare gas mixtures using swarm techniques. <i>J. Phys. D</i> 13, 377 (1980) United Kingdom
5396	G88 e + Ne	T	141-1130 Td	Makabe, T.; Mori, T. Theoretical analysis of the electron energy distribution functions in a weakly ionized gas under a relatively high E/N. <i>J. Phys. D</i> 13, 327 (1980) Japan
5397	G83 Undef	T	Undef	Martin, N.-L.S.; Edgley, P. D. Diffusion theory and Monte Carlo calculations of electron transport: dependence on the initial angular distribution of injected electrons. <i>J. Phys. D</i> 13, 397 (1980) United Kingdom
5398	D84 e + Cu; e + Au	T	0.5-1.0 keV	Bindi, R.; Lanteri, M.; Rostaing, F. Application de l'équation de Boltzmann à l'émission électronique secondaire, par réflexion, du cuivre et de l'or. <i>J. Phys. D</i> 13, 461 (1980) France
5399	E85 e + Al; e + Si E15 e + Al; e + Si	E	80 keV	Misra, M.; Egerton, R. F. L-shell ionization of aluminium and silicon by 80 keV electrons. <i>J. Phys. D</i> 13, L71 (1980) Canada
5400	D14 D ₁ ⁺ + Ni; D ₂ ⁺ + SS; He ⁺ + Ni; He ⁺ + SS; Ni ¹⁰⁺ + Ni; Ni ¹⁰⁺ + SS D15 D ₁ ⁺ + Ni; D ₂ ⁺ + SS; He ⁺ + Ni; He ⁺ + SS; Ni ¹⁰⁺ + Ni; Ni ¹⁰⁺ + SS D16 D ₁ ⁺ + Ni; D ₂ ⁺ + SS; He ⁺ + Ni; He ⁺ + SS; Ni ¹⁰⁺ + Ni; Ni ¹⁰⁺ + SS	T	0.3-4.0 MeV	Singh, S. P.; Shan, C.; Chaturvedi, S. N.; Math, M. Aluminized beryll as Si(Li) detector window for x-ray fluorescence spectrometer. <i>Nucl. Instrum. Methods</i> 167, 233 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5401	D02 Ca ⁺ + C; Ca ⁺ + B; Ca ⁺ + Be; Ca ⁺ + Si; Ca ⁺ + Ge; Ca ⁺ + Al; Ca ⁺ + Ni; Ca ⁺ + Fe; Ca ⁺ + U; Ca ⁺ + Ta; Ca ⁺ + Cu; Ca ⁺ + Mg; Ca ⁺ + Pd; Ca ⁺ + Pt; Ca ⁺ + V; Ca ⁺ + Ag; Ca ⁺ + Sm; Ca ⁺ + Au; Ca ⁺ + Zn; Ca ⁺ + Pb; Ca ⁺ + Li; Ca ⁺ + Ca; Ca ⁺ + Ne D03 Ca ⁺ + C; Ca ⁺ + B; Ca ⁺ + Be; Ca ⁺ + Si; Ca ⁺ + Ge; Ca ⁺ + Al; Ca ⁺ + Ni; Ca ⁺ + Fe; Ca ⁺ + U; Ca ⁺ + Ta; Ca ⁺ + Cu; Ca ⁺ + Mg; Ca ⁺ + Pd; Ca ⁺ + Pt; Ca ⁺ + V; Ca ⁺ + Ag; Ca ⁺ + Sm; Ca ⁺ + Au; Ca ⁺ + Zn; Ca ⁺ + Pb; Ca ⁺ + Li; Ca ⁺ + Ca; Ca ⁺ + Ne	T	0-100 keV	Lukner, C. Mechanisms for the production of negative ions in sputtering sources. Nucl. Instrum. Methods 167, 249 (1980) West Germany
5402	C02 Review C05 Review	E T	50-2500 keV	Besenbacher, F.; Andersen, J. U.; Scaderup, E. Straggling in energy loss of energetic hydrogen and helium ions. Nucl. Instrum. Methods 168, 1 (1980) Denmark
5403	C02 Review	T	1-100 MeV/amu	Ziegler, J. F. The stopping of energetic ions in solids. Nucl. Instrum. Methods 188, 17 (1980) United States
5404	C02 He ²⁺ + Al; He ²⁺ + Ni; He ²⁺ + Au C05 He ²⁺ + Al; He ²⁺ + Ni; He ²⁺ + Au	E	0.4-2.2 MeV	Friedland, E.; Lombard, J. M. Energy-loss straggling of alpha particles in Al, Ni, and Au. Nucl. Instrum. Methods 168, 25 (1980) South Africa
5405	C02 H ⁺ + Al; H ⁺ + Ti; H ⁺ + Zn; H ⁺ + Nb; H ⁺ + Ta; H ⁺ + Al ₂ O ₃ ; H ⁺ + TiO ₂ ; H ⁺ + ZnO; H ⁺ + Nb ₂ O ₅ ; H ⁺ + Ta ₂ O ₅ ; He ²⁺ + Be; He ²⁺ + BaO	E	1-3 MeV	Blondiaux, G.; Valladen, M.; Ishii, K.; Debrun, J. L. Search for the influence of chemical effect on the stopping power: the case of oxides. Nucl. Instrum. Methods 168, 29 (1980) France
5406	C02 H ⁺ + C; H ⁺ + Al; H ⁺ + Cu; H ⁺ + Ag; H ⁺ + Au; He ²⁺ + C; He ²⁺ + Al; He ²⁺ + Cu; He ²⁺ + Ag; He ²⁺ + Au; Li ⁺ + C; Li ⁺ + Al; Li ⁺ + Cu; Li ⁺ + Ag; Li ⁺ + Au; Be ⁺ + C; Be ⁺ + Al; Be ⁺ + Cu; Be ⁺ + Ag; Be ⁺ + Au	E	50-300 keV	Hertens, P.; Krist, T. Stopping ratios of 50-300 keV light ions in metals. Nucl. Instrum. Methods 168, 33 (1980) West Germany
5407	C02 H ⁺ + La; H ⁺ + Ce; H ⁺ + Pr; H ⁺ + Gd; H ⁺ + Dy; H ⁺ + Ho; H ⁺ + Er; H ⁺ + Yb; H ⁺ + Sn; H ⁺ + Bi; He ²⁺ + La; He ²⁺ + Ce; He ²⁺ + Pr; He ²⁺ + Gd; He ²⁺ + Dy; He ²⁺ + Ho; He ²⁺ + Er; He ²⁺ + Yb; He ²⁺ + Sn; He ²⁺ + Bi	E	200-2000 keV	Knudsen, H.; Andersen, M. M.; Martini, V. Hydrogen and helium stopping powers of rare-earth metals. Nucl. Instrum. Methods 168, 41 (1980) Denmark
5408	C02 H ⁺ + C; He ²⁺ + C; Li ⁺ + C C04 H ⁺ + C; He ²⁺ + C; Li ⁺ + C	E	2-24 MeV	Fearick, R. W.; Sellschop, J. P. F. Energy loss of light ions in diamond. Nucl. Instrum. Methods 168, 51 (1980) South Africa
5409	C02 H ⁺ + Au; D ⁺ + Au; He ²⁺ + Au C05 H ⁺ + Au; D ⁺ + Au; He ²⁺ + Au	E	3-70 keV	Blume, R.; Eckstein, W.; Verbeek, P. Electronic energy loss of H, D and He in Au below 20 keV. Nucl. Instrum. Methods 168, 57 (1980) West Germany
5410	C02 H ⁺ + Au; He ²⁺ + Au C06 H ⁺ + Au; He ²⁺ + Au D08 H ⁺ + Au; He ²⁺ + Au	E	20-150 keV	Thompson, D. A.; Poehlman, V. F. S. Stopping powers and backscattered charge fractions for 20-150 keV H ⁺ and He ²⁺ on gold. Nucl. Instrum. Methods 168, 63 (1980) Canada
5411	C02 H ⁺ + Si C04 H ⁺ + Si C05 H ⁺ + Si	E	0.5-300 keV	Demond, F.-J.; Kalbitzer, S.; Pennspurger, M.; Muller, G. Range parameters of protons in silicon implanted at energies from 0.5 to 300 keV. Nucl. Instrum. Methods 168, 69 (1980) West Germany
5412	C02 Li ⁺ + C; Li ⁺ + Al; Li ⁺ + Ni; Li ⁺ + Cu; Li ⁺ + Se; Li ⁺ + Ag; Li ⁺ + Te C05 Li ⁺ + C; Li ⁺ + Al; Li ⁺ + Ni; Li ⁺ + Cu; Li ⁺ + Se; Li ⁺ + Ag; Li ⁺ + Te	E	60-500 keV	Andersen, M. M.; Besenbacher, F.; Goddensen, P. Stopping power and straggling of 60-500 keV lithium ions in C, Al, Ni, Cu, Se, Ag, and Te. Nucl. Instrum. Methods 168, 73 (1980) Denmark

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
5413	C82 H ⁺ + Si; H ⁺ + Ge; H ⁺ + Mo	E	0.1-1.0 MeV	Izraelov, S. Z.; Sirotnin, E. I.; Tulinov, A. I. Energy loss of protons in Si, Ge, and Mo. Nucl. Instrum. Methods 168, 81 (1980) Soviet Union
5414	A87 H ⁺ + Ti; H ⁺ + Cu; H ⁺ + Ca	E	1-3 MeV	Barfoot, K. M.; Mitchell, I. V.; Eschbach, M. L.; Gilboy, V. B. A comparison of thin and thick target methods of measuring proton-induced K-shell ionization cross sections. Nucl. Instrum. Methods 168, 131 (1980) Belgium
5415	C82 H ⁺ + C; H ₂ ⁺ + C C85 H ⁺ + C; H ₂ ⁺ + C	E	12-25 keV	Levi-Sattl, R.; Fox, T. R. High resolution scanning ion probes: applications to physics and biology (Invited). Nucl. Instrum. Methods 168, 139 (1980) United States
5416	D87 H ⁺ + Al	E T	390 keV	Edge, R. D.; Bill, U. Surface topography using Rutherford backscattering. Nucl. Instrum. Methods 168, 157 (1980) United States
5417	D87 He ⁺ + Co	E T	2 MeV	Knudson, A. R. Effects of surface roughness on backscattering spectra. Nucl. Instrum. Methods 168, 167 (1980) United States
5418	C84 Au ⁺ + C; Al ⁺ + C	E	14-30 keV	Mitchell, I. V.; Eschbach, M. L.; Barfoot, K. M. A gold and aluminium implanted standard for ion beam experiments. Nucl. Instrum. Methods 168, 169 (1980) Belgium
5419	D16 D ⁺ + Mo; He ⁺ + Mo	E	4-8 keV	Schulz, R.; Behrlich, P.; Scherzer, H.M.U. D and He trapping and mutual replacement in silydenum. Nucl. Instrum. Methods 168, 295 (1980) West Germany
5420	D15 He ⁺ + VD	E	330-750 keV	Yamaguchi, S.; Ozawa, K.; Yoshinari, G.; Koike, M.; Hirabayashi, M. Deuterium enrichment during ion bombardment in VD ₂ alloys. Nucl. Instrum. Methods 168, 301 (1980) Japan
5421	C88 He ⁺ + Si	T	2 MeV	Wielunski, L.; Wielunski, D.; Della Rocca, G.; Turco, A. Analysis of the dechanneling mechanism due to dislocations. Nucl. Instrum. Methods 168, 323 (1980) The Netherlands
5422	C84 Ar ⁺ + Ge D82 Ar ⁺ + Si	T	5-100 keV	Littmark, U.; Hofer, W. G. Recoil sputtering in solids by energetic ion beams. Nucl. Instrum. Methods 168, 329 (1980) Denmark
5423	D82 O ₂ ⁺ + Si; C ₂ ⁺ + Nb; Ar ⁺ + Si; Ar ⁺ + Nb; O ₂ ⁺ + PERT; C ₂ ⁺ + PERT D83 O ₂ ⁺ + Si; O ₂ ⁺ + Nb; Ar ⁺ + Si; Ar ⁺ + Nb; O ₂ ⁺ + PERT; C ₂ ⁺ + PERT	E	4-20 keV	Wittnebeck, K. Aspects of quantitative secondary ion mass spectrometry. Nucl. Instrum. Methods 168, 342 (1980) West Germany
5424	D83 O ₂ ⁺ + Ge; O ₂ ⁺ + Fe; C ₂ ⁺ + Ta; O ₂ ⁺ + Zr; O ₂ ⁺ + Cr; O ₂ ⁺ + Nb; O ₂ ⁺ + Au; O ₂ ⁺ + Ag; O ₂ ⁺ + Mo; C ₂ ⁺ + V; O ₂ ⁺ + Ni; O ₂ ⁺ + Ge; O ₂ ⁺ + Pt; O ₂ ⁺ + Au; O ₂ ⁺ + Si; C ₂ ⁺ + C; C ₂ ⁺ + Ge; C ₂ ⁺ + Fe; C ₂ ⁺ + Ta; C ₂ ⁺ + Zr; C ₂ ⁺ + Cr; C ₂ ⁺ + Nb; C ₂ ⁺ + Ag; C ₂ ⁺ + Au; C ₂ ⁺ + Mo; C ₂ ⁺ + V; C ₂ ⁺ + Ni; C ₂ ⁺ + Ge; C ₂ ⁺ + Pt; C ₂ ⁺ + Au; C ₂ ⁺ + Si; C ₂ ⁺ + C	E T	Under	Williams, P.; Katz, W.; Evans, C. A., Jr. Towards a universal model for sputtered ion emission. Nucl. Instrum. Methods 168, 373 (1980) United States
5425	D84 Ar ⁺ + Al; Ar ⁺ + Cr; Ar ⁺ + Mn; Ar ⁺ + Fe; Ar ⁺ + Co	E	130 keV	Thomas, E. W.; Legy, R. H.; Metz, W. A. Ion induced Auger Spectroscopy. Nucl. Instrum. Methods 168, 375 (1980) United States
5426	C84 D ⁺ + Si	E	0.1-5.0 keV	Magee, C. W.; Cohen, S. A.; Voss, L. E.; Bries, D. R. Depth distributions of low energy deuterium implanted into silicon as determined by SIMS. Nucl. Instrum. Methods 168, 383 (1980) United States

REF. NO.	REACTANTS	EXP OP THEOR	ENERGY RANGE	REFERENCE
5427	D03 Ne ⁺ + Si; Ne ⁺ + SiO ₂ ; Ar ⁺ + Si; Ar ⁺ + SiO ₂	E	33 keV	Schartner, K.-H.; Fleig, H. J.; Hesselkamp, D.; Schermann, A. Light emission from scattered oxygen. Nucl. Instrum. Methods 168, 419 (1980) West Germany
5428	D17 Ar ⁺ + [Ag + Pd]; Ar ⁺ + [Au + Pd]; Ar ⁺ + [Cu + Pd]	E	2 keV	Betz, G.; Marten, J.; Braun, P. Changes in the surface composition of Ag-Pd, Au-Pd and Cu-Pd alloys under ion bombardment. Nucl. Instrum. Methods 168, 541 (1980) Austria
5429	D13 Ar ⁺ + CC + Ni; Ne ⁺ + CO + Ni; He ⁺ + CO + Ni; He ⁺ + O ₂ + Si; H ⁺ + S + Ni; He ⁺ + S + Ni; He ⁺ + S + Ni; Ar ⁺ + S + Ni; He ⁺ + O + Ti; He ⁺ + O + Ta; He ⁺ + C + U; He ⁺ + O + Ni; He ⁺ + O + Pd; He ⁺ + O + Pt; He ⁺ + CC + Ti	E T	3.5-2.0 keV	Tagliauer, E.; Meiland, W.; Oyggaard, J. Ion beam induced desorption of surface layers. Nucl. Instrum. Methods 168, 571 (1980) West Germany
5430	D04 Ne ⁺ + O ₂ + U	E	0.5 keV	Hesselkamp, D.; Schermann, A.; Stiller, H. Ion induced secondary electron emission as a probe for adsorbed oxygen on tungsten. Nucl. Instrum. Methods 168, 575 (1980) West Germany
5431	C08 He ⁺ + Ni; He ⁺ + Ni; Ar ⁺ + Ni D15 He ⁺ + Ni; He ⁺ + Ni; Ar ⁺ + Ni	E	3-30 keV	Verheij, L. K.; van Loenen, E.; van den Berg, J. A.; Armour, D. G. Creation of surface damage on a nickel (110) surface by bombardment with 2-30 keV noble gas ions. Nucl. Instrum. Methods 168, 595 (1980) United Kingdom
5432	D01 Ne ⁺ + Cu	E	6 keV	De Wit, A. G. J.; Fluit, J. M.; Niekens, T. M.; Bronckers, R. P. H. Ion-induced adsorption of oxygen at a Cu(110) surface. Nucl. Instrum. Methods 168, 607 (1980) The Netherlands
5433	C08 Review D12 Review	E T	Undef	Anderson, J. U. Channeling radiation and coherent bremsstrahlung. Nucl. Instrum. Methods 170, 1 (1980) Denmark
5434	C08 e + Si; e ⁺ + Si D12 e + Si; e ⁺ + Si	E	25-56 MeV	Alguerd, M. J.; Svant, R. L.; Portell, R. M.; Datz, S.; Barrett, J. M.; Berman, B. L.; Block, S. E. Radiation from channelled leptons. Nucl. Instrum. Methods 170, 7 (1980) United States
5435	C08 N ⁺ + Au; N ⁺ + Au D12 N ⁺ + Au; N ⁺ + Au	E	15-27 MeV	Datz, S.; Nosh, C. D.; Crawford, D. M.; Krauss, M. F.; Miller, P. D.; Gittner, P. J.; Gomez del Campo, J.; Biggerstaff, J. A.; Knudsen, H.; Huelplund, P. Resonant coherent excitation in planar channeling. Nucl. Instrum. Methods 170, 15 (1980) United States
5436	C08 Undef D12 Undef	T	Undef	Crawford, D. M. Resonant coherent excitation of channelled ions. Nucl. Instrum. Methods 170, 21 (1980) United States
5437	C08 e + Si	T	15 MeV	Kalashnikov, M. P.; Kuvshinov, G. V. The resonance scattering phenomenon of fast negatively charged particles in a single crystal. Nucl. Instrum. Methods 170, 25 (1980) Soviet Union
5438	C08 Undef D12 Undef	T	Undef	Kalashnikov, M. P.; Olchuck, A. S. Ultrarelativistic electron and positron radiation in planar channeling. Nucl. Instrum. Methods 170, 27 (1980) Soviet Union
5439	C08 e + C	T	4.7 GeV	Kalashnikov, M. P.; Olchuck, A. S. Self-acceleration of relativistic electrons in planar channeling in single crystals. Nucl. Instrum. Methods 170, 29 (1980) Soviet Union
5440	C01 Review C08 Review	E	3.5-2.4 MeV	Remillieux, J. Interaction of fast molecular ions with solids. Nucl. Instrum. Methods 170, 31 (1980) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5441	A84 $N_2^+ + Ar; N_2^+ + Ne; NeH^+ + Ar; NeH^+ + Ne$ C86 $OH^+ + C; OH_2^+ + C; C_2H_3^+ + C; N_2O^+ + C; O_2^+ + C; N_2^+ + C; NeH^+ + C; Ne_2^+ + C; CH^+ + C; CH_2^+ + C; CH_3^+ + C; CH_4^+ + C$	E	1.2-11.2 MeV	Gonnell, D. S. The collision induced fragmentation of fast molecular ions in solids and gases. Nucl. Instrum. Methods 170, 41 (1980) United States
5442	C86 $N_2^+ + C; NeH^+ + C; Ne_2^+ + C; N_2^+ + C; NeH^+ + Al; N_2^+ + Al_2O_3$	E	0.8-3.5 MeV	Pietsch, W. J.; Gonnell, D. S.; Cooney, P. J.; Kanter, E. P.; Kurath, E.; Mathewski, A. J.; Vager, Z.; Zabravsky, B. J. The transmission of fast molecular ions through thin foils. Nucl. Instrum. Methods 170, 61 (1980) United States
5443	C86 $H^+ + C; Ne^+ + C; N_2^+ + C; H^- + C; Ne + C; N_2^+ + C$	E	0.8-3.2 MeV	Coe, P.; de Castro Faria, M. V.; Gaillard, M. J.; Polzet, J. C.; Ronillieux, J. Electron loss and capture cross sections of 800 keV amu^{-1} H and Ne species in carbon foils. Nucl. Instrum. Methods 170, 67 (1980) France
5444	C86 $NeH^+ + C; N_2^+ + C$	E	9.34-9.0 MeV	Cooney, P. J.; Gonnell, D. S.; Kanter, E. P.; Pietsch, W. J.; Zabravsky, B. J. Neutral hydrogen from the foil-induced dissociation of $^3HeH^+$, $^4HeH^+$ and N_2^+ . Nucl. Instrum. Methods 170, 73 (1980) United States
5445	C86 $CH^+ + C; CH_2^+ + C; CH_3^+ + C; CH_4^+ + C$	E	2.6-3.2 MeV	Gonnell, D. S.; Kanter, E. P.; Pietsch, W. J. Experimental confirmation of the Jahn-Teller distortion of CH_4^+ . Nucl. Instrum. Methods 170, 75 (1980) United States
5446	A84 $CH_2^+ + Ar; NH_2^+ + Ar; OH_2^+ + Ar$ C86 $CH_2^+ + Ar; NH_2^+ + Ar; OH_2^+ + Ar$	E	3.6 MeV	Gonnell, D. S.; Cooney, P. J.; Kanter, E. P. Determination of molecular ion structures through studies of the collisionally-induced dissociation of fast (keV) molecular ions. Nucl. Instrum. Methods 170, 81 (1980) United States
5447	C86 $N_2^+ + C; NeH^+ + C$	E	3.7-3.6 MeV	Kanter, E. P.; Cooney, P. J.; Gonnell, D. S.; Vager, Z.; Pietsch, W. J.; Zabravsky, B. J. Measurement of the distributions of internuclear separations in 3.0 MeV N_2^+ and 3.63 MeV NeH^+ beams. Nucl. Instrum. Methods 170, 87 (1980) United States
5448	C86 $OH^+ + C$	E	11.2 MeV	Brushin, A.; Faible, A.; Goldring, G.; Moss, M.; Kaim, R.; Vager, Z.; Zuoang, M. Coulomb explosion of 11.2 MeV OH^+ in carbon foils. Nucl. Instrum. Methods 170, 92 (1980) Israel
5449	C82 $OH^+ + C$ C86 $OH^+ + C$	E	11.2 MeV	Faible, A.; Kaim, R.; Plessner, I.; Vager, Z. Electronic polarization in solids probed by dissociation of fast molecular ions. Nucl. Instrum. Methods 170, 95 (1980) Israel
5450	C88 $H^+ + Ge; H^+ + Si$	E	15-250 GeV	Uggerhoj, F. Channeling in the GeV-region. Nucl. Instrum. Methods 170, 105 (1980) Denmark
5451	C88 $Ne^+ + Ne; Ne^+ + Pt$	T	2 MeV	Berrett, J. M.; Jackson, D. P. Role of correlations of lattice vibrations in channeling. Nucl. Instrum. Methods 170, 115 (1980) United States
5452	C82 $H^+ + Si; H^+ + C$ C88 $H^+ + Si; H^+ + C$	E	190-350 keV	Reuvensdal, M. E.; Schiedesknecht, I.; Hubbes, M. H.; Lutz, M. O. Half-wavelength and stopping power for planar-channelled protons in silicon and diamond single crystals. Nucl. Instrum. Methods 170, 119 (1980) West Germany
5453	C82 $H^+ + V$ C88 $H^+ + V$	E, T	0.5 MeV	Isaev, S. Z.; Strotinin, E. I.; Tulinov, A. F.; Chumakov, V. T. Energy loss and dechanneling of protons with $E_0 = 0.5$ MeV in a V crystal. Nucl. Instrum. Methods 170, 123 (1980) Soviet Union
5454	C88 $H^+ + Al$	T	1 MeV	Kudo, M. Planar dechanneling in distorted crystals: dislocation dechanneling. Nucl. Instrum. Methods 170, 129 (1980) Japan

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5455	C88 He ²⁺ + C; H ⁺ + C	E	1-10 MeV	Berry, T. E.; Feenich, R. W.; Selleschop, J. P. f. Ion channeling and dechanneling in natural diamonds. Nucl. Instrum. Methods 170, 13b (1980) South Africa
5456	C88 e + Si; e + Ge; e + Mo; e + U; e + Fe; e + Cu	T	0.3-15.0 MeV	Kosaki, K.; Fujimoto, F. Quantum mechanical treatment of axial electron channeling. Nucl. Instrum. Methods 170, 141 (1980) Japan
5457	C88 Ar ⁺ + Cu D63 Ar ⁺ + Cu	E	33 keV	Belashova, L. I.; Borisev, A. N.; Ladunov, A. I.; Masheva, E. S.; Melchikov, V. A. Effect of surface semichannels in fast recoil energy distributions. Nucl. Instrum. Methods 170, 157 (1980) Soviet Union
5458	C84 He ⁺ + W C88 He ⁺ + W D67 He ⁺ + W	E	25-5000 eV	Kernelsen, E. V.; van Gorkum, A. A. Enhanced penetration of low energy (25 eV-5000 eV) helium along the (100) channel in tungsten. Nucl. Instrum. Methods 170, 161 (1980) Canada
5459	C85 He ⁺ + Nb; He ⁺ + Cu; He ⁺ + Al; He ⁺ + Be	E	5-25 keV	Abel, G.; Roux, G.; Tarrault, B.; Labrie, J. P. Ranges of 5-25 keV He ⁺ ions in Nb, Cu, Al, and Be. Nucl. Instrum. Methods 170, 171 (1980) Canada
5460	C84 Ar ⁺ + Si; Co ⁺ + Si; Fe ⁺ + Si; Co ⁺ + Si; Ni ⁺ + Si; Cu ⁺ + Si; Ga ⁺ + Si; Br ⁺ + Si; Kr ⁺ + Si; Mo ⁺ + Si; Zr ⁺ + Si; Mo ⁺ + Si; Ag ⁺ + Si; Cd ⁺ + Si; In ⁺ + Si; Sn ⁺ + Si; Sb ⁺ + Si; Te ⁺ + Si; I ⁺ + Si; Xe ⁺ + Si; Cs ⁺ + Si; Ba ⁺ + Si; La ⁺ + Si; Pr ⁺ + Si; Nd ⁺ + Si; Sm ⁺ + Si; Eu ⁺ + Si; Dy ⁺ + Si; Ho ⁺ + Si; Yb ⁺ + Si; Lu ⁺ + Si; Hf ⁺ + Si; W ⁺ + Si; Au ⁺ + Si; Hg ⁺ + Si; Pb ⁺ + Si; Bi ⁺ + Si; Th ⁺ + Si; U ⁺ + Si	E	1-29 keV	Benzenbacher, F.; Battiger, J.; Laurson, T.; Leftager, P.; Moller, W. Z ₁ -oscillations in low-energy heavy-ion ranges. Nucl. Instrum. Methods 170, 183 (1980) Bonnmark
5461	C84 Se ⁺ + Al; As ⁺ + Al; Ge ⁺ + Al; Ge ⁺ + Al; Br ⁺ + Al	E	56-60 MeV	Waltner, A. W.; Varghese, S. L.; Willis, J. E.; Shafroth, S. R. X-ray identification of fusion reaction products implanted in Al foils following ¹⁰⁰ keV and ¹⁰⁰ keV bombardment of ⁶⁰ Co foils. Nucl. Instrum. Methods 170, 189 (1980) United States
5462	C84 Sr ⁺ + Cu; Zr ⁺ + Cu; Ba ⁺ + Cu	E	9.7x10 ⁻¹⁶ , 8x10 ⁻¹⁶ cm/s	Nayak, A. K.; Mukherji, S. Differential ranges of fission products by a Coulometric method. Nucl. Instrum. Methods 170, 193 (1980) India
5463	C82 H ⁺ + e	T	10-10000 eV	Ashley, J. C. Stopping power of ²⁰ Ne electron gas for slow protons: influence of damping. Nucl. Instrum. Methods 170, 197 (1980) United States
5464	C82 H ⁺ + Au; He ⁺ + Au; Li ⁺ + Au; Be ⁺ + Au; B ⁺ + Au; C ⁺ + Au; N ⁺ + Au; O ⁺ + Au; F ⁺ + Au; Ne ⁺ + Au; Ar ⁺ + Au; Kr ⁺ + Au; Xe ⁺ + Au; Cs ⁺ + Au; Ba ⁺ + Au; La ⁺ + Au; Ce ⁺ + Au; Pr ⁺ + Au; Nd ⁺ + Au; Sm ⁺ + Au; Eu ⁺ + Au; Gd ⁺ + Au; Tb ⁺ + Au; Dy ⁺ + Au; Ho ⁺ + Au; Er ⁺ + Au; Tm ⁺ + Au; Yb ⁺ + Au; Lu ⁺ + Au; Hf ⁺ + Au; Ta ⁺ + Au; W ⁺ + Au; Re ⁺ + Au; Os ⁺ + Au; Ir ⁺ + Au; Pt ⁺ + Au; Au ⁺ + Au	T	2 MeV	Brice, D. K. Projectile size dependence of stopping power. Nucl. Instrum. Methods 170, 201 (1980) United States
5465	C82 Li ⁺ + Si; Li ⁺ + C; Be ⁺ + Si; Be ⁺ + C; B ⁺ + Si; B ⁺ + C; C ⁺ + Si; C ⁺ + C; N ⁺ + Si; N ⁺ + C; O ⁺ + Si; O ⁺ + C; F ⁺ + Si; F ⁺ + C; Ne ⁺ + Si; Ne ⁺ + C; Na ⁺ + Si; Na ⁺ + C; Mg ⁺ + Si; Mg ⁺ + C; Al ⁺ + Si; Al ⁺ + C; Si ⁺ + Si; Si ⁺ + C; P ⁺ + Si; P ⁺ + C; S ⁺ + Si; S ⁺ + C; Cl ⁺ + Si; Cl ⁺ + C; Ar ⁺ + Si; Ar ⁺ + C; K ⁺ + Si; K ⁺ + C; Ca ⁺ + Si; Ca ⁺ + C; Sc ⁺ + Si; Sc ⁺ + C; Ti ⁺ + Si; Ti ⁺ + C; V ⁺ + Si; V ⁺ + C; Cr ⁺ + Si; Cr ⁺ + C; Mn ⁺ + Si; Mn ⁺ + C; Fe ⁺ + Si; Fe ⁺ + C; Co ⁺ + Si; Co ⁺ + C; Ni ⁺ + Si; Ni ⁺ + C; Cu ⁺ + Si; Cu ⁺ + C; Zn ⁺ + Si; Zn ⁺ + C; Ga ⁺ + Si; Ga ⁺ + C; Ge ⁺ + Si; Ge ⁺ + C	T	30-170 keV	Cruz, S. A.; Vargas, C.; Brice, D. K. Critical analysis of the modified Firsov model: II. Sensitivity to the average speed of atomic electrons. Nucl. Instrum. Methods 170, 205 (1980) Mexico

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5466	C82 Underf C86 Underf C89 Underf	E	28-240 keV	Pothak, A. P. Velocity dependence of Z_1 -oscillations in stopping power of solids for channelled heavy ions. Nucl. Instrum. Methods 176, 269 (1980) India
5467	C82 $\text{Ne}^+ + \text{Au}; \text{H}^+ + \text{Au}$ C85 $\text{Ne}^+ + \text{Au}; \text{H}^+ + \text{Au}$	E	120-2000 keV	Reid, I.; Scanlon, P. J. Anomalous stopping power effects in thin gold films. Nucl. Instrum. Methods 170, 211 (1980) Canada
5468	C82 $\text{Ar}^+ + \text{C}; \text{Ar}^+ + \text{Al}; \text{Ar}^+ + \text{Ti}; \text{Ar}^+ + \text{Cr}; \text{Ar}^+ + \text{Ni}; \text{Ar}^+ + \text{Cu}; \text{Ar}^+ + \text{Zr}; \text{Ar}^+ + \text{Mo}; \text{Ar}^+ + \text{Ag}; \text{Ar}^+ + \text{Sn}; \text{Ar}^+ + \text{Sb}; \text{Ar}^+ + \text{Te}; \text{Ar}^+ + \text{Au}; \text{Ar}^+ + \text{Bi}; \text{Ar}^+ + \text{Yb}; \text{Ar}^+ + \text{U}; \text{U}^+ + \text{C}; \text{U}^+ + \text{Al}; \text{U}^+ + \text{Ti}; \text{U}^+ + \text{Cr}; \text{U}^+ + \text{Ni}; \text{U}^+ + \text{Cu}; \text{U}^+ + \text{Zr}; \text{U}^+ + \text{Mo}; \text{U}^+ + \text{Ag}; \text{U}^+ + \text{Sn}; \text{U}^+ + \text{Sb}; \text{U}^+ + \text{Te}; \text{U}^+ + \text{Au}; \text{U}^+ + \text{Bi}; \text{U}^+ + \text{Yb}; \text{U}^+ + \text{U}$	E	20-329 MeV	Gelschel, H.; Arneroster, P.; Kitchner, T.; Kraft, G.; Spieler, M.; Guttner, K. Energy loss of heavy particles in solid materials. Nucl. Instrum. Methods 170, 217 (1980) West Germany
5469	A86 $\text{C}^{4+} + \text{Al}$ A87 $\text{C}^{4+} + \text{Al}$ C85 $\text{O}^+ + \text{Al}; \text{C}^+ + \text{Al}$	E	4-36 MeV	Sofield, C. J.; Cowern, R.E.B.; Freeman, J. M. Charge-exchange effects in energy-loss straggling. Nucl. Instrum. Methods 170, 221 (1980) United Kingdom
5470	C88 $\text{He}^+ + \text{Pt}; \text{He}^+ + \text{Ge}$ D87 $\text{He}^+ + \text{Ge}; \text{He}^+ + \text{Au}; \text{He}^+ + \text{Pt}; \text{He}^+ + \text{Ni}; \text{He}^+ + \text{Cu}; \text{He}^+ + \text{RhNi}; \text{He}^+ + \text{Si}$	E	0.2-2.5 MeV	Pronko, P. P.; Appleton, B. R.; Holland, G. B.; Wilson, S. R. Near surface yield enhancement in narrow acceptance 180° elastic scattering for He ions in non-crystalline and polycrystalline solids. Nucl. Instrum. Methods 170, 227 (1980) United States
5471	C86 $\text{Si}^+ + \text{Fe}; \text{C}^+ + \text{Fe}; \text{O}^+ + \text{Fe}; \text{F}^+ + \text{Fe}; \text{F}^+ + \text{Co}$	E T	0-7 MeV	Dybdal, K.; Forster, J. S.; Bur, N. On the origin of transient magnetic fields. Nucl. Instrum. Methods 170, 233 (1980) Denmark
5472	A83 $\text{O}^{8+} + \text{Ne}; \text{O}^{8+} + \text{Ar}$ C87 $\text{O}^{8+} + \text{C}$	E	43-70 MeV	Betz, H.-D.; Rothermal, J.; Bell, F. On the decay of highly excited states produced in low-stem collisions. Nucl. Instrum. Methods 170, 243 (1980) West Germany
5473	C81 Underf	T	Underf	Tajeda, J.; Echenique, P. M.; Crawford, G. M.; Ritchie, R. M. Wake shifts in electron states on swift ions passing through solids. Nucl. Instrum. Methods 170, 249 (1980) Spain
5474	C81 $\text{H}^+ + \text{Au}$	E	Underf	Kitagawa, M.; Ohtsuki, Y. M. Scintillation solution in the wake interaction. Nucl. Instrum. Methods 170, 253 (1980) Japan
5475	A86 $\text{O}^{7+} + \text{C}; \text{O}^{7+} + \text{Al}; \text{O}^{6+} + \text{C}; \text{O}^{6+} + \text{Al}$ A87 $\text{O}^{6+} + \text{C}; \text{O}^{6+} + \text{Al}; \text{O}^{7+} + \text{C}; \text{O}^{7+} + \text{Al}$ C86 $\text{O}^{6+} + \text{C}; \text{O}^{6+} + \text{Al}; \text{O}^{7+} + \text{C}; \text{O}^{7+} + \text{Al}; \text{O}^{6+} + \text{C}; \text{O}^{6+} + \text{Al}$	E	43 MeV	Sofield, C. J.; Cowern, R.E.B.; Draper, J.; Pridwell, L.; Freeman, J. M.; Woods, C. J.; Spencer-Harper, R. Charge-exchange cross sections of nearly fully stripped ^{16}O ions in solid targets. Nucl. Instrum. Methods 170, 257 (1980) United Kingdom
5476	A87 $\text{H}^+ + \text{Th}; \text{O}^+ + \text{Th}$	E	2-60 MeV	May, M. J.; Soderbaum, J.; Treacy, P. B. Impact-parameter dependence of L and M vacancies induced in Th by H and O ions. Nucl. Instrum. Methods 170, 261 (1980) Australia
5477	A87 $\text{H}^+ + \text{F}; \text{He}^+ + \text{F}$	E	0.3-2.0 MeV	Kawamura, K.; Cotoh, A.; Ogasu, K.; Fujimoto, F.; Kameki, K.; Terasawa, M. Single and double K-shell ionization cross sections of fluorine by light ion bombardment. Nucl. Instrum. Methods 170, 261 (1980) Japan
5478	A86 $\text{H}^+ + \text{CH}_4; \text{H}^+ + \text{C}_2\text{H}_2; \text{H}^+ + \text{C}_2\text{H}_4; \text{H}^+ + \text{C}_2\text{H}_6; \text{H}^+ + \text{C}_3\text{H}_8; \text{H}^+ + \text{C}_4\text{H}_{10}; \text{H}^+ + \text{C}$	E	1.5-3.0 MeV	Verghese, S. L.; Blasinger, G.; Joyce, J. M.; Lambert, R. The electron capture cross section of 1.5-3 MeV protons from carbon. Nucl. Instrum. Methods 170, 269 (1980) United States

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5479	D01 Review D02 Review D04 Review	E	10 ¹ -10 ⁶ keV	Hofer, V. G. Emission of atoms and electrons from high density collision cascades in metals. Nucl. Instrum. Methods 170, 275 (1980) West Germany
5480	D02 P ⁺ + Ag; P ₂ ⁺ + Ag; As ⁺ + Ag; As ₂ ⁺ + Ag; Sb ⁺ + Ag; Sb ₂ ⁺ + Ag; Sb ₃ ⁺ + Ag; Bi ⁺ + Ag; Bi ₂ ⁺ + Ag	E	10-600 keV	Thompson, L. R.; Johar, S. S. Sputtering of silver by heavy atomic and molecular ion bombardment. Nucl. Instrum. Methods 170, 281 (1980) Canada
5481	D02 Ne ⁺ + NaCl; Kr ⁺ + NaCl; Ar ⁺ + NaCl; Xe ⁺ + NaCl; Ar ⁺ + Na	E	23 keV	Mosinsky, V.; Bruckmüller, R.; Blum, P. Velocity measurements of sputtered particles using the laser-Doppler method. Nucl. Instrum. Methods 170, 287 (1980) Austria
5482	D02 Na ⁺ + U; Ar ⁺ + U; Kr ⁺ + U; C ₂ ⁺ + U	E	572-3000 eV	Wright, R. B.; Pelling, R. J.; Groop, B. W.; Young, C. E. Laser fluorescence spectroscopy of sputtered uranium atoms. Nucl. Instrum. Methods 170, 295 (1980) United States
5483	D12 H ⁺ + CdS; H ₂ ⁺ + CdS; H ₃ ⁺ + CdS; He ⁺ + CdS	E	1.5-2.0 MeV	Itoh, H.; Mitsuhashi, Y.; Matsunami, M.; Morita, A. Behaviour of high-density electron-hole pairs in energetic ion tracks in compound semiconductors. Nucl. Instrum. Methods 170, 303 (1980) Japan
5484	D03 e + C; P ⁺ + Al	T	1-85 keV	Schoe, J. Transport theory for bipartic emission of secondary electrons from solids by electron and ion bombardment. Nucl. Instrum. Methods 170, 317 (1980) Denmark
5485	D02 H ⁺ + H ₂ C; He ⁺ + H ₂ O	E	5-1000 keV	Brown, W. L.; Augustyniak, V. R.; Eddy, E.; Cooper, R.; Lencarotti, L. J.; Mirza, P.; Ewelt, R.; Johnson, R. E. Energy dependence of the erosion of H ₂ O ice films by H and He ions. Nucl. Instrum. Methods 170, 321 (1980) United States
5486	D02 Ar ⁺ + Au; Xe ⁺ + Au	E	23 keV	Ahmed, S.; Farooq, S. M.; Thompson, M. W. The effect of ion mass and target temperature on the energy distribution of sputtered atoms. Nucl. Instrum. Methods 170, 327 (1980) United Kingdom
5487	D02 Ar ⁺ + [Si + Fe + W]; Xe ⁺ + [Si + Fe + W] D17 Ar ⁺ + [Si + Fe + W]; Xe ⁺ + [Si + Fe + W]	E	13-540 keV	Witzmann, A.; Blank, P. Projectile-energy dependence of compositional changes produced in sputtering of a dilute Si(Fe,W) alloy. Nucl. Instrum. Methods 170, 331 (1980) West Germany
5488	D02 Ar ⁺ + Au	E T	23 keV	Hou, R.; Reid, I.; Thompson, M. W. Computer studies of surface recoil sputter mechanisms from gold single crystals. Nucl. Instrum. Methods 170, 337 (1980) Belgium
5489	D02 Kr ⁺ + Cu; Kr ⁺ + Ag; Kr ⁺ + Au; Xe ⁺ + Cu; Xe ⁺ + Ag; Xe ⁺ + Au; Ar ⁺ + Cu; Ar ⁺ + Ag; Ar ⁺ + Au; Ne ⁺ + Cu; Ne ⁺ + Ag; Ne ⁺ + Au	E T	0.035-9.4 keV	van Veen, A.; Fluit, J. M. Low yield sputtering of monocrystalline metals. Nucl. Instrum. Methods 170, 341 (1980) The Netherlands
5490	D02 Ar ⁺ + [Ag + Au + Cu]; Ar ⁺ + [Au + Cu]; Ar ⁺ + [Ag + Au] D17 Ar ⁺ + [Ag + Au + Cu]; Ar ⁺ + [Au + Cu]; Ar ⁺ + [Ag + Au]	E	2 keV	Betz, G.; Aries, M.; Braun, P. Sputtering of the ternary alloy system Ag-Au-Cu with 2 keV Ar ions. Nucl. Instrum. Methods 170, 347 (1980) Austria
5491	D03 Ne ⁺ + CH + Si; Kr ⁺ + CH + Si; Ar ⁺ + CD + Si; Ar ⁺ + CD + Si; Ar ⁺ + CD + Si	E	21-50 keV	Snedden, K. J.; MacDonald, R. J. Rotational and vibrational excitation of sputtered molecules. Nucl. Instrum. Methods 170, 351 (1980) United Kingdom
5492	D03 Ar ⁺ + Glass	E	23 keV	Young, I. S. T.; Yusuf, M. A. Velocity measurements of sputtered atoms in excited states. Nucl. Instrum. Methods 170, 357 (1980) United States

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5493	D15 Ca ⁺ + W	E	33 keV	Corratt, R. I.; Seidman, D. N. Sputtering of tungsten: an atomic view of a near-surface depleted zone created by a single 30 keV ⁴⁰ Ca ⁺ projectile. Nucl. Instrum. Methods 170, 377 (1980) United States
5494	D01 Under D07 Under	T	Under	Das, C. S. Redefined scattering cross section in monatomic solids. Nucl. Instrum. Methods 170, 383 (1980) United States
5495	D01 Under D15 Under	T	Under	Mueller, G. P. New analytical calculation of displacement damage. Nucl. Instrum. Methods 170, 389 (1980) United States
5496	D15 Xe ⁺ + W D16 Xe ⁺ + W	E	20-160 keV	Pattyn, M.; Deneurs, J.; Verbiest, E. Measurements of the depth distribution of vacancies as produced by ions implanted in metals. Nucl. Instrum. Methods 170, 359 (1980) Belgium
5497	D15 He ⁺ + Pt ₂ ; He ⁺ + Co	E	2.5-2.5 keV	Aldelberg, J.; Seidman, D. N. Direct determination of radiation damage profiles in the order-disorder alloy Pt ₂ Co irradiated with low-energy (200-2500 eV) He ⁺ ions. Nucl. Instrum. Methods 170, 413 (1980) United States
5498	D15 Ca ⁺ + Cu	E	40 keV	van Uyck, G. M.; Smith, H. J. Crystalline reorientation due to ion bombardment. Nucl. Instrum. Methods 170, 433 (1980) South Africa
5499	D13 D ⁺ + C D16 D ⁺ + C	T	0 keV	Evans, S. K.; Rotston, E. S. A simple model for the trapping of deuterons in a carbon target. Nucl. Instrum. Methods 170, 449 (1980) United Kingdom
5500	D13 H ⁺ + D + C D16 D ⁺ + C	E	52-1000 eV	Evans, S. K. Low energy proton induced re-decisions of deuterium from carbon. Nucl. Instrum. Methods 170, 455 (1980) United Kingdom
5501	D14 He ⁺ + Nb	E	5-25 keV	Saint-Jacques, R. G.; Veilleux, G.; Terreselt, E. Correlation of swelling with local gas concentration in helium irradiated niobium. Nucl. Instrum. Methods 170, 461 (1980) Canada
5502	D14 He ⁺ + Ni	E	500 keV	Fenske, G.; Das, S. K.; Kaminsky, P.; Riley, G. Evidence for the coalescence of cavities in nickel irradiated with 500 keV He ⁺ ions. Nucl. Instrum. Methods 170, 465 (1980) United States
5503	D11 O + Cu D17 He ⁺ + O + Cu	E	D11 300 K D17 0 keV	de Wit, A. G.; Finl, J. M.; Maphors, T. N.; Bronckers, R.P.M. The influence of low energy ion beams on an adsorbing surface. Nucl. Instrum. Methods 170, 471 (1980) The Netherlands
5504	D03 He ⁺ + Cr	E	5, 80-100 keV	Wien, A.; Becker, O.; Daub, P.; Macarvald, D. Experimental investigation of fissile fragment and alpha-particle induced ejection of secondary ions. Nucl. Instrum. Methods 170, 477 (1980) West Germany
5505	D07 He + LiF; He + Ni	E T	300 K	Rieder, A. M.; Engel, T. Atomic beam diffraction from solid surfaces. Nucl. Instrum. Methods 170, 483 (1980) Switzerland
5506	D07 He ⁺ + Si	E	450-1600 eV	Bertrand, P. Inelastic effects in the scattering of low energy helium ions from monocrystalline silicon. Nucl. Instrum. Methods 170, 489 (1980) Belgium
5507	D07 He ⁺ + W; Ar ⁺ + W	E	2-6 keV	O'Connor, D. J.; MacDonald, N. J. Inelastic energy loss of low energy surface scattered ions. Nucl. Instrum. Methods 170, 495 (1980) Australia

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5508	D07 K + Ag; K + Au; K + Cu; K + Al; He + Ag; He + Au; He + Cu; He + Al; Cu + Ag; Cu + Au; Cu + Cu; Cu + Al; Pb + Ag; Pb + Au; Pb + Cu; Pb + Al; Br + Ag; Br + Au; Br + Cu; Br + Al	E	66 keV	Bettiger, J.; Melch, G.; Sidman, G. Total backscattering of low energy heavy ions from solid surfaces. Nucl. Instrum. Methods 170, 499 (1980) Denmark
5509	D08 He ⁺ + Cu; He ⁺ + Co	E	230-2300 eV	Helbig, H. F.; Crook, K. J. Ionopt effects in elastic ion-surface scattering: He ⁺ and He ⁺ on solid and liquid Co. Nucl. Instrum. Methods 170, 185 (1980) United States
5510	D08 K ⁺ + Ni	E	1-2 keV	Torric, I.; Ciric, D.; Mankovic, N.; Cherepash, V. S.; Perovic, B. Small angle scattering of low energy K ⁺ ions from the (001) Ni surface. Nucl. Instrum. Methods 170, 509 (1980) Yugoslavia
5511	D08 H ⁺ + Be; H ⁺ + C; H ⁺ + Cu; H ⁺ + Nb	E	5-15 keV	Harrison, J. E.; Thomas, E. M. Scattering of 5 and 15 keV H ⁺ from surfaces. Nucl. Instrum. Methods 170, 513 (1980) United States
5512	D07 He ⁺ + Ni; He ⁺ + [Ni + Au] D08 He ⁺ + Ni; He ⁺ + [Ni + Au]	E	2.4-9.5 keV	Buch, T. H.; Stenogard, I.; Whistley, G. H.; Marchut, L. Scattering of low energy He ⁺ ions on Ni(001) and Ni(001)Au (unagregated). Nucl. Instrum. Methods 170, 519 (1980) United States
5513	D08 He ⁺ + Ni; He ⁺ + Au; Ar ⁺ + Au; Kr ⁺ + Au; N ₂ ⁺ + Au	E	12-200 keV	Andra, M. J.; Winter, M.; Frohling, B.; Kirchhoff, R.; Plohn, M. J.; Wittmann, W.; Graser, W.; Voralas, C. Ion beam surface interaction at grazing incidence. Nucl. Instrum. Methods 170, 527 (1980) West Germany
5514	D08 H ⁺ + Au; He ⁺ + Au	E	5-16 keV	Verbeek, H.; Eckstein, W.; Bhattacharya, R. S. The angular dependence of the charge fractions of H and He backscattered from Au. Nucl. Instrum. Methods 176, 539 (1980) West Germany
5515	D08 H ⁺ + C	E	0.6-2.4 keV	Overbury, S. H.; Dittner, P. F.; Dotz, S. Neutralization in surface scattering of low energy H ⁺ by polycrystalline graphite. Nucl. Instrum. Methods 170, 143 (1980) United States
5516	D08 Li ⁺ + Au; B ⁺ + Au; C ⁺ + Au; N ⁺ + Au; F ⁺ + Au; He ⁺ + Au	E	30-130 keV	Poehmann, W. F. S.; Bhattacharya, R. S.; Thompson, D. A. Heavy ion neutralization behaviour in the 30-130 keV energy regime. Nucl. Instrum. Methods 170, 169 (1980) Canada
5517	D07 He ⁺ + Pt D08 He ⁺ + Pt	E	10-35 keV	Mashkev, E. S.; Melchenov, V. A. Helium ion reflection from platinum. Nucl. Instrum. Methods 170, 553 (1980) Soviet Union
5518	C06 H ⁺ + C; H ⁺ + Al; H ⁺ + Ag; H ⁺ + Au; O ⁺ + C; O ⁺ + Al; O ⁺ + Ag; O ⁺ + Au; Si ⁺ + C; Si ⁺ + Al; Si ⁺ + Ag; Si ⁺ + Au; Ni ⁺ + C; Ni ⁺ + Al; Ni ⁺ + Ag; Ni ⁺ + Au D04 H ⁺ + C; H ⁺ + Al; H ⁺ + Ag; H ⁺ + Au; O ⁺ + C; O ⁺ + Al; O ⁺ + Ag; O ⁺ + Au; Si ⁺ + C; Si ⁺ + Al; Si ⁺ + Ag; Si ⁺ + Au; Ni ⁺ + C; Ni ⁺ + Al; Ni ⁺ + Ag; Ni ⁺ + Au	E	1-150 MeV	Laubert, R.; Seilin, I. A.; Vane, C. R.; Setter, M.; Elston, S. D.; Alton, G. D.; Thoe, R. S. The yield of convey electrons from solids. Nucl. Instrum. Methods 170, 557 (1980) United States
5519	D03 Ar ⁺ + Al; Ar ⁺ + Fe D04 Ar ⁺ + Al; Ar ⁺ + Fe D07 Ar ⁺ + Al; Ar ⁺ + Fe	E	20-200 keV	Lugg, K. O.; Metz, V. A.; Thomas, I. M. Auger spectra induced by ion impact on metals. Nucl. Instrum. Methods 170, 561 (1980) United States
5520	D03 He ⁺ + Si; Ar ⁺ + Si; Kr ⁺ + Si; Xe ⁺ + Si D04 He ⁺ + Si; Ar ⁺ + Si; Kr ⁺ + Si; Xe ⁺ + Si	E	2-30 keV	Wittmann, K. Comparison of ion-excited Auger electron emission and secondary ion emission from silicon bombarded with noble gas ions. Nucl. Instrum. Methods 170, 565 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5521	C86 $H^+ + C; H_2^+ + C; H_3^+ + C$ C84 $H^+ + C; H_2^+ + C; H_3^+ + C$	E	0.8-2.4 MeV	Oda, H.; Nishimura, F.; Yonezaki, Y.; Tsurubuchi, S. Energy and angular spectra of electrons emitted from foils by ion beams. <i>Nucl. Instrum. Methods</i> 170, 571 (1980) United States
5522	D83 $Kr^+ + Be; Ar^+ + Be; Ne^+ + Be; O_2^+ + Be; N_2^+ + Be$ D89 $Cr^+ + Be; Ar^+ + Be; Ne^+ + Be; O_2^+ + Be; N_2^+ + Be$	E	200-3000 eV	Wright, B. B.; Green, B. M. Secondary photon emission studies of ion bombarded beryllium. <i>Nucl. Instrum. Methods</i> 170, 577 (1980) United States
5523	D12 $Ar^+ + Nb; Ar^+ + Mo; Ar^+ + C; Ar^+ + Ba$	E	43 keV	Brown, M.; Emmoth, B. Molecular cation observed during keV ion bombardment of solids. <i>Nucl. Instrum. Methods</i> 170, 585 (1980) Sweden
5524	D83 $Ar^+ + Si; Ar^+ + Ni$	E	10-20 keV	Williams, P.; Young, I. S. Y.; Yau, S. A comparison of absolute yields of excited neutrals and positive ions from ion-bombarded surfaces. <i>Nucl. Instrum. Methods</i> 170, 591 (1980) United States
5525	E82 $e + C_2H_4; e + Xe$ G85 $e + Ar + C_2H_4; e + Xe + C_2H_4; e + C_2H_4; e + Xe$	T	10^{-3} -10 eV	Chetani, V.; Monomantsozobene, J.; Grosser, J.; Schultz, G. Swift velocities in argon-ethane and xenon-ethane gas mixtures. <i>Nucl. Instrum. Methods</i> 171, 127 (1980) France
5526	C88 $H^+ + Ni$	T	100 keV	van der Veen, J. F.; Tromp, N. W.; van den, M. G.; Saris, F. W. Calculation of channeling and blocking effects for ion beam surface crystallography. <i>Nucl. Instrum. Methods</i> 171, 143 (1980) The Netherlands
5527	A04 $NaH^+ + Ar; NaH^+ + H_2; NaH^+ + N_2$ C86 $NaH^+ + Ar; NaH^+ + H_2; NaH^+ + N_2$	E	500-900 keV	Kanter, J.; Mir, D.; Rosner, B. Charge states of fragments of the $(NaH)^+$ ion after a dissociative single collision in the 500-900 keV energy range. <i>Nucl. Instrum. Methods</i> 171, 377 (1980) Israel
5528	E16 $e + H_2 + Ar$	E	250 keV	Eden, J. G. 406-nm laser on the C + B band of H_2 . <i>Appl. Phys. Lett.</i> 36, 393 (1980) United States
5529	A03 $Na^+ + HgBr_2; Na^+ + HgBr_2; Ar^+ + HgBr_2; H_2^+ + HgBr_2; Xe^+ + HgBr_2; Xe^+ + HgBr_2$ A05 $Na^+ + HgBr_2; Na^+ + HgBr_2; Ar^+ + HgBr_2; H_2^+ + HgBr_2; Xe^+ + HgBr_2; Xe^+ + HgBr_2$	E	330 K	Chang, R. S. F.; Burham, R. Dissociative excitation of $HgBr_2$ by rare-gas metastable atoms and $H_2(A^2 \Sigma^+_{g, u})$. <i>Appl. Phys. Lett.</i> 36, 397 (1980) United States
5530	E16 $e + Ar + Xe + CCl_4$	E	1 MeV	Tittle, F. R.; Wilson, M. L.; Stichel, R. E.; Marovsky, G.; Ernst, W. E. A triatomic Xe_2Cl endomer laser in the visible. <i>Appl. Phys. Lett.</i> 36, 405 (1980) United States
5531	H02 $h\nu + H_2$ H08 $h\nu + H_2$	E	1.7 eV	Barnivan, G.; Godart, J.; Sultan, G. Spectroscopic evidence of multiphoton absorption in nitrogen. <i>Appl. Phys. Lett.</i> 36, 415 (1980) France
5532	A11 $XeF^+ + He; XeF^+ + He; XeF^+ + H_2; XeF^+ + Xe; XeF^+ + Ar; XeF^+ + XeF_2; XeF^+ + HF_2; XeF^+ + F_2$	E	300 K	Waynant, R. W. $XeF(C)$ state lifetime and quenching by rare gases and fluorine donors. <i>Appl. Phys. Lett.</i> 36, 493 (1980) United States
5533	H06 $h\nu + S_2$	E	337 nm	Girardeau-Montaut, J. P.; Morau, G. Optically pumped superfluorescence S_2 molecular laser. <i>Appl. Phys. Lett.</i> 36, 505 (1980) France
5534	D02 $Ar^+ + Cu$	E	40 keV	Whitton, J. L.; Meier, M. O.; Littorah, U.; Brown, R.; Emmoth, B. Influence of surface morphology on the angular distribution and total yield of copper sputtered by energetic argon ions. <i>Appl. Phys. Lett.</i> 36, 521 (1980) Denmark
5535	D03 $Co^+ + O + Fe$	E	4 keV	Yu, F.; Lile, D. B.; Khuri-Yakub, S. T.; Kimo, G. S. Generation and detection of unipolar stress pulses. <i>Appl. Phys. Lett.</i> 36, 523 (1980) United States

REF. NO.	REACTANTS	EXP OR TECH	ENERGY RANGE	REFERENCE
5536	E16 $e + ArF; e + KrF; e + XeCl; e + XeF$	E	1 MeV	Edwards, C. B.; O'Neill, F.; Shaw, R. J. 60-nm e-beam excitation of rare-gas halide lasers. Appl. Phys. Lett. 36, 617 (1980) United Kingdom
5537	A14 $C + H_2$	E	238 K	Hack, U.; Prieuss, A. W.; Tompa, F.; Wagner, H. G. The reaction $C + H_2 \rightarrow CH + H$ studied with a LHM-ESR-spectrometer. Ber. Bunsenges, Phys. Chem. 83, 1275 (1979) West Germany
5538	A14 $BCl_3 + CH_4$ M18 $h\nu + BCl_3 + CH_4$	E	Undef	Schramm, B.; Biez, A. Laser induced chemical reactions with boron trichloride. Ber. Bunsenges, Phys. Chem. 83, 1279 (1979) West Germany
5539	M18 $h\nu + CF_3I$	T	Undef	Quack, M. Master equations for photochemistry with intense infrared light (III). The influence of molecular parameters in UMIR. Ber. Bunsenges, Phys. Chem. 83, 1287 (1979) West Germany
5541	D16 $H + Kb; D + Kb$	T	12C-680 K	Brischoen, J. Quantum rate theory for the relaxation in symmetrical microscopic systems. I. The dephasing mechanism. Ber. Bunsenges, Phys. Chem. 84, 186 (1980) West Germany
5541	A66 $K + H_2$ A18 $K + NO_2$	E	2.7-39.6 eV	Klauss, M.; Lacomme, K. Energy and angular differential cross sections for $K + NO_2$ charge transfer reactions. Chem. Phys. Lett. 70, 41 (1980) West Germany
5542	M88 $h\nu + NO + Ar$	E	0 μ	Kozometsky, J.; Vornann, M.; Dunschuld, M.; Rohrbeck, W.; Urban, W. IR laser induced LV fluorescence in nitric oxide. Chem. Phys. Lett. 70, 68 (1980) West Germany
5543	A11 $CH^+ + CH$	E	370 K	Lurie, J. B.; El-Sayed, M. A. Production and bimolecular quenching of excited CH radicals from multiphoton electronic excitation of benzoyl cyanide. Chem. Phys. Lett. 70, 251 (1980) United States
5544	A62 $H + D_2$ A17 $H + D_2$	E	2-330 meV	Hishinuma, M. H-D potential from absolute integral cross section measurements at thermal energy. Chem. Phys. Lett. 70, 361 (1980) Japan
5545	A14 $BF + O; BF + O_2$	E	294 K	Light, G. C.; Hearn, R. A.; Matsumoto, J. K. Rate coefficients for the reactions of BF with O and O ₂ . Chem. Phys. Lett. 70, 366 (1980) United States
5546	A03 $Li^+ + SF_6; H^+ + SF_6$	E	4-10 eV	Ellenbroek, T.; Gierz, U.; Tonnies, J. P. Observation of mode selective vibrational excitation of SF ₆ by collisions with 4-10 eV Li ⁺ and H ⁺ ions. Chem. Phys. Lett. 70, 459 (1980) West Germany
5547	A11 $HF^+ + HCl; HF^+ + CO_2; HF^+ + H_2O;$ $HF^+ + CO; HF^+ + N_2; HF^+ + O_2$ A14 $F + HCl$	E	296 K	Smith, I. V. M.; Brigley, D. J. Time-resolved vibrational chemiluminescence: rate constants for the reaction $F + HCl \rightarrow HF + Cl$ and for the relaxation of $HF(v=3)$ by HCl, CO ₂ , N ₂ O, CO, H ₂ and O ₂ . Chem. Phys. Lett. 70, 481 (1980) United Kingdom
5548	A13 $Xe^+ + 2Ar$	E	150-300 K	Jones, J. D. C.; Lister, D. G.; Twiddy, M. C. Equilibrium constant for the reaction $Xe^+ + 2Ar$ going to or coming from $XeAr^+ + Ar$ in the temperature range 150-300 K and the dissociation energy of $XeAr^+$. Chem. Phys. Lett. 70, 575 (1980) United Kingdom
5549	M66 $h\nu + NC$	E	4710-4760 Å	Eshelrich, P.; Anderson, M. J. M. Multiphoton ionization of molecules in selectively excited vibrational states. Chem. Phys. Lett. 70, 621 (1980) United States
5550	D18 $e + GaAs$	E	2.2-1.7 MeV	Pons, D.; Mooney, P. M.; Bourgoin, J. C. Energy dependence of deep level introduction in electron irradiated GaAs. J. Appl. Phys. 51, 2038 (1980) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5551	D02 H ⁺ + Al; H ⁺ + Au; H ⁺ + Be; H ⁺ + C; H ⁺ + Fe; H ⁺ + Na; H ⁺ + Ni; H ⁺ + Si; H ⁺ + Ta; H ⁺ + Ti; H ⁺ + V; H ⁺ + W; H ⁺ + Zr; D ⁺ + Al; D ⁺ + Au; D ⁺ + Be; D ⁺ + C; D ⁺ + Fe; D ⁺ + Na; D ⁺ + Ni; D ⁺ + Si; D ⁺ + Ta; D ⁺ + Ti; D ⁺ + V; D ⁺ + W; D ⁺ + Zr; He ⁺ + Al; He ⁺ + Au; He ⁺ + Be; He ⁺ + C; He ⁺ + Fe; He ⁺ + Na; He ⁺ + Ni; He ⁺ + Si; He ⁺ + Ta; He ⁺ + Ti; He ⁺ + V; He ⁺ + W; He ⁺ + Zr; Ne ⁺ + Ni; Ne ⁺ + W; Ne ⁺ + Xe; Ar ⁺ + Ni; Ar ⁺ + W; Ar ⁺ + Xe; Kr ⁺ + Ni; Kr ⁺ + W; Kr ⁺ + Xe; Xe ⁺ + Ni; Xe ⁺ + W; Xe ⁺ + Xe; Ni ⁺ + Ni; Ni ⁺ + W; Ni ⁺ + Xe	E F	0.2-200 keV	Behdassky, J.; Roth, J.; Bey, M. L. An analytical formula and important parameters for low-energy ion sputtering. <i>J. Appl. Phys.</i> 51, 2651 (1980) West Germany
5552	D02 Ar ⁺ + Cd; Ar ⁺ + Zn; Ar ⁺ + Au; Ar ⁺ + Pb; Ar ⁺ + Cu; Ar ⁺ + Bi; Ar ⁺ + U; Ar ⁺ + Fe; Ar ⁺ + Ta; Xe ⁺ + Cd; Xe ⁺ + Zn; Xe ⁺ + Au; Xe ⁺ + Pb; Xe ⁺ + Cu; Xe ⁺ + Bi; Xe ⁺ + U; Xe ⁺ + Fe; Xe ⁺ + Ta	E	13-40 keV	Okutani, T.; Shikata, M.; Ichimura, S.; Shiozaki, R. Angular distribution of Si atoms sputtered by keV Ar ⁺ ions. <i>J. Appl. Phys.</i> 51, 2884 (1980) Japan
5553	M02 hv + Hg	E	2 ⁺ =	Altman, E. L.; Canady, A. A.; Turkin, Y. I.; Sholegov, S. E. Some applications of the Zeeman effect to atomic absorption analysis. <i>J. Appl. Spectrosc.</i> 30, 708 (1979) Soviet Union
5554	M02 hv + AlCl; hv + NaO	E	533-464 nm	Nozlova, N. A.; Zhidnyov, L. V. List of the unresolved rotational structure of molecular spectra for measuring flame temperatures. <i>J. Appl. Spectrosc.</i> 30, 711 (1979) Soviet Union
5555	A10 HF + HF A12 HF + HF	E	236-373 K	Vasil'ev, G. K.; Gur'ev, V. I.; Koval'shii, A. O. Self-broadening of the absorption lines of the fundamental vibration-rotation band of HF molecules and processes of rotational relaxation. <i>J. Appl. Spectrosc.</i> 30, 754 (1979) Soviet Union
5555	E03 e + K E05 e + K	E	Under	Solntsev, Y. M.; Shapochkin, N. B. Excitation of states of the singly charged potassium ion from the ground state of the atom by electron bombardment. <i>J. Appl. Spectrosc.</i> 30, 802 (1979) Soviet Union
5557	A12 Ne ⁺ + Ne	E	633 K	Dunaev, V. V.; Kuchinskii, V. V.; Savlov, S. V. Interferometric determination of the parameters of a voigt profile. <i>J. Appl. Spectrosc.</i> 31, 817 (1978) Soviet Union
5558	A12 Under	F	Under	Preobrazhenskii, M. G.; Sedel'mikov, A. I. Determination of the parameters of a voigt profile measured over a finite frequency interval. <i>J. Appl. Spectrosc.</i> 31, 829 (1979) Soviet Union
5559	M02 hv + CaCl; hv + SrCl; hv + BaCl	E	388 nm	L'vov, B. V.; Peliava, L. A. Atomization energy and spectra of gaseous molecules of the monochlorides of calcium, strontium, and barium. <i>J. Appl. Spectrosc.</i> 31, 823 (1978) Soviet Union
5560	M02 hv + Au	E	255-243 nm	Akhmed'yev, M. A.; Popelkovskaya, L. A.; Korozov, V. R.; Drokov, V. G. Optimization of the conditions for the measurement of the atomic absorption signals of millisecond duration formed upon the atomization of powdered samples in a uhf discharge. <i>J. Appl. Spectrosc.</i> 31, 829 (1979) Soviet Union
5561	A10 CH ⁺ + CO; CH ⁺ + N ₂ ; CH ⁺ + Ar	E	333 K	Ibragimova, L. B. Population kinetics of the A ² Π _g (sub 1) and B ² Σ ⁺ electronic states of CH molecules on a shock wave front. <i>J. Appl. Spectrosc.</i> 31, 927 (1979) Soviet Union
5562	E03 e + Rb ⁺	E	Under	Solntsev, Y. M.; Shapochkin, N. B. Excitation of states of singly charged rubidium ion by electron impact. <i>J. Appl. Spectrosc.</i> 31, 932 (1979) Soviet Union

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
5563	AR4 ScCl ₃ + Ar; ScCl ₃ + H ₂ ; YCl ₃ + Ar; YCl ₃ + H ₂ ; LuCl ₃ + Ar; LuCl ₃ + H ₂ ; PrCl ₃ + Ar; PrCl ₃ + H ₂ ; NdCl ₃ + Ar; NdCl ₃ + H ₂ ; SmCl ₃ + Ar; SmCl ₃ + H ₂ ; EuCl ₃ + Ar; EuCl ₃ + H ₂ ; GdCl ₃ + Ar; GdCl ₃ + H ₂ ; TbCl ₃ + Ar; TbCl ₃ + H ₂ ; DyCl ₃ + Ar; DyCl ₃ + H ₂ ; HoCl ₃ + Ar; HoCl ₃ + H ₂ ; ErCl ₃ + Ar; ErCl ₃ + H ₂ ; TmCl ₃ + Ar; TmCl ₃ + H ₂ ; YbCl ₃ + Ar; YbCl ₃ + H ₂ ; LuCl ₃ + Ar; LuCl ₃ + H ₂	E	2430-2500 mC	L'vov, B. V.; Pailova, L. A. Determination of dissociation energy of rare-earth monochlorides by atomic absorption spectroscopy. <i>J. Appl. Spectrosc.</i> 31, 948 (1979) Soviet Union
5564	M02 Review M03 Review M03 Review	E	Under	Razumov, V. A.; Zvyagintsev, A. P. Nonselective attenuation of light in atomic-absorption and atomic-fluorescence analysis. <i>J. Appl. Spectrosc.</i> 31, 1067 (1979) Soviet Union
5565	AR4 LiCl + Ar; LiCl + H ₂ ; NaCl + Ar; NaCl + H ₂ ; KCl + Ar; KCl + H ₂ ; RbCl + Ar; RbCl + H ₂ ; CsCl + Ar; CsCl + H ₂	E	2300-2800 K	L'vov, B. V.; Pailova, L. A. Determination of the energies of solvation of the gaseous alkali metal monochlorides by atomic-absorption spectroscopy. <i>J. Appl. Spectrosc.</i> 31, 1070 (1979) Soviet Union
5565	A10 Mg ²⁺ + He + He; Mg ²⁺ + He + Ar; Mg ²⁺ + He + He; Mg ²⁺ + He + Ar	E	Under	Lazareva, L. P.; Rudakovskii, A. B. Investigation of the effect of alkali elements on the intensity of magnesium lines excited in a discharge with a hollow cathode, with the application of a magnetic field. <i>J. Appl. Spectrosc.</i> 31, 1081 (1979) Soviet Union
5567	M12 hv + e	T	Under	Menglin, C. A.; Ganev, N. I.; Feinberg, P. P. Multiphoton processes during the interaction of an electron with a uniform field and an electromagnetic wave. <i>J. Appl. Spectrosc.</i> 31, 1124 (1979) Soviet Union
5568	M08 Under	T	Under	Il'in, G. G.; Razumov, V. A.; Fishman, I. S. Calculation of the hyperfine splitting and the shift of a spectral line in the theory of atomic fluorescence analysis. <i>J. Appl. Spectrosc.</i> 31, 1203 (1979) Soviet Union
5569	A11 Xe ₂ ⁺ + Xe; Xe ₂ ⁺ + Ar A14 Xe ⁺ + 2Xe	E	330 K	Benfield, T. D.; Rainbow, F. H. E.; Walters, G. R.; McCusker, M. V.; Lorents, D. C.; Gutches, R. A. Time resolved spectroscopy of xenon cations excited by synchrotron radiation. <i>J. Chem. Phys.</i> 72, 2916 (1980) United States
5570	A14 Ar + CO ₂ + H ₂	E	331 K	Gauyacq, J. P.; Collier, F.; Lebland, J. B.; Cottin, P. Kinetic study of a-beam excited Ar-CO ₂ mixture. <i>J. Chem. Phys.</i> 72, 2974 (1980) France
5571	A14 H + H ₂	T	6.4-2.5 eV	Pollak, E.; Levine, P. D. Statistical theories for molecular collisions: a serious entropy derivation. <i>J. Chem. Phys.</i> 72, 2998 (1980) Israel
5572	M03 hv + O ₂ ⁻ ; hv + O ₂ ⁻ + H ₂ O; hv + C ₂ ⁻ ; hv + O ₂ ⁻ ; hv + CO ₂ ⁻ ; hv + CO ₂ ⁻ + H ₂ O; hv + CO ₂ ⁻ ; hv + HCO ₂ ⁻ ; hv + HCO ₂ ⁻ + H ₂ O; hv + NO ₂ ⁻ ; hv + NO ₂ ⁻ + H ₂ O; hv + NO ₂ ⁻ ; hv + O ₂ ⁻ + NO M07 hv + O ₂ ⁻ ; hv + O ₂ ⁻ ; hv + O ₂ ⁻ + H ₂ O; hv + O ₂ ⁻ ; hv + O ₂ ⁻ ; hv + CO ₂ ⁻ ; hv + CO ₂ ⁻ + H ₂ O; hv + CO ₂ ⁻ ; hv + HCO ₂ ⁻ ; hv + HCO ₂ ⁻ + H ₂ O; hv + HCO ₂ ⁻ ; hv + HCO ₂ ⁻ + H ₂ O; hv + NO ₂ ⁻ ; hv + NO ₂ ⁻ + H ₂ O; hv + NO ₂ ⁻ ; hv + O ₂ ⁻ + NO	E	6200-2400 Å ⁰	Hodges, R. V.; Lee, L. C.; Moseley, J. T. Photodissociation and photodetachment of molecular negative ions: IX. Atmospheric ions at 2400 and 3611 Å ⁰ . <i>J. Chem. Phys.</i> 72, 2998 (1980) United States
5573	A1 ⁰ I ₂ ⁰ + He A11 I ₂ ⁰ + He	E	300 K	Russell, T. D.; DeKoven, B. M.; Slazy, J. A.; Levy, B. M. Energy redistribution in low energy collisions between I ₂ ⁰ and He. <i>J. Chem. Phys.</i> 72, 3001 (1980) United States
5574	A04 He ⁺ + H ₂ ; He ⁺ + D ₂ A06 He ⁺ + H ₂ ; He ⁺ + D ₂	E	70-330 K	Johnson, R.; Chen, A.; Biendi, N. P. Dissociative charge transfer of He ⁺ ions with H ₂ and D ₂ molecules from 70 to 330 K. <i>J. Chem. Phys.</i> 72, 3005 (1980) United States

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5575	A10 $\text{CO}_2 + \text{H}_2$	T	0.1-0.2 eV	Sathyanarthy, N.; Raff, L. R. Inelastic scattering calculations in polyatomic systems using an ab initio intermolecular potential energy surface: II. Rotational energy transfer in $\text{CO}_2\text{-H}_2$ collisions. <i>J. Chem. Phys.</i> 72, 3163 (1980) India
5576	A03 $\text{Xe}^+ + \text{NH}_3$ A07 $\text{Xe}^+ + \text{H}_2$ A11 $\text{Xe}^+ + \text{NH}_3$	E	300 K	Kellert, F. G.; Smith, E. A.; Fendel, R. D.; Denning, F. D.; Stebbings, R. F. Collisions of xenon (or) rydberg atoms with ammonia. <i>J. Chem. Phys.</i> 72, 3175 (1980) United States
5577	A17 $\text{LiBe}; \text{LiHg}; \text{LiCa}$	T	Undef	Jones, R. G. Molecular bonding in LiBe , LiHg , and LiCa . <i>J. Chem. Phys.</i> 72, 3197 (1980) West Germany
5578	D02 $e + \text{H}_2$	T	5-50 eV	Rumble, J. R., Jr.; Trahler, D. G. Investigation of the assumptions of the multiple-scattering method for electron-molecule scattering cross sections. <i>J. Chem. Phys.</i> 72, 3286 (1980) United States
5579	A11 $\text{HF}^+ + \text{H}_2; \text{HF}^+ + \text{H}_2; \text{HF}^+ + \text{D}_2$	E	207-295 K	Bott, J. F.; Heidner, R. F. Vibrational relaxation of $\text{HF}(v=1 \text{ and } 3)$ in H_2 , H_2 , and D_2 at 200 and 295 K. <i>J. Chem. Phys.</i> 72, 3211 (1980) United States
5580	A14 $\text{H} + \text{H}_2$	T	0.02-0.23 eV	Althorn, R. I.; Schatz, G. C. A new method for determining semiclassical tunneling probabilities in atom-diatom reactions. <i>J. Chem. Phys.</i> 72, 3337 (1980) United States
5581	A17 $\text{Be} + \text{Be}$	T	Undef	Liu, B.; McLennan, A. D. Ab initio potential curve for $\text{Be}_2(^1\Sigma_g^+)$ from the interacting correlated fragments method. <i>J. Chem. Phys.</i> 72, 3416 (1979) United States
5582	D02 $e + \text{H}_2$	T	13.6 eV	Rumble, J. R., Jr.; Trahler, D. G. Erratum Low-energy electron-molecule scattering: comparison of coupled channel treatments of $e\text{-H}_2$ scattering at 13.6 eV using various approximations to the static and exchange potentials and an approximate polarization potential [<i>J. Chem. Phys.</i> 70, 4181 (1979)]. <i>J. Chem. Phys.</i> 72, 3441 (1980) United States
5583	A14 $\text{D} + \text{H}_2; \text{H} + \text{D}_2$	T	200-4000 K	Garrett, B. C.; Trahler, D. G. Generalized transition state theory calculations for the reactions $\text{D} + \text{H}_2$ and $\text{H} + \text{D}_2$ using an accurate potential energy surface: explanation of the kinetic isotope effect. <i>J. Chem. Phys.</i> 72, 3460 (1980) United States
5584	H05 $\text{hv} + \text{SO}_2^-; \text{hv} + \text{SO}_2^- + \text{SO}_2; \text{hv} + \text{SO}_2^- + \text{NO}_2; \text{hv} + \text{SO}_2^- + \text{NO}_2; \text{hv} + \text{SO}_2^- + \text{O}_2$ H07 $\text{hv} + \text{SO}_2^-; \text{hv} + \text{SO}_2^- + \text{SO}_2; \text{hv} + \text{SO}_2^- + \text{NO}_2; \text{hv} + \text{SO}_2^- + \text{NO}_2; \text{hv} + \text{SO}_2^- + \text{O}_2$	E	1.55-3.5 eV	Hodges, R. V.; Vanderhoff, J. A. Photodestruction of ions containing sulfur dioxide. <i>J. Chem. Phys.</i> 72, 3517 (1980) United States
5585	A03 $\text{Ne} + \text{D}_2$	T	0.7 eV	Gerber, R. B.; Buch, V.; Buch, U. Direct inversion method for obtaining anisotropic potentials from rotationally inelastic and elastic cross sections. <i>J. Chem. Phys.</i> 72, 3596 (1980) Israel
5586	A14 $(\text{I} + \text{I}) + \text{He}$	T	270-1500 K	Burns, G.; Young, A. W. Trajectory study of atomic recombination reactions: VIII. The energy transfer mechanism. <i>J. Chem. Phys.</i> 72, 3620 (1980) Canada
5587	A11 $\text{XeF}^+ + \text{F}_2; \text{XeF}^+ + \text{Xe}; \text{XeF}^+ + \text{Ne}; \text{Xe} + \text{Xe}; \text{Xe} + \text{Ne}; \text{Xe} + \text{F}_2; \text{Ne} + \text{Ne}$ D07 $e + \text{XeF}^+$	E	307-500 K	Trainer, D. W.; Jacob, J. M.; Akhni, M. Electron and heavy particle temperature dependent quenching rate constants of XeF^+ . <i>J. Chem. Phys.</i> 72, 3646 (1980) United States

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5588	A13 $O^+ + H_2$ A17 $O^+ + H_2$	T	3.71-100 eV	Hepper, D. G. PCSCY potential energy surface for the high barrier adiabatic 1^+E^- process of the $O^+(^4S) + H_2(X^1\Sigma_g^+)$ + $HO^+(X^1\Sigma^+)$ + $H(^4S)$ reaction. J. Chem. Phys. 72, 3679 (1980) United States
5589	A02 $Ar^+ + He; He^+ + He$ A17 $Ar^+ + He; He^+ + He$	E	3.4-3.0 keV	Inouye, M.; Noda, K. Repulsive potentials derived from the integral elastic scattering of Ar^+ and He^+ ions in collision with He atoms. J. Chem. Phys. 72, 3695 (1980) Japan
5590	A11 $O_2^+ + H_2; O_2^+ + D_2; O_2^+ + H_2; O_2^+ + HCl; O_2^+ + ECl; O_2^+ + CH_4; O_2^+ + C_2H_6; O_2^+ + NH_3; O_2^+ + ND_3$	E	230-350 K	Kobay-Holmgren, K.; Stuhl, F. H_2 -ioner photochemical study of the temperature dependent quenching of $O_2^+(^4\Sigma_g^+)$. J. Chem. Phys. 72, 5720 (1980) West Germany
5591	A14 $O + H_2$ A17 $O + H_2$	T	137-500 K	Schinke, R.; Lester, W. A., Jr. Trajectory studies of $O + H_2$ reactions on fitted ab initio surfaces: II. Singlet case. J. Chem. Phys. 72, 3764 (1980) United States
5592	A14 $H + O_3$	E	370 K	Howard, C. J.; Finlayson-Pitts, B. J. Yields of HO_2 in the reaction of hydrogen atoms with ozone. J. Chem. Phys. 72, 3842 (1980) United States
5593	A03 $H_2 + D_2$ A14 $H_2 + D_2$	T	3.5-5.0 eV	Brown, M. J.; Silver, D. M. Comparison of reactive and inelastic scattering of $H_2 + D_2$ using four semiempirical potential energy surfaces. J. Chem. Phys. 72, 3865 (1980) United States
5594	A11 $O_2^+ + O_2; O^+ + O_2$	E	295 K	Berkowitz, M.; Brooks, C. L., III; Adams, S. A. Generalized Langevin theory for many-body processes in chemical dynamics: modeling of solid and liquid state response functions. J. Chem. Phys. 72, 3899 (1980) United States
5595	A03 $H^+ + H_2$	T	10 eV	Schinke, R.; Dupuis, M.; Lester, W. A., Jr. Proton- H_2 scattering on an ab initio CI potential energy surface. I. Vibrational excitation at 10 eV. J. Chem. Phys. 72, 3509 (1980) United States
5596	A03 $H^+ + H_2$	T	4.7-6.0 eV	Schinke, R. Proton- H_2 scattering on an ab initio CI potential energy surface: II. Combined vibrational-rotational excitation at 4.67 and 6 eV. J. Chem. Phys. 72, 3916 (1980) United States
5597	A03 $Li^+ + CO_2$	T	4.7-6.9 eV	Schatz, G. C. A quasiclassical trajectory study of collisional excitation in $Li^+ + CO_2$. J. Chem. Phys. 72, 3529 (1980) United States
5598	M05 $h\nu + CS_2$	E	193 nm	Yang, S. C.; Freedman, A.; Kawasaki, R.; Bersohn, R. Energy distribution of the fragments produced by photodissociation of CS_2 at 193 nm. J. Chem. Phys. 72, 4658 (1980) United States
5599	A10 $Ne^+ + He$	E	370 K	Cheng, R.S.F.; Silver, D. V. Radiative lifetimes and collisional deactivation rate constants of excited $Ne(2p^5 3p)$ states. J. Chem. Phys. 72, 4099 (1980) United States
5600	A11 $HCl^+ + HCl; HCl^+ + HBr; HBr^+ + HCl; HBr^+ + HBr$	E	295 K	Dasch, C. J.; Moore, C. B. Single quantum vibrational energy transfer from $HCl(v=2)$ and $HBr(v=2)$. J. Chem. Phys. 72, 4117 (1980) United States
5601	A11 $O_2^+ + He; O_2^+ + D_2; C_2^+ + H_2$	E	164-413 K	Moy, J.; Mao, C.-R.; Gordon, R. J. The vibrational relaxation of O_2 by He, D_2 and H_2 . J. Chem. Phys. 72, 4216 (1980) United States
5602	A14 $Ge + H_2O$	E	475-920 K	Fontijn, A.; Felder, W. HTPFR kinetics studies of the Ge/H_2O chemiluminescent reaction. J. Chem. Phys. 72, 4316 (1980) United States
5603	M05 $h\nu + H_2C$	E	1370-1050 Å	Lee, L. C. $OH(A^2\Pi^+ + X^2\Sigma^+)$ yield from H_2O photodissociation in 1050-1370 Å. J. Chem. Phys. 72, 4334 (1980) United States

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5604	A17 Li + HF	T	Undef	Chen, M.-M.-L.; Schaefer, M. F., III. Potential energy surface for the Li + HF → LiF + H reaction. <i>J. Chem. Phys.</i> 72, 4376 (1980) United States
5605	A17 H ₂ ; H ₂ ⁺ ; H ₂ ²⁺	T	Undef	Cobb, M.; Moran, T. C.; Borkman, R. F.; Collins, R. Ab initio potential energy curves for the low-lying electronic states of H ₂ ²⁺ . <i>J. Chem. Phys.</i> 72, 4462 (1980) United States
5606	A03 Li ⁺ + He; Li ⁺ + Ne; Li ⁺ + Ar; Li ⁺ + Kr; Li ⁺ + Xe A11 Li ⁺ + He; Li ⁺ + Ne; Li ⁺ + Ar; Li ⁺ + Kr; Li ⁺ + Xe	E	558 K	Elward-Berry, J.; Berry, M. J. Lithium [Li(2 ² P _{1/2,3/2})] fine structure transitions induced by collisions with noble gas atoms. <i>J. Chem. Phys.</i> 72, 4500 (1980) United States
5607	A03 Li ⁺ + H ₂ ; Li ⁺ + D ₂ A11 Li ⁺ + H ₂ ; Li ⁺ + D ₂	E	564 K	Elward-Berry, J.; Berry, M. J. Lithium [Li(2 ² P _{1/2} out <i>jp</i>)] fine structure transitions and quenching induced by collisions with molecular hydrogen (H ₂ , D ₂). <i>J. Chem. Phys.</i> 72, 4516 (1980) United States
5608	E16 e + [TII + Xe]	E	0-1.5 MeV	Schlie, L. A.; Jusinski, L. E.; Sathya, R. E.; Hamill, R. A.; Drummond, D. L. Strong TI-Je excimer band emission via electron beam initiated discharges in TII and Xe mixtures. <i>J. Chem. Phys.</i> 72, 4525 (1980) United States
5609	E16 e + [TII + Ne]	E	0-1.5 MeV	Schlie, L. A.; Jusinski, L. E.; Sathya, R. D.; Hamill, R. A.; Drummond, D. L. Strong TI-Je excimer band emission at 4590 and 6560 Å via electron beam initiated discharges in TII and Ne mixtures. <i>J. Chem. Phys.</i> 72, 4549 (1980) United States
5610	A09 NH ₄ ⁺ + Cl ⁻ ; NH ₄ ⁺ + NO ₂ ⁻ ; Cl ₂ ⁺ + Cl ⁻ ; Cl ₂ ⁺ + NO ₂ ⁻ ; CCl ₃ ⁺ + Cl ⁻ ; CCl ₃ ⁺ + NO ₂ ⁻	T	330 K	Miller, T. M. Parametrization of ion-ion mutual neutralization rate coefficients. <i>J. Chem. Phys.</i> 72, 4659 (1980) United States
5611	A17 ND ₂ ⁺	T	Undef	Hopper, D. G. PCSCP/L ground state potential energy surface, dipole moment function, and gas phase vibrational frequencies for the nitrogen dioxide positive ion. <i>J. Chem. Phys.</i> 72, 4676 (1980) United States
5612	A10 H ₂ + H ₂ ; HF + HF	T	0.05-0.30 eV	DePrieto, A. E.; Rabitz, M. The collision of two linear rotors: a scaling theoretical analysis of the H ₂ -H ₂ and HF-HF systems. <i>J. Chem. Phys.</i> 72, 4685 (1980) United States
5613	A03 He + Na ₂	E	320 K	Bergmann, K.; Heffer, U.; Witt, J. State-to-state differential cross sections for rotationally inelastic scattering of Na ₂ by He. <i>J. Chem. Phys.</i> 72, 4777 (1980) West Germany
5614	A14 F + H ₂ ; F + D ₂	E	190-373 K	Wurzberg, E.; Houston, P. L. The temperature dependence of absolute rate constants for the F + H ₂ and F + D ₂ reactions. <i>J. Chem. Phys.</i> 72, 4811 (1980) United States
5615	A14 F + H ₂ ; F + D ₂	E	295-765 K	Heldner, R. P., III; Bott, J. F.; Gardner, C. E.; Meizer, J. E. Absolute rate coefficients for F + H ₂ and F + D ₂ at T = 295-765 K. <i>J. Chem. Phys.</i> 72, 4815 (1980) United States
5616	A13 H ₃ ⁺ + H ₂	E	0.1-0.9 eV	Koyanc, I.; Tenebe, K. State-selected ion-molecule reactions by a threshold electron-secondary ion coincidence (TESICO) technique: I. Apparatus and the reaction H ₃ ⁺ + H ₂ → H ₂ ⁺ + H. <i>J. Chem. Phys.</i> 72, 4828 (1980) Japan
5617	A17 H ₂ O ⁺	T	Undef	Jackels, C. F. An ab initio potential-energy surface study of several states of the water cation. <i>J. Chem. Phys.</i> 72, 4873 (1980) United States

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5618	A14 $H + H_2$	T	8.4-8.8 eV	Bowman, J. R.; Lee, E. T. Sodium rotation reactive scattering: theory and application to $3-8 H + H_2$. J. Chem. Phys. 72, 5071 (1980) United States
5619	H85 $h\nu + Na_2$; $h\nu + Rb_2$	E	5145-4579 Å	Rothe, E. W.; Krauss, U.; Pures, R. Photodissociation of Na_2 and Rb_2 : analysis of atomic fine structure of 2p products. J. Chem. Phys. 72, 5142 (1980) United States
5620	A10 $CD + DCl$; $CD + CO$; $DCI + DCl$	E	295 K	Busch, C. J.; Moore, C. B. Experimental V-V energy transfer from directly excited $CC(v=2)$ and $DCI(v=2)$. J. Chem. Phys. 72, 5219 (1980) United States
5621	E02 $e + H_2$	T	2-30 eV	Rumbis, J. R., Jr.; Truhlar, D. G. Comparison of local exchange potentials for electron- H_2 scattering. J. Chem. Phys. 72, 5223 (1980) United States
5622	E02 $e + H_2$ E03 $e + H_2$ G09 $e + H_2$	T	23-35 eV	Dada, K.; Truhlar, D. G. State-to-state cross sections for elastic and inelastic electron scattering by H_2 at 20-35 eV, including resonant enhancement of vibrational excitation. J. Chem. Phys. 72, 5245 (1980) United States
5623	A02 $Cu + Ar$; $Cu + O_2$; $K + C_2$	E	36-91 eV	Nie, A. W.; Khromov, V. M.; Lee, J. Observation of molecular action in a scattering experiment. J. Chem. Phys. 72, 5262 (1980) The Netherlands
5624	A13 $C^+ + H_2 + He$; $N^+ + H_2 + He$; $N_2^+ + H_2 + He$	T	180-300 K	Herbst, E. Refined calculated ion-molecule association rates. J. Chem. Phys. 72, 5264 (1980) United States
5625	D04 $e + W$	E	370-1500 eV	Rawlings, K. J.; Hopkins, B. J.; Foulkes, S. B. The tungsten Auger transitions: 150-200 eV. J. Electron. Spectrosc. Relat. Phenomena 18, 213 (1980) United Kingdom
5626	H06 $h\nu + Au$	E	100-750 eV	Johansson, L. I.; Necht, M. W.; Liden, I. The energy-dependence of the Au 4f photoionization cross-section. J. Electron. Spectrosc. Relat. Phenomena 18, 271 (1980) United States
5627	D04 $e + Pb + Ni$; $e + Sn + Ni$; $e + P + Ni$; $e + O + Ni$	E	2.5 keV	Ida, O. Effect of adsorption of various elements (Pb, Sn, P, O) on the secondary-electron energy spectra from a nickel (100) surface. J. Electron. Spectrosc. Relat. Phenomena 18, 351 (1980) France
5628	E05 $e + Ar$	E	75-100 eV	Roy, L.; Poulin, A.; Hubin-Framship, M.-J.; Delvaux, J. Electron scattering and electron ejection by argon in the range 24-29 eV. J. Electron. Spectrosc. Relat. Phenomena 19, 101 (1980) Canada
5629	H06 $h\nu + HBr$; $h\nu + HI$	E	21.2 eV	White, M. G.; Southworth, S. M.; Kabin, P.; Shirley, D. A. The photoelectron angular distributions of HBr and HI at $h\nu = 21.2$ eV. J. Electron. Spectrosc. Relat. Phenomena 19, 115 (1980) United States
5630	C04 $e^+ + Au$ E12 $e^+ + Au$	E	0.5 MeV	Pandya, S.; McGowan, J. W. A gold moderator surface preparation for increased slow positron yield. J. Electron. Spectrosc. Relat. Phenomena 19, 161 (1980) United States
5631	D13 $O_2 + SS$	E	350-1200 K	Jardin, C.; Duc, B. M.; Gauthier, J. P.; Thollat, G.; Michel, P. Interaction of oxygen with a stainless-steel surface studied by electron spectroscopy. J. Electron. Spectrosc. Relat. Phenomena 19, 213 (1980) France
5632	H06 $h\nu + CO$; $h\nu + H_2O$; $h\nu + H_2S$; $h\nu + O$; $h\nu + S$	T	13-65 eV	Roche, M.; Selah, D. R.; Mosser, R. P. Scattered-wave calculations of photoionization cross-sections and asymmetry parameters for CO , H_2O and H_2S . J. Electron. Spectrosc. Relat. Phenomena 19, 273 (1980) Canada

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5633	H_2 $h\nu + \text{O}_2$	E	4.8 μ	Fland, J.-M.; Camy-Peyret, C.; Berte, A.; Secroun, C.; Jouze, P. Line positions and intensities for the $2v_2$, $v_1 + v_2$ and $2v_1$ bands of ozone. <i>J. Mol. Spectrosc.</i> 81, 105 (1980) France
5634	H_2 Undef	T	Undef	Whiting, E. E.; Schadee, A.; Tatum, J. B.; Noonen, J. T.; Nicholls, R. W. Recommended conventions for defining transition moments and intensity factors in diatomic molecular spectra. <i>J. Mol. Spectrosc.</i> 86, 249 (1980) United States
5635	H_2 $h\nu + \text{O}_2$	E	750 nm	Brault, J. W. Detection of electric quadrupole transitions in the oxygen A band at 7500 Å. <i>J. Mol. Spectrosc.</i> 80, 384 (1980) United States
5636	H_2 Undef	T	Undef	Noben, H.; Müller, A. A general isotopic sum-rule for frequencies, band intensities, and Coriolis coupling constants. <i>J. Mol. Spectrosc.</i> 80, 455 (1980) West Germany
5637	H_2 $h\nu + \text{SF}_6$; $h\nu + \text{UF}_6$; $h\nu + \text{UF}_6$	E	925-1055 cm^{-1}	Cox, E. M.; Gnauch, A. Continuous-wave CCl_2 laser spectroscopy of SF_6 , WF_6 , and UF_6 . <i>J. Mol. Spectrosc.</i> 81, 207 (1980) United States
5638	H_2 $h\nu + \text{H}_2$	E	2500-5900 cm^{-1}	Cerny, D.; Roux, F.; Effantin, C.; D'Incan, J.; Verges, J. High-resolution Fourier spectroscopy of $^{14}\text{N}_2$ and $^{15}\text{N}_2$ infrared emission spectrum: extensive analysis of the ν_2 ($\text{sub } u$) - ν_2 ($\text{sub } g$) system. <i>J. Mol. Spectrosc.</i> 81, 216 (1980) France
5639	H_2 $h\nu + \text{CO}_2$	E	4.3 μ	Fridovich, B.; Braun, W. C.; Smith, G. H.; Champion, E. E. Strengths of single lines in the $^{12}\text{C}^{16}\text{O}_2$ ν_2 band at 4.3 μm . <i>J. Mol. Spectrosc.</i> 81, 246 (1980) United States
5640	H_2 $h\nu + \text{CO}_2$	E	4.3 μ	Rinsland, C. P.; Baldacci, A.; Maraheri Rao, A. Strengths of $^{12}\text{C}^{16}\text{O}_2$ lines at 4.3 μm . <i>J. Mol. Spectrosc.</i> 81, 256 (1980) United States
5641	H_2 $h\nu + \text{CO}_2$	E	4.8-5.3 μ	Arcas, P.; Arle, E.; Carlinet, P.; Valentin, A.; Henry, A. Intensity of CO_2 bands in the 4.8- to 5.3- μm region. The (11 10, 03 10) $_1$ -0000 band. <i>J. Mol. Spectrosc.</i> 81, 262 (1980) France
5642	E03 $e + \text{H}_2^+$ E09 $e + \text{H}_2^+$	E T	6-9 eV	Huetz, A.; Gréteau, F.; Hall, R. L.; Hazeau, J. Initial vibrational state dependence of resonant excitation and dissociative attachment in electron- H_2 scattering. <i>J. Chem. Phys.</i> 72, 5257 (1980) France
5643	A13 $\text{Ne}_2^+ + \text{Ar}$; $\text{Ne}_2^+ + \text{Kr}$; $\text{Ne}_2^+ + \text{Xe}$; $\text{Ne}_2^+ + \text{H}_2$; $\text{Ne}_2^+ + \text{O}_2$; $\text{Ne}_2^+ + \text{NO}$; $\text{Ne}_2^+ + \text{HCl}$; $\text{Ne}_2^+ + \text{HBr}$; $\text{Ne}_2^+ + \text{Ar} +$ Ar ; $\text{Ne}_2^+ + \text{Kr} + \text{Kr}$; $\text{Ne}_2^+ + \text{Xe} + \text{Xe}$; $\text{Ne}_2^+ + \text{H}_2 + \text{H}_2$; $\text{Ne}_2^+ + \text{O}_2 + \text{O}_2$; $\text{Ne}_2^+ + \text{NO} + \text{NO}$; $\text{Ne}_2^+ + \text{HCl} + \text{HCl}$; $\text{Ne}_2^+ + \text{HBr} + \text{HBr}$	E	330 K	Collins, C. B.; Lee, F. W. Measurement of the rate coefficients for the bimolecular and termolecular ion-molecule reactions of Ne_2^+ with selected atomic and molecular species. <i>J. Chem. Phys.</i> 72, 6361 (1980) United States
5644	A13 $\text{Cl}^- + \text{HBr}$; $\text{Cl}^- + \text{HI}$	E	330 K	Zwier, T. S.; Bierbaum, V. M.; Ellison, G. B.; Leone, S. R. Vibrational product state distributions of ion-molecule reactions by infrared chemiluminescence: $\text{Cl}^- + \text{HBr}$, $\text{HI} + \text{HCl}(\nu) + \text{Br}^-$, I^- . <i>J. Chem. Phys.</i> 72, 5426 (1980) United States
5645	A17 CN^+ ; Si_2 ; SiC ; CP^+ ; $^{14}\text{N}^+$	T	Undef	Bruna, P. J.; Peyerimhoff, S. D.; Buenker, R. J. Theoretical prediction of the potential curves for the lowest-lying states of the isovalent diatomic CN^+ , Si_2 , SiC , CP^+ , and SiN^+ using the ab initio MRD-CI method. <i>J. Chem. Phys.</i> 72, 5437 (1980) West Germany
5645	D11 $\text{H}_2 + \text{H}_2$; $\text{H}_2 + \text{D}_2$; $\text{D}_2 + \text{H}_2$; $\text{D}_2 + \text{D}_2$	E	Undef	Govers, T. R.; Patters, L.; Scoles, G. Molecular beam experiments on the sticking and accommodation of molecular hydrogen on a low-temperature substrate. <i>J. Chem. Phys.</i> 72, 5446 (1980) Canada

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5647	A10 $N_2^+ + He$	E	300 K	Katayama, D. N.; Miller, T. A.; Evershoy, V. E. Collisional deactivation of selectively excited N_2^+ . J. Chem. Phys. 72, 5469 (1980) United States
5648	A*3 $He + CO_2$ A11 $He + CO_2$ A17 $He + CO_2$ A18 $He + CO_2$	T	0.36 eV	Stroud, C. L.; Saff, L. N. Theoretical investigations of rotationally inelastic collisions in the $CO_2 + He$ system using ab initio, electron-gas, and experimental potential-energy surfaces. J. Chem. Phys. 72, 5475 (1980) United States
5649	A06 $O_2 + Cs; O_2 + K$ A07 $O_2 + Cs; O_2 + K$	E	0-100 eV	Stockdale, J.A.E.; Barnock, R. J. Collisional ionization of Cs and K by O_2 . J. Chem. Phys. 72, 5673 (1980) United States
5650	A11 $HBr^+ + CO; HBr^+ + NO; HBr^+ + N_2;$ $HBr^+ + C_2; HBr^+ + CO_2; HBr^+ + N_2O$	E	300-700 K	Saoudi, B.; Boyennette, L.; Margottin-Maclou, R.; Henry, L. Vibrational energy transfers from the $v = 1$ level of HBr to the $v = 1$ level of CO , NO , N_2 , and O_2 , and to the 00-1 level of CO_2 and N_2O . J. Chem. Phys. 72, 5687 (1980) France
5651	H06 $h\nu + N_2$	T	15-45 eV	Raseev, G.; Le Rouzo, N.; Lefebvre-Brion, M. Partial photoionization cross section and photoelectron angular distribution for the $K^+ 2I(\text{sub } g)^+$ state of N_2^+ in the static-exchange approximation. J. Chem. Phys. 72, 5701 (1980) Belgium
5652	A14 $Hg + Cl_2 + h\nu$ D07 $Hg + Cl_2 + h\nu$	T	300 K	Werner, J. On laser-induced hopping reactions. J. Chem. Phys. 72, 5731 (1980) United States
5653	A11 $I_2^+ + He; I_2^+ + Ne; I_2^+ + Ar$	E	297-453 K	Selke, R.; Toss, J.; Rice, S. A. Collision induced relaxation of an electronically excited molecule: evidence for low energy resonance enhanced vibrational deactivation. J. Chem. Phys. 72, 5733 (1980) United States
5654	A14 $HD^+ + He$	E	300 K	Herman, I. P. Molecular hydrogen exchange: a study of $HD(v = 5) + HD(v = 0) + H_2 + D_2$. J. Chem. Phys. 72, 5777 (1980) United States
5655	A07 $He^+ + He^+$	E	0.51-10 eV	Wayman, M. H.; Tang, S. Y. Penning ionization of metastable helium in the metastable helium-metastable neon system. J. Chem. Phys. 72, 5783 (1980) United States
5656	H06 $h\nu + AgCl; h\nu + AgBr; h\nu + AgI$	E	584 Å	Berkowitz, J.; Batson, C. H.; Goodson, G. L. Photoelectron spectroscopy of $AgCl$, $AgBr$, and AgI vapors. J. Chem. Phys. 72, 5825 (1980) United States
5657	H05 $2h\nu + O_3^+$	E	315-259 nm	Zittel, P. F.; Little, D. D. Photodissociation of vibrationally excited ozone. J. Chem. Phys. 72, 5860 (1980) United States
5658	A14 $F + HCl; F + HBr; F + HI; F + DBr$	E	195-373 K	Bersberg, E.; Houston, P. L. The temperature dependence of hydrogen abstraction reactions: $F + HCl$; $F + HBr$; $F + DBr$, and $F + HI$. J. Chem. Phys. 72, 5818 (1980) United States
5659	A17 $N_2 + N_2$	T	Under	Berns, R. H.; van der Aveld, A. N_2-N_2 interaction potential from ab initio calculations, with application to the structure of $(N_2)_2^+$. J. Chem. Phys. 72, 6107 (1980) The Netherlands
5660	A11 $CO^+ + CO$	E	300 Å	Paske, W. C.; Twist, J. R.; Garrett, A. W.; Golden, L. E. Low energy electron impact excitation and radiative decay of the d 3σ state of CO . J. Chem. Phys. 72, 6134 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5661	A11 $\text{CO}_2 + \text{CO}_2; \text{CO}_2 + \text{H}_2$	T	287-980 K	Pach, R. T. Analytic estimation of almost resonant molecular energy transfer due to multipolar potentials. VV processes involving CO_2 . J. Chem. Phys. 72, 6140 (1980) United States
5662	B17 $\text{H}_2^+ + \text{Re}$	E	157-3000 eV	Hu, M.-L.; Fukuda, Y.; Baldwin, E. A.; Murray, P. T.; Rabalais, J. W. Interactions of ion beams with surfaces: dynamics of the reaction of H_2^+ with rhenium. J. Chem. Phys. 72, 6150 (1980) United States
5663	A07 $\text{Ne}^+ + \text{Ar}^+$	E	0.01-10 eV	Reynolds, R. M.; Tang, S. Y. Chemi-ionization in the metastable neon-metastable argon system. J. Chem. Phys. 72, 6176 (1980) United States
5664	A17 $\text{H} + \text{Cl}_2; \text{D} + \text{Cl}_2$	E	Underf	Connor, J. H. L.; Jakubetz, W.; Herz, J.; Whitehead, J. C. The reaction $\text{X} + \text{Cl}_2 \rightarrow \text{XCl} + \text{Cl}$ ($\text{X} = \text{H}, \text{D}$). I. A new inversion procedure for obtaining energy surfaces from experimental detailed and total rate coefficient data. J. Chem. Phys. 72, 6205 (1980) United Kingdom
5665	A14 $\text{Ba} + \text{MCl}; \text{Ba} + \text{MBr}$	E	0.1-0.5 eV	Siegel, A.; Schultz, A. Laser-induced fluorescence study of reactions of Ba with MCl and MBr at different collision energies. J. Chem. Phys. 72, 6227 (1980) West Germany
5666	A14 $\text{Ba} + \text{HF}$	E	3-13 kcal/mol	Gupta, A.; Perry, D. S.; Zare, R. B. Effect of reagent translation on the dynamics of the exothermic reaction $\text{Ba} + \text{HF}$. J. Chem. Phys. 72, 6237 (1980) United States
5667	A14 $\text{Sr} + \text{HF}$	E	4-14 kcal/mol	Gupta, A.; Perry, D. S.; Zare, R. B. Comparison of reagent translation and vibration on the dynamics of the endothermic reaction $\text{Sr} + \text{HF}$. J. Chem. Phys. 72, 6250 (1980) United States
5668	A14 $\text{H} + \text{T}_2; \text{D} + \text{T}_2$	E	3.3-1.4 eV	Kwei, G. H.; Lo, V. W. S. Crossed beam studies of the hydrogen exchange reaction: the reaction of H and D atoms with T_2 molecules. J. Chem. Phys. 72, 6265 (1980) United States
5669	A11 $\text{Br}_2^+ + \text{Br}_2$	E	300 K	Luyckaert, R.; De Vlieger, G.; van Craen, J. Lifetimes and collisional quenching cross sections of single rotational states in bromine. J. Chem. Phys. 72, 6283 (1980) Belgium
5670	C03 $e + \text{Ne}; e + \text{Ar}; e + \text{Kr}$ C07 $e + \text{Ne}; e + \text{Ar}; e + \text{Kr}$ C09 $e + \text{Ne}; e + \text{Ar}; e + \text{Kr}$	T	0.025-0.5 eV	Nozlander, A. Electron thermalization in gases. II. Neon, argon, krypton, and xenon. J. Chem. Phys. 72, 6289 (1980) United States
5671	A10 $\text{Ar} + \text{Na}_2$	E	0.28 eV	Serri, J. A.; Morales, A.; Rosenblitz, W.; Pritchard, D. E.; Becker, C. H.; Kinsay, J. L. Observation of halos in rotationally inelastic scattering of Na_2 from Ar. J. Chem. Phys. 72, 6304 (1980) United States
5672	N06 $\text{He} + \text{CO}$	E	17-26 eV	Cole, B. E.; Ederer, D. L.; Stockbauer, R.; Coddling, K.; Parr, A. C.; Vont, J. B.; Follisoff, E. D.; Scherer, J. L. Wavelength and vibrational-state dependence of photoelectron angular distributions. Resonance effects in S I photoionization of CO. J. Chem. Phys. 72, 6308 (1980) United States
5673	A03 $\text{N}_2^+ + \text{HgBr}_2$ A04 $\text{N}_2^+ + \text{HgBr}_2$	E	0.2 meV	Fahy, D. W.; Scheerer, L. D. Dissociative excitation of HgBr_2 in collisions with a beam of metastable nitrogen. J. Chem. Phys. 72, 6316 (1980) United States
5674	D02 $\text{D}^+ + \text{C}$	E	40-120 keV	Doe, S. K.; Kaminsky, M.; Tishler, K.; Cecchi, J. Surface damage and sputtering of A1J graphite as candidate armor plate material for ITR under D^+ bombardment. J. Nucl. Mater. 86-88, 226 (1979) United States

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5675	D15 $n + C$	E	1.5-15 MeV	Gray, W. J.; Morgan, W. C. Damage function for carbon at neutron energies up to 15 MeV. J. Nucl. Mater. 85-86, 237 (1979) United States
5676	DC1 $D + SS; T + SS$	E	300 K	Swanniger, V. A.; Bantess, B. Tritium and deuterium permeation in stainless steel: influence of thin oxide films. J. Nucl. Mater. 85-86, 331 (1979) United States
5677	DB1 $D + Fe$	E T	300 K	Vanbroeck, F.; Ali-Khan, I.; Dietz, K. J.; Winkhold, P. Hydrogen solubilization into and permeation through wall materials. J. Nucl. Mater. 85-86, 345 (1979) West Germany
5678	CC2 $H^+ + Cu; H^+ + Ag; H^+ + Ni; D^+ + Cu; D^+ + Ag; D^+ + Ni; He^+ + Cu; He^+ + Ag; He^+ + Ni; Li^+ + Cu; Li^+ + Ag; Li^+ + Ni$	E	45-286 keV	Auerbach, R. S.; Benadeh, R.; Norbin, K. L.; Thompson, L. J. Defect production and electronic stopping for light ions in metals. J. Nucl. Mater. 86-88, 503 (1979) United States
5679	D15 $H^+ + Fe; H^+ + Cu$	E	10-16 MeV	Thompson, B. A.; Omer, A. N.; Robinson, J. E. 10-16 MeV proton irradiation damage in iron and copper. J. Nucl. Mater. 85-86, 509 (1979) Canada
5680	D15 $n + Au; n + Cu$	E	15 MeV	Marayan, J.; Uhr, S. M. The nature of high energy neutron damage in copper and gold. J. Nucl. Mater. 85-86, 515 (1979) United States
5681	D14 Under	T	Under	Mansur, L. K.; Yoo, M. M. Advances in the theory of swelling in irradiated metals and alloys. J. Nucl. Mater. 85-86, 523 (1979) United States
5682	D14 $n + SS$	T	Under	Odette, G. R. Modeling of microstructural evolution under irradiation. J. Nucl. Mater. 85-86, 533 (1979) United States
5683	D14 Under	T	Under	Kozlyk, L. M.; Sommer, V. F.; Heertzen, J.; Green, b. V. An analytic comparison of the effect of steady state and cyclic pulsed radiation on void growth and swelling. J. Nucl. Mater. 85-86, 553 (1979) United States
5684	D14 $e + SS; n + SS$	E	Under	Bullough, R.; Mayne, M. R.; Wood, R. M. Continuous gas generation effects in neutron and simulation environments. J. Nucl. Mater. 85-86, 565 (1979) United Kingdom
5685	D14 $n + Ni$	T	Under	Hall, B. O. Effect of simultaneous helium injection on defect cluster nucleation in irradiated metals. J. Nucl. Mater. 85-86, 565 (1979) United States
5686	D14 $n + Ni$	T	Under	Yoo, M. M.; Mansur, L. K. The inclusion of mobile helium in a rate theory model of void swelling. J. Nucl. Mater. 85-86, 571 (1979) United States
5687	D14 $Ni^+ + SS$	E	4 MeV	Lee, E. M.; Mansur, L. K.; Yoo, M. M. Spatial variation in void volume during charged particle bombardment—the effects of injected interstitials. J. Nucl. Mater. 85-86, 577 (1979) United States
5688	D14 Under	T	Under	Volter, W. G.; Gerner, F. A. Swelling-induced stresses in ion-bombarded surfaces; effect of crystalline orientation. J. Nucl. Mater. 85-86, 583 (1979) United States
5689	D14 Under	T	Under	Mansur, L. K.; Coghlan, W. A.; Brailsford, A. D. Swelling with inhomogeneous point defect production—a cascade diffusion theory. J. Nucl. Mater. 85-86, 581 (1979) United States
5690	CC4 $Au + Au$	T	100 keV	Hoffman, T. J.; Robinson, M. T.; Dadds, M. L. Jr. Range calculations using multigroup transport methods. J. Nucl. Mater. 85-86, 597 (1979) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
5691	D15 Undef	T	Undef	Yanamoto, R.; Shibata, M.; Goyama, F. Computer simulation of radiation damage in amorphous metals. J. Nucl. Mater. 85-86, 603 (1978) Japan
5692	D15 Undef	T	Undef	Haimlich, H. L.; Schiffgens, J. C.; Schwartz, D. R. The application of dynamical computer models to high energy cascades. J. Nucl. Mater. 85-86, 607 (1978) United States
5693	D15 Undef	T	Undef	Parkin, D. N.; Coulter, C. A. Displacement functions for diatomic materials. J. Nucl. Mater. 85-86, 611 (1978) United States
5694	D15 n + Cu	E	2-24 MeV	Goldstone, J. A.; Parkin, D. N.; Simpson, N. H. Differential neutron cross section for interstitial production in copper. J. Nucl. Mater. 85-86, 617 (1978) United States
5695	D14 n + SS; He ⁺ + SS D15 n + SS; He ⁺ + SS	E	Undef	Spitznagel, J. A.; Wiffen, F. W.; Wolff, F. V. Microstructures developed in simulated fusion irradiations. J. Nucl. Mater. 85-86, 625 (1978) United States
5696	D14 Si ⁺⁺ + SS D15 Si ⁺⁺ + SS	E	28 MeV	Choyke, J. J.; McGruer, J. H.; Townsend, J. R.; Spitznagel, J. A.; Boyle, B. J.; Vershytis, F. J. Helium effects in ion-beam-irradiated 304 stainless steel. J. Nucl. Mater. 85-86, 547 (1978) United States
5697	D14 Ni ⁺ + [Fe + Cr + Ti]; He ⁺ + [Fe + Cr + Ti]	E	0.95-3.0 MeV	Agarwal, S. C.; Agrawal, G.; Potter, D. L.; Taylor, A.; Wolff, F. V., Jr. Microstructure of single and dual-ion irradiated Fe-21 Ni-15 Cr and Ti-6 Al-4 alloys. J. Nucl. Mater. 85-86, 622 (1978) United States
5698	D14 Ni ⁺ + SS	E	4 MeV	Kanik, E. A. The influence of helium on microstructural evolution in an ion-irradiated low swelling stainless steel. J. Nucl. Mater. 85-86, 625 (1978) United States
5699	D14 He ⁺ + SS	E	83 keV	Bennetch, J. E.; Settler, M. L.; Morton, L. L. S.; Horton, J. A.; Jesser, W. A. HVEM observations of in-situ He-ion bombardments. J. Nucl. Mater. 85-86, 665 (1978) United States
5700	D14 Ni ⁺ + Ni	E	45 MeV	Mazey, I. J.; Nelson, R. S. Observations of bubble-void transition effects in nickel alloys. J. Nucl. Mater. 85-86, 671 (1978) United Kingdom
5701	D14 He ⁺ + SS; D ⁺ + SS; Ni ⁺ + SS	E	0.2-4.0 MeV	Pachen, N. H.; Farrell, K. Simulation of first wall damage: effects of the method of gas implantation. J. Nucl. Mater. 85-86, 677 (1978) United States
5702	D14 Ni ⁺ + SS	E	4 MeV	Farrell, K.; Pachen, N. H. A helium-induced shift in the temperature dependence of swelling. J. Nucl. Mater. 85-86, 683 (1978) United States
5703	D14 Cu ⁺ + Ni; Ni ⁺ + Ni	E	14-19 MeV	Whitely, J. B.; Kucinski, G. L.; Bihans, P.; Bilen, J. Depth dependent void swelling rates in self-ion irradiated nickel. J. Nucl. Mater. 85-86, 701 (1978) United States
5704	D14 He ⁺ + Ni	E	530 keV	Fenske, G.; Dan, S. R.; Kaminsky, P.; Riley, G. H. The effect of dose on the evolution of cavities in 500 keV He ⁺ -ion irradiated nickel. J. Nucl. Mater. 85-86, 707 (1978) United States
5705	D14 n + SS	E	Undef	Maxwell, P. J. The precipitation response of 20 percent-cold-worked type 316 stainless steel to simulated fusion irradiation. J. Nucl. Mater. 85-86, 713 (1978) United States

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5706	D14 $H^+ + [Ni + Si]$	E	40 ³ keV	Jaegerman, K.; Ardell, A. J. The early stages of irradiation induced γ precipitation in proton irradiated nickel-silicon alloys. <i>J. Nucl. Mater.</i> 85-86, 719 (1979) United States
5707	D14 $n + Mo; n + Fe; n + Nb; He^+ + Mo; He^+ + Fe; He^+ + Nb$	E	1250 keV	Kitajima, K.; Futagami, K.; Kurokawa, E. Nucleation of voids in bcc metals. <i>J. Nucl. Mater.</i> 85-86, 725 (1979) Japan
5708	D14 $Ta^{2+} + Mo; He^+ + Mo$	E	0.2-7 MeV	Brinkhall, J. L.; Charlot, L. A.; Kisselager, M. E. Effect of Mo on the swelling/microstructure produced in Mo by ion bombardment. <i>J. Nucl. Mater.</i> 85-86, 731 (1979) United States
5709	D14 $Cu^+ + [Mo + Zr]$	E	14 MeV	Liao, K.-T.; Wilken, P.; Kucinski, G. L.; Hillen, J. M. Void swelling and phase instability in heavy ion irradiated Mo-Zr alloy. <i>J. Nucl. Mater.</i> 85-86, 735 (1979) United States
5710	D14 $n + [Pb + Zr]; n + [V + Ti]; n + Mo; n + Nb; n + V; n + [Mo + Ti + Zr]$	E	0.1 MeV	Sprague, J. A.; Slidt, F. A., Jr.; Reed, J. R. The microstructures of some refractory metals and alloys following neutron irradiation at 625°C. <i>J. Nucl. Mater.</i> 85-86, 739 (1979) United States
5711	D14 $Ni^{2+} + V; Ni^{2+} + [V + Ti]; Ni^{2+} + [V + Ti + B^{11}]; Ni^{2+} + [V + Ti + Zr]$	E	4 MeV	Schneider, J. G.; Chen, C. V. Helium gas bubble formation in binary and ternary alloys of irradiated vanadium by energetic N^{14} ions. <i>J. Nucl. Mater.</i> 85-86, 745 (1979) United States
5712	D14 $Cu^+ + V; Cu^+ + [V + Ni]; Cu^+ + [V + N]$	E	14 MeV	Lott, R. G.; Kucinski, G. L.; Wilken, P.; Smith, H. V., Jr. Effect of nickel and nitrogen on void formation in ion bombarded vanadium. <i>J. Nucl. Mater.</i> 85-86, 751 (1979) United States
5713	D14 $n + V$	E	1 MeV	Bressers, J.; van Witzenburg, W. The influence of oxygen on void formation in neutron irradiated vanadium. <i>J. Nucl. Mater.</i> 85-86, 757 (1979) The Netherlands
5714	D14 $V^+ + [V + Cr]$	E	3.5 MeV	Rehn, L. E.; Agarwal, S. C.; McFell, F. V., Jr. Radiation-induced solute segregation in a V-15 wt percent Cr alloy. <i>J. Nucl. Mater.</i> 85-86, 763 (1979) United States
5715	D14 $He^+ + Ni$	E	Undef	Ruedi, C.; Schiller, P. The behaviour of He-bubbles in metals during high plastic deformation. <i>J. Nucl. Mater.</i> 85-86, 769 (1979) Italy
5716	D14 $He^+ + V$	E	2 MeV	Maletta, D. The microstructure of vanadium implanted with 2-MeV helium ions under pulsed conditions. <i>J. Nucl. Mater.</i> 85-86, 775 (1979) West Germany
5717	D15 $H^+ + SS; D^+ + SS$	E	7-10 MeV	Jung, P.; Schuegger, C.; Ullmeyer, H. Irradiation creep in deuterium-bombarded stainless steel. <i>J. Nucl. Mater.</i> 85-86, 867 (1979) West Germany
5718	D15 $n + Ni; n + Nb; n + SS$	E	1-20 MeV	Jones, R. M.; Styris, D. L.; Bradley, E. R.; Greenwood, L. R.; Heinrich, R. M. Microstructure and tensile properties of $T(d, n)$ and $B(d, n)$ neutron irradiated nickel, niobium and 316 SS. <i>J. Nucl. Mater.</i> 85-86, 889 (1979) United States
5719	D16 $D^+ + SS; D^+ + Inconel; D^+ + TZM$	E	3.3 keV	Wilson, K. L.; Fontana, A. E. The temperature dependence of deuterium trapping in fusion reactor materials. <i>J. Nucl. Mater.</i> 85-86, 989 (1979) United States
5720	D16 $D^+ + SS; Ti + SS$	E	50-200 eV	Loch, G. W.; Bashas, M. I. Hydrogen profiles in tokamak fusion reactor first walls. <i>J. Nucl. Mater.</i> 85-86, 995 (1979) United States

REF. NO.	REACTANTS	EXP OR *MEOS	ENERGY RANGE	REFERENCE
5721	D16 $D_2^+ + Ti; D_2^+ + [Ti + Al]; D_2^+ + [Ti + Al + V]$	E	12 keV	Pontou, A. E.; Haggmark, L. G.; Wilson, K. L.; Sauter, D.; Malinowski, R. C.; Dawson, D. E.; Baur, W. Scattering profiles in titanium and alloys. J. Nucl. Mater. 85-86, 1013 (1979) United States
5722	D15 $H^+ + TiB_2$	E	0.25-210 keV	Boyle, B. L.; Voth, F. L. Hydrogen trapping and re-emission in TiB_2 coatings for channels upon thermal, pulsed electron and laser annealing. J. Nucl. Mater. 85-86, 1019 (1979) United States
5723	D13 $He^+ + B + BeO$ D15 $B^+ + BeO$	E	5-2200 keV	Scherzer, B.H.U.; Bleuer, B. S.; Schriech, R.; Schulz, R.; Roth, J.; Borden, J.; Langley, R. Radiation induced detrapping of implanted deuterium in BeO by high energy He and proton irradiation. J. Nucl. Mater. 85-86, 1025 (1979) West Germany
5724	D17 $D^+ + Be; D^+ + Fe; D^+ + Mo; D^+ + V; T^+ + Be; T^+ + Fe; T^+ + Mo; T^+ + V$	E	0.1-19 keV	Haggmark, L. G.; Biersack, J. F. Monte Carlo studies of light ion reflection from metal surfaces. J. Nucl. Mater. 85-86, 1031 (1979) United States
5725	D02 $H^+ + Ni; D^+ + Ni; He^+ + Ni; O^+ + Ni; He^+ + Ni; Ar^+ + Ni; H^+ + Ni; Xe^+ + Ni; Kr^+ + Ni; Rn^+ + Ni; He^+ + Mo; H^+ + SS; D^+ + SS; He^+ + SS; H^+ + TiC; B^+ + TiC; He^+ + TiC$ D14 $H^+ + Nb; H^+ + SS; He^+ + Nb; He^+ + SS$	E T	D12 17-2-10 keV D14 7-100 keV	Behrlich, R. Surface erosion from plasma materials interaction. J. Nucl. Mater. 85-86, 1047 (1979) West Germany
5726	D02 $H^+ + Au; H^+ + Ni; H^+ + SS$	E	23°-2000 eV	Roberto, J. B.; Zehr, R. A.; Moore, J. L.; Allen, G. D. Low-energy hydrogen sputtering of Pu , Ni and stainless steel. J. Nucl. Mater. 85-86, 1053 (1979) United States
5727	D02 $H^+ + Be; H^+ + BeO; D^+ + Be; C^+ + BeO; He^+ + Be; He^+ + BeO$	E	0.05-80 keV	Roth, J.; Bondansky, J.; Bleuer, R. S.; Ottenberger, W.; Borden, J. Sputtering of Be and BeO by light ions. J. Nucl. Mater. 85-86, 1077 (1979) West Germany
5728	D17 $Ar^+ + [Ni + Cu]; Ar^+ + [Ni + Mo]$	T	5 keV	Lee, H. W.; Leaf, G. K.; Biederman, M. Effects of radiation-induced segregation and preferential sputtering on the sputtering rate of alloys. J. Nucl. Mater. 85-86, 1085 (1979) United States
5729	D14 $He^+ + Al$	E	10-80 keV	Braun, M.; Whitton, J. L.; Emmoth, B. Helium induced surface exfoliation of aluminum and the correlation between flake thickness and ion energy in the range 10-80 keV. J. Nucl. Mater. 85-86, 1091 (1979) Sweden
5730	D02 $D^+ + C; D^+ + TiB_2; He^+ + C; He^+ + TiB_2$ D14 $D^+ + C; D^+ + TiB_2; He^+ + C; He^+ + TiB_2$	E	10-100 keV	Kaminsky, M.; Das, S. K. Surface damage in TiB_2 and C coatings under energetic D^+ and He^+ irradiations. J. Nucl. Mater. 85-86, 1095 (1979) United States
5731	D14 $He^+ + SS; He^+ + [Cr + Ni]$	E	40-100 keV	Gusev, V. M.; Guseva, M. I.; Kortysenko, Y. V.; Mansurova, A. M.; Morozov, V. M.; Chelnobov, D. I. Helium blistering at high irradiation doses. J. Nucl. Mater. 85-86, 1101 (1979) Soviet Union
5732	D14 $Ar^+ + V$	E	10°-40° keV	Hayashi, K.; Fukaya, K.; Ishino, S.; Mishima, Y. The effect of irradiation mode on blistering of vanadium. J. Nucl. Mater. 85-86, 1105 (1979) Japan
5733	D14 $He^+ + Nb$	E	0.5-1800 keV	Gusev, M. I.; Gusev, V.; Kortysenko, Y. V.; Das, S. K.; Kaminsky, M. Damage of niobium surfaces caused by bombardment with He^+ ions of different energies typical for T-20. J. Nucl. Mater. 85-86, 1111 (1979) Soviet Union
5734	D14 $He^+ + Pd$	E	Under	McDonell, V. R. A general mechanism for helium blistering involving displaced atom transport. J. Nucl. Mater. 85-86, 1117 (1979) United States

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5735	D14 D ⁺ + Be; He ⁺ + Be D16 D ⁺ + Be; He ⁺ + Be D17 D ⁺ + Be; He ⁺ + Be	E	5 keV	Langley, R. A. Interaction of implanted deuterium and helium with beryllium: radiation enhanced oxidation. J. Nucl. Mater. 85-86, 1123 (1978) United States
5736	D02 He ⁺ + Al; He ⁺ + Al ₂ O ₃ ; He ⁺ + [Al + Si]; D ⁺ + Al; D ⁺ + Al ₂ O ₃ ; D ⁺ + [Al + Si]; He ⁺ + Al; He ⁺ + Al ₂ O ₃ ; He ⁺ + [Al + Si]	E	3x10 ⁻⁷ -10 keV	Bobdenahy, J.; Roth, J.; Brouse, F. Formation of various coatings and their behaviour under particle bombardment. J. Nucl. Mater. 85-86, 1145 (1979) West Germany
5737	C04 He ⁺ + Cu; He ⁺ + Ag; He ⁺ + Au; He ⁺ + Pt; He ⁺ + Be; He ⁺ + Zr; He ⁺ + Fe; He ⁺ + Ni; He ⁺ + Mo D16 He ⁺ + Cu; He ⁺ + Ag; He ⁺ + Au; He ⁺ + Pt; He ⁺ + Be; He ⁺ + Zr; He ⁺ + Fe; He ⁺ + Ni; He ⁺ + Mo	E	0.2-340 keV	Bierbach, J. P.; Fink, D.; Hemmelmann, R. A.; Muller, K. Range profiles and thermal release of helium implanted into various metals. J. Nucl. Mater. 85-86, 1145 (1979) United States
5738	D03 Ar ⁺ + Be; Ar ⁺ + C; Ar ⁺ + Ne; Ar ⁺ + Mg; Ar ⁺ + Al; Ar ⁺ + Si; Ar ⁺ + K; Ar ⁺ + Ti; Ar ⁺ + V; Ar ⁺ + Cr; Ar ⁺ + Mo; Ar ⁺ + Fe; Ar ⁺ + Co; Ar ⁺ + Ni; Ar ⁺ + Cu; Ar ⁺ + Zn; Ar ⁺ + Ga; Ar ⁺ + Ge; Ar ⁺ + Se; Ar ⁺ + Sr; Ar ⁺ + Zr; Ar ⁺ + Nb; Ar ⁺ + Mo; Ar ⁺ + Rh; Ar ⁺ + Pd; Ar ⁺ + Ag; Ar ⁺ + Cd; Ar ⁺ + In; Ar ⁺ + Sn; Ar ⁺ + Sb; Ar ⁺ + Te; Ar ⁺ + Ba; Ar ⁺ + Ta; Ar ⁺ + U; Ar ⁺ + Po; Ar ⁺ + Os; Ar ⁺ + Ir; Ar ⁺ + Pt; Ar ⁺ + Au; Ar ⁺ + Pb; Ar ⁺ + Bi; Ar ⁺ + U	E	0.5-3 keV	Krauss, A. R.; Green, D. R. The application of secondary ion emission to impurity control in tokamaks. J. Nucl. Mater. 85-86, 1175 (1978) United States
5739	D02 He ⁺ + SiC; He ⁺ + SiC; Ar ⁺ + SiC D03 He ⁺ + SiC; He ⁺ + SiC; Ar ⁺ + SiC	E	10 keV	Mahrt, M.; Motenaka, K.; Tomoshima, T.; Bai, H.; Hayakawa, K. AES-SIMS (IMA) study of physical and chemical sputtering processes of low-Z materials by energetic ions. J. Nucl. Mater. 85-86, 1183 (1978) Japan
5740	E03 Underf	T	Underf	Light, J. C. Multiphoton processes. Edited by J. H. Eberly and P. Lambropoulos. J. Am. Chem. Soc. 102, 2137 (1980) United States
5741	E01 Underf	T	Underf	Bartmess, J. E. Kinetics of ion-molecule reactions. Edited by F. Ausloos. J. Am. Chem. Soc. 102, 2516 (1980) United States
5742	G04 Ar ⁺ + Ar	E	Thermal	Mase, M.; Tanabe, T.; Tanaka, A.; Miyamoto, C. Energy spectrum of atomic ions moving through their parent gas in a strong electric field. J. Phys. D 12, L123 (1979) Japan
5743	G03 e + O ₂ ; e + Air	E	0.9-360 Td	Roznerski, W.; Reichleinske-Drewno, J. The ratio of lateral diffusion coefficient to mobility for electrons in oxygen and dry air. J. Phys. D 12, L127 (1979) Poland
5744	G03 e + CO ₂ ; e + N ₂	T	14-3000 Td	Kochukarpov, M. N.; Lucas, J. Simulation of electron swarm parameters in carbon dioxide and nitrogen for high E/N. J. Phys. D 12, 2123 (1979) United Kingdom
5745	E06 Underf	T	Underf	Gau, J. N.; Mohn, Y. Dielectronic recombination of positive ions I. A generalized cascade theory. J. Quant. Spectrosc. Radiat. Transfer 23, 121 (1980) United States
5746	E06 e + He ²⁺	T	1.4-5.6 keV	Gau, J. N.; Mohn, Y.; Rottler, J. A. Dielectronic recombination of positive ions II. Rate coefficients for He ²⁺ . J. Quant. Spectrosc. Radiat. Transfer 23, 131 (1980) United States
5747	E06 e + He ²⁺	T	1.4-5.6 keV	Gau, J. N.; Mohn, Y.; Rottler, J. A. Dielectronic recombination of positive ions III. Rate coefficients for He ²⁺ . J. Quant. Spectrosc. Radiat. Transfer 23, 147 (1980) United States

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5748	M02 hv + CO ₂	T	4.3 μ	Bernstein, L. S. Band model parameters for the parallel bands of linear triatomic molecule I. Theory. J. Quant. Spectrosc. Radiat. Transfer 23, 157 (1980) United States
5749	M02 hv + CO ₂	T	4.3 μ	Bernstein, L. S.; Robertson, D. C.; Conant, J. A. Band model parameters for the 4.3 μ CO ₂ band from 200 to 3000 K I. Prediction, comparison to experiment, and application to flame emission-absorption calculations. J. Quant. Spectrosc. Radiat. Transfer 23, 169 (1980) United States
5750	M04 hv + OH	T	259-329 nm	Chidsey, I. L.; Crosley, D. R. Calculated rotational transition probabilities for the A-X system of OH. J. Quant. Spectrosc. Radiat. Transfer 23, 187 (1980) United States
5751	A12 Ca ⁰ + Ne; Ca ⁰ + Ar; Ca ⁰ + Xe	E T	273-478 K	Gilbert, D. E.; Allard, N. F.; Ch'ou, S. Y. Interpretation of measured spectral line shapes using a square-well potential: the absorption line of cesium broadened by rare gases. J. Quant. Spectrosc. Radiat. Transfer 23, 201 (1980) United States
5752	M02 hv + AlCl	T	undef	Hebert, G. R.; Nicholas, R. W.; Linton, C. Absolute band strengths for the AlO blue-green (B ² -X ²) band system. J. Quant. Spectrosc. Radiat. Transfer 23, 229 (1980) Canada
5753	M07 hv + Cl ⁻ ; hv + Br ⁻ ; hv + I ⁻	E	410-330 nm	Neiger, M.; Zimmermann, B. Broadening of free-bound radiation thresholds in plasmas: I. Experimental investigation for Cl ⁻ , Br ⁻ , and I ⁻ . J. Quant. Spectrosc. Radiat. Transfer 23, 241 (1980) West Germany
5754	M07 hv + Cl ⁻ ; hv + Br ⁻ ; hv + I ⁻	T	3 eV	Neiger, M.; Zimmermann, B. Broadening of free-bound radiation thresholds in plasmas: II. Quasistatic theory for negative ions. J. Quant. Spectrosc. Radiat. Transfer 23, 247 (1980) West Germany
5755	A12 Ca ⁰ + Xe	T	391 K	Allard, N. F.; Brand, Y. G. Alkali rare-gas line profiles in a square-well potential approximation: width, shift, and asymmetry. J. Quant. Spectrosc. Radiat. Transfer 23, 253 (1980) France
5756	A12 OH ⁰ + HCl + H ₂ M02 hv + OH	E	A12 2800-2900 K M02 329 nm	Reinero, R. J.; Vanden, M. The OH collision broadening parameter in the 2800-2900 K H ₂ -OH flame. J. Quant. Spectrosc. Radiat. Transfer 23, 303 (1980) United States
5757	M02 hv + CoO	E	335-488 nm	Smyth, I. A.; Kuznetsova, L. P.; Kuznetsov, Y. Y. Determination of the B ¹ -X ¹ and C ¹ -X ¹ electronic transitions strengths of CoO. J. Quant. Spectrosc. Radiat. Transfer 23, 307 (1980) Soviet Union
5758	E06 e + Sn ²⁺	T	335-684 nm	Ney, J. D.; Brager, P. Stark broadening of isolated lines emitted by singly-ionized tin. J. Quant. Spectrosc. Radiat. Transfer 23, 311 (1980) South Africa
5759	E06 e + C ²⁺ ; e + O ²⁺ ; e + Ne ²⁺ ; e + Si ³⁺ ; e + Ar ²⁺	T	0.2x10 ⁶ -6x10 ⁶ K	Kastner, S. O. Bottleneck calculation of ion-electron recombination coefficients for lithium-like ions. J. Quant. Spectrosc. Radiat. Transfer 23, 327 (1980) United States
5760	A12 CO ₂ ⁰ + CO ₂ M02 hv + CO ₂	T	A12 197-294 K M02 4970 cm ⁻¹	Valero, F. P. J.; Suarez, C. B.; Boese, R. W. Absolute intensities and pressure broadening coefficients measured at different temperatures for the 201 (sub 1) cooling from 000 band of ¹² C ¹⁶ O ₂ at 4578 cm ⁻¹ . J. Quant. Spectrosc. Radiat. Transfer 23, 337 (1980) United States
5761	A12 N ₂ O ⁰ + H ₂ O	E T	1770-2250 cm ⁻¹	Mandla, J.-Y.; Fland, J.-M.; Comy-Peyret, C.; Guéhenchill, G. Measurements and calculations of self-broadening coefficients of lines belonging to the ν_2 band of N ₂ ¹⁶ O. J. Quant. Spectrosc. Radiat. Transfer 23, 381 (1980) France

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5762	A12 H α + H	T	122 nm	Pink, M. T.; Feautrier, N.; Edmonds, A. B. Short-range potentials in quantum and semi-classical calculations for the Ly α line. J. Quant. Spectrosc. Radiat. Transfer 23, 377 (1980) France
5763	H β 2 hv + HCl; hv + CO	T	2925-3050 cm $^{-1}$	Lin, C. L.; Shaw, J. P.; Calvert, J. G. Band analysis of spectral curve fitting. J. Quant. Spectrosc. Radiat. Transfer 23, 387 (1980) United States
5764	A12 BC1 α + HCl	T	33: K	Seleny, E. T.; Korff, D. A new impact parameter theory for collision induced lineshifts. J. Quant. Spectrosc. Radiat. Transfer 23, 355 (1980) United States
5765	H β 2 Undef	T	Undef	Ben-Aryeh, Y. A model for a stochastic multiphoton absorption process of an anharmonic oscillator. J. Quant. Spectrosc. Radiat. Transfer 23, 403 (1980) Israel
5766	H β 8 hv + Bi α	E	630-670 nm	Miller, P. H.; Benyoun, R. D. Experimental transition probabilities and Stark broadening for singly-ionized bismuth. J. Quant. Spectrosc. Radiat. Transfer 23, 411 (1980) United States
5767	EN3 e + H $^{++}$	T	13-1800 eV	Canas, P. S. Electron impact excitation cross sections for H(V). J. Quant. Spectrosc. Radiat. Transfer 23, 441 (1980) United States
5768	EES e + H E06 e + H $^+$ E08 e + H	T	Undef	Schluter, B. Debye shielding and the thermal collision of hydrogen. J. Quant. Spectrosc. Radiat. Transfer 23, 467 (1980) West Germany
5769	H γ 4 hv + Xe	E	6543-6536 Å	Richou, J. Absolute transition probabilities of Xe(I) visible lines. J. Quant. Spectrosc. Radiat. Transfer 23, 473 (1980) France
5770	EN3 e + H $^{++}$; e + Ar $^{10+}$; e + Fe $^{26+}$; e + Ar $^{18+}$; e + Fe $^{24+}$; e + Kr $^{36+}$; e + Fe $^{28+}$; e + Ne $^{10+}$; e + Ar $^{12+}$; e + Kr $^{34+}$; e + Ne $^{12+}$; e + Xe $^{54+}$	T	1.4-300 e.v.	Younger, S. M. Electron impact excitation of the resonance transitions of highly ionized atoms of the Be-, Mg-, and Zn-isoelectronic sequences. J. Quant. Spectrosc. Radiat. Transfer 23, 489 (1980) United States
5771	H γ 7 Li α + H $_2$ O $^+$; Na α + H $_2$ C $^+$; K α + H $_2$ C $^+$; Rg α + H $_2$ O $^+$; Ca α + H $_2$ C $^+$	E	2670 K	Benayoun, A. M.; Issa, M. A. A. P.; Balar, A. F. Effect of magnetic field on Lorentz collisions in acetylene-air flames. J. Quant. Spectrosc. Radiat. Transfer 23, 503 (1980) Saudi Arabia
5772	A12 NO α + N $_2$	T	Undef	Dodge, L. G.; Juosh, J. Errors in reported values for the collisional broadening parameters for nitric oxide γ (0,0) band. J. Quant. Spectrosc. Radiat. Transfer 23, 523 (1980) United States
5773	A12 NO α + N $_2$	T	372-750 K	McGregor, W. K.; Faw, J. D.; Kowler, D. H.; Lofry, R. S., II; Davis, M. G. Note for correction: broadening of NO γ -band lines. J. Quant. Spectrosc. Radiat. Transfer 23, 527 (1980) United States
5774	BC7 Undef H β 6 Undef	T	H γ 4 Undef	Salleghe, R. J.; Cooper, J. A multiphoton treatment of near resonant light scattering in intense fields. J. Quant. Spectrosc. Radiat. Transfer 23, 535 (1980) New Zealand
5775	H β 2 hv + Ti H β 4 hv + Ti	T	Undef	Bardelay, J. H.; Norcross, D. G. Oscillator strengths for thallium calculated using a semiempirical relativistic one-electron central-field model potential. J. Quant. Spectrosc. Radiat. Transfer 22, 575 (1980) United States
5776	A12 CO α + N $_2$ H β 2 hv + CO	E	A12 337-783 K H β 2 4.7 μ	Sell, J. A. Temperature dependence of the absorption coefficient and halfwidth of the P(6) line of carbon monoxide. J. Quant. Spectrosc. Radiat. Transfer 23, 595 (1980) United States

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5777	D03 $O_2^+ + Ni; O_2^+ + Cr; O_2^+ + Fe; O_2^+ + Cu$	E	15 keV	Yu, N. L.; Bouter, W. Matrix effect in SIMS analysis using an O_2^+ primary beam. J. Vac. Sci. Technol. 17, 26 (1980) United States
5778	D07 $He + Ag$	E	23 meV	Yerkes, S. C.; Miller, D. R. Helium scattering measurements of the Ag(111) surface phonon dispersion. J. Vac. Sci. Technol. 17, 126 (1980) United States
5779	D06 $s + H + b$	E	5.9 eV	Ho, U.; Billeau, M. J.; Plummer, E. W. Angle-resolved and variable impact energy electron vibrational excitation spectroscopy of molecules adsorbed on surfaces. J. Vac. Sci. Technol. 17, 134 (1980) United States
5780	D02 $Ar^+ + Si$ D17 $Ar^+ + Si$	E	3 keV	Morgan, P.; Ryberg, F. Changes in the structural properties of a Si(111) surface during ion bombardment, as revealed by Auger electron spectroscopy. J. Vac. Sci. Technol. 17, 578 (1980) Denmark
5781	A03 $Hg^+ + Hg^+$	E	Undef	Fogel, D.; Tolmachev, Y. A. Excitation of mercury levels in the collision of two metastable atoms. Opt. Spectrosc. 47, 461 (1979) Soviet Union
5782	H02 $h\nu + Ti$	E	11"-200 nm	Krylov, B. E.; Rozlov, M. G. Absorption spectrum of thallium atoms from the 230-nm ionization limit to 100. Opt. Spectrosc. 47, 464 (1979) Soviet Union
5783	A12 $NCl + He; NCl + Ne; NCl + Ar; NCl + Xe$	T	Undef	Kozlov, A. P. Collisional broadening of spectral lines by weak collisions. Opt. Spectrosc. 47, 467 (1979) Soviet Union
5784	A12 Undef	T	Undef	Rehner, V. H. Broadening and shift of hyperfine components of a $J = 3/2 - J_0 = 3/2$ spectral line as the result of collisions with neutral atoms. Opt. Spectrosc. 47, 472 (1979) Soviet Union
5785	H02 $h\nu + H_2S; h\nu + CH_4$	E	1.6 μm	Antipenko, B. M.; Zonov, V. A.; Privalova, I. A.; Slobodin, Y. P.; Tarasenko, V. V. Absorption of single gaseous media in the emission band of a neodymium laser. Opt. Spectrosc. 47, 457 (1979) Soviet Union
5786	A07 $H^+ + N_2$ C02 $H^+ + N_2$	E T	A:7 0.050-1.7 MeV C02 10 ⁻¹ -10 ¹ keV	Khare, S. P.; Kumar, A. Energy deposition by protons in molecular nitrogen. Physica 8+C 100, 135 (1986) India
5787	A17 $Li_2; Li_2^+; Li_2^-$	T	Undef	Gale, J. L.; Childs, R. M.; Dimer, D. A.; Eades, R. A. The electronic structure of the lithium triatom anion and cation. J. Chem. Phys. 72, 6208 (1980) United States
5788	H05 $h\nu + NCH$	E	0-11.6 eV	Lee, L. C. $CH[A^1\sigma(u\bar{u}) + X^1\sigma^+]$ and $CH[B^1\sigma^+ + X^1\sigma^+]$ yields from NCH photodissociation. J. Chem. Phys. 72, 6414 (1980) United States
5789	A10 $SO_2 + O_2$	E	311 K	Lester, M. I.; Fynn, G. J. Intermolecular vibrational energy transfer dynamics in IR laser pumped $SO_2/^{18}O_2$ mixtures. J. Chem. Phys. 72, 6424 (1980) United States
5790	A17 $He + LiH$	T	Undef	Silver, D. M. Rotationally inelastic collisions of LiH with He: I. An initial potential energy surface. J. Chem. Phys. 72, 6445 (1980) United States
5791	A03 $He + LiH$	T	0.2-0.4 eV	Jendrek, E. F.; Alexander, M. H. Rotationally inelastic collisions of LiH with He: II. Theoretical treatment of the dynamics. J. Chem. Phys. 72, 6462 (1980) United States
5792	A03 $He + LiH$	E	0.32 eV	Dagdigian, P. J.; Wilcom, B. L. Rotationally inelastic collisions of LiH with He: III. Experimental determination of state-to-state cross sections. J. Chem. Phys. 72, 6462 (1980) United States

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5793	H86 hv + Ag	E	17-41 eV	Krauss, R. O. Photoionization of atomic silver between 17 and 41 eV. <i>J. Chem. Phys.</i> 72, 6474 (1980) United States
5794	A93 LIN + HCl; LIN + DCI; LIN + NCI	E T	30° K	Dagdigian, P. J.; Alexander, M. F. Experimental and theoretical study of rotationally inelastic polar molecule collisions. ² LIN-HCl. <i>J. Chem. Phys.</i> 72, 6513 (1980) United States
5795	A14 NO + O ₂	E	300 K	Anderson, S. L.; Brooks, P. M.; Fite, J. B.; van Nguyen, G. Reaction of magnetically state selected NO with O ₂ : effect of its state on rotational states on reactivity. <i>J. Chem. Phys.</i> 72, 6121 (1980) United States
5796	H95 hv + H ₂ C H96 hv + H ₂ C	E	13-22 eV	Henner, I.; Guyon, P. M.; Boer, T.; Govers, T. R. A threshold photoelectron-photoion coincidence study of the H ₂ O ⁺ dissociation between 15 and 20.5 eV. <i>J. Chem. Phys.</i> 72, 6587 (1980) France
5797	A11 H ₂ ⁺ + H ₂ O	T	300-900 K	Nagel, J.; Rogovin, D. V-V exchange involving H ₂ O molecules: a calculation of the H ₂ O-H ₂ O deactivation rate constant. <i>J. Chem. Phys.</i> 72, 6593 (1980) United States
5798	C75 e + N ₂	E	Undef	Wade, T.; Freeman, G. R. Electron localization in dense nitrogen vapor. <i>J. Chem. Phys.</i> 72, 6726 (1980) Canada
5799	A14 Ba + HF	E	300 K	Torres-Filho, A.; Pratt, J. G. State-to-state dynamics using dual molecular beam excitation difference spectroscopy. <i>J. Chem. Phys.</i> 72, 6736 (1980) United States
5800	A17 Ar ₂ ; NH ₃ ; CC	T	Undef	Mattern, L.; Salvo, C.; Torrioni, S.; Tommasini, F. Representation of potential energy curves for diatomic molecules. <i>J. Chem. Phys.</i> 72, 6815 (1980) Italy
5801	B07 e + hv + Xe E11 e + hv + Xe	T	E11 12 keV	Avertessian, M. K.; Jivanian, M. A. Classical description of stimulated bremsstrahlung-electron beam bunching. <i>Phys. Lett.</i> 76A, 373 (1980) Soviet Union
5802	E05 e + Xe E17 e + Xe	E	0.2-4.5 keV	Giardini-Guidoni, A.; Fantoni, R.; Tiribelli, R.; Marconero, R.; Ceallioni, R.; Stefani, G. Absolute (σ, 2σ) cross section measured for the valence orbital of Xe. <i>Phys. Lett.</i> 77A, 19 (1980) Italy
5803	A02 H ⁺ + NI	E	810 MeV	Kyle, G. S.; Hirtz, M. M.; Othoudt, M. S.; Kalothe, M.; Lang, P. M.; Nann, M.; Seth, K. K.; McDaniels, E. K.; Verghese, P. M.; Kozlowski, T.; Madland, D. G.; Morris, C. L.; Pratt, J. C.; Spencer, J. E.; Tanaka, N.; Thiesen, M. A.; Bianchi, G. J.; Hoffmann, G. B.; Liljeström, R. P.; Fong, J. C.; Igo, G.; Ridge, R. J.; Whitten, C. A., Jr. Elastic and inelastic scattering of 800 MeV protons by ²⁰⁸ Pb. <i>Phys. Lett.</i> 91B, 383 (1980) United States
5804	D10 Undef	T	0-2 eV	Morshov, J. K.; Leif, N. D. Effective-medium theory of chemical binding: application to chemisorption. <i>Phys. Rev. B</i> 21, 2131 (1980) United States
5805	D13 e + O + W; hv + O + W	T	0-20 eV	Antoniewicz, P. R. Model for electron-and photon-stimulated desorption. <i>Phys. Rev. B</i> 21, 3811 (1980) United States
5806	A17 Mg + H; Ca + H; Ba + H	T	0-40000 cm ⁻¹	Klynnig, L.; Martin, M. Ionic bonds in the group IIA hydrides. <i>Phys. Scripta</i> 20, 594 (1979) Sweden
5807	D12 Ar ⁺ + Al; Ar ⁺ + Si; Kr ⁺ + Al; Kr ⁺ + Si; Ne ⁺ + Si; Ne ⁺ + Si	E	100 keV	Hill, K. W.; Comas, J.; Nagel, D. J.; Knudsen, A. H. Vacuum-ultraviolet continua from rare-gas ion-excitation of solids. <i>Phys. Scripta</i> 20, 692 (1979) United States

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5808	C08 Under	T	Under	Babakhanyan, E. A.; Kononets, Y. V. Energy band structure and Bloch functions in the planar channeling model with the Kronig-Penney potential. <i>Phys. Status Solidi B</i> 98, 55 (1980) Soviet Union
5809	C08 He ⁺ + Si; H ⁺ + Si	T	0.6-8.2 MeV	Lenkelt, K.; Uedell, R. Analytical description of the resonance dechanneling effect in the case of axia'-to-planar channeling transition. <i>Phys. Status Solidi B</i> 98, 235 (1980) East Germany
5810	D12 e + Ni	E	852-913 eV	Riecke, F. Resonant behaviour of x-ray intensities in metallic nickel near the 2p threshold. <i>Phys. Status Solidi B</i> 58, 245 (1980) West Germany
5811	C02 e + Sc; e + Y; e + Zr; e + Hf	E	20 keV	Frandon, J.; Brousseau, B.; Pradel, F. Electronic excitations in some transition metals and their oxides—characteristic energy loss measurements up to 50 eV. <i>Phys. Status Solidi B</i> 98, 379 (1980) France
5812	D16 He ⁺ + W	E	18 keV	Skakun, N. A.; Ekhil, N. P.; Svetashov, P. A. Investigation of the positions of helium atoms in the crystal lattice of tungsten. <i>Sov. Phys.-Solid State</i> 21, 1807 (1979) Soviet Union
5813	C08 H ⁺ + C	T	1 GeV	Taratyn, A. M.; Teyganov, E. M.; Vetrob'ev, S. A. Evolution of the transverse energy of protons in planar channels in diamond. <i>Sov. Phys.-Solid State</i> 21, 1847 (1979) Soviet Union
5814	D14 D ⁺ + TiB ₂ ; He ⁺ + TiB ₂	E	43-120 keV	Das, S. K.; Kaminsky, M. Deuterium and helium ion irradiation effects on TiB ₂ coatings. <i>Thin Solid Films</i> 63, 269 (1979) United States
5815	D16 H ⁺ + TiB ₂ ; H ⁺ + B ₄ C	E	0.25-30 keV	Doyle, J. L.; Vook, F. L. Hydrogen retention and release in first-wall coatings for tokamaks. <i>Thin Solid Films</i> 63, 277 (1979) United States
5815	D16 D ₂ ⁺ + Al	E	13 keV	Wilson, K. L.; Haggmark, L. G. Esterium trapping measurements in aluminum and plasma-sprayed aluminum coatings. <i>Thin Solid Films</i> 63, 283 (1979) United States
5817	E03 e + O ₂ E04 e + O ₂	T	13-1000 eV	Chung, S.; Lin, C. C. Oscillator strength and electron-impact excitation of the Schumann-Runge continuum of the oxygen molecule. <i>Phys. Rev. A</i> 21, 1075 (1980) United States
5818	A17 He + He	T	0-26 eV	Silver, D. M. Interaction energy between two ground-state helium atoms using many-body perturbation theory. <i>Phys. Rev. A</i> 21, 1106 (1980) United States
5819	E02 e + H	T	50-200 eV	Francis, V.; Halpern, A. M. Exchange amplitudes. <i>Phys. Rev. A</i> 21, 1116 (1980) United States
5820	A12 Na ⁺ + He; Na ⁺ + He; Na ⁺ + Ar; Na ⁺ + K ⁺ ; Na ⁺ + Xe	E	350 K	Kachru, R.; Mossberg, T. W.; Martens, S. R. Noble-gas-induced broadening of transitions to Rydberg S and D states in atomic sodium. <i>Phys. Rev. A</i> 21, 1124 (1980) United States
5821	E02 e + He E17 e + He E09 e + He	E	5-200 eV	Register, D. F.; Trajmar, S.; Srivastava, S. R. Absolute elastic differential electron scattering cross sections for He: a proposed calibration standard from 5 to 200 eV. <i>Phys. Rev. A</i> 21, 1124 (1980) United States
5822	E03 e + H E17 e + H	T	54-500 eV	Band, Y. B. Cross sections and multipole moments in the excitation of hydrogen by electron impact: quasiclassical close-coupling approximation. <i>Phys. Rev. A</i> 21, 1162 (1980) Israel

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5823	A13 $H^+ + CH_4$; $D^+ + CH_4$	T	70-150 eV	Shakeshaft, R.; Spruch, L. Quantum treatment of the capture of an atom by a fast nucleus incident on a molecule. <i>Phys. Rev. A</i> 21, 1161 (1980) United States
5824	C02 $Ag^+ + Ni$; $Ag^+ + Au$; $Se^+ + Ni$; $Se^+ + Au$	E	13-19 MeV	Dibas, R. V.; Seale, W. A.; Romay, W. R.; Szanto, E. M. Energy loss of ^{107}Ag , ^{109}Ag , and ^{136}Se in Ni and Au. <i>Phys. Rev. A</i> 21, 1173 (1980) Brazil
5825	D07 $Ca + Au$; $K + Au$; $Rb + Au$	T	30° K	Nehl, H. J.; Schleich, W. L. Quantum theory of neutral-atom scattering at long range from solid cylinders. <i>Phys. Rev. A</i> 21, 1177 (1980) United States
5826	C08 $Ar^+ + Cu$ D07 $Ar^+ + Cu$	E	13-35 keV	Belashova, L. L.; Borisov, A. M.; Pashkova, E. S.; Molchanov, V. A. Energy features of the blocking effect for fast ionized recoils. <i>Phys. Rev. A</i> 21, 1185 (1980) Soviet Union
5827	C02 $H^+ + PERT$; $He^{2+} + PERT$	T	130-1920 keV	Gertner, I.; Meron, M.; Resner, E. Z ₂ oscillations and target-structure effects in the electronic stopping cross section of heavy ions in solids. <i>Phys. Rev. A</i> 21, 1191 (1980) Israel
5828	A06 $H^+ + Li^+$; $H^+ + He$; $H^+ + H^-$; $He^{2+} + Li^+$; $He^{2+} + He$; $He^{2+} + H^-$	T	170-19000 keV	Shircliffe, G. W.; Banyard, R. E. Ordering of cross sections for electron capture from He-like targets by fast projectiles. <i>Phys. Rev. A</i> 21, 1197 (1980) United Kingdom
5829	E02 $e + CO$ G09 $e + CO$	T	1-7 eV	Levin, D. A.; Filiflet, A. W.; McKoy, V. Low-energy e ⁻ -CO scattering in the static-exchange approximation. <i>Phys. Rev. A</i> 21, 1202 (1980) United States
5830	A11 $He^{2+} + He$; $He^{2+} + He$; $He^{2+} + Ar$; $He^{2+} + Kr$; $He^{2+} + Xe$	T	$1 \times 10^4 - 5 \times 10^5$ cm/s	Gupta, G. P.; Mathur, K. C. Quenching of metastable $He^*(2s)$ ions in collision with noble gases. <i>Phys. Rev. A</i> 21, 1210 (1980) India
5831	H04 Under	T	Under	Gersten, J. I.; Alfano, R. R.; Belic, M. Combined stimulated Raman scattering and continuous self-phase modulations. <i>Phys. Rev. A</i> 21, 1222 (1980) Israel
5832	H06 $h\nu + Cl$	T	10-45 eV	Brown, E. R.; Carter, S. L.; Kelly, M. P. Photoionization cross section and resonance structure of Cl I. <i>Phys. Rev. A</i> 21, 1237 (1980) United States
5833	H04 $h\nu + Ne + Ne$	E T	5145 Å	Fromhold, L.; Proffitt, M. H. Collision-induced Raman spectra of neon and the diatomic polarizability. <i>Phys. Rev. A</i> 21, 1245 (1980) United States
5834	E05 $e + Fe$ E15 $e + Fe$	E	21-25 keV	Nigam, A. N.; Kothari, S. New K α satellites in the electron-excited x-ray emission spectrum of $_{26}Fe$. <i>Phys. Rev. A</i> 21, 1256 (1980) India
5835	F03 $e + CO^+$; $e + HCO^+$; $e + N_2H^+$	T	13-100 K	Gupta, G. P.; Mathur, K. C. Rotational excitation of heteronuclear molecular ions by electron impact. <i>Phys. Rev. A</i> 21, 1350 (1980) India
5836	H02 $h\nu + Ca$; $h\nu + V$; $h\nu + Ti$; $h\nu + Zn$; $h\nu + Y$; $h\nu + Cd$; $h\nu + Ir$; $h\nu + Nd$ H05 $h\nu + Ca$; $h\nu + V$; $h\nu + Ni$; $h\nu + Zn$; $h\nu + Y$; $h\nu + Cd$; $h\nu + In$; $h\nu + Nd$	E	52-85 keV	Prasad, R. Photoelectric cross sections deduced from the measured total photon interaction cross sections for eight elements (20 less than or equal to z less than or equal to 80) at 52.4, 60, 72.2, and 84.4 keV. <i>Phys. Rev. A</i> 21, 1362 (1980) Tanzania
5837	A07 Under	E T	Under	Gersten, J. I.; Cohen, M. Comment on Observation of oscillatory (interference) structure in the forward peak from fast-projectile electron loss. <i>Phys. Rev. A</i> 21, 1364 (1980) India
5838	E05 $e + Fe^{2+}$; $e + Fe^{10+}$; $e + Fe^{11+}$ E04 $e + Fe^{2+}$; $e + Fe^{10+}$; $e + Fe^{11+}$	E	10 ⁴ -200 eV	Crooks, R. L.; Batia, R. U.; Kruehn, A. D.; Grien, M. R. Measurement of effective dielectronic recombination rates for Fe IX, X, and XI. <i>Phys. Rev. A</i> 21, 1367 (1980) United States

REF. NO.	REACTANTS	EXP. OP. THEOR.	ENERGY RANGE	REFERENCE
5839	A06 B ²⁺ + H; B ³⁺ + H; B ⁴⁺ + H; C ²⁺ + H; C ³⁺ + H; C ⁴⁺ + H; N ²⁺ + H; N ³⁺ + H; N ⁴⁺ + H; O ²⁺ + H; O ³⁺ + H; O ⁴⁺ + H; O ⁵⁺ + H; O ⁶⁺ + H	E	12-100 keV	Gardner, L. D.; Bayfield, J. E.; Koch, W. M.; Sellin, I. A.; Pegg, B. J.; Peterson, R. S.; Crandall, D. M. Electron-capture collisions at keV energies of boron and other multiply charged ions with atoms and molecules: II. Atomic hydrogen. <i>Phys. Rev. A</i> 21, 1297 (1980) United States
5848	E01 Underf	T	Underf	Naleki, M.; Maciek, J. Schwinger's variational principle for electron-ion scattering. <i>Phys. Rev. A</i> 21, 1403 (1980) United States
5841	A07 H ⁺ + Al; H ⁺ + Cu	E	0.5-40 MeV	Sera, K.; Ishii, K.; Kaniya, M.; Kuwahara, A.; Morita, S. K-shell ionization of Al and Cu for 0.5-40-MeV-proton bombardment. <i>Phys. Rev. A</i> 21, 1412 (1980) Japan
5842	E02 a + H	T	1-8.4 eV	Venzani, C. A.; Kirtman, B.; Chipman, D. M. Exchange perturbation theory for electron scattering. Elastic scattering from hydrogen atoms. <i>Phys. Rev. A</i> 21, 1443 (1980) United States
5843	A11 F ₂ + Kr H04 nhv + Kr	E	A11 337 K H04 193 nm	Bohor, J.; Zavelovich, J. Y.; Rhodes, C. K. Multiphoton ultraviolet spectroscopy of some 6p levels in krypton. <i>Phys. Rev. A</i> 21, 1452 (1980) United States
5844	H06 Underf	T	Underf	Chang, C. S. Multinucleon and level-degeneracy effects in two-step resonant photoionization processes. <i>Phys. Rev. A</i> 21, 1480 (1980) United States
5845	H06 hv + N ₂ ⁺	T	Underf	McCurdy, C. W.; Rascigno, T. M. Complex-basis-function calculations of resolvent matrix elements: molecular photoionization. <i>Phys. Rev. A</i> 21, 1499 (1980) United States
5846	A12 Ne ⁺ + Ne A18 Ne ⁺ + Ne	E	33° K	Jahr, S. W.; Bennett, W. R., Jr. Lappier-free spectroscopy of the 5882-Å line of Ne I. <i>Phys. Rev. A</i> 21, 1518 (1980) United States
5847	A14 Rb + Xe + N ₂ A15 Rb + Xe	E	350 K	Volk, C. W.; Kwan, Y. M.; Mark, J. G. Measurement of the ⁸⁷ Rb- ¹²⁹ Xe spin-exchange cross section. <i>Phys. Rev. A</i> 21, 1549 (1980) United States
5848	H02 hv + Ne; hv + Ar; hv + Kr; hv + Xe	T	22-75 eV	Zangwill, A.; Seven, P. Density-functional approach to local-field effects in finite systems: photoabsorption in the rare gases. <i>Phys. Rev. A</i> 21, 1565 (1980) United States
5849	H02 Underf	T	Underf	Zubairy, M. S.; Yeh, J. J. Photon statistics in multiphoton absorption and emission processes. <i>Phys. Rev. A</i> 21, 1624 (1980) United States
5850	G05 a + Ar G09 a + Ar	T	0.1-1.0 eV	Gryko, J.; Popielawski, J. Theory of excess-electron mobility in compressed argon. <i>Phys. Rev. A</i> 21, 1717 (1980) Poland
5851	A08 Fe ²⁺ + N ₂ ; Fe ²⁺ + Ar; Fe ²⁺ + Kr; Fe ³⁺ + Xe C06 Fe ²⁺ + N ₂ ; Fe ²⁺ + Ar; Fe ²⁺ + Kr; Fe ³⁺ + Xe	E	23 MeV	Kaudern, H.; Moak, C. D.; Jones, C. M.; Miller, P. L.; Sayer, R. D.; Alton, G. D.; Bridwell, L. E. Erratum: Total electron-loss cross sections and absolute charge-state yields of 23-MeV Fe ions transmitted through gaseous targets [<i>Phys. Rev. A</i> 19, 1029 (1978)]. <i>Phys. Rev. A</i> 21, 1767 (1980) United States
5852	E05 a + Ar ⁺ ; a + Ar ²⁺ ; a + Ar ³⁺ E15 a + Ar ⁺ ; a + Ar ²⁺ ; a + Ar ³⁺	E	20-2000 eV	Müller, A.; Frodl, R. L-shell contributions to multiple ionization of Ar(nup 1) ⁺ ions (i = 1,2,3) by electron impact. <i>Phys. Rev. Lett.</i> 44, 29 (1980) West Germany
5853	A18 Xe + Rb	.	330-400 K	Volk, C. W.; Kwan, Y. M.; Mark, J. G.; Kim, Y. B.; Woo, J. C. Measurement of the Rb- ¹²⁹ Xe spin-exchange cross section in ¹²⁹ Xe relaxation studies. <i>Phys. Rev. Lett.</i> 44, 136 (1980) United States

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5854	A19 $H^+ + CO; H^+ + CO_2$	T	2 MeV	Blossinger, G.; Joyce, J. M.; Tonia, J. A.; Verheese, S. L. Chemical effects in carbon K X-ray yields. Phys. Rev. Lett. 44, 241 (1980) United States
5855	A19 $Nb + Nb$	E	100-250 MeV	O'Brien, J. J.; Liaronopis, E.; Greenberg, J. S. Observation of selected molecular-orbital X rays in coincidence with separated-atom K X rays. Phys. Rev. Lett. 44, 386 (1980) United States
5856	A66 Undef	T	2.5-10 MeV	Shakeshaft, R. Inner-shell electron capture by a swift bare ion; second born effects. Phys. Rev. Lett. 44, 442 (1980) United States
5857	A14 $K + HgBr_2 + h\nu$	E	595 nm	Hering, P.; Brooks, P. R.; Curl, R. F., Jr.; Jordon, R. S.; Lowe, D. S. Chemiluminescent reaction channel opened by photon absorption during collision. Phys. Rev. Lett. 44, 687 (1980) United States
5858	A67 $He^+ + O_2$	E	45-85 eV	Miller, T. M.; Gillen, K. T. Ion-atom neutralization-reionization spectroscopy of ion-pair formation in reactions of $He^+(2^3P)$ and $He^+(2^1S)$ with O_2 . Phys. Rev. Lett. 44, 776 (1980) United States
5859	A67 $Cl^- + H$ A13 $Cl^- + H$	E	33° K	Zwier, T. S.; Morlecq, M. M.; Simpson, C. J. S. R.; Bierbaum, V. M.; Ellison, G. B.; Leone, S. R. Direct detection of the product vibrational-state distribution in the associative detachment reaction $Cl^- + H \rightarrow HCl(v) + e^-$. Phys. Rev. Lett. 44, 1050 (1980) United States
5860	A11 $He^+ + He$	E	33° K	Bouimer, J.; Saran, G.; Devos, F.; Delpech, J.-F. Excitation exchange and collisional relaxation of Rydberg levels of helium. Phys. Rev. Lett. 44, 1122 (1980) France
5861	A14 $D + H_2$	T	0.1-0.5 eV	Sun, J. C.; Choi, B. N.; Poe, E. T.; Tang, K. T. Quantum theory of $D + H_2$ rearrangement collision: effects of vibrational excitation. Phys. Rev. Lett. 44, 1211 (1980) United States
5862	D67 $He^+ + Al; He^+ + Pt$ D16 $He^+ + Al; He^+ + Pt; He^+ + BaO; He^+ + Al_2O_3$	E	0.11-40 keV	Filleux, C.; Morgelli, M.; Stettler, W.; Iberhardt, P.; Geiss, J. Trapping of low-energy helium ions in polycrystalline Al and Pt and in BaO and anodic Al_2O_3 films at room temperature. Radiat. Eff. 46, 1 (1980) Switzerland
5863	D14 $e + SS$	E	Undef	Herrach, M. V.; Foreman, A. J. E. Errors in the determination of void volumes by transmission electron microscopy. Radiat. Eff. 46, 7 (1980) United Kingdom
5864	C64 Undef D16 Undef	T	Undef	Winterbon, K. B. Analytical calculations of some ion-implantation depth distributions: II. Inhomogeneous equations. Radiat. Eff. 46, 15 (1980) Canada
5865	A67 $H^+ + Ge; H^+ + Pb; H^+ + PERT$	T	10 ⁻⁷ -10 ⁻⁸ MeV	Komarov, F. Ionization of h-electrons in solids by relativistic heavy particles. Radiat. Eff. 46, 39 (1980) Denmark
5866	D15 $\alpha + Cu$	E	65° keV	Jager, W.; Frank, W.; Urban, K. High-voltage electron-microscope investigation of point-defect agglomerates in irradiated copper during in-situ annealing. Radiat. Eff. 46, 47 (1980) West Germany
5867	C62 $F^+ + Ti; F^+ + Ni; F^+ + Fe; F^+ + Ag; Mg^+ + Ti; Mg^+ + Ni; Mg^+ + Fe; Mg^+ + Ag; S^+ + Ti; S^+ + Ni; S^+ + Fe; S^+ + Ag; S^+ + N_2; S^+ + Ar; H^+ + Ar; H^+ + Al$	T	1.2-364 MeV	Buranov, A. F.; Komarov, F. F.; Teshin, N. M. Semiclassical theory for energy loss of heavy nonrelativistic ions in matter. Radiat. Eff. 46, 55 (1980) Soviet Union
5868	C62 Undef C64 $P^+ + Si$	T	110-300 eV	Yamashita, Y. Short communication: a new composite interatomic potential. Radiat. Eff. 46, 123 (1980) Japan

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5859	D16 Be ⁺ + Si; Li ⁺ + Si	T	20-300 keV	Wilson, R. G. The pearson iv distribution and its application to ion implanted depth profiles. Radiat. Eff. 46, 141 (1980) United States
5870	D16 Kr ⁺ + Cu	E	40 keV	Smith, H. J.; van Wyk, G. N. Effect of Cu ⁺ ion implantation of crystalline orientation in polycrystalline Cu investigated by Kr penetration measurements. Radiat. Eff. 46, 149 (1980) South Africa
5871	D02 Ar ⁺ + Au	E	20 keV	Reid, I.; Thompson, M. W.; Farnery, E. W. Atomic collision processes in sputtering. Radiat. Eff. 46, 163 (1980) United Kingdom
5872	D01 Underf	T	Underf	Kirsanov, V. V. Atom-atom collision cascades localization. Radiat. Eff. 46, 167 (1980) Soviet Union
5873	D01 Underf	T	Underf	Winterbon, K. B. On the net recoil density. Radiat. Eff. 46, 181 (1980) Canada
5874	C02 PERT ⁺ + PERT	T	20-5x10 ⁹ keV	Ziegler, J. F.; Istrate, G. J. The stopping of energetic ions in solids. Radiat. Eff. 46, 199 (1980) United States
5875	D15 O ⁺ + Cu	E	25 MeV	Lehmann, M.; Steemann-Ischenko, G.; Adrian, M.; Bieger, J.; Muller, P. Irradiation of copper with 25 MeV oxygen ions—defect production and annealing. Radiat. Eff. 46, 227 (1980) West Germany
5876	D01 Underf	T	Underf	Prinja, A. K.; Williams, R.N.R. The energy deposition of slowing down particles in heterogeneous media. Radiat. Eff. 46, 235 (1980) United Kingdom
5877	C02 He ⁺ + Gd C05 He ⁺ + Gd	E	0.25-2.8 MeV	Oberlin, J. C.; Amokrane, A.; Essouedjallie, M.; Le Chalony, Y.; Parrier de la Batie, R.; Stequert, J. P. Energy loss and straggling of 0.25-2.8 MeV ⁴ He ⁺ ions in gadolinium. Radiat. Eff. 46, 249 (1980) Algeria
5878	C04 Bi ⁺ + Si; Sb ⁺ + Si; As ⁺ + Si; Ge ⁺ + Si; Au ⁺ + Si; Cs ⁺ + Si; Eu ⁺ + Si; Gd ⁺ + Si; Td ⁺ + Si; Ag ⁺ + C; Ge ⁺ + C; P ⁺ + C; Au ⁺ + Al; Au ⁺ + Ge; Bi ⁺ + Ge C05 Bi ⁺ + Si; Sb ⁺ + Si; As ⁺ + Si; Ge ⁺ + Si; Au ⁺ + Si; Cs ⁺ + Si; Eu ⁺ + Si; Gd ⁺ + Si; Td ⁺ + Si; Ag ⁺ + C; Ge ⁺ + C; P ⁺ + C; Au ⁺ + Al; Au ⁺ + Ge; Bi ⁺ + Ge	E T	50-590 keV	Kalbitzer, S.; Letzmann, H. Ranges and range theories. Radiat. Eff. 47, 57 (1980) West Germany
5879	C02 He ⁺ + Ge; He ⁺ + Si; He ⁺ + C	E	0.1-1.0 MeV	Letzmann, H.; Kalbitzer, S. ⁴ He-stopping power measurements by using ion implantation and backscattering techniques. Radiat. Eff. 47, 73 (1980) West Germany
5880	D16 Sn ⁺ + Sn; Xe ⁺ + Sn; He ⁺ + [Te + Au]	E	90-230 keV	Mayer, J. D.; Stritzker, B. Investigation of metastable superconducting alloys produced by low temperature ion implantation. Radiat. Eff. 47, 177 (1980) West Germany
5881	D14 Al ⁺ + Al	E	3.4 MeV	Engen, U.; Høglqvist, B. Electron microscopy studies of void swelling and annealing of voids in aluminium irradiated with aluminium ions. Radiat. Eff. 47, 185 (1980) Sweden
5882	D07 He ⁺ + Bi	E T	1.1 MeV	L'Ecuycr, J.; Davies, J. A.; Matsuura, H. The importance of screening corrections in accurate RBS measurements at MeV energies. Radiat. Eff. 47, 225 (1980) Canada

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5883	D14 He ⁺ + He	E	5-25 keV	St.-Jacques, R. G.; Vailloux, G.; Portel, J. G.; Terrault, B. Helium blistering of niobium: large swelling measurements supporting the gas pressure model. <i>Radiat. Eff.</i> 47, 233 (1980) Canada
5884	D15 Review	E	5-20000 keV	Kaletta, B. Light element implantations in metals. <i>Radiat. Eff.</i> 47, 237 (1980) West Germany
5885	D67 Undef	T		Zeller, P. Laser photon correlation effects in electron scattering. <i>J. Phys. B</i> 13, L249 (1980) Austria
5886	A03 Sc ⁺ + He; Sc ⁺ + He; Sc ⁺ + Ar; Sc ⁺ + Kr; Sc ⁺ + Xe; Ti ⁺ + He; Ti ⁺ + He; Ti ⁺ + Ar; Ti ⁺ + Kr; Ti ⁺ + Xe; V ⁺ + He; V ⁺ + He; V ⁺ + Ar; V ⁺ + Kr; V ⁺ + Xe; Cr ⁺ + He; Cr ⁺ + He; Cr ⁺ + Ar; Cr ⁺ + Kr; Cr ⁺ + Xe; Mn ⁺ + He; Mn ⁺ + He; Mn ⁺ + Ar; Mn ⁺ + Kr; Mn ⁺ + Xe; Fe ⁺ + He; Fe ⁺ + He; Fe ⁺ + Ar; Fe ⁺ + Kr; Fe ⁺ + Xe; Co ⁺ + He; Co ⁺ + He; Co ⁺ + Ar; Co ⁺ + Kr; Co ⁺ + Xe; Ni ⁺ + He; Ni ⁺ + He; Ni ⁺ + Ar; Ni ⁺ + Kr; Ni ⁺ + Xe; Cu ⁺ + He; Cu ⁺ + He; Cu ⁺ + Ar; Cu ⁺ + Kr; Cu ⁺ + Xe; Zn ⁺ + He; Zn ⁺ + He; Zn ⁺ + Ar; Zn ⁺ + Kr; Zn ⁺ + Xe A06 Sc ⁺ + He; Sc ⁺ + He; Sc ⁺ + Ar; Sc ⁺ + Kr; Sc ⁺ + Xe; Ti ⁺ + He; Ti ⁺ + He; Ti ⁺ + Ar; Ti ⁺ + Kr; Ti ⁺ + Xe; V ⁺ + He; V ⁺ + He; V ⁺ + Ar; V ⁺ + Kr; V ⁺ + Xe; Cr ⁺ + He; Cr ⁺ + He; Cr ⁺ + Ar; Cr ⁺ + Kr; Cr ⁺ + Xe; Mn ⁺ + He; Mn ⁺ + He; Mn ⁺ + Ar; Mn ⁺ + Kr; Mn ⁺ + Xe; Fe ⁺ + He; Fe ⁺ + He; Fe ⁺ + Ar; Fe ⁺ + Kr; Fe ⁺ + Xe; Co ⁺ + He; Co ⁺ + He; Co ⁺ + Ar; Co ⁺ + Kr; Co ⁺ + Xe; Ni ⁺ + He; Ni ⁺ + He; Ni ⁺ + Ar; Ni ⁺ + Kr; Ni ⁺ + Xe; Cu ⁺ + He; Cu ⁺ + He; Cu ⁺ + Ar; Cu ⁺ + Kr; Cu ⁺ + Xe; Zn ⁺ + He; Zn ⁺ + He; Zn ⁺ + Ar; Zn ⁺ + Kr; Zn ⁺ + Xe	T	Thermal	Johansson, S.; Litzen, U. Possibilities of obtaining laser action from singly ionized iron group elements through charge transfer in helium cathode lasers. <i>J. Phys. B</i> 13, L243 (1980) Sweden
5887	E03 e + He; e + Ar; e + Kr; e + Hg	T	Undef	Blum, K.; de Paizao, F. J.; Connah, G. Comments on the interpretation of electron-photon coincidence experiments. <i>J. Phys. B</i> 13, L227 (1980) West Germany
5888	F03 e + He E17 e + He	E	15-20 eV	Joyez, G. Threshold excitation of the n = 2 states of helium by electron impact. <i>J. Phys. B</i> 13, L263 (1980) France
5889	E73 e + Cd E85 e + Cd E17 e + Cd	T	15 eV	Belashov, V. V.; Berezno, E. G.; Grun-Grzheleski, A. N.; Kabachnik, B. V.; Nagunov, A. I. The (e,2e) method for the study of autoionizing atomic states: distortion effects. <i>J. Phys. B</i> 13, L269 (1980) Soviet Union
5890	E04 e + HF E90 e + HF	E	13-15 eV	Abouef, R.; Tallet-Billy, D. Predissociation of Feshbach resonances in hydrogen fluoride. <i>J. Phys. B</i> 13, L275 (1980) France
5891	B61 Undef	T		Gadiyak, G. V.; Lozovik, Y. E. Many-electron atoms in high magnetic fields. <i>J. Phys. B</i> 13, L631 (1980) Soviet Union
5892	H64 2hv + Ca; 4hv + Ca	E	2.3-2.7 eV	Morand, D.; Morand, J. Absolute determination of two- and four-photon ionization cross sections of calcium atoms. <i>J. Phys. B</i> 13, L631 (1980) France
5893	M7 Undef	T		Crance, M.; Stenholm, S. Level-crossing expansion of laser-induced collisional energy transfer. <i>J. Phys. B</i> 13, L633 (1980) Finland

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5894	A11 Rb ⁺ + He	E	520 K	Hugon, M.; Goumand, F.; Fournier, F. R.; Berlande, J. Collisional processes of rubidium in the S and D Rydberg states with helium. <i>J. Phys. B</i> 13, 1585 (1980) France
5895	A07 H ⁺ + Rg; H ⁺ + Ar; H ⁺ + Xe	T	Under	Sizov, J. V.; Kabanikh, N. N. Inner-shell alignment of atoms in ion-atom collisions: I. Impact ionisation. <i>J. Phys. B</i> 13, 1601 (1980) Soviet Union
5896	E03 e + He E05 e + He	E	40-50 eV	Spence, D. A technique to enhance and separate negative ions from neutral autoionising features in scattered electron spectra in the ionisation continuum: application to negative ions in neon. <i>J. Phys. B</i> 13, 1611 (1980) United States
5897	E13 e + H ⁺ ; e + F ⁻ ; e + C ⁻ ; e + O ⁻	T	100-1000 eV	Esaulov, V. A. Comments on classical scaling of electron impact detachment cross sections from negative ions. <i>J. Phys. B</i> 13, 1625 (1980) France
5898	E05 e + Au; e + Pb; e + Bi E15 e + Au; e + Pb; e + Bi	E	63-600 keV	Palinkas, J.; Schleich, B. K-shell ionisation cross sections for Au, Pb and Bi by 60-600 keV electron impact. <i>J. Phys. B</i> 13, 1631 (1980) Hungary
5899	E02 e + N ₂ ; e + N ₂ ; e + LiH; e + CH	T	2-8 eV	Collins, L. A.; Robb, V. D. Multichannel variational calculations of low-energy electron-molecule collisions: static exchange approximation. <i>J. Phys. B</i> 13, 1637 (1980) United States
5900	B06 H ⁺	T		Braton, C.; De Michellis, C.; Fisherthel, N.; Mattioli, M. H(sub α) and H(sub β) spectral profiles from neutral beams and plasmas in high magnetic fields. <i>J. Phys. B</i> 13, 1703 (1980) France
5901	H06 nhν + H; nhν + Li	T	2300-252 Å	Aymar, M.; Crance, M. Two-photon ionisation of atomic hydrogen in the presence of one-photon ionisation. <i>J. Phys. B</i> 13, L227 (1980) France
5902	H06 hv + Ba	E	520-490 Å	Hollami, D.M.P.; Codling, K. The double ionisation of barium between 29 and 25 eV. <i>J. Phys. B</i> 13, L293 (1980) United Kingdom
5903	A03 H ⁺ + He	T	3.2-17 e.u.	Zien, P.; Morgenstern, R. Collisionally induced alignment of the He 2p ³ 3s ² ⁴ p _{3/2} state by proton impact. <i>J. Phys. B</i> 13, L299 (1980) West Germany
5904	E05 e + Mg	E	27-500 eV	Pejcev, V.; Russi, D.; Ross, K. J. The ejected-electron spectra of magnesium autoionising levels following two-electron excitation to states of the type 4oni by low-energy electron impact. <i>J. Phys. B</i> 13, L305 (1980) United Kingdom
5905	E04 e + H ₂ ⁺ E06 e + H ₂ ⁺	T	0.2-1 a.u.	Zhdanov, V. P. Dissociative recombination in e-H ₂ ⁺ collisions. <i>J. Phys. B</i> 13, L311 (1980) Soviet Union
5906	A05 Ca + Kr; Ca + Xe A12 Ca + Kr; Ca + Xe	E	Thermal	Niemax, K. Investigations on three-body Ca-noble-gas inter-penetration and secondary satellites. <i>J. Phys. B</i> 13, 1791 (1980) West Germany
5907	H06 2hv + He ⁺ ; 2hv + He ⁺	E	14350-14440 cm ⁻¹	Lampre, L. A.; Mainfray, G.; Mathieu, B.; Metel, G.; Aymar, M.; Crance, M. Absolute determination of two- and three-photon ionisation cross sections of singlet and triplet 2S metastable helium. <i>J. Phys. B</i> 13, 1799 (1980) West Germany
5908	H02 hv + I ₂	E	3.443 μm	Villaverde, A. B. Resonable absorption and self-focusing effects in molecular iodine vapour. <i>J. Phys. A</i> 13, 1817 (1980) Brazil

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5999	AC3 K + He	E	0.207-1 eV	Pascalis, J.; Perrin, M.-Y. Energy dependence of total cross sections for $K[4^2P(\text{sub } j_1, \text{sub } j_2) + 4^2P(\text{sub } j_2, \text{sub } j_1)] + \text{He}$ collisions. <i>J. Phys. B</i> 13, 1839 (1980) France
5910	B11 He + H ₂ ⁺	T	1.5x10 ³ -3.5 x10 ³ Å ⁰	Bell, K. L. The free-free absorption coefficient of the negative ion of molecular hydrogen. <i>J. Phys. B</i> 13, 1859 (1980) United Kingdom
5911	E75 e + Cd E17 e + Cd	E	151 eV	Martin, N.L.S.; Otting, T. W.; Ross, E. J. (e-Ze) angular distribution studies of the cadmium 5 ⁴ P ₁ autoionising state excited by 150 eV electrons. <i>J. Phys. B</i> 13, 1867 (1980) United Kingdom
5912	E05 e + O ⁺ ; e + He ⁺ ; e + Xe ⁺ ; e + Ar ⁺ ; e + Ar ²⁺ ; e + Ar ³⁺ ; e + Ar ⁴⁺ ; e + Ar ⁵⁺	E	13.6-839 eV	Haller, A.; Seizhorn, E.; Frodl, R.; Becker, R.; Klein, M.; Winter, M. Absolute ionisation cross sections for electrons incident on O ⁺ , He ⁺ , Xe ⁺ and Ar (sup i*) [i = 1,...,5] ions. <i>J. Phys. B</i> 13, 1877 (1980) West Germany
5913	E03 e + CO	E	3-190 eV	Chetjian, A.; Tanabe, M. Electron impact cross sections for v = 0 + 1 vibrational excitation in CO at electron energies of 3 to 100 eV. <i>J. Phys. B</i> 13, 1901 (1980) United States
5914	E04 e + HCl E09 e + HCl E17 e + HCl	E	2-12 eV	Azria, R.; Le Coat, Y.; Simon, D.; Tronc, M. Differential cross section for dissociative attachment in HCl: Cl ⁻ and H ⁻ formation. <i>J. Phys. B</i> 13, 1905 (1980) France
5915	E12 e ⁺ + Na; e ⁺ + K; e ⁺ + Rb; e ⁺ + Cs	T	0.5-20 eV	Guha, S.; Mandal, P. Model potential approach for positron-atom collisions: I. Positronium formation in ground state in alkali atoms Na, K, Rb and Cs using the distorted-wave approximation. <i>J. Phys. B</i> 13, 1919 (1980) India
5916	F12 e ⁺ + Na; e ⁺ + K; e ⁺ + Rb; e ⁺ + Cs	T	0-20 eV	Mandal, P.; Guha, S. Model potential approach for positron-atom collisions: II. Positronium formation in excited ns states in Na, K, Rb and Cs using the first Born approximation. <i>J. Phys. B</i> 13, 1937 (1980) India
5917	MC2 hv + He; hv + O; hv + N ₂ ; hv + C ₂ MC4 hv + He; hv + O; hv + N ₂ ; hv + O ₂	T	1029-34 Å ⁰	Kirby, K.; Constantinides, E. R.; Tobey, S.; Oppenheimer, M.; Victor, G. A. Photoionization and photoabsorption cross sections of He, O, N ₂ , and O ₂ for aeronomic calculations. <i>Atomic Data and Nuclear Data Tables</i> 20, 63 (1979) United States
5918	AC7 H ⁺ + Ar A10 H ⁺ + Ar	E	0-5000 keV	Pedd, M. E.; Toberon, L. M.; Statterficht, M. Differential cross sections for ejection of electrons from argon by protons. <i>Atomic Data and Nuclear Data Tables</i> 23, 495 (1979) United States
5919	1,26 Underf	T	0.13-4.5 keV	Bond, I. M.; Khoritonov, V. I.; Trushkovskaya, M. B. Photoionization cross sections and photoelectron angular distributions for x-ray line energies in the range 0.132-4.509 keV. <i>Atomic Data and Nuclear Data Tables</i> 23, 443 (1979) Soviet Union
5920	D16 Co ⁺ + Si; Co ⁺ + Ge	E	71 keV	Lengouche, G.; Ezzi, I.; De Bruyn, J.; van Rossum, M.; Coussment, R. Mossbauer study ⁵⁷ Co implanted in silica and germanium. <i>J. Phys. (Paris) Colloq. C-2</i> , 547 (1979) Belgium
5921	D16 Fe ⁺ + Al	E	38 keV	Sessa, K.; Ishida, Y.; Kaneko, K. Mossbauer spectroscopy of ⁵⁷ Fe implanted to aluminium at liquid nitrogen temperature. <i>J. Phys. (Paris) Colloq. C-2</i> , 556 (1979) Japan
5922	D16 Co ⁺ + C; Co ⁺ + Te; Co ⁺ + Cu; Co ⁺ + Zn; Co ⁺ + Mo; Co ⁺ + V	E	70 keV	Ezzi, I.; Coussment, R.; Lengouche, G.; Pattyn, M.; Poinssone, S.; van Rossum, M.; De Bruyn, J. The isomer shift values of implanted ¹²² Sr/ ¹²² Y/ ¹²² Cs in various hosts. <i>J. Phys. (Paris) Colloq. C-2</i> , 573 (1979) Belgium

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5923	B16 $N_2 + Fe; NH_3 + Fe$	E	723 K	Ujihira, Y.; Nanda, A. Chemical state analysis of nitrided steel surface by means of conversion electron Mossbauer spectrometry. J. Phys. (Paris) Colloq. C-2, 586 (1979) Japan
5924	B16 $Fe + Cu; Fe + Ag; Fe + Au$	E	65 keV	Langwerth, G.; Jain, J. Mossbauer spectroscopy of iron implanted copper, silver, and gold alloys. J. Phys. (Paris) Colloq. C-2, 608 (1979) United Kingdom
5925	B16 $H + Ta; O + Ta$	E	52-300; 300-2400 K	Vest, P. J.; Solomon, B. The study of static and dynamical properties of oxygen and hydrogen impurities in tantalum metal, using the 6.2 keV Mossbauer transition of ^{181}Ta . J. Phys. (Paris) Colloq. C-2, 616 (1979) West Germany
5926	C04 $e + S; e + La; e + Y; e + Nd; e + Eu; e + Mo; e + Yb$	T	1-77 MeV	Takhar, P. S. The process of multiple scattering in rare earths. J. Phys. (Paris) Colloq. C-3, 84 (1979) Canada
5927	A11 $Xe^+ + Xe$	E	330 K	Wlene, W.; Vanwerche, M.; Bruyngoghe, W. Radiative and collisional desexcitation of ^{131}P and ^{132}P resonance states in xenon. J. Phys. (Paris) Colloq. C-7(I), 3 (1979) Belgium
5928	A10 $He^+ + He$ A11 $He^+ + He$	E	13 eV	Dubreuil, B.; Cotherinet, A. Excitation transfer and quenching of the $n = 3$ excited states of helium in a low-pressure glow discharge. J. Phys. (Paris) Colloq. C-7(I), 5 (1979) France
5929	E03 $e + Ne; e + Ne^+$	E	Undef	Valligat, S.; Lewau, J.; Delget, J. Investigation of excitation mechanisms in neon with the aid of the radial distribution of excited atoms. J. Phys. (Paris) Colloq. C-7(I), 7 (1979) France
5930	G11 $e + SO_2$	E	13-100 V/cm Torr	Moruzzi, J. L.; Lakdawala, V. K. Electron attachment in SO_2 . J. Phys. (Paris) Colloq. C-7(I), 11 (1979) United Kingdom
5931	G08 $e + O_2$	T	1-15 eV	Capitelli, M.; Elionardo, M.; Gorse, C. Self consistent electron energy distribution functions in non-equilibrium oxygen. J. Phys. (Paris) Colloq. C-7(I), 13 (1979) Italy
5932	A04 $Ne_2^+ + Ne$	E	3.15-1.5 eV	van der Kraak, P.A.M.; Diehl, J.W.H.; De Hoog, F. J. Formation and destruction of near molecular ions in Townsend discharges. J. Phys. (Paris) Colloq. C-7(I), 15 (1979) The Netherlands
5933	A06 $Ne^{2+} + N_2; Ne^{2+} + N_2; Ar^{2+} + He$	E	0.75-0.4 eV	Peska, K.; Alga, E.; Villinger, H.; Storf, H.; Lindinger, W. Reactions of doubly charged ions with various neutrals. J. Phys. (Paris) Colloq. C-7(I), 21 (1979) Austria
5934	H06 $He + Ne^+; He + Ar^+; He + Kr^+; He + Xe^+$	T	3000-1000 A°	Ranson, P.; Chapelle, J. Calculation of the photoionization cross sections of excited levels of rare gas atoms. J. Phys. (Paris) Colloq. C-7(I), 2b (1979) France
5935	A13 $CH_3^+ + NH_3$	E	Undef	Thomas, R.; Barassin, J.; Barassin, A. Reaction $CH_3^+ + NH_3$ - evolution des produits en fonction de la concentration de NH_3 . J. Phys. (Paris) Colloq. C-7(I), 41 (1979) France
5936	G08 $e + Ne$	T	20°-120° Td	Nakabe, Y.; Mori, T. Electron swarm having an anisotropic velocity distribution function. J. Phys. (Paris) Colloq. C-7(I), 43 (1979) Japan
5937	G11 $e + SF_6$	E	13-45 V/cm Torr	Abdel-Salam, M.; Moruzzi, J. L. Attachment and ion molecule reactions in SF_6 mixtures. J. Phys. (Paris) Colloq. C-7(I), 53 (1979) United Kingdom

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5938	625 $e + Ar$	T	3 Td	Davies, A. J.; Botton, J.; Evans, C. J.; Goodings, P.; Stewart, P. K. Monte Carlo simulations of electron drift velocities in the noble gases and their mixtures. <i>J. Phys. (Paris) Colloq.</i> C-7(1), 63 (1979) United Kingdom
5939	E06 $e + Ne_2^+$	E	1570 K	Coubray, P. Recombination de l'ion moléculaire Ne_2^+ a haute température. <i>J. Phys. (Paris) Colloq.</i> C-7(1), 65 (1979) France
5940	E03 $e + Ne$	E	521 keV	Luches, A.; Mazzini, V.; Parrone, P.; Parrone, M. B. Excitation of 3 2P level of Ne and 4 2F level of Ne^+ with electron beams. <i>J. Phys. (Paris) Colloq.</i> C-7(1), 67 (1979) Italy
5941	A96 $Ar^{4+} + Ne$	T	2-70 keV	Grozdanov, T. P.; Janov, R. K. Two electron capture processes in plasmas containing multiply charged ions. <i>J. Phys. (Paris) Colloq.</i> C-7(1), 71 (1979) Yugoslavia
5942	A11 $Ne^+ + Ne$	E	77-295 K	Diella, J.-B.M.; De Haeg, F. J.; Schram, D. C. Decay of metastable $Ne(^3F_2)$ -atoms. <i>J. Phys. (Paris) Colloq.</i> C-7(1), 75 (1979) The Netherlands
5943	G11 $e + H_2O; e + NH_3$	E	70-150 Td	Rishad, A. V.; Naidu, M. S. Ionization and attachment in water vapour and ammonia. <i>J. Phys. (Paris) Colloq.</i> C-7(1), 77 (1979) India
5944	A13 $O^+ + H_2$	T	3-3 eV	Hopper, D. G. Ab initio studies of ion-molecule reactions. The $H_2O^+(a^1\pi)$ potential energy hypersurface for the $U^+(H_2, h) H_2O^+$ reaction. <i>J. Phys. (Paris) Colloq.</i> C-7(1), 79 (1979) United States
5945	E08 $e + Ne$	E	Underf	Fleuriot, C.; Coulaud, G.; Chapelle, J. Effect of the ion motion at low electron densities on the profiles of the lines 4471 A^0 and 4922 A^0 of NeI. <i>J. Phys. (Paris) Colloq.</i> C-7(1), 81 (1979) France
5946	A86 $CO_2^+ + O_2$ A13 $O_2^+ + CH_4$	E	3.74-2 eV	Alga, E.; Villinger, M.; Pasco, R.; Raulier, M.; Stori, M.; Lindinger, b. The influence of ion vibrational excitation on ion molecule reactions. <i>J. Phys. (Paris) Colloq.</i> C-7(1), 83 (1979) Austria
5947	A11 $Ne^+ + N_2$	E	325 K	Catherinot, A.; Dubreuil, B. Quenching of $n = 3,4$ singlet NeI excited states by molecular nitrogen in a low-pressure glow discharge. <i>J. Phys. (Paris) Colloq.</i> C-7(1), 85 (1979) France
5948	A07 $Rb^+ + Rb$	E	437-560 K	Klucharev, A. N.; Lazarenko, A. V.; Vujnovic, V. The ionization rate coefficients for some radiatively excited rubidium states. <i>J. Phys. (Paris) Colloq.</i> C-7(1), 87 (1979) Soviet Union
5949	E05 Underf	T	Underf	Gelubkov, G. V.; Kuznetsov, R. N.; Yagorov, V. V. The role of single-step ionization by thermal electron-atom collisions. <i>J. Phys. (Paris) Colloq.</i> C-7(1), 89 (1979) Soviet Union
5950	E94 $e + Ne_2^+$ F06 $e + Ne_2^+$	E	33° K	Steenhuijsen, L.V.G.; van Scheik, A.; van de Nieuwenhuysen, L.C.A.M.; Verspaget, F.M.P. Measurements of the production of neon 2p atoms by dissociative recombination. <i>J. Phys. (Paris) Colloq.</i> C-7(1), 95 (1979) The Netherlands
5951	A10 $Ne^+ + Ne$	E F	1 eV	van Scheik, M.; Steenhuijsen, L.V.G.; van Bommel, P.J.M.; Verspaget, F.M.P. Determination of the coefficients of collisional transfer between the 2p levels of neon. <i>J. Phys. (Paris) Colloq.</i> C-7(1), 97 (1979) The Netherlands

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5952	G11 $e + O$	E	5-10 V/cm Torr	Vasilova, A. M.; Grishina, I. A.; Ittitorov, V. I.; Kevlev, A. S.; Bokhimov, A. T. On the three-body electron attachment of oxygen in the plasma of a non-self-sustained discharge. J. Phys. (Paris) Colloq. C-7(1), 103 (1979) Soviet Union
5953	A86 $H^+ + H + \text{plasma}$	T	undef	Grigorov, A. B.; Finon, O. I. On charge-exchange of ions in plasma. J. Phys. (Paris) Colloq. C-7(1), 105 (1979) Soviet Union
5954	A11 $Ca^+ + CO_2$	E	503-800 K	Kaidin, G. V.; Sineishnikov, V. A. Determination of quenching cross-section of resonant $Ca(4P)$ state by CO_2 molecules in discharge in He - CO_2 - Ca. J. Phys. (Paris) Colloq. C-7(1), 107 (1979) Soviet Union
5955	E34 $e + N_2; e + C_2H_2$	T	4-10 eV	Noruzov, I. I.; Tairava, V. L. Molecular dissociation on bombardment by electrons of an energy lower than the ionization potential. J. Phys. (Paris) Colloq. C-7(1), 109 (1979) Soviet Union
5956	G86 $CO_2^+ + CO_2$	E	43-1400 Td	Coxon, P. A.; Marrucci, J. L. Positive ion mobilities in carbon dioxide. J. Phys. (Paris) Colloq. C-7(1), 117 (1979) United Kingdom
5957	E88 $e + Na^+$	T	5370 K	Dimitrijevic, M. S.; Grujic, P. A modified adiabatic theory calculation for the Stark broadening of NaI ($3^1P^o - 2^1S$). J. Phys. (Paris) Colloq. C-7(1), 115 (1979) Yugoslavia
5958	G87 $e + C_2H_2$	E	230-2900 V/cm Torr	Maylon, A.E.D. Electron molecule collision frequencies from breakdown data in a crossed magnetic field for ethane gas. J. Phys. (Paris) Colloq. C-7(1), 143 (1979) United Kingdom
5959	G82 $e + O_2; e + CO_2$	E	67-390 Td	Paznerski, W.; Hochinska-Browka, J. The ratio of lateral diffusion coefficient to mobility for electrons in oxygen and carbon dioxide. J. Phys. (Paris) Colloq. C-7(1), 149 (1979) Poland
5960	G88 $e + Ar$	E T	4-20 V/cm Torr	Vagner, S. B.; Mischenko, I. S. Electron energy distribution function and atom ionization processes in high frequency discharge mercury-argon plasma. J. Phys. (Paris) Colloq. C-7(1), 209 (1979) Soviet Union
5961	G88 $e + Ne$	E	25-40 eV	Volchev, L. M.; Dvoryatov, A. M.; Kral'hina, E. A.; Karalova, A. V. The investigation of the fast electrons energy distribution in the positive column and negative glow of the low pressure helium discharge. J. Phys. (Paris) Colloq. C-7(1), 231 (1979) Soviet Union
5962	H16 $h\nu + (e + H)$	T	1-5 eV	Meiger, M. Theoretical study of negative absorption for H^- affinity radiation. J. Phys. (Paris) Colloq. C-7(1), 301 (1979) West Germany
5963	G88 $e + CO_2$	E	1-12 eV	Bourquard, S.; Mayor, J. M.; Kocler, P. Measurement of the electron energy distribution in a CO_2 laser plasma. J. Phys. (Paris) Colloq. C-7(1), 305 (1979) Switzerland
5964	D89 $H_2^+ + TiO_2$	E	53-307 eV	Kassmann, P.; Napsen, M. J.; Lee, J. H^+ production by interaction of a H_2^+ -ion beam with a surface. J. Phys. (Paris) Colloq. C-7(1), 435 (1979) The Netherlands
5965	E83 $e + Fe^+$	E	undef	Molty, J. Experimental determination of FeII Gf -values. J. Phys. (Paris) Colloq. C-7(1), 709 (1979) France
5966	E83 $e + Al^{2+}; e + Al^{3+}; e + C^{2+}; e + C^{3+}; e + Si^{2+}; e + Si^{3+}; e + O^{2+}; e + Cl^{2+}; e + N^+$	E T	25700 K	Piel, A.; Pinnuckamp, F. The role of molecular lines in the study of plasma satellites. J. Phys. (Paris) Colloq. C-7(1), 813 (1979) Yugoslavia

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5967	EC8 $e + He$	T	12 ⁺ -19 ⁺ eV	Dimitrijevic, W. S.; Grajic, P.; Kicledin, B. Quantum mechanical calculations of the Stark broadening of some He I lines from plasmas. <i>J. Phys. (Paris) Colloq. C-7(I)</i> , 423 (1979) Yugoslavia
5968	EP3 $He + O$; $He + O^+$; $He + O^{++}$; $He + O^{3+}$; $He + C^+$; $He + C^{++}$; $He + C^{3+}$	T	1-20 keV	Kupiyushova, A. V.; Kupilashvili, Z. J. Rayleigh and Compton scattering cross sections of X rays by oxygen ions. <i>J. Phys. (Paris) Colloq. C-7(I)</i> , 603 (1979) Soviet Union
5969	EP7 Review	E T	Under	Grieger, G. Progress in toroidal magnetic confinement. <i>J. Phys. (Paris) Colloq. C-7(II)</i> , 87 (1979) West Germany
5970	EP7 Review	E	Under	Ahlstrom, R. G. Progress of laser fusion at Lawrence Livermore Laboratory. <i>J. Phys. (Paris) Colloq. C-7(II)</i> , 97 (1979) United States
5971	EB8 Under	T	Under	Kilgusovich, V. L. Kinetic theory of spectral line broadening in a nonequilibrium plasma. <i>J. Phys. (Paris) Colloq. C-7(II)</i> , 113 (1979) United Kingdom
5972	EP7 Review	T	Under	Bravin, N. V. Plasma properties and atomic processes at medium and high pressures. <i>J. Phys. (Paris) Colloq. C-7(II)</i> , 149 (1979) France
5973	AG1 Under EB1 Under	T	Under	Grynski, M. Theoretical description of collisions in plasmas: classical methods. <i>J. Phys. (Paris) Colloq. C-7(II)</i> , 171 (1979) Poland
5974	AG6 $D^+ + Cu$ EP9 $H_2^+ + [Ca + He]$; $H_2^+ + [Ca + He]$; $H_2^+ + [Ba + Cu]$; $H_2^+ + [He + Cu]$ EC9 $e + H_2$; $e + H_2^+$	E	A16 3.2-20 keV B39 B.42-4 keV E39 Under	Nishan, J. R. Formation of hydrogen negative ions by surface and volume processes with application to negative ion sources. <i>J. Phys. (Paris) Colloq. C-7(II)</i> , 179 (1979) United States
5975	GB8 Review	T	Under	Wihelm, J.; Wihler, R. Progress in the kinetic description of non-stationary behaviour of the electron ensemble in non-isothermal plasmas. <i>J. Phys. (Paris) Colloq. C-7(II)</i> , 251 (1979) West Germany
5976	EP3 Review	T	Under	Presnyakov, L. P.; Urtsov, A. N. X-ray plasma diagnostics. <i>J. Phys. (Paris) Colloq. C-7(II)</i> , 275 (1979) Soviet Union
5977	EP3 $e + H_2$; $e + D_2$; $e + HD$ EC4 $e + H_2$; $e + D_2$; $e + HD$ EP5 $e + H_2$; $e + D_2$; $e + HD$	E	33-100 eV	Burrows, W. D.; McIntyre, L. C., Jr.; Ryan, S. B.; Lamb, W. E., Jr. Dissociative ionization of H_2 , D_2 , and HD using electron-impact excitation. <i>Phys. Rev. A</i> 21, 1641 (1980) United States
5978	EB3 $e + He$ EP7 $e + He$	E	43-500 eV	Steph, M. C.; Golden, D. E. Alignment and orientation in the electron-impact excitation of the 2^1P state of He from 40 to 500 eV. <i>Phys. Rev. A</i> 21, 1646 (1980) United States
5979	AG8 $Ar^+ + Ar$; $Ar^{2+} + Ar$; $Ar^{3+} + Ar$	E	2-15 keV	Bliman, S.; Chan-Tung, H.; Dossou, S.; Jacquet, B.; van Marle, D. Cross section for stripping of argon ions in atomic collisions with argon gas at energies from 2 to 15 keV per incident charge. <i>Phys. Rev. A</i> 21, 1656 (1980) France
5980	EP3 $e + H_2$ EP7 $e + H_2$	T	12-40 eV	Filiflet, A. V.; McKay, V. Distorted-wave-approximation cross sections for excitation of the $b^1\Sigma_{\text{sub } u}^+$ and $B^1\Sigma_{\text{sub } u}^+$ states of H_2 by low-energy-electron impact. <i>Phys. Rev. A</i> 21, 1663 (1980) United States
5981	EP2 $e + H_2$ EP3 $e + H_2$	E	3.4-5 ⁺ eV	Kennedy, R. E. Absolute total electron scattering cross sections for H_2 between 0.1 and 50 eV. <i>Phys. Rev. A</i> 21, 1676 (1980) United States

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5982	E11 $e + Al$; $e + Cu$; $e + Sn$; $e + Pb$	E	754 keV	Pover, M. S.; Ahmed, S.; Singh, P. External bremsstrahlung spectra excited by ^{203}Tl β particles in thick targets. <i>Phys. Rev. A</i> 21, 1884 (1980) India
5983	A18 $H^+ + Bi$; $H^+ + Zn$; $H^+ + C$; $H^+ + Au$; $He^+ + Bi$; $He^+ + Zn$; $He^+ + C$; $He^+ + Au$; $Li^+ + Bi$; $Li^+ + Zn$; $Li^+ + C$; $Li^+ + Au$	E	3.2-2.4 MeV	Andersson, N. H.; Beyenbocher, F.; Loftager, P.; Moller, V. Large-angle scattering of light ions in the weakly screened Rutherford region. <i>Phys. Rev. A</i> 21, 1891 (1980) Denmark
5984	A03 $Xe^+ + Xe$	E	7-50 eV	Jones, E. G. Excitation of Xe I resonance lines in Xe^+/Xe collisions. <i>Phys. Rev. A</i> 21, 1902 (1980) United States
5985	H08 $h\nu + N_2$	E	845-720 eV	Breton, J.; Gayen, P. M.; Glass-Hausmann, M. Radiative emission from singlet superexcited levels of N_2 . <i>Phys. Rev. A</i> 21, 1905 (1980) France
5986	E85 $e + Fe$ H06 $h\nu + Fe$	T	E25 $10^2-3 \times 10^3$ eV M56 1^7-1000 Ry	Jacobs, W. L.; Davis, J.; Rozsnyai, B. F.; Cooper, J. V. Multiple ionization and x-ray emission accompanying the cascade decay of inner-shell vacancies in Fe. <i>Phys. Rev. A</i> 21, 1917 (1980) United States
5987	A12 $He + Ne$; $Na + Ne$; $He + Kr$ H02 $h\nu + He$ B07	E	A12 380 K H02 569 nm	Liao, P. F.; Bjorkholm, J. E.; Berman, P. R. Effects of velocity-changing collisions on two-photon and stepwise-absorption spectroscopic line shapes. <i>Phys. Rev. A</i> 21, 1927 (1980) United States
5988	Underf	T		Rosenberg, L. Infrared radiation in electron-atom scattering. <i>Phys. Rev. A</i> 21, 1935 (1980) United States
5989	E03 $e + H$	E	54.4 eV	Wolgast, E.; Frost, L.; Hygaard, R. J. Large-angle electron-photon coincidence experiment in atomic hydrogen. <i>Phys. Rev. A</i> 21, 1950 (1980) Australia
5990	H02 $h\nu + Ba$	E, T	553 nm	Pappas, P. G.; Burns, M. H.; Hineswood, D. D.; Feld, M. S.; Murnick, D. E. Saturation spectroscopy with laser optical pumping in atomic barium. <i>Phys. Rev. A</i> 21, 1955 (1980) United States
5991	A10 $Er^+ + Sr$	E	30° K	Cahuzac, P.; Teschke, P. E. High-resolution studies on laser-induced collisional-energy-transfer profiles. <i>Phys. Rev. A</i> 21, 1969 (1980) France
5992	H02 $h\nu + Ni$	T	75-520 eV	Combet Farnoux, F.; Ben Amar, M. $P(\text{sub } II, III)$ spectrum of atomic nickel: ab initio calculations. <i>Phys. Rev. A</i> 21, 1979 (1980) France
5993	E03 $e + N_2$	T	1.5-3.5 eV	Radisig, A. A.; Firsov, G. B. Excitation of molecule vibrations in resonant scattering of electrons. <i>Sov. Phys.-JETP</i> 50, 669 (1979) Soviet Union
5994	B07 Underf	T		Gerasimovich, S. P.; Krainov, B. P. Radiative collisions between atoms in dichroic field. <i>Sov. Phys.-JETP</i> 50, 674 (1979) Soviet Union
5995	D12 $e + Al$; $e + Ag$	E	83 keV	Arutyunyan, F. B.; Khnitarian, A. B.; Oganesyan, R. A. Polarization and spectral composition of the radiation of nonrelativistic electrons interacting with a rough surface. <i>Sov. Phys.-JETP</i> 50, 88b (1979) Soviet Union
5996	H06 Underf	T	Underf	Fedorov, M. V. Resonant ionization of atoms under conditions of adiabatic level inversion. <i>Sov. Phys.-JETP</i> 50, 1056 (1979) Soviet Union
5997	D07 $He^+ + Pt$ D08 $He^+ + Pt$	E	12-35 keV	Mashkova, E. S.; Molchanov, V. A. Reflection of helium ions from polycrystalline platinum. <i>Sov. Phys.-JETP</i> 50, 1091 (1979) Soviet Union

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5998	D81 Undef	T	Undef	Gediyah, G. V.; Masysov, R. A. Shell effects in elastic collisions of an atom with a crystal. <i>Sov. Phys.-Tech. Phys.</i> 24, 1162 (1979). Soviet Union
5999	A17 $N_2 + Ar$; $CO_2 + Ar$	T	Undef	Geldazhko, V. I.; Kuznetsov, N. B. Intermolecular potentials. <i>Sov. Phys.-Tech. Phys.</i> 24, 1163 (1979). Soviet Union
5999	K97 Undef	E T	Undef	Kisteener, J. Highlights of twenty-five years of atomic and molecular collision physics. XI ICPEAC, Kyoto, Invited Papers, p.3, North-Holland (1979). The Netherlands
5991	C81 Review	E T	Undef	Inohuti, M. Atomic processes pertinent to radiation physics. XI ICPEAC, Kyoto, Invited Papers, p.31, North-Holland (1979). United States
5992	M01 Undef	E	Undef	Schawlow, A. L. Some methods of laser spectroscopy. XI ICPEAC, Kyoto, Invited Papers, p.47, North-Holland (1979). United States
5993	M01 Review M04 Review M06 Review	E	10-1000 eV	Willemsier, F. J. Atomic physics with synchrotron radiation. XI ICPEAC, Kyoto, Invited Papers, p.65, North-Holland, (1979). France
5994	E05 Review E17 Review	E	3-1200 eV	Wielgold, E. (e, 2e) spectroscopy. XI ICPEAC, Kyoto, Invited Papers, p.81, North-Holland (1979). Australia
5995	E92 Review E03 Review E17 Review	T	1-100 eV	Tamkin, A. Theory and calculation of electron-molecule scattering. XI ICPEAC, Kyoto, Invited Papers, p.53, North-Holland (1979). United States
5996	A06 $Kr^+ + Kr$; $Kr^{2+} + Kr$; $Kr^{3+} + Kr$; $Xe^+ + Xe$; $Xe^{2+} + Xe$ A17 $Li^+ + He$	E	A35 3.03-10 eV A17 0.1-10 eV	Kaneko, Y. Drift tube technique in ion-neutral collisions. XI ICPEAC, Kyoto, Invited Papers, p.105, North-Holland (1979). Japan
5997	A03 Review A06 Review M07 Review	E	3.1-10 keV/amu	Richard, P. Inelastic ion-atom collisions: inner shells. XI ICPEAC, Kyoto, Invited Papers, p.125, North-Holland (1979). United States
5998	M03 H^- M07 $h\nu + H^-$	E	M27 10.7-13 eV	Bryant, M. C. Studies of H^- resonances in an electric field. XI ICPEAC, Kyoto, Invited Papers, p.145, North-Holland (1979). United States
5999	M05 $h\nu + O_2^+$; $h\nu + N_2O^+$ M06 $h\nu + He$; $h\nu + O_2^+$; $h\nu + N_2O^+$	E	10-40 eV	Guyon, P. M. Threshold photoion-photoelectron coincidences. XI ICPEAC, Kyoto, Invited Papers, p.163, North-Holland (1979). France
5991	M06 $h\nu + Xe$; $h\nu + Kr$; $h\nu + Ne$; $h\nu + Ar$	T	10-60 eV	Johnson, W. R. Analysis of atomic photoionization using relativistic random-phase approximation and multichannel quantum defect theory. XI ICPEAC, Kyoto, Invited Papers, p.175, North-Holland (1979). France
5991	E03 $e + N_2$; $e + CO_2$ M04 $h\nu + N_2$; $h\nu + CO^+$ M06 $h\nu + N_2$; $h\nu + CO^+$	E T	0-50 eV	Behmer, J. L.; Dill, D. Shape-resonance-enhanced nuclear motion effects in electron-molecule scattering and molecular photoionization. XI ICPEAC, Kyoto, Invited Papers, p.195, North-Holland (1979). United States

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6012	ED3 e + N ₂ : e + SF ₆ : e + CCl ₄ : e + CO ED4 e + N ₂ : e + SF ₆ : e + CCl ₄ : e + CO ED5 e + N ₂ : e + SF ₆ : e + CCl ₄ : e + CO E15 e + N ₂ : e + SF ₆ : e + CCl ₄ : e + CO	E	100-600 eV	van der Vliet, M. J. Inner-shell excitation of molecules by electron impact. XI ICPEAC, Kyoto, Invited Papers, p.209, North-Holland (1979). The Netherlands
6013	ED3 e + N ₂	E	10-300 eV	McConkey, J. W. Optical polarization studies in molecules following electron impact. XI ICPEAC, Kyoto, Invited Papers, p.225, North-Holland (1979). Canada
6014	E01 Review K02 Review	E	Under	McGowan, J. W. Electron-ion collision—an update. XI ICPEAC, Kyoto, Invited Papers, p.227, North-Holland (1979). Canada
6015	ED4 Review ED9 Review	E	0-12 eV	Compton, R. W. Electron attachment to molecules. XI ICPEAC, Kyoto, Invited Papers, p.251, North-Holland (1979). United States
6016	A07 He ⁺ + H; He ⁺ + Ar; He ⁺ + Kr; He ⁺ + N ₂ ; He ⁺ + N ₂	E	0-6 eV	Hotop, H. Electron spectrometric studies of ionizing thermal energy collisions involving excited atoms. XI ICPEAC, Kyoto, Invited Papers, p.271, North-Holland (1979). West Germany
6017	A07 He ⁺ + Na; He ⁺ + Ne ⁺ ; He ⁺ + He ⁺ ; He ⁺ + Kr ⁺ ; He ⁺ + Kr; He ⁺ + D; He ⁺ + Ar; He ⁺ + Na; He ⁺ + Ne ⁺ ; He ⁺ + He ⁺ ; He ⁺ + Kr ⁺ ; He ⁺ + Kr; He ⁺ + D; He ⁺ + Ar; He ⁺ + O ⁺	E	0-10 eV	Mayneber, R. H. Merging-beam experiments with excited atoms. XI ICPEAC, Kyoto, Invited Papers, p.287, North-Holland (1979). United States
6018	A03 Li + He; Li + Ne; Li + Ar; Na + He; Na + Ne; Na + Ar; Mg + Ar; Mg ⁺ + He; Mg ⁺ + He; Mg ⁺ + Ar	E T	0.1-100 keV	Andersen, N. Collision studies of quasi-one-electron systems. XI ICPEAC, Kyoto, Invited Papers, p. 301, North-Holland (1979). Denmark
6019	A03 H ⁺ + Cd	E	2-12 MeV	Chemin, J. F.; Andriamonje, S.; Soturier, J.; Thibaud, J. P.; Joly, S.; Uzureau, J. Simultaneous excitation of heavy nucleus and K-shell by protons. XI ICPEAC, Kyoto, Invited Papers, p.313, North-Holland (1979). France
6020	A07 Review	E	20-120 MeV	Awaga, Y. Systematics of multiple ionization in heavy ion collisions. XI ICPEAC, Kyoto, Invited Papers, p.325, North-Holland (1979). Japan
6021	A06 C ⁴⁺ + H; Review K01 C ⁴⁺ + H; Review	E T	0.01-1000 keV/amu	Dixon, R. E. Electron capture between multiply-charged ions and one-electron targets. XI ICPEAC, Kyoto, Invited Papers, p.391, North-Holland (1979). United States
6022	A06 Review	E	0.01-100 keV/amu	Seitzbarn, E.; Muller, A. Electron capture by multi-charged ions colliding with multi-electron targets. XI ICPEAC, Kyoto, Invited Papers, p.407, North-Holland (1979). West Germany
6023	A03 Ne ¹⁰⁺ + Ar; Ne ¹⁰⁺ + Ar; Ne ¹⁰⁺ + Ar; Ar ¹⁰⁺ + Ne; Ar ¹⁰⁺ + Ne; Ar ¹⁰⁺ + Ar; Ar ¹⁰⁺ + Ar; Ar ¹⁰⁺ + Xe A06 Ne ¹⁰⁺ + Ar; Ne ¹⁰⁺ + Ar; Ne ¹⁰⁺ + Ar; Ar ¹⁰⁺ + Ne; Ar ¹⁰⁺ + Ne; Ar ¹⁰⁺ + Ar; Ar ¹⁰⁺ + Ar; Ar ¹⁰⁺ + Xe	E	~ 100 keV/amu	de Meer, F. J. Collisions between multiply charged ions and atoms resulting in radiation and autoionization. XI ICPEAC, Kyoto, Invited Papers, p.427, North-Holland (1979). The Netherlands
6024	A06 He ¹⁰⁺ + He; He ¹⁰⁺ + Ar; He ¹⁰⁺ + Xe; Ar ¹⁰⁺ + He; Ar ¹⁰⁺ + He; Ar ¹⁰⁺ + He; Ar ¹⁰⁺ + H; Ar ¹⁰⁺ + He	E	1-100 keV	Panov, M. N. Electron capture into different excited states of multiply charged ions. XI ICPEAC, Kyoto, Invited Papers, p.437, North-Holland (1979). Soviet Union
6025	A06 Si ¹⁰⁺ + H; Review	T	0.01-100 keV/amu	Ryufuku, H.; Watanabe, T. The uniterized distorted wave approximation for electron capture by multicharged ions with atomic hydrogen. XI ICPEAC, Kyoto, Invited Papers, p.449, North-Holland (1979). Japan

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6025	A06 $H^{3+} + H$	T	0.3001-1 eV	McCarroll, R.; Velliron, P. Thermal charge exchange reaction with multicharged ions of astrophysical interest; application to the H^{3+} -H system. XI ICPEAC, Kyoto, Invited Papers, p.453, North-Holland (1979). France
6027	E03 $e + Na^+$ E05 $e + Na^+$	E	0-3 eV	Delpech, J. F. Electron collision with Rydberg Atoms. XI ICPEAC, Kyoto, Invited Papers, p.463, North-Holland (1979). France
6028	A11 $Cs^+ + Cs$; $Rb^+ + Rb$; $Na^+ + Ar$; $Rb^+ + Xe$; $Na^+ + He$; $Na^+ + Ar$; $Na^+ + Xe$ H04 $Hr + Xe^+$	E	397 K	Gallagher, T. F. Collisions of Rydberg atoms with atoms and photons. XI ICPEAC, Kyoto, Invited Papers, p.473, North-Holland (1979). United States
6029	A06 $Kr^+ + SF_6$; $Xe^+ + NH_3$; $Ar^+ + SF_6$ A07 $Kr^+ + SF_6$; $Xe^+ + NH_3$; $Ar^+ + SF_6$	E	0-1 eV	Bundel, R. D. Collisions of Rydberg atoms with molecules. XI ICPEAC, Kyoto, Invited Papers, p.481, North-Holland (1979). United States
6030	A73 $H^+ + He$; $Na^+ + He$; $Na^+ + Ar$; $Na^+ + Fe$; $Rb^+ + He$; $Rb^+ + Ar$; $Rb^+ + Fe$ I00 $Kr^+ + SF_6$; $Kr^+ + NH_3$	T	0-1 eV	Matsuzawa, M. Theory of thermal collisions between high-Rydberg atoms and neutral species. XI ICPEAC, Kyoto, Invited Papers, p.493, North-Holland (1979). Japan
6031	A03 $LiH + He$; $LiH + HCl$; $LiH + DCl$; $LiH + NCH$; $LiH^+ + He$; $LiH^+ + HCl$; $LiH^+ + DCl$; $LiH^+ + NCH$ A10 $LiH + He$; $LiH + HCl$; $LiH + DCl$; $LiH + NCH$; $LiH^+ + He$; $LiH^+ + HCl$; $LiH^+ + DCl$; $LiH^+ + NCH$	E	0.7 eV	Dagdigan, P. J. Laser fluorescence measurements of integral cross sections for rotational transitions of state-selected lithium hydride. XI ICPEAC, Kyoto, Invited Papers, p.513, North-Holland (1979). United States
6032	A10 $Na_2 + He$	E	0-1 eV	Bergmann, K.; Heftler, U.; Witt, J. Laser fluorescence measurements of differential cross sections for rotational transitions of Na_2 . XI ICPEAC, Kyoto, Invited Papers, p.523, North-Holland (1979). West Germany
6033	A03 $D_2 + He$; $D_2 + Ar$; $D_2 + HD$	E	0-1 eV	Andree, J.; Buck, U.; Mulsken, F.; Schlausener, J.; Torella, F. State resolved $\Delta J = 2$ rotational transitions in hydrogen molecule collisions. XI ICPEAC, Kyoto, Invited Papers, p.531, North-Holland (1979). West Germany
6034	A03 $H^+ + H_2$; $H^+ + CO_2$	E	0-110 eV	Linder, F. Energy loss studies of rotational and vibrational excitation in proton-molecule scattering. XI ICPEAC, Kyoto, Invited Papers, p.630, North-Holland (1979). West Germany
6035	A13 $H_2^+ + H_2$; $CO^+ + D_2$	E	0-1 eV	Koyano, I.; Tanaka, K. State-selected reactive collisions of diatomic molecular ions by a coincidence technique. XI ICPEAC, Kyoto, Invited Papers, p.647, North-Holland (1979). Japan
6036	A03 $He^+ + He$ A18 $He^+ + He$ E03 $e + He$ E17 $e + He$	E	A03; A18 3 keV E03; E17 80 eV	Williams, J. F. Angular correlations in atomic physics. XI ICPEAC, Kyoto, Invited Papers, p.567, North-Holland (1979). United Kingdom
6037	A07 $He^+ + He$	E	2 keV	Morgenstern, R. Excitation of autoionizing states in heavy particle collisions studied by ion-electron angular correlations. XI ICPEAC, Kyoto, Invited Papers, p.591, North-Holland (1979). The Netherlands
6038	A03 $He^+ + He$	E	2-15 keV	Anderson, M.; Anderson, T.; Olson, J. O.; Pedersen, L. M.; Nielsen, S. E.; Dahler, J. S. Coherence study of He^+ -He collisions: 180° phase jumps for $He^+(2s-2p)$ excitation amplitudes. XI ICPEAC, Kyoto, Invited Papers, p.603, North-Holland (1979). Denmark

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6039	A03 $Li + H_2; Li + H_2$	E	3-400 eV	Hanner, R.; Pfaff, J.; Staudenmayer, R.; Zehle, L.; Kuepper, V. Alignment and orientation of $Li(2p)$ after collisional excit. ion by the molecules H_2 and D_2 . XI ICPEAC, Kyoto, Invited Papers, p.687, North-Holland (1979). West Germany
6040	A06 $H^+ + Ar$	E	3.5-2.5 keV	Hippier, R.; Kleinpoppen, H.; Lutz, H. O. Determination of alignment tensor components for the charge exchange excitation of $M(2p)$ using a coincidence technique. XI ICPEAC, Kyoto, Invited Papers, p.611, North-Holland (1979). West Germany
6041	A16 Review	E	10^{-10} eV	Risley, J. S. A review of negative ion detachment cross sections. XI ICPEAC, Kyoto, Invited Papers, p.619, North-Holland (1979). United States
6042	A16 $Cl^- + Na; Cl^- + Ar; Cl^- + H_2; Cl^- + H_2; Cl^- + D_2; Cl^- + Na; Cl^- + K$	E	2-60 eV	Champion, R. L. Experimental measurements of collisional detachment for energies near threshold. XI ICPEAC, Kyoto, Invited Papers, p.635, North-Holland (1979). United States
6043	A16 Underf	T	0-10 eV	Deshov, Y. N. Zero range Fermi approach in negative ion detachment. XI ICPEAC, Kyoto, Invited Papers, p.645, North-Holland (1979). Soviet Union
6044	A16 $H^- + He$	T	0.11-100 eV	Gauyacq, J. P.; Esaulov, V. Theoretical study of the detachment process in $H^- - He$ collision. XI ICPEAC, Kyoto, Invited Papers, p.655, North-Holland (1979). France
6045	A16 $H^- + H; H^- + He$	T	0.1-100 eV	Horzenberg, A. The two mechanisms for detachment in the adiabatic regime. XI ICPEAC, Kyoto, Invited Papers, p.665, North-Holland (1979). United States
6046	B07 Review	E T		DeVries, P. L.; Lam, K. S.; George, T. F. Atomic and molecular collisions in the presence of strong radiation fields. XI ICPEAC, Kyoto, Invited Papers, p.683, North-Holland (1979). United States
6047	E11 $e + He$	E	5-15 eV	Andrich, D. Free-free processes in electron-atom scattering: experiment. XI ICPEAC, Kyoto, Invited Papers, p.697, North-Holland (1979). West Germany
6048	B07 $Li + Li + h\nu$	E		Weiner, J. Penning and associative ionization produced by intense optical fields. XI ICPEAC, Kyoto, Invited Papers, p.705, North-Holland (1979). United States
6049	B07 $Eu + Sr + h\nu$	E		Cahuzec, P.; Brechignac, C.; Tschek, P. E. Light-induced atomic collisions: experimental verification of line shapes. XI ICPEAC, Kyoto, Invited Papers, p.718, North-Holland (1979). West Germany
6050	A14 Underf B07 Underf	T	A14 Underf	Orel, A. E.; Miller, W. H. Enhancement of chemical reactions by collision induced absorption of infrared laser radiation. XI ICPEAC, Kyoto, Invited Papers, p.719, North-Holland (1979). United States
6051	E01 Underf	T	Underf	Lau, V. K.; Le Dourneuf, M. New theoretical developments in electron-atom and electron-molecule processes. XI ICPEAC, Kyoto, Invited Papers, p.761, North-Holland (1979). France
6052	A03 $Br + CCl_4; Br + NCH; Br + H_2O;$ $Br + H_2O; Ca + Ca; Ca + Ar$ A10 $Br + CCl_4; Br + NCH; Br + H_2O;$ $Br + H_2O; Ca + Ca; Ca + Ar$	E	1000 K	Pance, W. H.; Leone, S. H. New atomic and molecular lasers and their application to the study of collision physics. XI ICPEAC, Kyoto, Invited Papers, p.773, North-Holland (1979). United States
6053	E03 $e + H_2; e + H_2$ E06 $e + Ar$	E	2 eV	Jung, K. J. Developments in techniques in high resolution electron spectroscopy. XI ICPEAC, Kyoto, Invited Papers, p.787, North-Holland (1979). West Germany

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6934	A18 $K + Kr$	E	3.1 eV	Arihara, T. Applications of Moesnard transfer to beam spectroscopy. XI ICPEAC, Kyoto, Invited Papers, p.795, North-Holland (1979). Japan
6935	A03 $H\beta + D_2; He + D_2$ H05 $h\nu + [C_2H_4]_2$ K07 Underf	E	A03 3.35 eV H05 10.6 μ K07 Underf	Conry, V. B. Pulsed molecular beam experiments. XI ICPEAC, Kyoto, Invited Papers, p.867, North-Holland (1979). United States
6936	H04 $h\nu + C$ H06 $h\nu + C$	T	60°-500 Å	Hofmann, H.; Trefftz, E. Excitation of CII lines by photoionization of neutral carbon. XI ICPEAC, Kyoto, p.10, North-Holland (1979). West Germany
6937	H06 $h\nu + O_3$	T	3°-35 Ry	Seraph, M. E. CIV: bound states, oscillator strengths and photoionization cross sections. XI ICPEAC, Kyoto, p.12, North-Holland (1979). United Kingdom
6938	H06 $h\nu + U$	T	0.001-100 keV	Kim, Y. S.; Ren, A.; Tseng, H. K.; Pratt, R. N. Energy dependence of low energy photoelectron angular distributions and matrix elements for high Z elements. XI ICPEAC, Kyoto, p.14, North-Holland (1979). United States
6939	H06 $h\nu + Xe$	E	103-93 nm	Heizmann, U.; Schafers, F. The Fock effect at xenon atoms using circularly polarized synchrotron radiation. XI ICPEAC, Kyoto, p.22, North-Holland (1979). West Germany
6940	H06 $h\nu + Xe$	E	15°-40 nm	Heizmann, U.; Schenke, G.; Kessler, J. Polarization of photoelectrons ejected by unpolarized light from xenon atoms. XI ICPEAC, Kyoto, p.26, North-Holland (1979). West Germany
6941	H06 $h\nu + Ni^+$	T	10-70 eV	Combet Farnoux, F.; Ben Amar, M. Theoretical evidence of super-Coster-Kronig transitions in nickel spectra: ab initio calculations. XI ICPEAC, Kyoto, p.34, North-Holland (1979). France
6942	H05 $h\nu + H_2$ H06 $h\nu + H_2$	E	21-31 eV	Kollmann, K.; Guyon, P. M.; Ito, K.; Benner, I.; Ferreira, L.F.A. Dissociative autoionization of hydrogen and deuterium by photon impact. XI ICPEAC, Kyoto, p.36, North-Holland (1979). West Germany
6943	E04 $e + D_2$ E05 $e + D_2$	E	2°-40 eV	van Vingerden, E.; van der Leeuw, P. E.; de Haer, F. J.; van der Biel, M. J. Formation of energetic D ⁺ fragments from D ₂ by photoexcitation in the 20-40 eV range. XI ICPEAC, Kyoto, p.38, North-Holland (1979). The Netherlands
6944	H05 $h\nu + N_2C; h\nu + CO_2$ H06 $h\nu + N_2C; h\nu + CO_2$	E	10-80 eV	Erion, C. E.; Hitchcock, A. P.; van der Biel, M. J. Dipole oscillator strengths for ionic fragmentation of N ₂ C and CO ₂ (10-75 eV). XI ICPEAC, Kyoto, p.30, North-Holland (1979). Canada
6945	H02 $h\nu + O_2$ H05 $h\nu + O_2$ H06 $h\nu + O_2$	E	2°-80 eV	Erion, C. E.; Tan, K. H.; van der Biel, M. J.; van der Leeuw, P. E. Dipole oscillator strengths for the photoabsorption, photoionization and fragmentation of molecular oxygen. XI ICPEAC, Kyoto, p.32, North-Holland (1979). Canada
6946	H06 $h\nu + SF_6$	E	15-40 eV	Sasakawa, M.; Ishiguro, E.; Hayashi, T.; Masuzaki, H.; Morikawa, Y.; Nakajima, T.; Ashimura, M. Photoionization of SF ₆ in the XUV region. XI ICPEAC, Kyoto, p.64, North-Holland (1979). Japan
6947	H05 $h\nu + H_2$	E	62°-380 Å	Glass-Maujean, M.; Kollmann, K.; Ito, K. Upper limit of the cross section for photodissociation of H ₂ into excited atoms in the range 620-380 Å. XI ICPEAC, Kyoto, p.58, North-Holland (1979). France
6948	H05 $h\nu + MeH^{2+}$	T	58°0-800 Å	Datta, K. K.; Saha, S.; Barua, A. R. Photodissociation of MeH ²⁺ by electronic transition. XI ICPEAC, Kyoto, p.64, North-Holland (1979). India

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6069	H07 hv + K ⁻	E	17000-17500 cm ⁻¹	Falk, R. A.; Leep, D.; Getalia, S. Photodetachment of K ⁻ to the 4 ² S _{1/2} , 4 ² P _{1/2} and 4 ² P _{3/2} levels of K. XI ICPEAC, Kyoto, p.79, North-Holland (1979). United States
6070	H06 2hv + He	T	4000-3200 Å ⁰	Sharma, R. K.; Mathur, K. C. Two-photon ionization of helium from 2 ² S state. XI ICPEAC, Kyoto, p.70, North-Holland (1979). India
6071	H06 2hv + He ⁰ ; 3hv + He ⁰	E	10396-20792 cm ⁻¹	Louppe, L. A.; Mathieu, B.; Mainfray, G.; Batel, G. Three-photon, two-photon ionization of metastable 2 ¹ S and 2 ³ S helium atoms. XI ICPEAC, Kyoto, p.00, North-Holland (1979). France
6072	E02 e + H	T	0.1-1 a.u.	Khan, R. B.; Falcon, C. A.; Ghosh, A. S. Low energy electron-hydrogen scattering. XI ICPEAC, Kyoto, p.50, North-Holland (1979). India
6073	E02 e + H	T	12-30 eV	Ne-Yac, L.; Iga, I.; Nogueira, J. C. Elastic scattering of electron by hydrogen atoms in the adiabatic approximation (electron-h scattering). XI ICPEAC, Kyoto, p.92, North-Holland (1979). Brazil
6074	E02 e + He	T	0.1-10 eV	Tomic, A. R. Calculation of momentum-transfer cross section for slow electrons in helium. XI ICPEAC, Kyoto, p.54, North-Holland (1979). Yugoslavia
6075	E02 e + H; e + O; e + He	T	0-10 eV	Tsing-Tsuan, K.; Yong-Fang, C.; Shou-Fu, P.; Hong-Shan, X.; Pi-Zhu, D. The calculation of total cross sections for the scattering of slow electrons by nitrogen, oxygen and neon atoms. XI ICPEAC, Kyoto, p.96, North-Holland (1979). China
6076	E02 e + Ar E17 e + Ar	E	20 eV	Howell, W. R.; Brewer, D.F.C.; Selth, A.C.M. Elastic differential electron scattering from He, Ne, Ar, and Kr for incident electron energies from 7.5-20 eV. XI ICPEAC, Kyoto, p.100, North-Holland (1979). United Kingdom
6077	E02 e + Ar; e + Kr E17 e + Ar; e + Kr	E	20 eV	Srivastava, S. K.; Tanaka, H.; Chutjian, A.; Register, B.; Trajmar, S. Cross sections for elastic scattering of intermediate-energy electrons by Ar and Kr. XI ICPEAC, Kyoto, p.102, North-Holland (1979). United States
6078	E02 e + He E17 e + He	E	12-50 eV	Register, D. F.; Trajmar, S.; Srivastava, S. K. Absolute elastic differential electron scattering cross sections for He; a proposed calibration standard from 2 to 200 eV. XI ICPEAC, Kyoto, p.104, North-Holland (1979). United States
6079	E02 e + Xe	E	7.5-150 eV	Kiewer, W.; Beerlage, H.J.M.; van der Wiel, M. J. Spin polarization in elastic scattering of 5-300 eV electron from xenon. XI ICPEAC, Kyoto, p.106, North-Holland (1979). The Netherlands
6080	E02 e + H	T	15-30 eV	Srivastava, S. K. A two potential approach for electron-atom elastic scattering at low and intermediate energies. XI ICPEAC, Kyoto, p.108, North-Holland (1979). India
6081	E02 e + H E17 e + H	T	50 eV	Srivastava, S. K.; Lal, R. Electron-atom elastic scattering at intermediate and high energies. XI ICPEAC, Kyoto, p.110, North-Holland (1979). India
6082	E02 e + H	T	5-500 eV	Khayrolah, G. P. Asymmetry in scattering of electrons from hydrogen; exchange-corrected (lauber approximation). XI ICPEAC, Kyoto, p.114, North-Holland (1979). United States
6083	E02 e + He	T	10 ⁰ eV	Tayal, S. B.; Tripathi, A. N.; Srivastava, S. K. Elastic scattering of electrons by helium in two-potential dielectric approximation. XI ICPEAC, Kyoto, p.120, North-Holland (1979). India

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6984	E02 e + He; e + He E17 e + He; e + He	T	100-500 eV	Strivastava, B. P.; Dhol, S. S.; Bhargava, B. A two-potential approximation for elastic scattering of electrons from complex atoms. XI ICPEAC, Kyoto, p.122, North-Holland (1979). India
6985	E02 e + He	T	50 eV	Dey, A. C.; Sill, V. C. Elastic scattering of electrons from helium in the Wallace's screened-coulomb potential approximation. XI ICPEAC, Kyoto, p.124, North-Holland (1979). India
6986	E03 e + H	T	15-200 eV	Sill, V. C.; Sur, S. K. Glauber cross sections for low-energy excitation of hydrogen by electron impact. XI ICPEAC, Kyoto, p.126, North-Holland (1979). India
6987	E03 e + He E17 e + He	T	29.6 eV	Fen, H. C.; Berrington, K. A.; Kingston, P. E. The excitation of n = 2 states of helium by electron impact. XI ICPEAC, Kyoto, p.122, North-Holland (1979). United Kingdom
6988	E03 e + He E17 e + He	T	10 eV	Gupta, G. P.; Pathur, K. C. Excitation of S states of He by electron at intermediate energies. XI ICPEAC, Kyoto, p.134, North-Holland (1979). India
6989	E03 e + He E17 e + He	T	30-100 eV	Scott, T.; Taylor, M. S.; Brissenden, P. Application of the many-body theory to elastic and inelastic scattering of electrons off helium and other rare gas atoms. XI ICPEAC, Kyoto, p.144, North-Holland (1979). United States
6990	E03 e + Li	T	50-500 eV	Tayal, S. S.; Tripathi, A. M. Glauber generalized oscillator strength for allowed transitions of lithium atom. XI ICPEAC, Kyoto, p.144, North-Holland (1979). India
6991	E03 e + He E17 e + He	T	4 eV	Rahid, S.; Kleinpoppen, H. Differential cross section of interference between direct and exchange interaction in polarized electron impact excitation of polarized atoms. XI ICPEAC, Kyoto, p.146, North-Holland (1979). United States
6992	E03 e + O ⁺⁺	E	42-420 eV	Fujimoto, Y.; Fato, T. Excitation cross section of helium-like ions as inferred from relative intensities of coronal emission lines. XI ICPEAC, Kyoto, p.146, North-Holland (1979). Japan
6993	E03 e + O ⁺⁺	T	42-130 eV	Nakazaki, S.; Hashino, T. Electron impact excitation of positive ions by the Coulomb-Born-Bely approximation. XI ICPEAC, Kyoto, p.158, North-Holland (1979). Japan
6994	E03 e + H E17 e + H	E	54 eV	Wolgold, L.; Frost, L.; Rygaard, K. J. Large momentum transfer electron-photon correlations for the 2p state of atomic hydrogen. XI ICPEAC, Kyoto, p.166, North-Holland (1979). Australia
6995	E03 e + He E17 e + He	E	29.6 eV	McAdams, R.; Hollywood, M. I.; Cross, A.; Williams, J. F. Alignment and orientation of He(2 ¹ P) in low energy electron collisions. XI ICPEAC, Kyoto, p.168, North-Holland (1979). United Kingdom
6996	E03 e + He E17 e + He	E	39.7 eV	Chutjian, A.; Hippler, R.; McGregor, I.; Kleinpoppen, H. Differential cross section measurements for electron impact excitation of He(3 ² P) with sub-eV resolution using a coincidence technique. XI ICPEAC, Kyoto, p.172, North-Holland (1979). United Kingdom
6997	E03 e + He	E	50 eV	van Zyl, B.; Dunn, G. M.; Hordle, I. B. D.; Chamberlain, G. E. Benchmark cross sections for electron impact excitation of n=3 levels of He. XI ICPEAC, Kyoto, p.174, North-Holland (1979). United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6094	E03 e + He	E	23.5-27.5 eV	Maldeson, R.G.M.; van de Water, W.; van Ick, J.; van Meerestel, L.J.R. The effect of electron correlations on the polarization of atomic line radiation excited by electron impact. XI ICPEAC, Kyoto, p.178, North-Holland (1979). The Netherlands
6099	E02 e + C E17 e + C	E	30 keV	Schoorlman, W.; Grabe, M.; Looschelder, J. Measurement of electron exchange contributions to the large angle scattering cross sections of 30 keV electrons. XI ICPEAC, Kyoto, p.166, North-Holland (1979). West Germany
6100	E02 e + He E03 e + He E17 e + He	E	54 eV	Srivastava, S. K.; Vukovic, L. Cross sections for elastic and inelastic excitations in He by intermediate energy electrons. XI ICPEAC, Kyoto, p.150, North-Holland (1979). United States
6101	E02 e + K E03 e + K E17 e + K	E	60 eV	Vukovic, L.; Srivastava, S. K. Scattering of intermediate energy electrons by potassium. XI ICPEAC, Kyoto, p.192, North-Holland (1979). United States
6102	E05 e + H ⁺	T	1-17 eV	Runc, J. A. Binary encounter collisional ionization of (n,l) states of hydrogen. XI ICPEAC, Kyoto, p.158, North-Holland (1979). United States
6103	E05 e + He; e + Ne; e + Ar; e + Kr	E	15-180 eV	Stephan, R.; Helm, M.; Wark, T. C. Absolute partial electron impact ionization cross section functions for He, Ne, Ar and Kr from threshold up to 180 eV. XI ICPEAC, Kyoto, p.203, North-Holland (1979). Austria
6104	E05 e + He	E	0.2-5 keV	Eckhardt, M.; Scharner, A.-M.; Beyer, M. F. Electron impact ionization of 2s- and 2p-electrons of neon. XI ICPEAC, Kyoto, p.202, North-Holland (1979). West Germany
6105	E05 e + Ar	E	35-35 eV	Winter, M.; Varga, P. Apparent cross sections for production of singly and doubly charged metastable noble gas ions by electron impact. XI ICPEAC, Kyoto, p.204, North-Holland (1979). Austria
6106	E05 e + He E17 e + He	E	30.5 eV	Jung, K. K.; Schubert, E. Angular correlations of the outgoing electrons after ionizing collisions of low energy electrons with helium atoms. XI ICPEAC, Kyoto, p. 206, North-Holland (1979). West Germany
6107	E05 e + He	E	0.2-2.0 keV	van Vliet, B.; Kinnear, J. I.; Firaus, B.; Joachain, C. J.; de Meer, F. J. Absolute triple differential cross sections for scattering of 260-2800 eV electrons incident on helium. XI ICPEAC, Kyoto, p. 208, North-Holland (1979). The Netherlands
6108	E05 e + He; e + Xe	E	0.2-3.6 keV	Giardini-Guidoni, A.; Fantoni, R.; Iribelli, R.; Stefani, G.; Ceccioni, R. Absolute (e, 2e) coplanar symmetric cross section measured for valence orbitals of He and Xe. XI ICPEAC, Kyoto, p.210, North-Holland (1979). Italy
6109	E05 e + Xe	E	3.6 keV	Giardini-Guidoni, A.; Fantoni, R.; Pasconero, R.; Ceccioni, R.; Stefani, G. Inadequacy of hartree-Fock single particle model in describing intermediate state of Xe. XI ICPEAC, Kyoto, p.212, North-Holland (1979). Italy
6110	E05 e + He ⁺	T	1-8 eV Threshold	Tsuji, A.; Kofegawa, M.; Harumi, M. Ionization of hydrogenic ions by charged particles in the Glauber approximation. XI ICPEAC, Kyoto, p.216, North-Holland (1979). Japan
6111	E05 e + C ²⁺ ; e + N ²⁺ ; e + O ²⁺	T	10 ⁻¹ -1000 eV	Kim, Y.-K.; Cheng, K.-T. Bethe cross sections for ionization of C ²⁺ , N ²⁺ , and O ²⁺ . XI ICPEAC, Kyoto, p.218, North-Holland (1979). United States

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
6112	E05 e + Ne ⁺ ; e + Ar ⁺ ; e + Ar ²⁺ ; e + Ar ³⁺ ; e + Ar ⁴⁺ ; e + Ar ⁵⁺	E	15-810 eV	Recker, R.; Frodl, R.; Klein, H.; Puzler, A.; Seizberg, E.; Winter, M. Measurement of cross sections for electron impact ionization of ions up to 810 eV. XI ICPEAC, Kyoto, p.222, North-Holland (1979). West Germany
6113	E05 e + Ar ⁺ E15 e + Ar ⁺	E	25-810 eV	Müller, A.; Frodl, R. Multiple ionization of argon ions by electron impact. XI ICPEAC, Kyoto, p.224, North-Holland (1979). West Germany
6114	E05 e + O ⁺	E	10 ⁴ -1500 eV	Cranwell, D. N.; Phaneuf, R. A. Electron impact ionization of oxygen ions—O ²⁺ , O ³⁺ , O ⁴⁺ . XI ICPEAC, Kyoto, p.226, North-Holland (1979). United States
6115	E03 e + He E05 e + He	E	61-119 eV	Meijer, H. G. M.; Westerveld, W. B.; van Eck, J. Excitation of the (2p ²) ³ P doublet, excited state of helium by electrons. XI ICPEAC, Kyoto, p.246, North-Holland (1979). The Netherlands
6116	E ⁰⁵ e + Kr; e + Xe E15 e + Kr; e + Xe	E	100-2600 eV	Takayanagi, T.; Nakasato, A.; Hirota, C.; Suzuki, K.; Wakiya, K. Cross sections for Ar-L _{2,3} , Kr-M _{4,5} , and Xe-N _{4,5} ionizations by electron impact. XI ICPEAC, Kyoto, p.260, North-Holland (1979). Japan
6117	E ⁰⁵ e + Ne E15 e + Ne	E	2.4-7 keV	Sandner, W.; Theodosiou, C. L. Isotopic differential ionization cross section for neon K-shell by electron impact. XI ICPEAC, Kyoto, p.262, North-Holland (1979). West Germany
6118	E ⁰⁵ e + Xe; e + Kr E05 e + Xe; e + Kr	E	6-14 keV	Aydinli, N.; Hippler, R.; McGreger, I.; Kleinpoppen, H. Angular distribution of X radiation following electron bombardment of free atoms. XI ICPEAC, Kyoto, p.266, North-Holland (1979). United Kingdom
6119	E05 e + Au E15 e + Au	E	20-60 MeV	Genz, H.; Hoffmann, D. H. M.; Low, W.; Richter, A. Energy dependence of the L(sub P)/L(sub s) branching ratio after L-shell ionization by relativistic electrons. XI ICPEAC, Kyoto, p.268, North-Holland (1979). West Germany
6120	E05 e + Au; e + Sn; e + Pb; e + Bi E15 e + Au; e + Sn; e + Pb; e + Bi	E	20-60 MeV	Hoffmann, D. H. M.; Brandel, C.; Eschwege, P.; Genz, H.; Kuhn, U.; Low, W.; Richter, A. K-, L- and M-shell ionization by relativistic electron impact: cross sections and scaling behaviour. XI ICPEAC, Kyoto, p.270, North-Holland (1979). West Germany
6121	E05 e + Na; e + Mg; e + Al; e + Cl; e + Zn; e + Zn E15 e + Na; e + Mg; e + Al; e + Cl; e + Zn; e + Zn	E	70-200 MeV	Kamiya, M.; Kinefuchi, Y.; Kuwano, A.; Ishii, K.; Porita, S.; Oyazaki, M. Density effect in K-shell ionizations by ultrarelativistic electrons. XI ICPEAC, Kyoto, p.272, North-Holland (1979). Japan
6122	E02 e + H ₂ ⁺	E	3.1-1 a.u.	Takagi, H.; Masamura, M.; Iikawa, Y. Elastic scattering of electrons from H ₂ ⁺ and studies of dynamic processes in the H ₂ ⁺ + e system. XI ICPEAC, Kyoto, p.278, North-Holland (1979). Japan
6123	E03 e + H ₂	T	3.1-1 Ry	Ficocelli Varracchio, E. Effective potential theory of e ⁻ - H ₂ rotational excitation. XI ICPEAC, Kyoto, p.280, North-Holland (1979). Italy
6124	E03 e + H ₂	T	40-100 eV	Gupta, G. P.; Rathur, K. C. Rotational excitation of H ₂ molecule by electron impact. XI ICPEAC, Kyoto, p.282, North-Holland (1979). India
6125	E02 e + H ₂	T	75-100 eV	Jain, A.; Tripathi, A. N.; Srivastava, M. A. Elastic scattering of electrons by hydrogen molecule at intermediate and high energies. XI ICPEAC, Kyoto, p.284, North-Holland (1979). India

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6126	E03 $e + N_2$	T	47-82 eV	LaGattuta, K. J. Glauber approximation for $e^- + N_2(g.s.) + e^- + N_2^+$ in a Gaussian basis. XI ICPEAC, Kyoto, p.286, North-Holland (1979). United States
6127	E02 $e + N_2$	T	2-9 eV	Klonner, A.; Kaldor, U. Ab initio calculations of low energy electron-molecule scattering with polarization. XI ICPEAC, Kyoto, p.288, North-Holland (1979). Israel
6128	E03 $e + N_2$	T	1-4 eV	Schneider, B. L.; Le Bourneuf, M.; Lou, V. K. Resonant vibrational excitation of diatomic molecules by electron impact. An ab initio S -matrix calculation for $e^- + N_2$. XI ICPEAC, Kyoto, p.252, North-Holland (1979). France
6129	E03 $e + CO$	T	0.5-4.5 eV	Choi, B. N.; Pao, B. T. Vibrational excitation in low energy electron-carbon monoxide scattering: a hybrid theory calculation. XI ICPEAC, Kyoto, p.302, North-Holland (1979). United States
6130	E02 $e + CO_2$ E03 $e + CO_2$	T	50-500 eV	Sun, J. C.; Choi, B. N.; Pao, B. T. Electron-carbon dioxide scattering at intermediate and high energies; two-potential approach. XI ICPEAC, Kyoto, p.304, North-Holland (1979). United States
6131	E02 $e + CO$	T	400 eV	Khare, S. P.; Hajj, D. Elastic scattering of electrons by CO molecules. XI ICPEAC, Kyoto, p.306, North-Holland (1979). India
6132	E02 $e + CH_4; e + C_2H_2$ E17 $e + CH_4; e + C_2H_2$	E	10 eV	Howell, W. R.; Brewer, D. F. C.; Selby, A. C. M. Elastic differential electron scattering from the polyatomic molecules CH_4 , C_2H_2 and C_2H_4 . XI ICPEAC, Kyoto, p.308, North-Holland (1979). United Kingdom
6133	E03 $e + CO$	E	3-100 eV	Tanaka, M.; Chutjian, A. Electron-impact cross sections for $v = 0 + 1$ vibrational excitation in CO at electron energies of 3 to 100 eV. XI ICPEAC, Kyoto, p.310, North-Holland (1979). Japan
6134	E03 $e + CO_2$	E	4-50 eV	Hishiyama, N.; Register, D. F.; Trajner, S. Elastic scattering and vibrational excitation of CO_2 by 4, 10, 20 and 50 eV electrons. XI ICPEAC, Kyoto, p.312, North-Holland (1979). United States
6135	E02 $e + H_2C$	E	30-90 eV	Hishiyama, N. Elastic scattering cross sections of H_2C by low energy electrons. XI ICPEAC, Kyoto, p.214, North-Holland (1979). United States
6136	E02 $e + CCl_2; e + As_2$ E17 $e + CCl_2; e + As_2$	E	70-500 eV	Baloon, M.; Kondow, T.; Kuchitsu, F. Measurement of the differential cross sections for elastic scattering of electrons (70-500 eV) by CCl_2 and As_2 molecules. XI ICPEAC, Kyoto, p.316, North-Holland (1979). Japan
6137	E03 $e + N_2$	E	0.005-100 eV	Phelps, A. V.; Levron, D.; Tachibana, K. A consistent set of electron collision cross sections for N_2 . XI ICPEAC, Kyoto, p.318, North-Holland (1979). United States
6138	E02 $e + CH_4$ E03 $e + CH_4$	E	0-4 eV	Bohr, K. Collision processes in e^-CH_4 scattering at low energies. XI ICPEAC, Kyoto, p.324, North-Holland (1979). West Germany
6139	E03 $e + O_2$	E	2-20 eV	Yamamoto, T.; Ohada, Y.; Suzuki, Y.; Tanaka, N. New features in the vibrational excitation in O_2 by electron impact in the 2-20 eV region. XI ICPEAC, Kyoto, p.326, North-Holland (1979). Japan
6140	E18 $e + CO; e + N_2; e + CO_2; e + CH_4$	E	3.3-5 eV	Hasted, J. B.; Radtke, S.; Solov'ev, I. Total cross-sections for resonant scattering of electrons by diatomic and polyatomic molecules. XI ICPEAC, Kyoto, p.334, North-Holland (1979). United Kingdom

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6141	E03 $e + N_2C$ E04 $e + N_2C$	T	2 ⁻ -500 eV	Fujita, Y.; Inui, Y.; Ogura, K.; Watanabe, S.; Watanabe, Y. Dissociative excitation of water molecule by electron impact. XI ICPEAC, Kyoto, p.348, North-Holland (1979). Japan
6142	E04 $e + F_2$; $e + Cl_2$; $e + I_2$ E09 $e + F_2$; $e + Cl_2$; $e + I_2$	T	0.15-5 eV	Brubaker, G. F.; Pozdnev, S. A. Calculation of dissociative attachment cross sections to F_2 , Cl_2 and I_2 molecules. XI ICPEAC, Kyoto, p.346, North-Holland (1979). Soviet Union
6143	E04 $e + HCl$	E	Under	Nige, R.; Cgawa, T. Kinetic energy distribution of the excited hydrogen atom produced by controlled electron impact on HCl. XI ICPEAC, Kyoto, p.362, North-Holland (1979). Japan
6144	E03 $e + NH_3$ E04 $e + NH_3$	E	0 ⁻ -500 eV	Kurogo, J. W.; Iadic, W. D. Absolute emission cross-section of $NH_3(e^+ + h\nu)$, 0-5 vibrational band of ammonia. XI ICPEAC, Kyoto, p.368, North-Holland (1979). Yugoslavia
6145	E04 $e + N_2$	E	0-12 eV	Spence, D.; Burrow, P. D. Cross section for resonant dissociation of N_2 by electron impact. XI ICPEAC, Kyoto, p.372, North-Holland (1979). United States
6146	E04 $e + N_2^+$; $e + N_2^+$; $e + N_2^+$	E	16-400 eV	Roates, J. B.; Pather, D.; Khan, S. U. Trap recombination processes of cluster ions. XI ICPEAC, Kyoto, p.376, North-Holland (1979). United Kingdom
6147	E03 $e + N_2$	T	12-100 eV	Nazi, A. U. Cross sections for electronic excitation of molecules by electron impact. XI ICPEAC, Kyoto, p.384, North-Holland (1979). United States
6148	E07 $e + KrF^+$; $e + XeF^+$	T	33° K	Rescigno, T. W. Theoretical study of electron impact dissociation of KrF^+ and XeF^+ cations. XI ICPEAC, Kyoto, p.389, North-Holland (1979). United States
6149	E05 $e + NO_2$	E	1 ⁻ -100 eV	Helm, M.; Kim, Y. B.; Mack, T. D.; Kessler, J.; Sejkora, G.; Stephen, K. Single and double electron impact ionization of NO_2 . XI ICPEAC, Kyoto, p.392, North-Holland (1979). Austria
6150	E03 $e + N_2$ E05 $e + N_2$ E15 $e + N_2$	E	1-2 keV	Cda, A.; Nishimura, F.; Oono, Y. Generalized oscillator strengths for K-shell excitation and ionization of N_2 by electron impact. XI ICPEAC, Kyoto, p.402, North-Holland (1979). Japan
6151	A02 $O + Kr$ A17 $O + Kr$	E	1230-1560 eV	Aquilanti, V.; Luzzatti, E.; Pirani, F.; Valpi, G. G. Cross sections for collisions of O (¹⁶ O) atoms with partial analysis of population of magnetic sublevels. XI ICPEAC, Kyoto, p.412, North-Holland (1979). Italy
6152	A02 $H^+ + He$; $H^+ + Ne$; $H^+ + Ar$ A06 $H^+ + He$; $H^+ + Ne$; $H^+ + Ar$ A10 $H^+ + He$; $H^+ + Ne$; $H^+ + Ar$	E	3.1-1.9 keV	Alkley, J. S.; Clison, R. E. Total scattering cross sections of protons by He, Ne, and Ar. XI ICPEAC, Kyoto, p.429, North-Holland (1979). United States
6153	G09 $U^+ + U$; $U^+ + U^+$; $U^+ + U^+$	T	1-1000 eV	Cohen, J. S.; May, P. J. JWB calculation of resonance-transfer cross sections for a shielded Coulomb potential: uranium ions. XI ICPEAC, Kyoto, p.424, North-Holland (1979). United States
6154	A04 $He^+ + P$	T	3.1-10.9 MeV	Mukherjee, S. C.; Datta, S. Charge transfer in $He^+ - H(1s)$ collisions. XI ICPEAC, Kyoto, p.428, North-Holland (1979). India
6155	A06 $H^+ + H$	T	3.92-24.1 eV	Baruch-Rezvani, V.; Grün, H.; Schele, U. A numerical solution of the Schrödinger equation for atomic collisions. XI ICPEAC, Kyoto, p.436, North-Holland (1979). West Germany

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6156	A06 $H^+ + H$	T	50 keV	Sil, A. C.; Roy, P. R.; Saha, B. C. Charge exchange cross sections in $H^+ - H$ collisions. XI ICPEAC, Kyoto, p.438, North-Holland (1979). India
6157	A06 $H^+ + H$	T	1 MeV	Polakowitch, B. L.; Stachurs, S. L. Electron capture at relativistic energies. XI ICPEAC, Kyoto, p.440, North-Holland (1979). United Kingdom
6158	A10 $K^+ + K$	E	Thermal	Shelivshi, P.; Krause, L. Ionization of 4^2P potassium atoms induced in resonant collisions. XI ICPEAC, Kyoto, p.444, North-Holland (1979). Canada
6159	A10 $K^+ + He$	T	0.0716-1.0 eV	Pascals, J.; Perrin, R. Y. Energy dependence of the total cross sections for $K(4^2P_{3/2} \text{ sub } m_{3/2}) + 4^2P_{3/2} \text{ sub } m_{3/2} He$ collisions. XI ICPEAC, Kyoto, p.440, North-Holland (1979). France
6160	A10 $K^+ + He$	E	3.972-0.4 eV	Cavallier, J.; Berlande, J.; Benoit, C.; Perrin, R. Y.; Mustagh, J. M.; Du Mesny, J. Crossed term determination of energy dependence of fine structure transitions in $K(4^2P) - He$ collisions. XI ICPEAC, Kyoto, p.440, North-Holland (1979). France
6161	A17 $Li^+ + He; K^+ + He; R^+ + He$	T	Undef	Passey-Sauvage, F.; Comrais-Gaussergues, C.; Philippe, R. Model potential calculations for $LiHe$, RHe and RHe molecular systems: oscillations in velocity dependent fine structure changing cross sections. XI ICPEAC, Kyoto, p.442, North-Holland (1979). France
6162	A10 $Ne^+ + He; He^+ + e$ E03 $e + He$	E	$3 \times 10^3 - 5 \times 10^4$ K	Fukuda, K.; Ohe, S.; Yonemura, N. Excitation transfer between excited levels of He ($n = 3, 4$) by dye laser pumping. XI ICPEAC, Kyoto, p.446, North-Holland (1979). Japan
6163	A10 $Na^+ + He$	E	25-370 meV	Mohrland, H.; Gesterlin, P. Energy transfer between metastable helium and ground state neon atoms. XI ICPEAC, Kyoto, p.450, North-Holland (1979). West Germany
6164	A17 $Na^+ + He$	E	3.02-0.12 eV	Fukuyama, T.; Sato, P. L. $Na(2^1S, 2^3S) + He$ differential scattering: adiabatic entrance channel potentials and primary exit channels. XI ICPEAC, Kyoto, p.460, North-Holland (1979). United States
6165	A17 $Cu + Xe; Cu + Kr; Cu + Ar; Cu + He$	E	10 ⁻⁴ -410 °C	Sayer, B.; Farray, M.; Vioticot, J. P.; Loxingot, J. Experimental investigation of the $Cu(2S) + Cu(2S_{3/2})$ rare gas interaction. XI ICPEAC, Kyoto, p.462, North-Holland (1979). France
6166	A11 $F^+ + H^+$	T	0.25-0.25 eV	Meyer, H. D.; McCurdy, C. W.; Piller, W. M. Classical model for electronic degrees of freedom in non-adiabatic collision processes. XI ICPEAC, Kyoto, p.460, North-Holland (1979). United States
6167	A06 $H^+ + He; H^+ + Ne; H^+ + Ar; H^+ + Kr; H^+ + Xe$	E	0.2-10 keV	Rieley, J. S.; Britt, R. D. Single and double electron transfer cross sections for protons at atomic and molecular targets. XI ICPEAC, Kyoto, p.470, North-Holland (1979). United States
6168	A06 $Na^+ + He$	T	0-12 keV	Harel, C.; Salin, A. Charge exchange and excitation in $Na^+ - He$ collisions in the keV range. XI ICPEAC, Kyoto, p.480, North-Holland (1979). France
6169	A03 $Li^+ + He$ A06 $Li^+ + He$	E	0.45-4.2 keV	Tsurutachi, S.; Masuda, T.; Iwai, I. Interference behavior of optical excitation function in $Li^+ - He$ collision. XI ICPEAC, Kyoto, p.488, North-Holland (1979). Japan
6170	A03 $Na^+ + Ar; H^+ + He$	E	2-10 keV	Chavira, P.; Fukuda, K. Spectroscopic studies of collisions between rare-gas ion or light-atom ion and rare gas at 1-10 keV energy range. XI ICPEAC, Kyoto, p.490, North-Holland (1979). Japan

REF. NO.	REACTIONS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6171	A03 $Ar^{2+} + He$ A06 $Ar^{2+} + He$	E	0-8 keV	Matsuzoto, A.; Tsurubachi, Z.; Iwai, Y.; Chitani, S.; Chino, K.; Kaneko, Y. Electron capture into Ar II excited state by Ar^{2+} impact on $He(0.2-12 \text{ keV})$. XI ICPEAC, Kyoto, p.494, North-Holland (1979). Japan
6172	A03 $Hg + He; Hg^+ + He$ A06 $Hg + He; Hg^+ + He$	E	1-90 keV	Blignard, P.; Anderson, T.; Sorensen, S. V. Study of the optical emission in quasi-two-electron systems: $Hg(Js^2)$, $Hg(Js3f^2P)-He$, He , Ar and Hg^+-He , 1-90 keV. XI ICPEAC, Kyoto, p.498, North-Holland (1979). Denmark
6173	A06 $He + C; He^+ + C; He^{2+} + C$ A08 $He + C; He^+ + C; He^{2+} + C$	E	3.7-2.0 MeV	Itoh, A.; Asari, N.; Fukuoka, F. Additive rule in the charge-changing process of He beam. XI ICPEAC, Kyoto, p.502, North-Holland (1979). Japan
6174	A06 $H + Ca; H + Rb; H + K; H^+ + Ca; H^+ + Rb; H^+ + K$	E	0.4-5.0 keV	Nagata, T. Single-electron capture cross sections for H^+ ions and $H(1s)$ atoms incident upon Ca , Rb and K vapors. XI ICPEAC, Kyoto, p.512, North-Holland (1979). Japan
6175	A06 $Ca^+ + Rb$	T	$6-20 \times 10^6 \text{ cm/s}$	Valance, A.; Nguyen-Yuan, Q.; Duc, A. Y. $Ca^+ + Rb$ and $H^+ + He$ charge exchange calculations. XI ICPEAC, Kyoto, p.516, North-Holland (1979). France
6176	A06 $B + Ca; B + Pb; B + Na; B^+ + Ca; B^+ + Pb; B^+ + Na$ A08 $B + Ca; B + Pb; B + Na; B^+ + Ca; B^+ + Pb; B^+ + Na$	E	0.3-10 keV	Schlachter, A. J.; Stalder, R. R.; Stearns, J. W. B^- formation by charge-transfer collisions of 0.3 to 10-keV deuterium ions and atoms in calcium, rubidium, and sodium vapors. XI ICPEAC, Kyoto, p.526, North-Holland (1979). United States
6177	A06 $C + Na; C + He; F + Na; P + Na; Cl + Na$	E	13-500 keV	Hvelplund, P.; Tøllund, E. Electron capture by hot C, O, F, P, and Cl atoms in Na vapour. XI ICPEAC, Kyoto, p.528, North-Holland (1979). Denmark
6178	A02 $H + Ca$ A10 $H + Ca$	E	40-79 eV	El Maddar, P.; Pradel, P. Differential cross sections for elastic scattering of atomic hydrogen from cesium vapour. XI ICPEAC, Kyoto, p.528, North-Holland (1979). France
6179	A06 $H^+ + Ca$ A10 $H^+ + Ca$	E	20-100 eV	Pradel, P.; Splawa, G.; Sidis, V.; Kubeck, C. Differential cross sections for the near resonant charge transfer process $H^+ + Ca + H(2s) + Ca^+$ and ion energy. XI ICPEAC, Kyoto, p.522, North-Holland (1979). France
6180	A06 $H + Ca$ A10 $H + Ca$	E	70-80 eV	Pradel, P.; El Maddar, P. Differential electron attachment cross sections for $H(1s)$ colliding with a cesium vapour target. XI ICPEAC, Kyoto, p.524, North-Holland (1979). France
6181	A06 $Na^+ + Cs$	E	100-1500 eV	Raymond, C.; Pommier, J.; Tuan, V. H.; Barot, M. Relative abundances of $Na(2^2S)$ and $Na(2^1S)$ formed by charge exchange on alkali vapor. XI ICPEAC, Kyoto, p.530, North-Holland (1979). France
6182	A06 $Na^+ + Cs$	T	$0.5-2.5 \times 10^7 \text{ cm/s}$	Sidis, V.; Kubeck, C. Systematic theoretical investigation of charge exchange in Na^+ /alkali-atom collisions. XI ICPEAC, Kyoto, p.532, North-Holland (1979). France
6183	A06 $Li^+ + H_2; B^{2+} + H_2; Be^{2+} + H_2; C^{2+} + H_2; N^{2+} + H_2; O^{2+} + H_2$	E	$0 \times 10^6 \text{ cm/s}$	Tagilov, Y. A.; Dmitriev, I. S.; Nibalev, V. S. The cross section for capture of an electron by the helium-like metastable ions of light elements. XI ICPEAC, Kyoto, p.538, North-Holland (1979). Soviet Union

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
6104	A06 $\text{Li}^{2+} + \text{He}; \text{Li}^{2+} + \text{He}; \text{Li}^{2+} + \text{He};$ $\text{Li}^{2+} + \text{He}; \text{Li}^{2+} + \text{Ar}; \text{B}^{2+} + \text{He};$ $\text{B}^{2+} + \text{He}; \text{B}^{2+} + \text{He}; \text{B}^{2+} + \text{He}; \text{B}^{2+} +$ $+ \text{Ar}; \text{B}^{2+} + \text{He}; \text{B}^{2+} + \text{He}; \text{B}^{2+} +$ $\text{He}; \text{B}^{2+} + \text{He}; \text{B}^{2+} + \text{Ar}; \text{B}^{2+} + \text{He};$ $\text{B}^{2+} + \text{He}; \text{B}^{2+} + \text{He}; \text{B}^{2+} + \text{He}; \text{B}^{2+} +$ $+ \text{Ar}; \text{B}^{2+} + \text{He}; \text{B}^{2+} + \text{He}; \text{B}^{2+} +$ $\text{He}; \text{B}^{2+} + \text{He}; \text{B}^{2+} + \text{Ar}$	E	4.8×10^8 cm/s	Yapleva, V. A.; Dmitriev, I. S.; Kuchinskaya, Z. N.; Fainberg, V. A. Formation of metastable ions with two and three electrons in different gases. XI ICPEAC, Kyoto, p.540, North-Holland (1979). Soviet Union
6105	A06 $\text{N}^{2+} + \text{He}; \text{N}^{2+} + \text{He}; \text{N}^{2+} + \text{Ar}; \text{N}^{2+}$ $+ \text{Kr}; \text{N}^{2+} + \text{Xe}$	E	20-200 keV	Hird, B.; All, E. P.; Suh, H. C. σ_{22} cross section for nitrogen ions in rare gas targets. XI ICPEAC, Kyoto, p.542, North-Holland (1979). Canada
6106	A06 $\text{N}^+ + \text{He}$	E	520-1000 eV	Thielemann, U.; Krut'kin, J.; Borot, M. Electron capture in $\text{N}^+ - \text{He}$ collisions—influence of metastable ions. XI ICPEAC, Kyoto, p.544, North-Holland (1979). France
6107	A06 $\text{O}^+ + \text{Ar}; \text{O}^+ + \text{Kr}; \text{O}^+ + \text{Xe}$	E T	2-25 keV	Matic, M.; Sidi, V.; Cobic, B.; Vojovic, N. Charge transfer of $\text{O}^+ \text{ } ^2\text{S}$ and ^2D state in Ar, Kr and Xe. XI ICPEAC, Kyoto, p.546, North-Holland (1979). Yugoslavia
6108	A06 $\text{N}^{2+} + \text{He}$	E	0.5-2.5 keV	Sato, Y.; Moore, J. M. Electron capture in $\text{N}^{2+} - \text{He}$ and $\text{N}^+ - \text{He}$ collisions. XI ICPEAC, Kyoto, p.550, North-Holland (1979). United States
6109	A06 $\text{N}^+ + \text{N}_2\text{C}$	E	33-60 keV	Mayer, F. U.; Kim, M. J. Measurement of N atom Hydberg-state population by a transmission method. XI ICPEAC, Kyoto, p.552, North-Holland (1979). United States
6110	A03 $\text{Ne} + \text{He}; \text{Ne}^+ + \text{He}; \text{Ne}^+ + \text{He}$	E	0.5-5 keV	Kiura, N.; Egawa, Y.; Inai, Y. He I-excitation in collisions of $\text{Ne}(\text{sup } a)$, $\text{Ne}(\text{sup } g)$ and Ne^+ with He. XI ICPEAC, Kyoto, p.554, North-Holland (1979). Japan
6111	A06 $\text{PERT} + \text{H}$	T	3.901-10 MeV/amu	Prasnyakov, L. F.; Shevelko, V. F. One-electron charge exchange of multiply charged ions with atoms at intermediate and large relative velocities. XI ICPEAC, Kyoto, p.558, North-Holland (1979). Soviet Union
6112	A06 $\text{PERT} + \text{H}; \text{PERT} + \text{He}$	T	40-5000 keV/amu	Elchler, J.; Chan, F. Y. Approach to electron capture into arbitrary principal shells of fast projectiles. XI ICPEAC, Kyoto, p.562, North-Holland (1979). West Germany
6113	A06 $\text{Ar}^{20+} + \text{He}$	T	1-24 keV	Opradko, L.; Vallron, P.; McCarrill, R. Electron capture by Ar^{20+} ions from He in the keV energy range. XI ICPEAC, Kyoto, p.564, North-Holland (1979). Soviet Union
6114	A06 $\text{Ne}^{20+} + \text{H}$	T	$0.7 - 0.0 \times 10^7$ cm/s	Vaaben, J.; Taulbjerg, K. Connection between choice of translation factors and size of NO ions in charge-transfer calculations. XI ICPEAC, Kyoto, p.566, North-Holland (1979). Denmark
6115	A06 $\text{P}^{20+} + \text{Si}; \text{Si}^{20+} + \text{Cu}; \text{Si}^{20+} + \text{Ti}$	T	0.4 MeV/amu	Lin, C. D. Theory of electron transfer in ion-ion collisions. XI ICPEAC, Kyoto, p.568, North-Holland (1979). United States
6116	A06 $\text{PERT} + \text{H}$	T	$0.001 - 2.0 \times 10^8$ cm/s	Bonan, E. L.; Menchikov, L. G.; Smirnov, B. N. The hydrogen atom destruction in collisions with multicharged ion. XI ICPEAC, Kyoto, p.572, North-Holland (1979). Soviet Union
6117	A06 $\text{H}^+ + \text{H } ^{20}\text{g}; \text{H}^{20+} + \text{H } ^{20}\text{g}$	T	$0.01 - 10 \times 10^8$ MeV/amu	Lal, R.; Srivastava, M. K.; Trigathi, A. N. Charge transfer cross sections for α -particles colliding with hydrogenic ions. XI ICPEAC, Kyoto, p.574, North-Holland (1979). India
6118	A06 $\text{H}^+ + \text{H}^{20+}$	T	100-400 keV	Basu, D.; Mukherjee, S. Ion-ion capture collisions in the continuum distorted wave approximation. XI ICPEAC, Kyoto, p.576, North-Holland (1979). India

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REF. NO.	REACTANTS	EXP. OF THEOR.	ENERGY RANGE	REFERENCE
6207	A06 $F^{+} + He$ A07 $F^{+} + He$	E	1 MeV/amu	Coché, C. L.; Gray, T. J.; Justiciere, E. Production of low-velocity highly ionized recoil ions by heavy-ion bombardment of He. XI ICPEAC, Kyoto, p.608, North-Holland (1979). United States
6208	A06 $Ne^{10+} + He$; $Ne^{10+} + He$; $Ne^{10+} + Ar$; $Ne^{10+} + N_2$; $Ne^{10+} + CH_4$; $Ne^{10+} + He$; $Ne^{10+} + He$; $Ne^{10+} + Ar$; $Ne^{10+} + N_2$; $Ne^{10+} + CH_4$	E	10 eV	Mann, R.; Beyer, H. F.; Scharfner, K. M.; Eichmann, F. Selective electron capture by highly charged very slow ions: II. Spectroscopic results. XI ICPEAC, Kyoto, p.660, North-Holland (1979). West Germany
6209	A07 $H^{+} + He$; $He^{2+} + He$	E	0.5-2.0 MeV	Sakisaka, M.; Maeda, M.; Kobayashi, M.; Kusuhara, T. Charge spectra of target atoms excited by energetic ions. XI ICPEAC, Kyoto, p.606, North-Holland (1979). Japan
6210	A03 $H^{-} + H$ A05 $H^{-} + H$ A16 $H^{-} + H$	E	70-300 eV	Esaulov, V. A. H^{-} scattering by H. XI ICPEAC, Kyoto, p.608, North-Holland (1979). France
6211	A06 $H^{-} + H$; $H^{-} + N_2$ A16 $H^{-} + H$; $H^{-} + N_2$	E	1-300 keV	Geddes, J.; Hill, J.; Shah, M. B.; Coffey, T. V.; Gilbody, M. B. Electron detachment by H^{-} ions in H and N_2 . XI ICPEAC, Kyoto, p.610, North-Holland (1979). United Kingdom
6212	A16 $H^{-} + He$	T	50-400 eV, deg.	Gauyacq, J. P. Ab initio study of detachment process in low energy H^{-} -He collisions. XI ICPEAC, Kyoto, p.612, North-Holland (1979). France
6213	A08 $H^{-} + Ar$; $H^{-} + Kr$; $H^{-} + He$; $H^{-} + He$; $H^{-} + Xe$	E	0.25-10 keV	Bisley, J. S.; Tennyson, P. D. Single and double electron detachment cross sections for H^{-} on atomic and molecular gas targets. XI ICPEAC, Kyoto, p.614, North-Holland (1979). United States
6214	A03 $H^{-} + Na$ A06 $H^{-} + Na$ A16 $H^{-} + Na$	E	300 eV	Esaulov, V. A.; Tsun, V. N. H^{-} scattering by Na. XI ICPEAC, Kyoto, p.615, North-Holland (1979). France
6215	A16 $I^{-} + He$	E	500-3000 eV	de Vreugd, C.; Bijmolt, van Besop, R. W.; Loe, J. Electron detachment in collisions of negative halogen ions and noble gases. XI ICPEAC, Kyoto, p.617, North-Holland (1979). The Netherlands
6216	A04 $UF_6^{-} + Ar$ A16 $UF_6^{-} + Ar$	E	3-30 eV	Champion, R. L.; Doverspike, L. E.; Herbst, L.; Haywood, S.; Annis, B. K.; Satz, S. The collisional induced dissociation and electron detachment cross sections for the UF_6^{-} -rare gas systems. XI ICPEAC, Kyoto, p.618, North-Holland (1979). United States
6217	A07 $H_2^{+} + Ar$; $He^{+} + Ar$ A18 $H_2^{+} + Ar$; $He^{+} + Ar$	E	9.5-18 keV	Satake, M.; Okuno, K.; Urekebe, J.; Oda, H. Doubly differential cross sections of electron ejected from argon by 6-20 keV H_2^{+} and He^{+} ions. XI ICPEAC, Kyoto, p.620, North-Holland (1979). Japan
6218	A07 $H_2^{+} + H_2$; $H_2^{+} + He$; $He^{+} + H_2$ A18 $H_2^{+} + H_2$; $H_2^{+} + He$; $He^{+} + H_2$ $He^{+} + He$	E	1-2 MeV	Oda, H.; Nishimura, F. Energy and angular distributions of electrons ejected from He and H_2 bombarded by equal velocity H_2^{+} and He^{+} ions. XI ICPEAC, Kyoto, p.622, North-Holland (1979). Japan
6219	A07 $He^{+} + He$	T	0.1-10 MeV	Tiwary, S. N. Ionization of He by He^{+} ion impact. XI ICPEAC, Kyoto, p.624, North-Holland (1979). Italy
6220	A07 $H^{+} + Ar$	T	50 keV	Rudd, M. E.; Macask, J. A new description of electron ejection by low energy protons. XI ICPEAC, Kyoto, p.626, North-Holland (1979). United States

REF. NO.	REACTANTS	EXP. OP. TECH.	ENERGY RANGE	REFERENCE
6221	A07 $H^+ + Kr$ A18 $H^+ + Kr$	E T	1-4 MeV	Toburen, L. M.; Manson, S. I. Differential cross sections for ionization of krypton by fast protons: theory and experiment. XI ICPEAC, Kyoto, p.628, North-Holland (1979). United States
6222	A07 $C^+ + He; C^+ + Ne; C^+ + Ar; C^+ + CH_4$ A18 $C^+ + He; C^+ + Ne; C^+ + Ar; C^+ + CH_4$	E	1-2 MeV	Toburen, L. M. Secondary electron emission in collisions of 1-2 MeV C^+ ions with He, Ne, Ar, and CH_4 . XI ICPEAC, Kyoto, p.630, North-Holland (1979). United States
6223	A07 $Li^+ + He; Li^+ + Ne; Li^{2+} + He; Li^{2+} + Ne$	T	0.142-0.294 MeV/amu	Gillespie, G. M. Born cross sections for the impact ionization of helium by fast lithium atoms and ions. XI ICPEAC, Kyoto, p.632, North-Holland (1979). United States
6224	A07 $H^+ + H_2$ A18 $H^+ + H_2$	T	50-100 keV	Garibotti, C. R.; Miraglia, J. E. Ionization of hydrogenlike atoms by fast stripped ions. XI ICPEAC, Kyoto, p.638, North-Holland (1979). Argentina
6225	A07 $H^+ + Air$	E	0.02-385 GeV	Ishimaru, N.; Noto, K.; Igarashi, T.; Hirose, S.; Shibata, S.; Griffin, J. E.; Ischut, R. Measurement of ionization cross section of gaseous molecule for 0.02-385 GeV protons. XI ICPEAC, Kyoto, p.640, North-Holland (1979). Japan
6226	A03 $He^{2+} + Xe; He^{2+} + Ar; He^{2+} + Xe;$ A06 $He^{2+} + Xe; He^{2+} + Ar; He^{2+} + Xe;$ A07 $He^{2+} + Xe; He^{2+} + Ar; He^{2+} + Xe;$ A18 $He^{2+} + Xe; He^{2+} + Ar; He^{2+} + Xe;$	E	10-30 MeV	Gurtskov, G. M.; Mikhovskii, V. P.; Flaks, I. P. Autoionization in multiply charged ion-atom collisions. XI ICPEAC, Kyoto, p.650, North-Holland (1979). Soviet Union
6227	A03 $H^+ + Li$	E T	1-1000 keV	Zinn, P.; Schwarz, W.H.E.; Schilling, R.; Stelzer, M. The excitation of Li is 2s and 2p terms by proton impact. XI ICPEAC, Kyoto, p.658, North-Holland (1979). West Germany
6228	A07 $H^+ + Al; H^+ + Cu$	E	0.5-32 MeV	Sera, K.; Ishii, K.; Morita, S.; Kaniya, P.; Kubake, A. K-shell ionizations of aluminum and copper by 0.5-32 MeV protons. XI ICPEAC, Kyoto, p.664, North-Holland (1979). Japan
6229	A07 $H^+ + Ag$	E	25-500 keV	Petukhov, V. P.; Romanovskii, E. A.; Babachnik, N. M.; Sizov, V. V.; Erashov, S. V. Polarization of L-shell x-rays of Ag produced by proton impact. XI ICPEAC, Kyoto, p.668, North-Holland (1979). Soviet Union
6230	A07 $H^+ + Au$	T	0.2-1.7 MeV	Mukoyama, T.; Serkadi, L. Electronic relativistic effects in L-shell ionization by charged-particle impact. XI ICPEAC, Kyoto, p.671, North-Holland (1979). Japan
6231	A07 $O^{8+} + He; C^{6+} + Al; C^{6+} + Cl; C^{6+} + Ca; C^{6+} + Mn; C^{6+} + Fe; C^{6+} + Ni; O^{8+} + Cu; O^{8+} + K; C^{6+} + He; O^{8+} + Al; C^{6+} + Cl; O^{8+} + K; C^{6+} + Ca; O^{8+} + Mn; O^{8+} + Fe; C^{6+} + Al; C^{6+} + Cl; C^{6+} + K; O^{8+} + Ca; C^{6+} + Mn; C^{6+} + Fe; C^{6+} + Ni; C^{6+} + Cu$	E	4-100 MeV	Shima, K.; Mikuze, T.; Taguchi, T.; Iguchi, Y.; Arai, T.; Kono, M.; Takasaki, M. A shell ionization of 2 + 11-20 atoms by 40-100 MeV oxygen ion bombardment. XI ICPEAC, Kyoto, p.673, North-Holland (1979). Japan
6232	A07 $H^+ + Au$ A18 $H^+ + Au$	E	1 MeV	Andriamonje, S.; Chemin, J. J.; Fournier, J. Measurements of gold L-shell ionization probability at large scattering angles. XI ICPEAC, Kyoto, p.678, North-Holland (1979). France

REF. NO.	REACTANTS	EXP OR THEIR	ENERGY RANGE	REFERENCE
6233	A07 H ⁺ + Cr; H ⁺ + Fe; H ⁺ + Ni; H ⁺ + Cu; H ⁺ + Zn; H ⁺ + Se; H ⁺ + Zr; H ⁺ + Mo	E	7 MeV	East, M.; Hopperau, S.; Kising, J.; Bohl, S. Z-dependence of K-shell ionization probability in central collisions of 7 MeV protons. XI ICPEAC, Kyoto, p.680, North-Holland (1979). West Germany
6234	A19 Cu ¹⁰⁺ + Kr; Cu ¹⁰⁺ + Kr; Cu ¹¹⁺ + Kr; Cu ¹²⁺ + Kr; Cu ¹³⁺ + Kr; Cu ¹⁴⁺ + Kr; Cu ¹⁵⁺ + Kr; Cu ¹⁶⁺ + Kr; Cu ¹⁷⁺ + Kr; Cu ¹⁸⁺ + Kr; Cu ¹⁹⁺ + Kr; Cu ²⁰⁺ + Kr	E	0.86 MeV/amu	Hegmann, S.; Coche, C. L.; Justiliane, E.; Macdonald, J. B.; Schmidt-Roehrig, M. Impact parameter dependence of K vacancy production in Cu(sup 5+)-Kr collisions. XI ICPEAC, Kyoto, p.682, North-Holland (1979). United States
6235	A19 Xe + Pt	E	4.6 MeV/amu	Anholt, R.; Neyerhof, W. E.; Steller, C. Impact parameter dependence of 1sI vacancy production in 4.6 MeV/amu Xe + Pb collisions. XI ICPEAC, Kyoto, p.684, North-Holland (1979). United States
6236	A19 Ar + Ar	E	357-1400 KeV	Bessler, J.; Hippler, R.; Shaker, S.; Lutz, M. L. Impact parameter dependence of K and L vacancy production in slow ion-atom collisions. XI ICPEAC, Kyoto, p.686, North-Holland (1979). West Germany
6237	A07 H ⁺ + He	T	1.5-3.0 MeV	Aashnes, K.; Amundsen, P. A. Impact parameter dependence of inner-shell ionization of light atoms by protons. XI ICPEAC, Kyoto, p.688, North-Holland (1979). Norway
6238	A19 S ¹⁶⁺ + Ar	E	32 MeV	Schuch, R.; Lichtenberg, W.; Helte, G.; Scholtz-Boehling, M.; Specht, M. J. Impact-parameter dependence of K-shell excitation in near symmetric heavy ion collisions. XI ICPEAC, Kyoto, p.692, North-Holland (1979). West Germany
6239	A07 H ⁺ + Cu	T	10 MeV	Kaminsky, A. K.; Popova, N. I. Impact parameter dependence of the probabilities of atomic ionization by nuclei. XI ICPEAC, Kyoto, p.694, North-Holland (1979). Soviet Union
6240	A19 Xe + Au	T	1-7 MeV/amu	Soff, G.; Reinhardt, J.; Betz, W.; Kirsch, J.; Wietchorke, K.-M.; Oberacker, V.; Piller, B.; Grover, W. Multiple Coulomb excitation of electron configurations in superheavy quasimolecules. XI ICPEAC, Kyoto, p.696, North-Holland (1979). West Germany
6241	A03 F ⁺ + He; F ²⁺ + He; F ³⁺ + He; F ⁴⁺ + He; F ⁵⁺ + He; F ⁶⁺ + He; F ⁷⁺ + He; F ⁸⁺ + He; F ⁹⁺ + He; F ¹⁰⁺ + He; F ¹¹⁺ + He; F ¹²⁺ + He; F ¹³⁺ + He; F ¹⁴⁺ + He; F ¹⁵⁺ + He; F ¹⁶⁺ + He; F ¹⁷⁺ + He; F ¹⁸⁺ + He; F ¹⁹⁺ + He; F ²⁰⁺ + He	E	15 MeV	Tawara, H.; Richard, P.; Janssen, B. A.; Gray, T. J.; Newcomb, J.; Schmiedeknecht, C. Fluorine K x-ray production by electron excitation, ionization and capture processes in F(sup q+)-He collisions. XI ICPEAC, Kyoto, p.698, North-Holland (1979). United States
6242	A03 F ¹⁰⁺ + He A08 F ¹⁰⁺ + He	E	12-40 MeV	Tawara, H.; Richard, P.; Pegibler, P.; Gray, T. J.; Hall, J.; Newcomb, J. Excitation and ionization of K-shell electron in F ¹⁰⁺ ions in collision with He gas target. XI ICPEAC, Kyoto, p.700, North-Holland (1979). United States
6243	A07 H ⁺ + B	E	0.25-1.1 MeV	Kawatsura, K.; Ezawa, K.; Fujimoto, F.; Aomai, K.; Terasawa, M. Single and double K-shell ionization in asymmetric ion-atom collisions for Z ₁ , Z ₂ less than or equal to 10. XI ICPEAC, Kyoto, p.702, North-Holland (1979). Japan
6244	A07 H ⁺ + N; H ⁺ + N; C + N	T	280-1700 keV	Kaminsky, A. K.; Mykhalov, N. G.; Popova, N. I. Doubly differential cross sections for atomic L-subshell ionization. XI ICPEAC, Kyoto, p.708, North-Holland (1979). Soviet Union
6245	A07 Ar ¹⁸⁺ + He; Kr ¹⁸⁺ + He; Ti ¹⁸⁺ + He; Xe ¹⁸⁺ + He; Ni ¹⁸⁺ + He; Pb ¹⁸⁺ + He	E	7.5 e.u.	Sayer, M. F.; Schertner, K. M.; Folmann, F. X-ray spectroscopy of highly excited recoil ions. XI ICPEAC, Kyoto, p.710, North-Holland (1979). West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6246	A19 Pb + Pt; Bi + Bi	E	1 GeV	Steller, C.; Moriconi, E.; Bulfil, b.; Regerhof, b. E.; Feikmann, F.; Vincent, F.; Nehler, P. B.; Arambuster, P. ND x-ray angular distributions from 1 GeV $^{208}\text{Pb} + ^{208}\text{Pb}$ and $^{208}\text{Bi} + ^{208}\text{Bi}$ collisions. XI ICPEAC, Kyoto, p.724, North-Holland (1978). Switzerland
6247	A19 Hg + Hg; P + Si	E	1.3-1.7 MeV	Nehler, P. B.; Leonard, W. B.; Mitchell, I. V. Linear polarization measurement for quasicollinear K radiation. XI ICPEAC, Kyoto, p.728, North-Holland (1979). Canada
6248	A18 $\text{Si}^{11+} + \text{Al}$; $\text{Si}^{12+} + \text{Al}$; $\text{Si}^{13+} + \text{NaCl}$; $\text{Si}^{14+} + \text{NaCl}$; Ar + NaCl; Ni + Ni; Pb + Pb A19 $\text{Si}^{11+} + \text{Al}$; $\text{Si}^{12+} + \text{Al}$; $\text{Si}^{13+} + \text{NaCl}$; $\text{Si}^{14+} + \text{NaCl}$; Ar + NaCl; Bi + Bi; Pb + Pb	E	28-978 MeV	Schmidt-Bocking, M.; Bothge, K.; Lichtenberg, W.; Bolte, G.; Schuch, R.; Specht, M. J.; Stiebing, K. E. A systematic study of the impact-parameter dependence of quasicollinear radiation. XI ICPEAC, Kyoto, p.732, North-Holland (1979). West Germany
6249	A83 Cl + C A86 Cl + C A87 Cl + C	E	40-80 MeV	Tania, J. A.; Shafroth, S. B.; Mcnet, J. B. Target thickness analysis of projectile K X rays and REC for 40-80 MeV Cl on C. XI ICPEAC, Kyoto, p.744, North-Holland (1979). United States
6250	A87 $\text{Kr}^{20+} + \text{Kr}$	E	200 keV	Gordsev, V. S.; Moerland, P. M.; de boord, M.; Saris, F. b. Continuous electron spectra produced in $\text{Kr}(\text{sup } 20+)$ -Kr collisions. XI ICPEAC, Kyoto, p.746, North-Holland (1979). The Netherlands
6251	A87 $\text{Ne}^{20+} + \text{Ne}$	E	200 keV	Moerland, P. M.; Gordsev, V. S.; de boord, M.; Saris, F. b. Continuous electron spectra produced in $\text{Ne}(\text{sup } 20+)$ -Ne collisions. XI ICPEAC, Kyoto, p.748, North-Holland (1979). The Netherlands
6252	A18 U + U; U + Pb; Pb + Pb A19 U + U; U + Pb; Pb + Pb	E	5.9 MeV/amu	Kashubarov, C.; Kienle, P.; Bordenmann, E.; Bohmeyer, M.; Greenberg, J. S.; Nakagawa, Y.; Vincent, P.; Bach, M.; Wanderslag, L.; Kankeliet, E. Charge number and scattering angle dependence of the positron production in very heavy ion atom collisions. XI ICPEAC, Kyoto, p.750, North-Holland (1979). West Germany
6253	A86 $\text{O}^{8+} + \text{Ne}$; $\text{O}^{8+} + \text{Ar}$; $\text{O}^{8+} + \text{Xe}$	E	1.6-3.9 MeV/amu	Vane, C. R.; Sells, I. A.; Suter, P.; Elston, S. B.; Allen, G. S.; Thoe, R. S.; Loutert, B. Target dependence for continuum capture processes in ion-atom collisions. XI ICPEAC, Kyoto, p.752, North-Holland (1979). United States
6254	A86 $\text{H}^+ + \text{Si}$ A18 $\text{H}^+ + \text{Si}$	T	0.1-6.8 MeV	Wei, C.-C. Electron capture from silicon by protons. XI ICPEAC, Kyoto, p.756, North-Holland (1979). Taiwan
6255	A87 $\text{Cu}^{20+} + \text{Kr}$; $\text{Cu}^{20+} + \text{Kr}$; $\text{Cu}^{19+} + \text{Kr}$; $\text{Cu}^{18+} + \text{Kr}$; $\text{Cu}^{17+} + \text{Kr}$; $\text{Cu}^{16+} + \text{Kr}$; $\text{Cu}^{15+} + \text{Kr}$; $\text{Cu}^{14+} + \text{Kr}$; $\text{Cu}^{13+} + \text{Kr}$; $\text{Cu}^{12+} + \text{Kr}$; $\text{Cu}^{11+} + \text{Kr}$; $\text{Cu}^{10+} + \text{Kr}$; $\text{Cu}^{9+} + \text{Kr}$; $\text{Cu}^{8+} + \text{Kr}$; $\text{Cu}^{7+} + \text{Kr}$; $\text{Cu}^{6+} + \text{Kr}$; $\text{Cu}^{5+} + \text{Kr}$; $\text{Cu}^{4+} + \text{Kr}$; $\text{Cu}^{3+} + \text{Kr}$; $\text{Cu}^{2+} + \text{Kr}$; $\text{Cu}^{1+} + \text{Kr}$	E	88.6 MeV	Leonard, W. B.; Mitchell, I. V.; Nehler, P.; Bell, G. C. Projectile charge state dependence of K x-ray production in heavy ion-atom single collisions. XI ICPEAC, Kyoto, p.760, North-Holland (1978). Canada
6256	A86 $\text{Kr} + \text{Ni}$; $\text{Kr} + \text{Cu}$; $\text{Kr} + \text{Zr}$ A87 $\text{Kr} + \text{Ni}$; $\text{Kr} + \text{Cu}$; $\text{Kr} + \text{Zr}$	E	300 MeV	Chattop, A.; Roset, J. P.; Briand, J. P.; Stephan, C. Energy and capture cross sections for near symmetric collisions of 300 MeV Kr ions. XI ICPEAC, Kyoto, p.764, North-Holland (1979). France
6257	A83 I + I	T	$5-300 \times 10^8$ cm/s	Jakubsson, B. M.; Taubjerg, K. Relativistic treatment of $2p_{3/2} \rightarrow 2p_{1/2}$ transitions in ion-atom collisions within the semi-R expansion method. XI ICPEAC, Kyoto, p.772, North-Holland (1979). Denmark
6258	A87 F + PERT; Si + PERT	E	1-25 MeV	Prosser, G.; Scherer, E.; Stahler, J. Inner-shell ionization produced by MeV fluorine and silicon projectiles. XI ICPEAC, Kyoto, p.774, North-Holland (1979). West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6259	A07 Ca + Kr	E	1-30 MeV	Pressner, G.; Scherer, E.; Stahler, J.; Thew, T. Emission of characteristic and noncharacteristic X rays induced by Ca, Sr, Ag and Sb ions. XI ICPEAC, Kyoto, p.776, North-Holland (1979). West Germany
6260	A07 He ⁺ + He; He ⁺ + Ne; He ⁺ + Ar; He ⁺ + Xe	E	50-1000 keV	Dugov, M. F.; Schertner, K. N.; Niggler, B. Ion impact ionization of both 2p-electrons of neon. XI ICPEAC, Kyoto, p.780, North-Holland (1979). West Germany
6261	A07 Kr ⁺ + Kr	E	50 keV	Afrosimov, V. V.; Noshki, G. G.; Tsarev, A. N.; Shergin, A. P. Auger spectroscopy of desorbing Kr in Kr ⁺ -Kr quasimolecule. XI ICPEAC, Kyoto, p.782, North-Holland (1979). Soviet Union
6262	A07 Kr ⁺ + Kr	E	5-10 keV	Afrosimov, V. V.; Gerasov, V. S.; Shergin, A. P.; Zinovlev, A. N. Discrete structure in energy spectra of electrons produced in cyclic Kr ⁺ -Kr collisions. XI ICPEAC, Kyoto, p.784, North-Holland (1979). Soviet Union
6263	A10 Ba ⁺ + Kr	T	0.2-1.5 MeV	Fritsch, W.; Villo, U. Theoretical investigation of K-L vacancy sharing in slow Ba + Kr collisions. XI ICPEAC, Kyoto, p.786, North-Holland (1979). West Germany
6264	A02 H + D ₂ ; H + He	E	0.6×10^{-5} - 5.0×10^{-5} cm/s	Nishimura, M. H-D ₂ and H-He total scattering cross sections at thermal energy. XI ICPEAC, Kyoto, p.750, North-Holland (1979). Japan
6265	A02 H + H ₂ A10 H + H ₂	E	35.8 meV	Bondi, M. G.; Torallo, F. A new H-H ₂ spherical potential from high resolution molecular beam experiments. XI ICPEAC, Kyoto, p.754, North-Holland (1979). Italy
6266	A02 O + O ₂ ; O + H ₂ ; O ₂ + O ₂ ; C ₂ + N ₂	E	0.7×10^{-5} - 2.2×10^{-5} cm/s	Brunetti, B.; Liotti, G.; Lazzatti, E.; Pirani, F.; Vaccinocattivi, F. Absolute total cross sections for collision in O-O ₂ , O ₂ -O ₂ , O-H ₂ , O ₂ -H ₂ systems. XI ICPEAC, Kyoto, p.796, North-Holland (1979). Italy
6267	A03 H + H ₂	T	0.31-0.76 eV	Choi, B. N.; Poe, R. F.; Tang, K. I. Rotational transitions and rate coefficients of the H + H ₂ system. XI ICPEAC, Kyoto, p.802, North-Holland (1979). United States
6268	A03 Li ⁺ + H ₂	E	150-800 eV	Itoh, Y.; Kobayashi, M.; Kaneko, Y. Vibrational and rotational excitation of H ₂ and D ₂ by Li ⁺ impact above 100 eV. XI ICPEAC, Kyoto, p.804, North-Holland (1979). Japan
6269	A06 H ⁺ + H ₂	T	500 keV	Ray, F. P.; Saha, B. C. Charge transfer in proton-hydrogen molecule collisions. XI ICPEAC, Kyoto, p.824, North-Holland (1979). India
6270	A06 D ⁺ + H ₂ A10 D ⁺ + H ₂	E	2.6 keV	Peterson, R. S.; Vadder, M.; Pollack, E. Charge exchange in D ⁺ + H ₂ collisions. XI ICPEAC, Kyoto, p.826, North-Holland (1979). United States
6271	A03 H ⁺ + H ₂ ; H ₂ ⁺ + H ₂ ; He ⁺ + H ₂ ; H ⁺ + H ₂ ; O ⁺ + H ₂ ; Ne ⁺ + H ₂ ; Ar ⁺ + H ₂	E	3.2-12.0 keV	Lavrov, V. M.; Gochitskhvili, M. R.; Anhudinov, V. A.; Khikari, B. I. Vibrational excitation of molecules in collision processes. Role of intermediate states. XI ICPEAC, Kyoto, p.832, North-Holland (1979). Soviet Union
6272	A03 He ⁺ + H ₂ A06 He ⁺ + H ₂	E	0.2-10.0 keV	Gochitskhvili, M. R.; Anhudinov, V. A.; Lavrov, V. M.; Khikari, B. I. Excitation of H ₂ atoms and H ₂ ⁺ ions in slow He ⁺ -H ₂ collisions. XI ICPEAC, Kyoto, p.834, North-Holland (1979). Soviet Union
6273	A03 O + H ₂ A11 O + H ₂	E	4-20 keV	Sheridan, J. R.; Enxweiler, J. A. Excitation and quenching of O(4S _g) in collisions of 4 to 20 keV oxygen atoms with H ₂ . XI ICPEAC, Kyoto, p.840, North-Holland (1979). United States

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6274	A06 $\text{CH}_2^+ + \text{Kr}$	E	126 keV	Hird, B.; Ali, S. P. The existence of the negative ion of CH_2 . XI ICPEAC, Kyoto, p.447, North-Holland (1979).-Canada
6275	A06 $\text{Kr}^{2+} + \text{He}$	E	0.15-3.0 eV	Kelzner, Y.; Ohno, K.; Kaneko, Y. Slit tube study of charge transfer between Kr^{2+} and He. XI ICPEAC, Kyoto, p.462, North-Holland (1979).-Japan
6276	A06 $\text{Ne}^{2+} + \text{Ne}; \text{Ne}^{2+} + \text{He}; \text{Ne}^{2+} + \text{Kr};$ $\text{Ne}^{2+} + \text{Ar}; \text{Ne}^{2+} + \text{Xe};$ $\text{Ar}^{2+} + \text{Ne}; \text{C}^{2+} + \text{N}_2$	E	300 K	Johnson, R.; Biondi, R. A. Measurements of single-electron charge transfer between doubly charged ions and atoms or molecules at thermal energies. XI ICPEAC, Kyoto, p.464, North-Holland (1979).-United States
6277	A06 $(\text{CO}_2)_2^+ + \text{CO}; (\text{CO}_2)_2^+ + \text{N}_2\text{C};$ $(\text{CO}_2)_2^+ + \text{CH}_3; (\text{CO}_2)_2^+ + \text{SO}_2;$ $(\text{CO}_2)_2^+ + \text{C}_2; (\text{CO}_2)_2^+ + \text{CO}_2;$ $(\text{CO}_2)_2^+ + \text{C}_2\text{H}_2; (\text{CO}_2)_2^+ + \text{NH}_3;$ $(\text{CO}_2)_2^+ + \text{C}_2\text{H}_4; (\text{CO}_2)_2^+ + \text{HC};$ $(\text{CO}_2)_2^+ + \text{CH}_3\text{NH}_2$ A13 $(\text{CO}_2)_2^+ + \text{CO}; (\text{CO}_2)_2^+ + \text{N}_2\text{C};$ $(\text{CO}_2)_2^+ + \text{CH}_3; (\text{CO}_2)_2^+ + \text{SO}_2;$ $(\text{CO}_2)_2^+ + \text{C}_2; (\text{CO}_2)_2^+ + \text{CO}_2;$ $(\text{CO}_2)_2^+ + \text{C}_2\text{H}_2; (\text{CO}_2)_2^+ + \text{NH}_3;$ $(\text{CO}_2)_2^+ + \text{C}_2\text{H}_4; (\text{CO}_2)_2^+ + \text{NO};$ $(\text{CO}_2)_2^+ + \text{CH}_3\text{NH}_2$	E	Thermal	Bakshit, A. B.; Varneck, P. Charge transfer versus molecule displacement in interaction of CCl_2 dimer ions with neutral molecules. XI ICPEAC, Kyoto, p.466, North-Holland (1979).-West Germany
6278	A07 $\text{He} + \text{Ar}$	I	0-300 meV	Hoffmann, V.; Margner, M. Interpretation of the angular distribution of electrons ejected in Penning ionization of argon by metastable helium. XI ICPEAC, Kyoto, p.472, North-Holland (1979).-West Germany
6279	A07 $\text{Ar}^+ + \text{Kr}^+$	E	0.133 eV	Waymister, R. W.; Tang, S. Y. Penning and associative ionization in the metastable argon-metastable krypton system. XI ICPEAC, Kyoto, p.474, North-Holland (1979).-United States
6280	A13 $\text{H}^+ + \text{H}^-; \text{D}^+ + \text{D}^-$	E	0.01-3.0 eV	Poulaert, G.; Brouillard, F.; Claeys, G.; Defrance, F.; McGovern, J. B. Associative ionization in H^+-H^- and D^+-D^- collisions. XI ICPEAC, Kyoto, p.476, North-Holland (1979).-France
6281	A07 $\text{Ne}^+ + \text{HCl}; \text{Ne}^+ + \text{CO}$	E	5-500 meV	Parr, T. P.; Hanson-Parr, D.; Martin, R. M. Energy dependence for ionization of HCl , CO , H_2 and L_2 by $\text{Ne}(2^1\Sigma)$ and $\text{Ne}(2^1\Sigma)$ atoms. XI ICPEAC, Kyoto, p.478, North-Holland (1979).-United States
6282	A11 $\text{He}^+ + \text{Ar}; \text{He}^+ + \text{Kr}; \text{He}^+ + \text{Xe}; \text{He}^+ + \text{H}_2;$ $\text{He}^+ + \text{D}_2; \text{He}^+ + \text{O}_2; \text{He}^+ + \text{N}_2; \text{He}^+ + \text{D}_2\text{O};$ $\text{He}^+ + \text{CO}; \text{He}^+ + \text{CH}_3\text{OH}; \text{He}^+ + \text{NH}_3;$ $\text{He}^+ + \text{CCl}_4; \text{He}^+ + \text{SO}_2; \text{He}^+ + \text{H}_2\text{O};$ $\text{He}^+ + \text{C}_2\text{H}_4; \text{He}^+ + \text{C}_2\text{H}_2; \text{He}^+ + \text{HC};$ $\text{He}^+ + \text{CH}_3\text{NH}_2; \text{He}^+ + \text{H}_2\text{O}; \text{He}^+ + \text{Ar};$ $\text{He}^+ + \text{H}_2; \text{He}^+ + \text{N}_2; \text{He}^+ + \text{SF}_6$	E	Thermal	Yokoyama, A.; Ueno, T.; Ishio, S.; Matsuo, Y. De-excitation rate constants of $\text{He}(2^1\Sigma)$ and $\text{He}(2^3\Sigma)$ and $\text{He}(2^1\Sigma)$ by atoms and molecules using time-resolved optical emission and absorption spectroscopy. XI ICPEAC, Kyoto, p.482, North-Holland (1979).-Japan
6283	A13 $\text{H}_2^+ + \text{He}$	I	1.7-1.2 eV	Tang, K. T.; Tang, Y. Y.; Choi, S. S.; Pao, B. Y. Three-dimensional quantum mechanical studies of $\text{He} + \text{H}_2^+ + \text{HeH}^+ + \text{H}$ reactive scattering. XI ICPEAC, Kyoto, p.484, North-Holland (1979).-United States
6284	A13 $\text{UO}^+ + \text{C}_2$	E	Thermal	Lo, M. M.; Fite, W. L. Ion-molecule reaction of UO^+ with molecular oxygen. XI ICPEAC, Kyoto, p.487, North-Holland (1979).-United States
6285	A13 $\text{H}_2\text{O}^+ + \text{H}_2; \text{H}_2\text{O}^+ + \text{D}_2$	E	2.7-6.3 eV	Johno, A.; Murata, Y. Dynamics of the reaction of H_2O^+ with D_2 and H_2 . XI ICPEAC, Kyoto, p.490, North-Holland (1979).-Japan
6286	A13 $\text{H}_2^+ + \text{H}_2$	E	0.13 eV	Yanche, A. J.; Fuzar, A.; Niehaus, A. State selected ion-molecule reaction studies by electron-ion coincidence spectroscopy. I. $\text{H}_2^+ (\text{H}_2, \text{H})\text{H}_2^+$. XI ICPEAC, Kyoto, p.492, North-Holland (1979).-United States

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6287	A13 $H_2O^+ + H_2O; H_2S^+ + H_2S$	E	Thermal	Yeeche, A. J.; Panzer, A.; Diebus, A. State selected ion-molecule reaction studies by electron-ion coincidence spectroscopy: II. $H_2O^+(H_2O, CH_3)_2^+$ and $H_2S^+(H_2S, NH_3)_2^+$. XI ICPEAC, Kyoto, p.904, North-Holland (1979). United States
6288	A14 $K + HCl$	E	35-50 kcal/mol	Reisemann, F.; Leach, M. J. Translational and vibrational activation of chemical reactions. XI ICPEAC, Kyoto, p.906, North-Holland (1979). West Germany
6289	A10 $Rb^+ + Sb$ A11 $Rb^+ + Sb$	E	520 K	Gouneau, F.; Fournier, P. R.; Hugon, M. Depopulation of Rydberg S and D states of rubidium in collision with ground-state rubidium atoms. XI ICPEAC, Kyoto, p.520, North-Holland (1979). France
6290	A10 $Rb^+ + He$ A11 $Rb^+ + He$	E	520 K	Hugon, M.; Fournier, P. R.; Gouneau, F. Collisional depopulation of non hydrogenic S and D Rydberg states of rubidium by helium. XI ICPEAC, Kyoto, p.522, North-Holland (1979). France
6291	A11 $Rb^+ + He; Rb^+ + Ar; Rb^+ + Xe; Rb^+ + Kr$	E	520 K	Hugon, M.; Gouneau, F.; Fournier, P. R.; Barlande, J. Collisional depopulation of Rydberg F states of rubidium at thermal energies. XI ICPEAC, Kyoto, p.534, North-Holland (1979). France
6292	A03 $Xe^+ + NH_3$	T	300 K	Bundel, R. E. Excitation of Rydberg atoms by HF_2 molecules: sequential theory. XI ICPEAC, Kyoto, p.536, North-Holland (1979). France
6293	A07 $Xe^+ + NH_3$ A11 $Xe^+ + NH_3$	E	300 K	Kellert, F. G.; Foltz, G. W.; Smith, R. A.; Bundel, R. E.; Dunning, F. B.; Stebbings, R. F. Collisions of $Xe(nf)$ Rydberg atoms with ammonia. XI ICPEAC, Kyoto, p.538, North-Holland (1979). United States
6294	A03 $Rb^+ + He; Rb^+ + Ar; Xe^+ + HCl$ A10 $Rb^+ + He; Rb^+ + Ar; Xe^+ + HCl$	T	300-520 K	Katsukawa, M. State-changing collisions of high-Rydberg atoms with neutral species. XI ICPEAC, Kyoto, p.942, North-Holland (1979). Japan
6295	A11 $He^+ + He; He^+ + Ne; He^+ + Ar; He^+ + Kr; He^+ + Xe$	E	620 K	Mitachi, A.; Boha, T.; Kubota, S.; Davies, C.; King, I. A. De-excitation of highly excited $He(n^1,^3S)$ by collisions with rare gases. XI ICPEAC, Kyoto, p.544, North-Holland (1979). Japan
6296	A12 $Na^+ + He; Na^+ + Ne; Na^+ + Ar; Na^+ + Kr; Na^+ + Xe$	E	400 K	Kachru, R.; Mossberg, T. W.; Hartmann, S. M. Relaxation of Rydberg S and D states in atomic sodium perturbed by He, Ne, Ar, Kr, or Xe. XI ICPEAC, Kyoto, p.946, North-Holland (1979). United States
6297	A07 $Ar^+ + P_2O; N_2^+ + H_2C$	E	Thermal	Miraishi, M.; Uematsu, M.; Kondo, T.; Fukuyama, T.; Kuchitov, K. Reaction of rare gas atoms and hydrogen molecules in highly excited Rydberg states. I. Collisional ionization. XI ICPEAC, Kyoto, p.548, North-Holland (1979). Japan
6298	A07 $Ar^+ + H_2$ A14 $Ar^+ + H_2$	E	330 K	Kondo, T.; Miraishi, M.; Uematsu, M.; Fukuyama, T.; Kuchitov, K. Reaction of rare gas atoms and hydrogen molecules in highly excited Rydberg states. II. Rearrangement ionization. XI ICPEAC, Kyoto, p.560, North-Holland (1979). Japan
6299	E07 $e + He^+$	E	$0.4 \times 10^3 - 8.0 \times 10^3$ K	Boron, G.; Boulmer, J.; Deves, F.; Gauthier, J.-C. Temperature dependence of depopulation rates in transitions between Rydberg levels of helium induced by electron collisions. XI ICPEAC, Kyoto, p.562, North-Holland (1979). France
6300	A07 $D^+ + H_2$	E	6-11 keV	Koch, P. M. Electron scattering resonances in fast D(high n) collisions with H_2 . XI ICPEAC, Kyoto, p.9E4, North-Holland (1979). United States

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6301	A06 $H^+ + H$	T	0.4-2000 eV	Toshino, N. Charge transfer processes involving highly excited hydrogen atoms. XI ICPEAC, Kyoto, p.558, North-Holland (1975). Japan
6302	E03 $e + H^0$	T	4.5 Ry	Sil, L. C.; Saha, B. C. Transition of atomic hydrogen between highly excited states. XI ICPEAC, Kyoto, p.560, North-Holland (1975). India
6303	A07 $H + H^+ +$	E	40 keV	Kim, I. J.; Meyer, F. W. n-Scaling of electron-loss cross sections for fast $H(n)^0 + H^+$ collisions. XI ICPEAC, Kyoto, p.562, North-Holland (1975). United States
6304	E12 $e^+ + C; e^+ + N; e^+ + O; e^+ + Ne$	T	2-10 keV	Guha, S.; Mandal, P. Positronium formation in multi-electron atoms C, N, O and Ne. XI ICPEAC, Kyoto, p.566, North-Holland (1975). India
6305	E12 $e^+ + Na; e^+ + K; e^+ + Rb; e^+ + Cs$	T	1-10 keV	Mandal, P.; Guha, S. Model potential approach for positron alkali-atom collisions. XI ICPEAC, Kyoto, p.568, North-Holland (1975). India
6306	E12 $e^+ + Na; e^+ + K; e^+ + Pb; e^+ + Cs$	T	12 eV	Guha, S.; Mandal, P. Positronium formation in arbitrary excited ns states in alkali atoms. XI ICPEAC, Kyoto, p.570, North-Holland (1975). India
6307	E12 $e^+ + He$	E	100-1000 eV	Glen, T. T. Total cross sections of $e^+ - He$ collision in a modified Glauber method. XI ICPEAC, Kyoto, p.572, North-Holland (1975). Canada
6308	E05 $e + Ag$ E12 $e^+ + Ag$	E	50-450 keV	Mock, G. On Coulomb distortion effects in K-shell ionizations by electrons and positrons. XI ICPEAC, Kyoto, p.574, North-Holland (1975). Hungary
6309	C08 $e^+ + Si$ E12 $e^+ + Si$	E	56 MeV	Datz, S.; Barrett, J. M.; Alguerd, R. J.; Sweet, R. L.; Pantell, R. M.; Berman, L. L.; Bloch, S. E. Coherent radiation from correlated collisions of positrons with Si. XI ICPEAC, Kyoto, p.576, North-Holland (1975). United States
6310	A02 $Na + He$	E	Thermal	Mossberg, T. W.; Kachru, R.; Mortensen, S. M. Stimulated photon echo measurements of atom-atom elastic scattering in buffered atomic vapors. XI ICPEAC, Kyoto, p.580, North-Holland (1975). United States
6311	A03 $He + He$ A10 $He + He$	E	1 keV	Brenot, J. C.; Fayeton, J.; Houwer, J. C. A fast multichannel, time correlator. XI ICPEAC, Kyoto, p.1000, North-Holland (1975). France
6312	A04 $H + H_2$ A14 $H + H_2$	T	0.5-20 eV	Perkhurlov, S. P.; Pozdnev, S. A. New numerical methods in three-body scattering problem. XI ICPEAC, Kyoto, p.1024, North-Holland (1975). Soviet Union
6313	A14 $H + NO_2; H + ClNO; D + NO_2; D + ClNO$	E	0.44 eV	Heberland, M.; Lucadou, V. V.; Schuer, P. Chemical reactions of H and D atoms with NO_2 and $ClNO$, a crossed molecular beam study. Ber. Bunsenges. Phys. Chem. 84, 587 (1980) West Germany
6314	H06 $h\nu + PF_3$	E	1447 eV	Szejoen, J.; Jenkin, J. G.; Lockey, K.C.G.; Liesegang, J. Subshell photoionization cross-sections, electron mean free paths and quantitative x-ray photoelectron spectroscopy. J. Electron Spectrosc. Relat. Phenom. 19, 353 (1980) Australia
6315	A17 $N + N$	E	Undef	Amiot, C.; Verges, J. The $^{14}N^{14}C$ ground state up to $v = 15$ by emission Fourier transform spectroscopy of the $\Delta v = 2$ sequence. J. Mol. Spectrosc. 81, 424 (1980) France
6316	H02 Undef	T	Undef	Ruchins, R. O.; Fernandez-fraga, A. The optical path length approach to radiation heat transfer with isotropic scattering and gaseous absorption. J. Quant. Spectrosc. Radiat. Transfer 24, 1 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6317	A12 $\text{Na}^0 + \text{Na}; \text{Na}^0 + \text{Ar}; \text{Na}^0 + \text{Xe}$	E	673 K	Wildman, D. W.; Schumann, L. W.; Gellenger, A. C. <i>He 3P-3P line broadening by He, Ar, and Xe. J. Quant. Spectrosc. Radiat. Transfer</i> 24, 11 (1980) United States
6318	H02 $\text{hv} + \text{CaO}$	E	443 cm^{-1}	Svyatkin, I. A.; Kuznetsova, L. A.; Kuznetsov, Y. Y. Determination of the B ¹ π -X ¹ π and C ¹ π -X ¹ π electronic transitions strengths of CaO. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 24, 25 (1980) Soviet Union
6319	H02 $\text{hv} + \text{O}_2; \text{hv} + \text{H}_2$	E	476-175 nm	Kuz'menko, M. E.; Kuznetsova, L. A.; Masyagin, A. F.; Kuznetsov, Y. Y. Probabilities for electronic transitions of molecular systems of high-temperature air components: I. The Schumann-Runge system of the O_2 -molecule and the first positive system of the H_2 -molecule. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 24, 25 (1980) Soviet Union
6320	A12 $\text{NH}_3^0 + \text{He}; \text{NH}_3^0 + \text{Ne}; \text{NH}_3^0 + \text{Ar}; \text{NH}_3^0 + \text{Kr}$	T	30° K	Yamaoka, Y.; Cattani, M. Pressure broadening of the NH_3 pure rotation line ($J(\text{sub } 1) = 0 + J(\text{sub } 2) = 1$); perturbed by inert gases (He, Ne, Ar, Kr). <i>J. Quant. Spectrosc. Radiat. Transfer</i> 24, 59 (1980) Brazil
6321	H04 $\text{hv} + \text{O}_2$	E	33-110 cm^{-1}	Clark, T. A.; Kendall, D. J. W. Line positions and strengths of magnetic dipole transitions of molecular oxygen from stratospheric emission spectra. <i>J. Quant. Spectrosc. Radiat. Transfer</i> 24, 61 (1980) Canada
6322	H04 $4\text{hv} + \text{Na}$	E	589 nm	Mumphy, L. M.; Gordon, J. P.; Lisc, P. F. Angular dependence of line shape and strength of degenerate four-wave mixing in a Doppler-broadened system with optical pumping. <i>Opt. Lett.</i> 5, 56 (1980) United States
6323	H02 $\text{hv} + \text{Na}; \text{hv} + \text{Ba}$	E	589-554 nm	Feld, M. S.; Burns, M. M.; Kuhl, T. U.; Pappas, P. C.; Purnich, D. E. Laser-saturation spectroscopy with optical pumping. <i>Opt. Lett.</i> 5, 75 (1980) United States
6324	H04 $\text{hv} + \text{Na}$	E	589 nm	Hamaguchi, M.; Buckingham, A. E.; Pabinger, M. Depolarization of the near-resonant light scattered by atomic sodium. <i>Opt. Lett.</i> 5, 116 (1980) United Kingdom
6325	B07 $\text{hv} + \text{He}^0 + \text{Ba}$	E		White, J. C.; Freeman, M. R.; Liso, F. F. Observation of dipole-dipole pair absorption using optical-pump detection. <i>Opt. Lett.</i> 5, 120 (1980) United States
6326	B07 $\text{hv} + \text{H}_2^0 + \text{HD}$	T		White, J. C. Switched photodissociation: a proposal for the inversion of atomic and molecular species. <i>Opt. Lett.</i> 5, 159 (1980) United States
6327	H04 $2\text{hv} + \text{Ca}; 2\text{hv} + \text{Ba}$ H06 $2\text{hv} + \text{Ca}; 2\text{hv} + \text{Ba}$	E	55.15-3934 $\text{\AA}^0$	Hermann, J. P.; Wynne, J. J. Ionization studies in laser-excited alkaline-earth vapors. <i>Opt. Lett.</i> 5, 236 (1980) United States
6328	A10 $\text{Ba}^0 + \text{Tl}^0$	E	1583 K	White, J. C. Observation of dipole-quadrupole radiative collisional fluorescence. <i>Opt. Lett.</i> 5, 129 (1980) United States
6329	H04 $\text{hv} + \text{Hg}^0$	E	26° nm	Wineland, R. J.; Bergquist, J. C.; Itano, W. R.; Drullinger, R. E. Double-resonance and optical-pumping experiments on electromagnetically confined, laser-cooled ions. <i>Opt. Lett.</i> 5, 246 (1980) United States
6330	G02 Under H01 Under	T	Under	Kalyazin, A. L.; Sazonov, V. M. Anisotropy of inelastic scattering and selective diffusion of gas mixture components exposed to laser radiation. <i>Sov. J. Quantum Electron.</i> 9, 556 (1979) Soviet Union
6331	H06 $3\text{hv} + \text{Tl}$	E	694 nm	Klyachko, V. A.; Timofeev, V. F. Ruby-laser third harmonic generation in thallium vapor. <i>Sov. J. Quantum Electron.</i> 5, 1764 (1979) Soviet Union

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6332	M05 $\text{shv} + \text{WF}_6$	E	615-1004 cm^{-1}	Allopiev, E. Z.; Dubichov, A. P.; Koronov, G. S.; Kariyev, M. V.; Karchevskii, A. I.; Kulikov, S. Y.; Kartaysh'yan, V. L.; Nabiev, S. I.; Nishiferov, I. N.; Pechenkov, A. P.; Sartakov, B. G.; Shvartsava, E. F.; Khokhlov, E. M. Dissociation of uranium hexafluoride molecules in a two-frequency infrared laser field. Sov. J. Quantum Electron. 5, 1263 (1979) Soviet Union
6333	M08 $3\text{shv} + \text{Cu} + \text{Ti}$	E	10.6 μ	Arkhigian, V. G.; Popov, A. R.; Ilushev, V. P.; Epstein, V. S. Frequency conversion of CuCl_2 laser radiation from $\lambda = 10.6 \mu$ to the 236.8 nm range in a mixture of thallium and cesium vapor. Sov. J. Quantum Electron. 5, 1442 (1979) Soviet Union
6334	M04 Undef	T	Undef	Zen, E. A. Resonance-photon excitation of an atom by multiwave radiation. Sov. J. Quantum Electron. 5, 1446 (1979) Soviet Union
6335	C02 $\text{C}^{2+} + \text{Ni}; \text{C}^{2+} + \text{Ti}; \text{C}^{2+} + \text{Cu}$	E	1-9.8 keV	Ved'manov, G. B.; Gavrilov, I. F.; Ritzelin, V. B.; Moshev, F. G.; Putanov, A. A.; Bratkov, A. B. Energy loss of carbon ions in titanium, nickel, and germanium. Sov. Phys. J. 22, 660, (1979) Soviet Union
6336	D13 $\text{hv} + \text{H}_2\text{C} + \text{SiO}_2$	E	Undef	Yagircov, R. B. Determination of cross section of photoadsorption of molecules by a pulse method. Sov. Phys. J. 22, 885 (1979) Soviet Union
6337	M11 Undef	T	Undef	Lebedev, A. L. Polarization-frequency characteristics of bremsstrahlung of monoenergetic electron beam in scattering on shielded Coulomb potential. Sov. Phys. J. 22, 898 (1979) Soviet Union
6338	D16 $\text{He}^+ + \text{Si}; \text{D}^+ + \text{Si}$	E	30-50 keV	Kovalov, G. G. Implantation of boron ions in silicon crystals doped with helium ions. Sov. Phys. J. 22, 948 (1979) Soviet Union
6339	C06 $\text{Ne}^+ + \text{NaCl}; \text{Ar}^+ + \text{NaCl}; \text{Kr}^+ + \text{NaCl}$ D03 $\text{Ne}^+ + \text{NaCl}; \text{Ar}^+ + \text{NaCl}; \text{Kr}^+ + \text{NaCl}$	E	5-10 keV	Koval', A. G.; Kopp, I. V.; Rizio, P. S. Channeling effects in an investigation of luminescence and sputtering of excited particles. Sov. Phys. J. 22, 969 (1979) Soviet Union
6340	C02 Undef C04 Undef	E	50 keV	Potatynko, G. A. Experimental material on energy losses and ranges of hydrogen ions in substances: I. One-component media. Sov. Phys. J. 22, 1030 (1979) Soviet Union
6341	C02 Undef C04 Undef	E	50 keV	Potatynko, G. A. Experimental material on energy losses and ranges of hydrogen ions in substances: II. Multiple-component media. Sov. Phys. J. 22, 1031 (1979) Soviet Union
6342	A05 $\text{O}^{2+} + \text{Xe}; \text{O}^{2+} + \text{Ne}; \text{O}^{2+} + \text{Ar}; \text{O}^{2+} + \text{Kr}; \text{O}^{2+} + \text{Xe}$	E, T	60-200 keV	Mird, B.; All, E. P. Electron transfer measurements from rare targets to O_2^{2+} ions between 60 and 200 keV. Can. J. Phys. 58, 772 (1980) Canada
6343	A15 $\text{H} + \text{H}$	T	0-10 meV	Berlinsky, A. J.; Shizgal, B. Spin-exchange scattering cross sections for hydrogen atoms at low temperatures. Can. J. Phys. 58, 881 (1980) Canada
6344	M02 $\text{hv} + \text{Cl}_2; \text{hv} + \text{Br}_2; \text{hv} + \text{I}_2; \text{hv} + \text{HCl}; \text{hv} + \text{HBr}; \text{hv} + \text{HI}; \text{hv} + \text{CCl}_4; \text{hv} + \text{HgCl}_2; \text{hv} + \text{HgBr}_2; \text{hv} + \text{HgI}_2$	E	170-230 nm	Rosio, C.; Mond, A. Vacuum ultraviolet absorption cross sections for halogen containing molecules. J. Appl. Phys. 51, 2969 (1980) United States
6345	A06 $\text{Ce}^+ + \text{Dy}$	E	1.1 keV	Burghardt, B.; Harzer, P.; Peloni, G.; Persson, S. Isotope separation of Dy atoms using laser excitation followed by charge exchange with Ce^+ ions. Opt. Commun. 33, 165 (1980) West Germany
6346	A04 $\text{H} + \text{Co}$ A14 $\text{H} + \text{Co}$	T	0.72-1 keV	Cison, R. E. Cross sections for production of H^+ in H^+ + Co collisions. Phys. Lett. 77A, 143 (1980) United States

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6347	A04 $H_2^+ + H_2; H_2^+ + Ar$	E	250-600 keV	Nir, E.; Hemen, E.; Pann, A.; Feener, E. Betatons between the dissociation cross section of H_2^+ ions and the charge exchange cross sections of their fragments. Phys. Lett. 77A, 150 (1980) Israel
6348	E03 $e + He\ 5s^2$	T	75 Ry	Delujs, R. L.; Coyle, J. G. Electron impact excitation of helium-like ions. Phys. Lett. 77A, 152 (1980) United Kingdom
6349	E05 $e + He; e + Cu$	E	6.7-25 keV	Shino, K. He and Cu K-shell ionization cross sections by slow electron impact. Phys. Lett. 77A, 237 (1980) Japan
6350	A12 $Cd + He; Cd + He; Cd + Ar; Cd + Kr; Cd + Xe$	E	391 K	Heule, W.; Schermann, A.; Witz, F. Foreign gas broadening of the 5^1P_1 level of Cd. Phys. Lett. 77A, 240 (1980) West Germany
6351	A17 $He + He$	T	$0-6 \times 10^{-5}$ Ry	Lewther, R. E.; Caldwell, R. L. Monte Carlo calculation of the Born-Oppenheimer potential between two helium atoms. Phys. Rev. A 22, 14 (1980) United States
6352	A17 $He + He; He + He + He; He + He + He + He + He; He + He + He + He + He + He + He + He$	T	Underf	Lin, T. K.; Nohatchi, S.; Ahsaihi, Y.; Yano, K. Near-threshold behavior of the ground-state binding energies of the few-atom systems of 4He and other bosons in two and three dimensions. Phys. Rev. A 22, 28 (1980) United States
6353	C02 $Ar + Ar; Ar^{10+} + Ar; Ar^{11+} + Ar; Ar^{12+} + Ar; Ar^{13+} + Ar; Ar^{14+} + Ar; Ar^{15+} + Ar; Ar^{16+} + Ar; Ar^{17+} + Ar; Ar^{18+} + Ar; Ar^{19+} + Ar; Ar^{20+} + Ar; Ar^{21+} + Ar; Ar^{22+} + Ar; Ar^{23+} + Ar; Ar^{24+} + Ar; Ar^{25+} + Ar; Ar^{26+} + Ar; Ar^{27+} + Ar; Ar^{28+} + Ar; Ar^{29+} + Ar; Ar^{30+} + Ar; Ar^{31+} + Ar; Ar^{32+} + Ar; Ar^{33+} + Ar; Ar^{34+} + Ar; Ar^{35+} + Ar; Ar^{36+} + Ar; Ar^{37+} + Ar; Ar^{38+} + Ar; Ar^{39+} + Ar; Ar^{40+} + Ar; Ar^{41+} + Ar; Ar^{42+} + Ar; Ar^{43+} + Ar; Ar^{44+} + Ar; Ar^{45+} + Ar; Ar^{46+} + Ar; Ar^{47+} + Ar; Ar^{48+} + Ar; Ar^{49+} + Ar; Ar^{50+} + Ar; Ar^{51+} + Ar; Ar^{52+} + Ar; Ar^{53+} + Ar; Ar^{54+} + Ar; Ar^{55+} + Ar; Ar^{56+} + Ar; Ar^{57+} + Ar; Ar^{58+} + Ar; Ar^{59+} + Ar; Ar^{60+} + Ar; Ar^{61+} + Ar; Ar^{62+} + Ar; Ar^{63+} + Ar; Ar^{64+} + Ar; Ar^{65+} + Ar; Ar^{66+} + Ar; Ar^{67+} + Ar; Ar^{68+} + Ar; Ar^{69+} + Ar; Ar^{70+} + Ar; Ar^{71+} + Ar; Ar^{72+} + Ar; Ar^{73+} + Ar; Ar^{74+} + Ar; Ar^{75+} + Ar; Ar^{76+} + Ar; Ar^{77+} + Ar; Ar^{78+} + Ar; Ar^{79+} + Ar; Ar^{80+} + Ar; Ar^{81+} + Ar; Ar^{82+} + Ar; Ar^{83+} + Ar; Ar^{84+} + Ar; Ar^{85+} + Ar; Ar^{86+} + Ar; Ar^{87+} + Ar; Ar^{88+} + Ar; Ar^{89+} + Ar; Ar^{90+} + Ar; Ar^{91+} + Ar; Ar^{92+} + Ar; Ar^{93+} + Ar; Ar^{94+} + Ar; Ar^{95+} + Ar; Ar^{96+} + Ar; Ar^{97+} + Ar; Ar^{98+} + Ar; Ar^{99+} + Ar; Ar^{100+} + Ar$	T	2-10 MeV/amu	Kim, Y.-K.; Cheng, K.-T. Stopping power for partially stripped ions. Phys. Rev. A 22, 41 (1980) United States
6354	C04 $H^+ + C; H^+ + Si; H^+ + V; H^+ + Mn; H^+ + Fe; H^+ + Co; H^+ + Ni; H^+ + Cu; H^+ + Zn; H^+ + Nb; H^+ + Mo; H^+ + Rh; H^+ + Ag; H^+ + Cd; H^+ + In; H^+ + Sn; H^+ + Au; H^+ + Pb; H^+ + Ti; H^+ + Cr; H^+ + Zr; H^+ + Te; H^+ + Ga$ C05 $H^+ + C; H^+ + Si; H^+ + V; H^+ + Mn; H^+ + Fe; H^+ + Co; H^+ + Ni; H^+ + Cu; H^+ + Zn; H^+ + Nb; H^+ + Mo; H^+ + Rh; H^+ + Ag; H^+ + Cd; H^+ + In; H^+ + Sn; H^+ + Au; H^+ + Pb; H^+ + Ti; H^+ + Cr; H^+ + Zr; H^+ + Te; H^+ + Ga$ C02 $H^+ + C; H^+ + Si; H^+ + V; H^+ + Mn; H^+ + Fe; H^+ + Co; H^+ + Ni; H^+ + Cu; H^+ + Zn; H^+ + Nb; H^+ + Mo; H^+ + Rh; H^+ + Ag; H^+ + Cd; H^+ + In; H^+ + Sn; H^+ + Au; H^+ + Pb; H^+ + Ti; H^+ + Cr; H^+ + Zr; H^+ + Te; H^+ + Ga$	E	200-2000 keV	Lund, B. J.; Sluons, B. G.; Brennan, J. G.; Brown, P. B. Z, and energy dependence of range distributions and stopping powers for nitrogen ions in solids. Phys. Rev. A 22, 68 (1980) United States
6355	A04 $H^+ + Ar; H^+ + He; H^+ + Kr; F^{9+} + Si; F^{10+} + Ar; F^{11+} + Ar^{10+}; F^{12+} + Ar^{10+}; F^{13+} + Ar^{10+}; H^{10+} + Ar; Li^{10+} + Ar; Be^{10+} + Ar; B^{10+} + Ar$	T	3-456 MeV	Lin, C. D.; Tansell, L. H. Improved atomic model for charge transfer in multielectron ion-atom collisions at intermediate energies. Phys. Rev. A 22, 76 (1980) United States
6356	E02 $e + He$ E17 $e + He$	T	12-400 eV	Gode, K.; Truhler, D. G. New approaches to the quantum-mechanical treatment of charge polarization in intermediate-energy electron scattering. Phys. Rev. A 22, 84 (1980) United States
6357	E06 $e + He^+; e + C^{6+}; e + He^{10+}; e + Be^{10+}; e + O^{8+}; e + Mg^{10+}; e + N^{7+}; e + C^{5+}$	T	52-1300 eV	Younger, S. R. Electron-impact ionization cross sections for highly ionized hydrogen- and lithium-like atoms. Phys. Rev. A 22, 111 (1980) United States

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6358	A97 $\text{Li}^+ + \text{He}$	E	0.6-5.0 keV	Yagishita, E.; Ishiguro, K.; Takayanagi, T.; Suzuki, K.; Ohnishi, S.; Kisho, F. Electron spectra resulting from autoionization in low-energy $\text{Li}^+ + \text{He}$ collisions. <i>Phys. Rev. A</i> 22, 110 (1980) Japan
6359	E83 $\alpha + \text{Li}^+$	T	60-100 eV	Plindze, M. S.; Bhatia, A. K.; Tachin, A. Electron-impact excitation of Li II in the distorted-wave approximation. <i>Phys. Rev. A</i> 22, 132 (1980) United States
6360	H82 Undef H87 $\text{He} + \text{H}^-$	T	Undef	Groene, C. M. Dependence of photoabsorption spectra on long-range forces. <i>Phys. Rev. A</i> 22, 145 (1980) United States
6361	H87 $\text{He} + \text{H}^-$	T	Undef	Watanabe, S.; Groene, C. M. Atomic polarizability in negative-ion photodetachment. <i>Phys. Rev. A</i> 22, 151 (1980) United States
6362	H83 $\text{He} + \text{Ar}$	E	Undef	Groene, C. M.; Chandrasekhar, R.; Chubb, P. E.; Hale, M. E.; Balajal, B. A.; Lin, J. S.; Schmidt, P. W. X-ray scattering study of the critical opalescence in argon. <i>Phys. Rev. A</i> 22, 170 (1980) United States
6363	H86 $\text{He} + \text{H}_2$	E	504 Å	Morioka, T.; Nara, S.; Nakamura, M. Rotational intensity distribution in the H_2 photoelectron spectrum. <i>Phys. Rev. A</i> 22, 177 (1980) Japan
6364	A12 $\text{OH}^+ + \text{H}_2\text{O}$	E	30° K	Wang, C. C.; Hillinger, D. K.; Huang, K.-M. Rotational dependence in the linewidth of the ultraviolet transitions of OH^+ . <i>Phys. Rev. A</i> 22, 182 (1980) United States
6365	H86 Undef	T	Undef	Huang, K.-M. Theory of angular distribution and spin polarization of photoelectrons. <i>Phys. Rev. A</i> 22, 222 (1980) United States
6366	H83 Undef H98 Undef	T	Undef	Le Berre-Rousseau, M.; Rassegne, E.; Tallet, A. Statistical properties of the light scattered by a two-level atom driven by a resonant multilevel laser beam. <i>Phys. Rev. A</i> 22, 240 (1980) France
6367	H84 Undef	T	Undef	Harducci, L. M.; Yuan, J. M. Multiboson excitation of a polyatomic molecule by the infrared lasers. <i>Phys. Rev. A</i> 22, 261 (1980) United States
6368	E82 $\alpha + \text{C}_2\text{H}_6$ G85 $\alpha + \text{C}_2\text{F}_6$	E	30° K	Gee, J.; Freeman, G. R. Density and temperature effects on electron mobility in gaseous, critical, and liquid ethane. <i>Phys. Rev. A</i> 22, 281 (1980) Canada
6369	H85 $\text{He} + \text{Ca}$	T	3.1-27.2 eV	Huang, K.-M.; Starace, A. F. According to an initial treatment of final-state spin-orbit interactions: photoionization of the $6s$ electron in calcium. <i>Phys. Rev. A</i> 22, 310 (1980) United States
6370	H87 $\text{He} + \text{H}^-$	T	15 eV	Tachin, A. Effect of blackbody radiation on the threshold for two-electron photodetachment of H^- . <i>Phys. Rev. A</i> 22, 324 (1980) United States
6371	A87 $\text{Kr}^+ + \text{Kr}$	E	50 keV	Afrosimov, V. V.; Meshli, G. G.; Tsvetov, B. B.; Shergin, A. P. Auger spectroscopy of the Kr^+-Kr quasimolecule by an electron-scattered-ion coincidence method. <i>Sov. Tech. Phys. Lett.</i> 5, 371 (1979) Soviet Union
6372	E86 Undef	T	Undef	Bakht, F. G. Role of collective interactions in the diffusion of an electron through excited atomic or ionic states in a plasma. <i>Sov. Tech. Phys. Lett.</i> 1, 425 (1975) Soviet Union

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6373	G00 $e + [Ar + Mg + Cl_2]$	T	0.5-3 V.cm ²	Vutikh, N. G.; Polchanov, A. G. Energy distribution and rate constants for inelastic collisions of electrons in a discharge in an Ar-Mg-Cl ₂ mixture. <i>Sov. Tech. Phys. Lett.</i> 5, 450 (1979); Soviet Union
6374	G00 $e + [CC + He]$	E	3.1-3 V.cm ²	Ionikh, V. Z.; Kochetov, I. V.; Aurenau, P. L.; Pavlov, V. G.; Penkin, B. P. Ionization in a CC-He discharge. <i>Sov. Tech. Phys. Lett.</i> 5, 478 (1979); Soviet Union
6375	A06 $O^{2+} + H; He^{2+} + He$	T	10° K	Paquignot, D. Charge transfer reactions in some astrophysical situations. <i>Astron. Astrophys.</i> 81, 356 (1980) France
6376	E03 $e + Fe^+$	T	Under	Blackwell, D. E.; Shellin, P. J.; Simons, G. J. Oscillator strengths of Fe II lines derived from the solar spectrum: choice of solar model atmosphere. <i>Astron. Astrophys.</i> 81, 340 (1980) United Kingdom
6377	H04 $h\nu + C$ H06 $h\nu + C$	T	1.0-0.8 Å	Hofmann, H.; Treffitz, E. Excitation of C II lines by photoionization of neutral carbon. <i>Astron. Astrophys.</i> 82, 256 (1980) West Germany
6378	A03 $H^+ + Fe^{2+}$ E03 $e + Fe^{2+}$	T	A03 10° K E03 2F-100 Ry	Bhatia, A. K.; Pason, M. E. New atomic data for Fe ²⁺ . <i>Astron. Astrophys.</i> 83, 388 (1980); United Kingdom
6379	E03 $e + C^+$	T	Under	Singh, P. D.; de Almeida, A. A. The hydroxyl ion in interstellar clouds. <i>Astron. Astrophys.</i> 84, 177 (1980) Brazil
6380	E03 $e + Mg^+$	T	Under	Doroshky, N. N. On the absolute oscillator strength of Mg II 3584 Å and the presence of Mg ions in ap stars. <i>Astron. Astrophys.</i> 84, 256 (1980) United Kingdom
6381	A06 $C^+ + H; S^+ + H$	T	10° K	Butler, S. E.; Esigarno, A. Charge transfer of C ⁺ and S ⁺ in diffuse nebulae. <i>Astron. Astrophys.</i> 85, 144 (1980) United States
6382	E03 $e + O^{2+}$	T	Under	Ganes, P. S. Optical oscillator strengths for some astrophysically interesting lines in O III. <i>Astron. Astrophys., Suppl. Ser.</i> 38, 313 (1980) United States
6383	H06 $h\nu + Si^{2+}; h\nu + Si^{3+}; h\nu + Cl; h\nu + Cl^+; h\nu + Cl^{2+}; h\nu + Cl^{3+}; h\nu + Cl^{4+}$	T	1 Threshold	Koppen, J. Photoionization models for gaseous nebulae; II. Third period elements. <i>Astron. Astrophys., Suppl. Ser.</i> 39, 77 (1980) West Germany
6384	E03 $e + O^{2+}$	T	32-1000 eV	Ganes, P. S. Electron impact excitation cross sections for O III. <i>Astron. Astrophys., Suppl. Ser.</i> 40, 225 (1980) United States

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6385	E93 e + Fe ¹⁰⁺ ; e + Fe ¹¹⁺ ; e + Fe ¹²⁺ ; e + Fe ¹³⁺ ; e + Fe ¹⁴⁺ ; e + Fe ¹⁵⁺ ; e + Fe ¹⁶⁺ ; e + Fe ¹⁷⁺ ; e + Fe ¹⁸⁺ ; e + Fe ¹⁹⁺ ; e + Fe ²⁰⁺ ; e + Fe ²¹⁺ ; e + Fe ²²⁺ ; e + Fe ²³⁺ ; e + Fe ²⁴⁺ ; e + Fe ²⁵⁺ ; e + Fe ²⁶⁺ ; e + Fe ²⁷⁺ ; e + Fe ²⁸⁺ ; e + Fe ²⁹⁺ ; e + Fe ³⁰⁺ ; e + Ca ¹⁹⁺ ; e + Ca ²⁰⁺ ; e + Ca ²¹⁺ ; e + Ca ²²⁺ ; e + Ca ²³⁺ ; e + Ca ²⁴⁺ ; e + Ca ²⁵⁺ ; e + Ca ²⁶⁺ ; e + Ca ²⁷⁺ ; e + Ca ²⁸⁺ ; e + Ca ²⁹⁺ ; e + Ca ³⁰⁺ E95 e + Fe ¹⁰⁺ ; e + Fe ¹¹⁺ ; e + Fe ¹²⁺ ; e + Fe ¹³⁺ ; e + Fe ¹⁴⁺ ; e + Fe ¹⁵⁺ ; e + Fe ¹⁶⁺ ; e + Fe ¹⁷⁺ ; e + Fe ¹⁸⁺ ; e + Fe ¹⁹⁺ ; e + Fe ²⁰⁺ ; e + Fe ²¹⁺ ; e + Fe ²²⁺ ; e + Fe ²³⁺ ; e + Fe ²⁴⁺ ; e + Fe ²⁵⁺ ; e + Fe ²⁶⁺ ; e + Fe ²⁷⁺ ; e + Fe ²⁸⁺ ; e + Fe ²⁹⁺ ; e + Fe ³⁰⁺ ; e + Ca ¹⁹⁺ ; e + Ca ²⁰⁺ ; e + Ca ²¹⁺ ; e + Ca ²²⁺ ; e + Ca ²³⁺ ; e + Ca ²⁴⁺ ; e + Ca ²⁵⁺ ; e + Ca ²⁶⁺ ; e + Ca ²⁷⁺ ; e + Ca ²⁸⁺ ; e + Ca ²⁹⁺ ; e + Ca ³⁰⁺ E96 e + Fe ¹⁰⁺ ; e + Fe ¹¹⁺ ; e + Fe ¹²⁺ ; e + Fe ¹³⁺ ; e + Fe ¹⁴⁺ ; e + Fe ¹⁵⁺ ; e + Fe ¹⁶⁺ ; e + Fe ¹⁷⁺ ; e + Fe ¹⁸⁺ ; e + Fe ¹⁹⁺ ; e + Fe ²⁰⁺ ; e + Fe ²¹⁺ ; e + Fe ²²⁺ ; e + Fe ²³⁺ ; e + Fe ²⁴⁺ ; e + Fe ²⁵⁺ ; e + Fe ²⁶⁺ ; e + Fe ²⁷⁺ ; e + Fe ²⁸⁺ ; e + Fe ²⁹⁺ ; e + Fe ³⁰⁺ ; e + Ca ¹⁹⁺ ; e + Ca ²⁰⁺ ; e + Ca ²¹⁺ ; e + Ca ²²⁺ ; e + Ca ²³⁺ ; e + Ca ²⁴⁺ ; e + Ca ²⁵⁺ ; e + Ca ²⁶⁺ ; e + Ca ²⁷⁺ ; e + Ca ²⁸⁺ ; e + Ca ²⁹⁺ ; e + Ca ³⁰⁺	T	10 ⁴ K	Poore, R.; Schrijver, J.; Szymaster, J. Analysis of x-ray line spectra from a transient plasma under solar flare conditions: II. Rate coefficients. <i>Astron. Astrophys., Suppl. Ser.</i> 40, 323 (1980) The Netherlands
6386	A93 H ₂ + H ₂ C; He + H ₂ O	T	50 ⁴ K	Green, S. Collisional excitation of interstellar molecules: water. <i>Astrophys. J., Suppl. Ser.</i> 42, 163 (1980) United States
6387	E93 e + Ne ¹⁰⁺ ; e + O ¹⁰⁺ ; e + O ¹¹⁺ ; e + Ne ²⁰⁺ ; e + Ne ²¹⁺ ; e + Ne ²²⁺ ; e + Mg ¹⁰⁺ ; e + Mg ¹¹⁺ ; e + Si ¹⁰⁺ ; e + Si ¹¹⁺ ; e + Si ¹²⁺ ; e + Si ¹³⁺ ; e + Si ¹⁴⁺ ; e + Si ¹⁵⁺ ; e + Si ¹⁶⁺ ; e + Si ¹⁷⁺ ; e + Si ¹⁸⁺ ; e + Si ¹⁹⁺ ; e + Si ²⁰⁺ ; e + Si ²¹⁺ ; e + Si ²²⁺ ; e + Si ²³⁺ ; e + Si ²⁴⁺ ; e + Si ²⁵⁺ ; e + Si ²⁶⁺ ; e + Si ²⁷⁺ ; e + Si ²⁸⁺ ; e + Si ²⁹⁺ ; e + Si ³⁰⁺ ; e + Ca ¹⁹⁺ ; e + Ca ²⁰⁺ ; e + Ca ²¹⁺ ; e + Ca ²²⁺ ; e + Ca ²³⁺ ; e + Ca ²⁴⁺ ; e + Ca ²⁵⁺ ; e + Ca ²⁶⁺ ; e + Ca ²⁷⁺ ; e + Ca ²⁸⁺ ; e + Ca ²⁹⁺ ; e + Ca ³⁰⁺	T	10 ⁴ K	Kafetsos, M.; Lynch, J. P. Forbidden lines of ne(III) q ions: I. Detailed balance and line intensity ratios. <i>Astrophys. J., Suppl. Ser.</i> 42, 611 (1980) United States
6388	E93 e + H	T	1-10 Threshold	Flannery, R. W.; McCann, R. J. Trends in inelastic form factors and Born cross sections for n1 + (n + 1) prime collisional transitions. <i>Astrophys. J., Part 1</i> 236, 200 (1980) United States
6389	H12 hv + e	T	10 ⁻³ -10 hv/hT	Lightman, A. P.; Rybicki, G. B. Inverse Compton reflection: the steady-state theory. <i>Astrophys. J., Part 1</i> 236, 528 (1980) United States
6390	A13 C ⁺ + H ₂ ; CH ₃ ⁺ + H ₂ ; NH ₃ ⁺ + H ₂ ; CH ₃ ⁺ + CO; NH ₃ ⁺ + CO; CH ₃ ⁺ + H ₂ O; CH ₃ ⁺ + HCN	T	10 ⁻⁵ -50 K	Herbst, E. A new look at radiative association in dense interstellar clouds. <i>Astrophys. J., Part 1</i> 227, 462 (1980) United States
6391	E94 e + C ₂ ⁺ ; e + C ₂ H ⁺ ; e + C ₂ H ₂ ⁺ ; e + C ₂ H ₃ ⁺ E96 e + C ₂ ⁺ ; e + C ₂ H ⁺ ; e + C ₂ H ₂ ⁺ ; e + C ₂ H ₃ ⁺	E	0.12-1 eV	Mul, F. M.; McGowan, J. W. Dissociative recombination of C ₂ ⁺ , C ₂ H ⁺ , C ₂ H ₂ ⁺ , and C ₂ H ₃ ⁺ . <i>Astrophys. J., Part 1</i> 237, 749 (1980) Canada
6392	E93 e + S ¹⁰⁺ ; e + O ¹⁰⁺ ; e + O ¹¹⁺ ; e + S ²⁰⁺ E95 e + S; e + S ⁺ ; e + S ²⁺ ; e + S ³⁺	T	100 0.5-1000 eV(Temp) E95 4-100 eV(Temp)	Ströbel, D. F.; Davis, F. Properties of the 10 plasma torus inferred from voyager EUV data. <i>Astrophys. J., Part 2</i> 238, L45 (1980) United States
6393	E94 e + Fe ²⁰⁺	T	10 ⁴ -5x10 ⁴ K	Gabriel, A. M.; Phillips, R. J. M. Dielectronic satellite spectra for highly charged helium-like ions: IV. Iron satellite lines as a measure of non-thermal electron energy distributions. <i>Proc. Nat. Roy. Astron. Soc.</i> 189, 319 (1979) United Kingdom
6394	A93 OH + H; OD + H; CH + H; CE + H; NH ₂ + H	T	10 ⁴ K	Dixon, R. M.; Field, D. A-doublet population inversion in collisions of OH, OD, CH, CE and NH ₂ . <i>Mon. Not. Roy. Astron. Soc.</i> 189, 583 (1979) United Kingdom

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6395	E03 $e + Fe^{230}$	T	4-336 Ry	Moyes, R. A. Calculation of oscillator strengths and electron impact excitation collision strengths for Fe XXIV. Mon. Not. Roy. Astron. Soc. 189, 95f (1975); United Kingdom
6396	H06 $h\nu + He^0; h\nu + He^{2+}; h\nu + He^{3+}$	T	300-90 Å ⁰	Pradhan, A. K. Photo-ionization cross-sections of He II, He III and He IV. Mon. Not. Roy. Astron. Soc. 190, 4p (1980); United Kingdom
6397	E03 $e + Mg^{20}; e + Si^{12}; e + S^{16}; e + Al^{13}; e + Ca^{12}$	T	10 ⁴ K	Bhatia, A. K.; Pason, H. E. Theoretical atomic structure and electron scattering data for ions in the nitrogen isoelectronic sequence: Mg VI, Si VII, S X, Al XII and Ca XIV. Mon. Not. Roy. Astron. Soc. 15C, 525 (1980); United States
6398	E03 $e + Fe^{210}$	T	10 ⁷ K	Pason, H. E.; Storey, P. J. Atomic data for Fe XXII. Mon. Not. Roy. Astron. Soc. 151, 421 (1980); United Kingdom
6399	E06 $e + Mg^{110}$	T	Undef	Steenman-Clark, L.; Bely-Dubau, F.; Faucher, P. Calculations of the atomic parameters for the dielectronic satellite lines of the Mg XI resonance line. Mon. Not. Roy. Astron. Soc. 151, 531 (1980); France
6400	A11 $XeCl^0 + Ne; XeCl^0 + Ne + Ne; XeCl^0 + Xe; XeCl^0 + HCl$ G08 $e + [Ne + Xe + HCl]$	E	A11 300 K G08 Undef	Finn, T. G.; Chang, R.S.F.; Palumbo, L. J.; Champagne, L. F. Kinetics of the $XeCl(B + X)$ laser. Appl. Phys. Lett. 36, 785 (1980); United States
6401	D17 $Ne^0 + [Ag + Cu]$	E	370 keV	Tsaur, B. Y.; Lau, S. S.; Mayer, J. G. Continuous series of metastable Ag-Cu solid solutions formed by ion-beam mixing. Appl. Phys. Lett. 36, 823 (1980); United States
6402	A03 $Ne^{20} + Li$	E	60-4000 eV	Barrett, J. L.; Leventhal, J. J. Soft x-ray emission from $Ne^{20}-Li$ collisions. Appl. Phys. Lett. 36, 865 (1980); United States
6403	D14 $Ni^0 + [Fe + Cr + Ni]$	E	500 keV	Boulaenger, L. Boucles de dislocation multiples dans une austénite irradiée aux ions Ni ²⁺ . J. Nucl. Mater. 89, 129 (1980); France
6404	D14 $Ni^{40} + [Fe + Cr + Ni]$	E	46 MeV	Mazey, D. J.; Herries, D. R.; Hudson, J. P. The effects of silicon and titanium on void swelling and phase stability in 12Cr-5Ni austenitic alloys irradiated with 46 MeV nickel ions. J. Nucl. Mater. 89, 125 (1980); United Kingdom
6405	D14 $n + Al; n + Pt; n + [Al + Pb]$ D15 $n + Al; n + Pt; n + [Al + Pb]$	E	14 MeV	Sneed, C. L., Jr.; Golind, A. R.; Lynn, R. G.; Flatev, Y. M.; Guinan, P. Investigation of damage in Pt, Al and Al-0.1 at percent Ag produced by d-Be and fission-reactor neutrons using positron-annihilation. J. Nucl. Mater. 89, 191 (1980); United States
6406	D14 Undef D15 Undef	E	Undef	Bates, J. F. Erratum: A relationship between irradiation-induced swelling and the shear modulus of irradiated metal [J. Nucl. Mater. 87, 409 (1979)]. J. Nucl. Mater. 85, 201 (1980); United Kingdom
6407	G05 $e + Ar; e + CH_4; e + [Ar + CH_4]$	E	0-2.0 eV	El-Nakeem, M.; Mathieson, F. Measurement of electron drift velocity in counter gas mixtures. Nucl. Instrum. Methods 166, 447 (1979); United Kingdom
6408	C06 $Pi^{10} + C; Pi^{10} + C; Pi^{10} + C$	E	72-123 MeV	Beschapper, P.; Lebrun, P.; Lehmann, J.; Peiffy, L.; Pellegrin, P. Charge distributions of phosphorus ions between 72 and 123 MeV. Nucl. Instrum. Methods 166, 431 (1979); Belgium
6409	C05 $C^0 + Al; C^0 + Ag; C^0 + Au; C^0 + Pb; He^0 + Al; He^0 + Ag; He^0 + Au; He^0 + Pb$	E	28-60 MeV	Takahashi, T.; Pwys, Y.; Tanaka, T.; Kusagaki, M.; Izumo, K.; Hashizume, A.; Uchiyama, S.; Hitechi, A. Energy straggling of C and He ions in metal foils. Nucl. Instrum. Methods 166, 587 (1979); Japan

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6410	C82 Under C84 Under	E	0.01-1.0 MeV/amu	Semidevich, M. B.; Makhtin, I. E.; Shatunov, V. G.; Shapovalov, M. P. Stopping powers and energy distributions of fission fragments in gases. <i>Nucl. Instrum. Methods</i> 171, 551 (1980) Soviet Union
6411	A86 $H^+ + Au; H^+ + Al; H^+ + O$	E	42-62 MeV	Rosenc, J. L.; Brady, F. P.; Neesham, G. P.; Cantaneda, C. R.; Subramanian, T. S.; Liljemark, J. L.; Zonelli, C. I. Electron capture by protons in a neutron beam facility. <i>Nucl. Instrum. Methods</i> 171, 669 (1980) United States
6412	D01 $e + H + U; e + D + U$ D06 $e + H + U; e + D + U$	E	1-30 eV	Willie, R. F.; Plummer, E. W. Mechanisms for low-energy-electron vibrational excitation of adsorbates: H on W(100). <i>Phys. Rev. B</i> 21, 4202 (1980) United States
6413	C85 $Li^+ + V; Li^+ + Al; Li^+ + Si; Li^+ + Co; Li^+ + C; Li^+ + Cr; Li^+ + Fe; Li^+ + Cu; C^+ + Au; Fe^+ + Au; Ne^+ + Au; Ne^+ + Au; Ne^+ + Au$	T	25-500 keV	Scanlon, P. J.; MacArthur, J. E. Calculations of the multiple scattering of low-energy heavy ions in a finite-range potential. <i>Phys. Status Solidi B</i> 50, 691 (1980) Canada
6414	D09 $Ca + W$	E	300 K	Culbertson, R. J.; Robertson, G. W.; Sakurai, T. Abstract: Ionization mechanism of gallium on a tungsten field emitter. <i>J. Vac. Sci. Technol.</i> 16, 1860 (1979) United States
6415	D02 $H^+ + H_2; H^+ + C; H^+ + Cu; H^+ + TiB_2; H^+ + B_2C; H^+ + Be; H^+ + VBe_2; H^+ + Si; H^+ + Al_2O_3; H^+ + BeO; H^+ + SiO_2; Ar^+ + Ne; Ar^+ + C; Ar^+ + Cu; Ar^+ + TiB_2; Ar^+ + B_2C; Ar^+ + Fe; Ar^+ + VBe_2; Ar^+ + Si; Ar^+ + Al_2O_3; Ar^+ + BeO; Ar^+ + TiO_2; Xe^+ + Ne; Xe^+ + C; Xe^+ + Cu; Xe^+ + TiB_2; Xe^+ + B_2C; Xe^+ + Be; Xe^+ + VBe_2; Xe^+ + Si; Xe^+ + Al_2O_3; Xe^+ + FeO; Xe^+ + SiC_2$	E	0.25-1.0 keV	Sharp, D. J.; Panitz, J.K.G.; Matten, D. H. Applications of a Kaufman ion source to low energy ion erosion studies. <i>J. Vac. Sci. Technol.</i> 16, 1879 (1979) United States
6416	D02 $Ar^+ + Si$	E	10 keV	Elbery, A.; Wlodarczyk, P. Measurement of the sputtering yield of Fe from an oxidized stainless steel target using a pulsed dye laser. <i>J. Vac. Sci. Technol.</i> 16, 2090 (1979) Brazil
6417	H06 $Zn + Cu$	E	2.3-2.7 eV	Morillec, J.; Nermard, D.; Mainfray, G.; Hane, C. First experimental evidence of destructive interference effects in two-photon ionization of Co atoms. <i>Phys. Rev. Lett.</i> 44, 1394 (1980) France
6418	A17 $D_2 + Na$	E T	Under	Gerber, R. B.; Buch, V.; Buch, U.; Manabe, G.; Zehsener, J. Direct inversion of rotationally inelastic cross sections: determination of the anisotropic Ne-D ₂ potential. <i>Phys. Rev. Lett.</i> 44, 1357 (1980) Israel
6419	A09 $O_2^+ + C_2^- + O_2; O_2^+ + O_2^- + C_2$	T	300 K	Bates, S. D. Dependence of rate of ionic recombination on temperature and density of ambient gas. <i>Proc. Roy. Soc., London A</i> 369, 327 (1980) United Kingdom
6420	D02 $Xe^+ + Au; Xe_2^+ + Au$	E	1-50 keV	Olivier-Flores, A. R.; Alonso, E. V.; Beroglio, R. A.; Ferron, J.; Jakes, M. M. Energy dependence of the molecular effect in sputtering. <i>Radiat. Eff. Lett.</i> 50, 3 (1979) Argentina
6421	D01 Under	E T	Under	Carter, G. A semi quantitative approach to ion impact induced shock processes in solids. <i>Radiat. Eff. Lett.</i> 50, 165 (1980) United Kingdom
6422	D01 Under	E T	Under	Carter, G. The influence of non linear thermal diffusion on energy spike development and quenching. <i>Radiat. Eff. Lett.</i> 50, 147 (1980) United Kingdom
6423	D03 $Ar^+ + Fe$	E	55 keV	Martin, P. J.; Loxton, C. M. Photo studies of ion induced Fe continuum emission. <i>Radiat. Eff. Lett.</i> 50, 161 (1980) Australia

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6424	C08 N ⁺ + Si	E	387 keV	Kerkov, M.; Pietsch, H.; Teubner, F. Comparative measurements of proton dechanneling in silicon under channeling, blocking and double alignment conditions. <i>Radiat. Eff. Lett.</i> 50, 165 (1980); East Germany
6425	D10 Ne + W	E	2 meV	Forbes, R. G. Corivation of surface-atom polarizability from field-ion energy deficits. <i>Appl. Phys. Lett.</i> 36, 739 (1980); United Kingdom
6426	D02 Ca ⁺ + C + Si; Ca ⁺ + Si ₃ N ₄ + Si; Ca ⁺ + NiSi + Si; Cu ⁺ + PdSi + Si; Ca ⁺ + Pt ₂ Si + Si; Ca ⁺ + Au + Si; Ca ⁺ + C + Si; Ca ⁺ + F + Si; Ca ⁺ + H + Si	E	28 keV	Williams, P. Anomalous sputter yields due to cascade mixing. <i>Appl. Phys. Lett.</i> 36, 757 (1980); United States
6427	D02 Cl ⁺ + Al ₂ O ₃	E	500-750 eV	Neiman, M.; Minkiewicz, V.; Chappas, E. High rate reactive ion etching of Al ₂ O ₃ and Si. <i>J. Vac. Sci. Technol.</i> 17, 721 (1980); United States
6428	D13 Review	E	Undef	Knotek, M. L.; Feibelman, P. J. Stability of ionically bonded surfaces in ionizing environments. <i>Surface Sci.</i> 90, 7E (1979); United States
6429	D07 He + Cu	E	21-63 meV	Lepjuculade, J.; Lejay, Y.; Papastellou, N. Diffraction of helium from a stepped surface: Cu(117)-an experimental study. <i>Surface Sci.</i> 90, 122 (1979); France
6430	D07 H ₂ + Pt; D ₂ + Pt	E	700 K	Engel, T.; Kuipers, H. A molecular-beam investigation of the scattering, adsorption and desorption of H ₂ and D ₂ from/on/in Pt(111). <i>Surface Sci.</i> 90, 162 (1979); West Germany
6431	D09 KCl + W	E T	1400 K	Bonczek, F.; Engel, T.; Bauer, E. The interaction of KCl with tungsten single crystal surfaces. <i>Surface Sci.</i> 94, 57 (1980); West Germany
6432	D02 He ⁺ + Cu; He ⁺ + Cu; Ar ⁺ + Cu D03 He ⁺ + Cu; He ⁺ + Cu; Ar ⁺ + Cu	E	50-1000 eV	Hart, R. G.; Cooper, C. B. Energies of Cu ⁺ ions sputtered from Cu by very low energy (50 eV less than 1 keV) inert gas ions. <i>Surface Sci.</i> 94, 105 (1980); United States
6433	D07 He + C	E	5-17 meV	Berry, G.; Wesner, D.; Videll, G.; Twiss, I.; Frankl, D. R. Study of level crossings in the selective adsorption of He on graphite (0001). <i>Surface Sci.</i> 94, 221 (1980); United States
6434	D13 e + O + W	T	53-1000 eV	Prews, E. Computer simulations of electron stimulated desorption patterns from oxygen on b(100) and (111) surfaces. <i>Surface Sci.</i> 94, 249 (1980); West Germany
6435	D03 Ar ⁺ + Si; Ar ⁺ + Ni; Ar ⁺ + Zr; Ar ⁺ + Ti; Ar ⁺ + Cr	E	18-20 keV	Tsang, I.S.T.; Tsuji, S. The effect of adsorbed and recoil-implanted oxygen on sputtered excited atoms. <i>Surface Sci.</i> 94, 269 (1980); United States
6435	D11 D ₂ + Zr; CC + Zr; H ₂ + Zr; NG + Zr; O ₂ + Zr	E	330 K	Foord, J. S.; Goddard, P. J.; Lambert, M. P. Adsorption and absorption of diatomic gases by zirconium: studies of the dissociation and diffusion of CO, NC, N ₂ , O ₂ and D ₂ . <i>Surface Sci.</i> 94, 235 (1980); United Kingdom
6437	D11 NO + Co	E	330 K	Bridge, M. E.; Lambert, R. P. Adsorption and reactivity of nitric oxide on Co(0001). <i>Surface Sci.</i> 94, 469 (1980); United Kingdom
6438	D11 O + W D13 e + O + W	E	D11 300 K D13 307 eV	Maday, T. E. The role of steps and defects in electron stimulated desorption: oxygen on stepped b(110) surfaces. <i>Surface Sci.</i> 94, 483 (1980); United States
6439	D07 Undef	T	Undef	Goodman, F. O. The CCGH theory applied to the specular intensity near a bound-state resonance in atom-surface diffractive scattering. <i>Surface Sci.</i> 94, 607 (1980); Canada

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6440	D07 He + C; He + LiF	E	22 meV	Welfe, K. L.; Nease, J. M. Evidence of inelasticity in He-graphite (0001) scattering. <i>Surface Sci.</i> 54, 801 (1980); United States
6441	D06 e + C	E	5-30 eV	Ershova, T. P.; Korabiev, V. V.; Merozov, Y. A.; Ershov, S. G. Angular characteristics of elastic reflection of low primary-electron energies. <i>Sov. Phys.-Solid State</i> 21, 746 (1979); Soviet Union
6442	D05 e + C	T	1-50 eV	Ershova, T. P.; Korabiev, V. V.; Merozov, Y. A.; Ershov, S. G. Some characteristics of the elastic reflection of slow electrons from a solid. <i>Sov. Phys.-Solid State</i> 21, 1071 (1979); Soviet Union
6443	C08 H ⁺ + Au D07 H ⁺ + Au	T	0.47 MeV	Taratina, A. M.; Vorobiev, S. A. Influence of channeling in the case of reflection of protons by the surface of a single crystal. <i>Sov. Phys.-Solid State</i> 21, 1279 (1979); Soviet Union
6444	C01 e + Al; e + Cu; e + Au E18 e + Al; e + Cu; e + Au	T	35 keV	Karmyushkin, Y. D. Transmission of electrons through free solid films allowing for the energy loss. <i>Sov. Phys.-Solid State</i> 21, 1351 (1979); Soviet Union
6445	A06 H ⁺ + H; H ⁺ + He ⁺ ; H ⁺ + He; H ⁺ + Li; H ⁺ + Na; H ⁺ + K; H ⁺ + Ar; H ⁺ + He; H ⁺ + N; H ⁺ + O; H ⁺ + C; He ⁺ + H; He ⁺ + He; He ⁺ + Ar; He ⁺ + C; He ⁺ + Na; Li ⁺ + H; Li ⁺ + C; Li ⁺ + He; F ⁺ + H; F ⁺ + He; F ⁺ + Ar; F ⁺ + Na; B ⁺ + He; C ⁺ + He; N ⁺ + He; O ⁺ + He; C ⁺ + Ar; O ⁺ + Ar; C ⁺ + Na; O ⁺ + Ar; F ⁺ + Ar; F ⁺ + He; F ⁺ + He; C ⁺ + Ar	T	5 keV; 100 MeV	Belic, D.; Gayet, R.; Salin, A. Electron capture in high-energy ion-atom collisions. <i>Phys. Reports</i> 56, 275 (1979); France
6446	A16 Ca ⁺ + HCl; Ca ⁺ + Cl ₂	E	300 K	Telle, M.; Brinkmann, U. State-to-state cross sections for the reactions of excited Ca atoms with HCl and Cl ₂ yielding CaCl(A, B). <i>Mol. Phys.</i> 25, 361 (1980); West Germany
6447	A17 DCS	T	Uninf	Whiffen, D. M. Fitting molecular potential surfaces to spectroscopic observations; example carbonyl sulphide. <i>Mol. Phys.</i> 35, 391 (1980); United Kingdom
6448	A13 CO ⁺ + C ₂	E	1.4-10 eV	Jarrold, M. F.; Birkinshaw, K.; Hirst, D. M. A crossed beam study of the reaction of CO ⁺ with C ₂ . <i>Mol. Phys.</i> 39, 767 (1980); United Kingdom
6449	A14 F + H ₂	T	5-20.5 eV	Connor, J. H. L.; Jakubetz, W.; Parz, J. Quantum collision reaction probabilities for vibrationally excited reactants: F + H ₂ (v less than or equal to 2) + FH (v prime less than or equal to 5) + H. <i>Mol. Phys.</i> 39, 759 (1980); United Kingdom
6450	A17 Ar + Ar	T	Uninf	Kolde, A.; Reath, W. J.; Allnatt, F. W. A reliable single parameter interatomic potential for argon. <i>Mol. Phys.</i> 35, 895 (1980); Canada
6451	E03 e + He ⁺	T	10 ⁻¹ -10 ⁰ eV	Arrighini, G. P.; Biondi, F.; Biagi, A.; Guidetti, C. Inelastic scattering of fast electrons from metastable states of helium. <i>Mol. Phys.</i> 35, 1111 (1980); Italy
6452	H06 He + NH ₃	E	2 ⁺ eV	Dunaway, B. J.; Dyke, J. M.; Jonathan, A.; Morris, A. Vacuum ultraviolet photoelectron spectroscopy of transient species: II. The NH ₂ (² B ₂) radical. <i>Mol. Phys.</i> 39, 1121 (1980); United Kingdom
6453	A13 HCO ⁺ + CO + H ₂	E	12 ⁺ -250 K	Miraoka, K. Temperature and pressure dependence of rate constants for the clustering reaction: HCO ⁺ + CO + H ₂ = H(CO) ₂ ⁺ + H ₂ . <i>Int. J. Mass Spectrom. Ion Phys.</i> 33, 73 (1980); Japan

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6454	A14 $\text{NO}_2 + \text{CCl}_4$	E	530-570 m μ	Arutunyan, A. P.; Shakhmurov, I. K.; Folligonsky, A. G.; Malhasdyan, A. N. The kinetics and the mechanism of the oxidation of carbon monoxide in the presence of hydrogen. <i>Int. J. Chem. Kinetics</i> 12, 55 (1980) Soviet Union
6455	A14 $\text{SO} + \text{NO}_2$; $\text{ClO} + \text{NO}$	E	295 K	Clyne, M.A.A.; Packer, A. J. Kinetic studies of free radical reactions by mass spectrometry: 1. The reactions $\text{SO} + \text{NO}_2$ and $\text{ClO} + \text{NO}$. <i>Int. J. Chem. Kinetics</i> 12, 75 (1980) United Kingdom
6456	H08 $\text{hv} + \text{I}_2^*$	E	650-630 nm	Clyne, M.A.A.; Keenan, M. C. Laser-induced fluorescence of I_2^* (the $\text{B}^2\Sigma_u^+$ excited state). <i>J. Chem. Soc., Faraday Trans., II</i> 76, 49 (1980) United Kingdom
6457	A17 H_2 ; Li_2 ; Na_2 ; K_2 ; Rb_2 ; Cs_2 ; NF ; Cl_2 ; H_2 ; O_2 ; CO ; ON ; NO	T	Under	Varandas, A.J.C. Hybrid potential function for bound diatomic molecules. <i>J. Chem. Soc., Faraday Trans. II</i> 76, 129 (1980) Portugal
6458	H06 $\text{hv} + \text{SeCl}_2$; $\text{hv} + \text{Se}_2\text{Cl}_2$	E	2.5 eV	Nagy-Felsobuhi, E.; Paul, J. B. Photoelectron spectra of selenium dichloride and diselenium dichloride. <i>J. Chem. Soc., Faraday Trans., II</i> 76, 148 (1980) Australia
6459	A05 $\text{NO} + \text{O}_2$	E	300 K	van den Ende, B.; Stolte, S. Influence of translational and internal energy upon the chemiluminescent part of the exothermic reaction $\text{NO} + \text{O}_2 \rightarrow \text{NO}_2^* \rightarrow \text{O}_2 + \text{NO}_2 + \text{hv} \rightarrow \text{O}_2$. <i>Chem. Phys.</i> 45, 55 (1980) The Netherlands
6460	A05 $\text{H} + \text{BrF}$; $\text{H} + \text{IF}$ A14 $\text{H} + \text{BrF}$; $\text{H} + \text{IF}$	E	300 K	Brandt, D.; Polanyi, J. C. Energy distribution among reaction products: XIII. $\text{H} + \text{XF} \rightarrow \text{HF} + \text{X}$ ($\text{X} = \text{Br}, \text{I}$). <i>Chem. Phys.</i> 45, 65 (1980) Canada
6461	A11 $\text{Na}_2 + \text{He}$; $\text{Na}_2 + \text{Ne}$; $\text{Na}_2 + \text{Ar}$; $\text{Na}_2 + \text{Kr}$; $\text{Na}_2 + \text{Xe}$	E	300 K	Konig, F.; Weber, M. G. Relaxation studies of ground state Na_2 by optical pumping transients. <i>Chem. Phys.</i> 45, 91 (1980) West Germany
6462	H06 $\text{hv} + \text{SEr}_2$; $\text{hv} + \text{SeBr}_2$	E	25 eV	Nagy-Felsobuhi, E.; Paul, J. B. Photoelectron spectra of sulfur dibromide and selenium dibromide. <i>Chem. Phys.</i> 45, 189 (1980) Australia
6463	H05 $\text{hv} + \text{OCS}^+$; $\text{hv} + \text{CS}_2^+$	E	1.0-5.2 eV	Orth, R. G.; Ewbank, R. C. Photofragmentation of OCS^+ and CS_2^+ . <i>Chem. Phys.</i> 45, 195 (1980) United States
6464	A11 $\text{CO} + \text{H}_2$	E	80-300 K	Allen, D. C.; Simpson, C.J.S.M. Vibrational energy exchange between CO and the isotopes of H_2 between 200 K and 80 K. <i>Chem. Phys.</i> 42, 281 (1980) United Kingdom
6465	A10 $\text{He} + \text{I}_2$; $\text{He} + \text{O}_2$; $\text{Ar} + \text{O}_2$; $\text{Xe} + \text{O}_2$	T	300-2500 K	Muller, T.; Schatz, G. C. Classical rotational and centrifugal sudden approximations for atom-molecule collisional energy transfer. <i>Chem. Phys.</i> 45, 213 (1980) United States
6466	A11 $\text{He}^+ + \text{H}_2$; $\text{He}^+ + \text{Ar}$; $\text{He}^+ + \text{Kr}$; $\text{He}^+ + \text{Xe}$; $\text{He}^+ + \text{N}_2$; $\text{He}^+ + \text{D}_2$; $\text{He}^+ + \text{O}_2$; $\text{He}^+ + \text{CO}$; $\text{He}^+ + \text{CO}_2$; $\text{He}^+ + \text{H}_2\text{O}$; $\text{He}^+ + \text{CCl}_4$; $\text{He}^+ + \text{SO}_2$; $\text{He}^+ + \text{H}_2\text{C}$; $\text{He}^+ + \text{D}_2\text{O}$	E	320 K	Ueno, T.; Yokoyama, A.; Iehara, S.; Matsuo, Y. De-excitation rate constants of $\text{He}(2^1S)$ by atoms and molecules as studied by the pulse radiolysis method. <i>Chem. Phys.</i> 45, 261 (1980) Japan
6467	A11 $\text{He}^+ + \text{H}_2$; $\text{He}^+ + \text{SF}_6$	E	300 K	Yokoyama, A.; Iehara, S.; Ueno, T.; Matsuo, Y. Measurements of de-excitation rate constants of $\text{He}(2^1S)$ by H_2 and SF_6 using a pulse radiolysis method. <i>Chem. Phys.</i> 42, 439 (1980) Japan
6468	H02 $\text{hv} + \text{H}_2\text{O}$; $\text{hv} + \text{CO}_2$ H05 $\text{hv} + \text{H}_2\text{C}$; $\text{hv} + \text{CO}_2$ H06 $\text{hv} + \text{H}_2\text{O}$; $\text{hv} + \text{CO}_2$	T	4-60 eV	Hitchcock, A. P.; Brion, C. L.; van der Wiel, M. J. Absolute oscillator strengths for valence-shell ionic photofragmentation of H_2O and CO_2 (0-75 eV). <i>Chem. Phys.</i> 45, 461 (1980) Canada

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
6469	A10 Ar ^o + F ₂ A14 Ar ^o + Ar + Ar; N ₂ + N ₂ ; N ₂ + Ar E16 a + [Ar + N ₂]	E	A10: A14 30° K E16 20° keV	Gedart, J.; Pouch, V. Kinetic studies of the N ₂ [a ¹ Σ(sub g) ⁺ + b ¹ Σ(sub u) ⁺] continuous emission of an Ar-N ₂ mixture pumped by a-beam. <i>Chem. Phys.</i> 46, 22 (1988) France
6470	B02 I ₂	E		Sullivan, B. J.; Doss, D. A. Electric field-induced predissociation of I ₂ [B ² Σ _g ⁺ (out u)]. <i>Chem. Phys.</i> 46, 231 (1988) United States
6471	H05 hv + O ₂ ; hv + NO; hv + CO H06 hv + O ₂ ; hv + NO; hv + CO	E	17-30 eV	Cartel, M.; Schenk, M.; Baumgartel, M. Ion pair formation from photon irradiation of O ₂ , NO and CO in 17-30 eV. <i>Chem. Phys.</i> 46, 251 (1988) West Germany
6472	A10 DF ^o + EF	T	300-3000 K	Poulsen, L. L.; Billing, G. D. Vibrational deactivation of DF. <i>Chem. Phys.</i> 46, 267 (1988) Denmark
6473	A11 SO ₂ ^o + SO ₂ ; SO ₂ ^o + Ar; SO ₂ ^o + He	E	55°-2100 K	Kishore, V. V. R.; Babu, S. V.; Subba Rao, V. A shock tube study of vibrational relaxation in SO ₂ , SO ₂ -Ar and SO ₂ -He. <i>Chem. Phys.</i> 46, 257 (1988) India
6474	A13 H ₂ ^o + He	T	0.9-1.4 eV	Stroud, C.; Raff, L. M. Effects of surface topography upon reaction dynamics: the He + H ₂ ^o (v = 0,1,2) + HeH ⁺ + H reaction. <i>Chem. Phys.</i> 46, 213 (1988) United States
6475	A10 H ₂ ^o + CCS	E	330 K	Bogay, M.; Bower, A. Study by microwave spectroscopy of vibrational energy transfer processes in the H ₂ ^o -CCS system. <i>Chem. Phys.</i> 46, 353 (1988) France
6476	H08 hv + O ₃ H10 hv + O ₃	E	325-297 nm	Broch, J. C.; Watson, R. T. Laser flash photolysis of ozone: O(1D) quantum yields in the fall-off region 267-325 nm. <i>Chem. Phys.</i> 46, 477 (1988) United States
6477	H10 hv + O ₃	E	30° nm	Arnold, I.; Comes, F. J. Photolysis of ozone in the ultraviolet region. Reactions of O(1D), C ₂ H ₄ (sub g) and O ₃ . <i>Chem. Phys.</i> 47, 125 (1988) West Germany
6478	H08 hv + BC ₂	E	515 nm	Mayer, K. G.; Benndorf, R. A.; Stracke, H.; Walther, H. Laser excited fluorescence of the v vibratic states of BO ₂ . <i>Chem. Phys.</i> 47, 171 (1988) West Germany
6479	A10 Ar ^o + F	E	30° K	Clyne, M. A. A.; Heaven, M. C.; Bayes, K. D.; Rethhouse, P. B. Energy transfer in collisions of excited Ar(3P _{2,2}) metastable atoms with F(2P) atoms: II. Lyman-α emission profile. <i>Chem. Phys.</i> 47, 179 (1988) United Kingdom
6480	A03 Ar + TIF; Ar + H ₂ ; F ⁺ + H ₂ ; Li ⁺ + H ₂	T	0.3-3.7 eV	Fitz, D. E.; Kauri, D. J. On the sudden approximation of e-atom; computational tests and factorization of cross sections and related scattering phenomena. <i>Chem. Phys.</i> 47, 195 (1988) United Kingdom
6481	A13 H ⁺ + D ₂	T	0.1-4.0 eV	Gerlich, D.; Hewatny, U.; Schlier, C.; Toley, E. Complex formation in proton-D ₂ collisions. <i>Chem. Phys.</i> 47, 245 (1988) West Germany
6482	A11 Cd ^o + CC; Cd ^o + CO ₂ ; Cd ^o + NC	E	454 K	Uemoto, M.; Tsumashima, Y.; Sato, I. The absolute cross sections for the quenching of cadmium 5 ² P ₁ and 5 ² P ₂ atoms by carbon monoxide, carbon dioxide and nitric oxide. <i>Chem. Phys.</i> 47, 257 (1988) Japan
6483	A11 Cd ^o + He; Cd ^o + Ar; Cd ^o + Xe	E	534 K	Uemoto, M.; Tsumashima, Y.; Sato, I. Phase-shift studies of the imprisonment lifetime of cadmium (5 ² P ₁) and the effect of the addition of noble gases. <i>Chem. Phys.</i> 47, 263 (1988) Japan
6484	E02 a + H	T	Under	Coulter, P. W. Formulas for determining pseudostates in modified close-coupling calculations. <i>Phys. Rev. A</i> 22, 372 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6485	A06 Xe ²⁺ + H; Xe ²⁺ + H ₂ ; Xe ²⁺ + H; Xe ³⁺ + H ₂ ; Xe ³⁺ + H; Xe ³⁺ + H ₂ ; Xe ⁴⁺ + H; Xe ⁴⁺ + H ₂ ; Xe ⁴⁺ + H; Xe ⁵⁺ + H ₂ ; Xe ⁵⁺ + H; Xe ⁵⁺ + H ₂ ; Xe ⁶⁺ + H; Xe ⁶⁺ + H ₂ ; Xe ⁶⁺ + H; Xe ⁷⁺ + H ₂ ; Xe ⁷⁺ + H; Xe ⁷⁺ + H ₂ ; Xe ⁸⁺ + H; Xe ⁸⁺ + H ₂ ; Xe ⁸⁺ + H; Xe ⁹⁺ + H ₂ ; Xe ⁹⁺ + H; Xe ⁹⁺ + H ₂ ; Xe ¹⁰⁺ + H ₂ ; Xe ¹⁰⁺ + H; Xe ¹⁰⁺ + H ₂ ; Xe ¹¹⁺ + H ₂ ; Xe ¹¹⁺ + H; Xe ¹¹⁺ + H ₂ ; Xe ¹²⁺ + H ₂ ; Xe ¹²⁺ + H; Xe ¹²⁺ + H ₂ ; Ar ³⁺ + H; Ar ³⁺ + H ₂ ; Ar ³⁺ + H; Ar ⁴⁺ + H ₂ ; Ar ⁴⁺ + H; Ar ⁴⁺ + H ₂ ; Ar ⁵⁺ + H; Ar ⁵⁺ + H ₂ ; Ar ⁵⁺ + H; Ar ⁶⁺ + H ₂ ; Ar ⁶⁺ + H; Ar ⁶⁺ + H ₂ ; Ar ⁷⁺ + H; Ar ⁷⁺ + H ₂ ; Ar ⁷⁺ + H; Ar ⁸⁺ + H ₂ ; Ar ⁸⁺ + H; Ar ⁸⁺ + H ₂ ; Fe ⁸⁺ + H; Fe ⁸⁺ + H ₂ ; Fe ⁸⁺ + H; Fe ⁹⁺ + H ₂ ; Fe ⁹⁺ + H; Fe ⁹⁺ + H ₂	E	6-240 keV	Crandall, D. N.; Phaneuf, R. A.; Meyer, F. W. Electron capture by heavy multicharged ions from atomic hydrogen at low velocities. <i>Phys. Rev. A</i> 22, 275 (1980) United States
6486	C01 H ⁺ + C; H ₂ ⁺ + C C06 H ⁺ + C; H ₂ ⁺ + C	E	0.4-2.4 MeV	Cao, H.; de Castro Faria, M. V.; Grillard, M. J.; Poizat, J. C.; Soulliev, J. Inhibition of H ⁺ production in the foil breakup of fast H ₂ ⁺ . <i>Phys. Rev. A</i> 22, 388 (1980) France
6487	A16 Cl ⁻ + F ₂ ; Cl ⁻ + D ₂ ; Cl ⁻ + C ₂ ; Cl ⁻ + N ₂ ; Cl ⁻ + CO; Cl ⁻ + CO ₂ ; Cl ⁻ + CH ₄ ; Br ⁻ + H ₂ ; Br ⁻ + D ₂ ; Br ⁻ + O ₂ ; Br ⁻ + h ₂ ; Br ⁻ + CO; Br ⁻ + CO ₂ ; Br ⁻ + CH ₄	E	3-300 eV	Doverspike, L. E.; Smith, M. T.; Crossley, R. L. Total electron detachment cross sections for collisions of negative halogen ions with various molecules for energies around threshold. <i>Phys. Rev. A</i> 22, 353 (1980) United States
6488	A07 H ⁺ + Cu; C ⁶⁺ + Cu	T	0.5-24 MeV	Goldberg, E. C.; Ponce, V. B. Acoustic effects in atomic inner-shell ionization by heavy charged particles. <i>Phys. Rev. A</i> 22, 351 (1980) Argentina
6489	E03 e + Ag E05 e + Ag E12 e + Ag	F	103-400 keV	Ito, S.; Shimizu, S.; Kawarantani, J.; Kubota, K. Inner-shell ionization of silver by 100-400-keV electrons and positrons. <i>Phys. Rev. A</i> 22, 407 (1980) Japan
6490	E05 e + Na; e + Mg; e + Al; e + Cl; e + Cu; e + F; e + Si; e + S; e + Zn; e + Mn; e + Sn	E	70-230 MeV	Kamiya, M.; Kawaoka, A.; Ishii, K.; Perito, S.; Cusano, M. Density effect in K-shell ionization by ultrarelativistic electrons. <i>Phys. Rev. A</i> 22, 413 (1980) Japan
6491	E01 e + H ₂	T	Undef	Lucchese, R. R.; Watson, D. R.; Pichay, V. Iterative approach to the Schwinger variational principle for electron-molecule collisions. <i>Phys. Rev. A</i> 22, 421 (1980) United States
6492	G09 e + Cs	E, T	0.05-2.0 eV	Stefanov, B. Electron momentum-transfer cross section in cesium: fit to the experimental data. <i>Phys. Rev. A</i> 22, 427 (1980) The Netherlands
6493	E03 e + Be ⁺	E	3-1000 eV	Taylor, P. C.; Phaneuf, R. A.; Evers, G. W. Absolute cross sections and polarization for electron-impact excitation of the resonance multiplet of the Be ⁺ ion. <i>Phys. Rev. A</i> 22, 435 (1980) United States
6494	C02 e + H ₂	T	17 keV	Inchuti, M.; Douthett, D. A.; New, J. R. P. Statistical fluctuations in the ionization yield and their relation to the electron degradation spectrum. <i>Phys. Rev. A</i> 22, 445 (1980) United States

REF. NO.	REACTANTS	EXP. CH. THEORY	ENERGY RANGE	REFERENCE
6495	<p>A02</p> <p>H + He; H + H; H + Ar; He⁺ + He; He⁺ + H; He⁺ + Ar; Li²⁺ + He; Li²⁺ + H; Li²⁺ + Ar; Be³⁺ + He; Be³⁺ + H; Be³⁺ + Ar; B⁴⁺ + He; B⁴⁺ + H; B⁴⁺ + Ar; C⁵⁺ + He; C⁵⁺ + H; C⁵⁺ + Ar; N⁶⁺ + He; N⁶⁺ + H; N⁶⁺ + Ar; O⁷⁺ + He; O⁷⁺ + H; O⁷⁺ + Ar; F⁸⁺ + He; F⁸⁺ + H; F⁸⁺ + Ar; Ne⁹⁺ + He; Ne⁹⁺ + H; Ne⁹⁺ + Ar; Mg¹¹⁺ + He; Mg¹¹⁺ + H; Mg¹¹⁺ + Ar; Si¹³⁺ + He; Si¹³⁺ + H; Si¹³⁺ + Ar; S¹⁵⁺ + He; S¹⁵⁺ + H; S¹⁵⁺ + Ar; Ar¹⁷⁺ + He; Ar¹⁷⁺ + H; Ar¹⁷⁺ + Ar; Ca¹⁹⁺ + He; Ca¹⁹⁺ + H; Ca¹⁹⁺ + Ar; Ti²¹⁺ + He; Ti²¹⁺ + H; Ti²¹⁺ + Ar; Cr²³⁺ + He; Cr²³⁺ + H; Cr²³⁺ + Ar; Fe²⁵⁺ + He; Fe²⁵⁺ + H; Fe²⁵⁺ + Ar; Ni²⁷⁺ + He; Ni²⁷⁺ + H; Ni²⁷⁺ + Ar; Zn²⁹⁺ + He; Zn²⁹⁺ + H; Zn²⁹⁺ + Ar; Rn²⁷⁺ + H</p> <p>A03</p> <p>H + He; H + H; H + Ar; He⁺ + He; He⁺ + H; He⁺ + Ar; Li²⁺ + He; Li²⁺ + H; Li²⁺ + Ar; Be³⁺ + He; Be³⁺ + H; Be³⁺ + Ar; B⁴⁺ + He; B⁴⁺ + H; B⁴⁺ + Ar; C⁵⁺ + He; C⁵⁺ + H; C⁵⁺ + Ar; N⁶⁺ + He; N⁶⁺ + H; N⁶⁺ + Ar; O⁷⁺ + He; O⁷⁺ + H; O⁷⁺ + Ar; F⁸⁺ + He; F⁸⁺ + H; F⁸⁺ + Ar; Ne⁹⁺ + He; Ne⁹⁺ + H; Ne⁹⁺ + Ar; Mg¹¹⁺ + He; Mg¹¹⁺ + H; Mg¹¹⁺ + Ar; Si¹³⁺ + He; Si¹³⁺ + H; Si¹³⁺ + Ar; S¹⁵⁺ + He; S¹⁵⁺ + H; S¹⁵⁺ + Ar; Ar¹⁷⁺ + He; Ar¹⁷⁺ + H; Ar¹⁷⁺ + Ar; Ca¹⁹⁺ + He; Ca¹⁹⁺ + H; Ca¹⁹⁺ + Ar; Ti²¹⁺ + He; Ti²¹⁺ + H; Ti²¹⁺ + Ar; Cr²³⁺ + He; Cr²³⁺ + H; Cr²³⁺ + Ar; Fe²⁵⁺ + He; Fe²⁵⁺ + H; Fe²⁵⁺ + Ar; Ni²⁷⁺ + He; Ni²⁷⁺ + H; Ni²⁷⁺ + Ar; Zn²⁹⁺ + He; Zn²⁹⁺ + H; Zn²⁹⁺ + Ar</p> <p>A07</p> <p>H + He; H + H; H + Ar; He⁺ + He; He⁺ + H; He⁺ + Ar; Li²⁺ + He; Li²⁺ + H; Li²⁺ + Ar; Be³⁺ + He; Be³⁺ + H; Be³⁺ + Ar; B⁴⁺ + He; B⁴⁺ + H; B⁴⁺ + Ar; C⁵⁺ + He; C⁵⁺ + H; C⁵⁺ + Ar; N⁶⁺ + He; N⁶⁺ + H; N⁶⁺ + Ar; O⁷⁺ + He; O⁷⁺ + H; O⁷⁺ + Ar; F⁸⁺ + He; F⁸⁺ + H; F⁸⁺ + Ar; Ne⁹⁺ + He; Ne⁹⁺ + H; Ne⁹⁺ + Ar; Mg¹¹⁺ + He; Mg¹¹⁺ + H; Mg¹¹⁺ + Ar; Si¹³⁺ + He; Si¹³⁺ + H; Si¹³⁺ + Ar; S¹⁵⁺ + He; S¹⁵⁺ + H; S¹⁵⁺ + Ar; Ar¹⁷⁺ + He; Ar¹⁷⁺ + H; Ar¹⁷⁺ + Ar; Ca¹⁹⁺ + He; Ca¹⁹⁺ + H; Ca¹⁹⁺ + Ar; Ti²¹⁺ + He; Ti²¹⁺ + H; Ti²¹⁺ + Ar; Cr²³⁺ + He; Cr²³⁺ + H; Cr²³⁺ + Ar; Fe²⁵⁺ + He; Fe²⁵⁺ + H; Fe²⁵⁺ + Ar; Ni²⁷⁺ + He; Ni²⁷⁺ + H; Ni²⁷⁺ + Ar; Zn²⁹⁺ + He; Zn²⁹⁺ + H; Zn²⁹⁺ + Ar</p>	T	5x10 ⁻² -10 ⁻¹⁰ MeV	Gillespie, G. M. Excitation and ionization contributions to sum-rule Born cross sections: II. Collisions of one-electron ions initially in the 2E state with atoms. Phys. Rev. A 22, 454 (1980) United States
6496	<p>A03</p> <p>H + He; H + H; H + Ar; He⁺ + He; He⁺ + H; He⁺ + Ar; Li²⁺ + He; Li²⁺ + H; Li²⁺ + Ar; Be³⁺ + He; Be³⁺ + H; Be³⁺ + Ar; B⁴⁺ + He; B⁴⁺ + H; B⁴⁺ + Ar; C⁵⁺ + He; C⁵⁺ + H; C⁵⁺ + Ar; N⁶⁺ + He; N⁶⁺ + H; N⁶⁺ + Ar; O⁷⁺ + He; O⁷⁺ + H; O⁷⁺ + Ar; F⁸⁺ + He; F⁸⁺ + H; F⁸⁺ + Ar; Ne⁹⁺ + He; Ne⁹⁺ + H; Ne⁹⁺ + Ar; Mg¹¹⁺ + He; Mg¹¹⁺ + H; Mg¹¹⁺ + Ar; Si¹³⁺ + He; Si¹³⁺ + H; Si¹³⁺ + Ar; S¹⁵⁺ + He; S¹⁵⁺ + H; S¹⁵⁺ + Ar; Ar¹⁷⁺ + He; Ar¹⁷⁺ + H; Ar¹⁷⁺ + Ar; Ca¹⁹⁺ + He; Ca¹⁹⁺ + H; Ca¹⁹⁺ + Ar; Ti²¹⁺ + He; Ti²¹⁺ + H; Ti²¹⁺ + Ar; Cr²³⁺ + He; Cr²³⁺ + H; Cr²³⁺ + Ar; Fe²⁵⁺ + He; Fe²⁵⁺ + H; Fe²⁵⁺ + Ar; Ni²⁷⁺ + He; Ni²⁷⁺ + H; Ni²⁷⁺ + Ar; Zn²⁹⁺ + He; Zn²⁹⁺ + H; Zn²⁹⁺ + Ar</p>	E	2-30 keV	Brothcy, R.; Stone, J. Collisional coherent excitation to the n = 2 state of hydrogen. Phys. Rev. A 22, 473 (1980) United States
6497	<p>A03</p> <p>Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu</p> <p>A07</p> <p>Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu; Cl¹⁹⁺ + Cu</p>	E	27-80 MeV	Taniguchi, J. A.; Jacobs, W. W.; Shafritz, S. P. Systematics of target and projectile K-x-ray production and radiative electron capture for 20-80-MeV Cl (sup 35) ions incident on 25-200-μg/cm ² Cu targets. Phys. Rev. A 22, 463 (1980) United States
6498	<p>A03</p> <p>Br + Br</p> <p>All</p> <p>Br + Br</p>	E	301 K	Brachmann, C.; Vetter, F. Measurement of a metastability-exchange cross section in krypton. Phys. Rev. A 22, 496 (1980) France
6499	<p>F05</p> <p>a + H</p>	T	2f-500 eV	McCarthy, I. E.; Stobowicz, A. I. Continuum in the atomic optical model. Phys. Rev. A 22, 182 (1980) Australia

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6500	A06 $H + H; H^+ + H$ A07 $H + H; H^+ + H$ A08 $H + H; H^- + H$	T	10-100 keV	Prasad, M. A.; Santhkrishnan, K. Electron-loss cross sections for collisions of neutral and metastable hydrogen atoms with atomic hydrogen, using four-body trajectory calculations. Phys. Rev. A 22, 514 (1980) India
6501	H02 $h\nu + Ar; h\nu + Kr; h\nu + Xe$ H06 $h\nu + Ar; h\nu + Kr; h\nu + Xe$	E	3.2-14.3 keV	Brautig, W.; Chen, H. M.; Lee, C. L.; Parents, F.; Cramann, B.; Brown, G. S. Atomic inner-shell level energies determined by absorptive spectroscopy with synchrotron radiation. Phys. Rev. A 22, 520 (1980) United States
6502	C07 $Ne^+ + C$	E	160 keV	Brooks, R. L.; Fittington, E. P. Spectrum and polarization of helium doubly excited triplet states. Phys. Rev. A 22, 525 (1980) Canada
6503	A17 $Na + Xe$ B07 $2h\nu + Na + Xe; h\nu + Na + Xe$ H04 $2h\nu + Na + Xe; h\nu + Na + Xe$	E	A17 0.05-0.25 eV H04 5500 Å	DeVries, P. L.; Chang, C.; George, T. F.; Lashewski, B.; Stallop, J. R. Computational study of alkali-metal-noble-gas collisions in the presence of nonresonant lasers: $Na + Xe + \text{far laser}$, a 4-bar omega ₀ system. Phys. Rev. A 22, 545 (1980) United States
6504	E03 $e + Fe^{24+}$	T	2×10^4 K	Kastner, S. O.; Bhatia, A. K. Use of generalized population ratios to obtain Fe XXIV line intensities and line widths at high electron densities. Phys. Rev. A 22, 560 (1980) United States
6505	H06 $h\nu + U$	T	10^{-3} - 10^2 keV	Kim, Y. S.; Pratt, R. M.; Han, A.; Young, H. K. Photoelectron angular distributions from the subshells of high-Z elements. Phys. Rev. A 22, 567 (1980) United States
6506	H06 $h\nu + Na^+$	E	1.06 μ	Smith, A. V.; Goldsmith, J. L. M.; Nitz, D. E.; Smith, S. J. Absolute photoionization cross-section measurements of the excited 4D and 5S states of sodium. Phys. Rev. A 22, 577 (1980) United States
6507	C07 $S^+ + Li; S^+ + Be; S^+ + B; S^+ + C;$ $S^+ + Ne; S^+ + Al; S^+ + P; S^+ + K$	E	64 MeV	Watson, R. L.; White, J. R.; Langerberg, A.; Kosslich, F. A.; Bahr, C. C. Spectra of K α X rays from 64-pb sulfur ions traveling in solids. Phys. Rev. A 22, 582 (1980) United States
6508	H05 $h\nu + I_2$	T	10000-30000 cm^{-1}	Lau, P. M. F. Photon-catalyzed unimolecular decomposition with large first-order rate constant. Phys. Rev. A 22, 614 (1980) United States
6509	E02 $e + He; e + Li$ E17 $e + He; e + Li$	T	20-700 eV	Tayal, S. S.; Tripathi, A. K.; Srivastava, M. K. Elastic scattering of electrons by helium and lithium in the two-potential alcohol approximation. Phys. Rev. A 22, 702 (1980) India
6510	E03 $e + H$	T	0-100 eV	Caldwell, K. *Erratum 2s and 2p electron excitation in atomic hydrogen [Phys. Rev. A 132, 570 (1964)], Phys. Rev. A 22, 707 (1980) United States
6511	D02 $Au^+ + Au; Ar^+ + Cu; Kr^+ + Cu; Xe^+ + Cu$	T	10^{-1} - 10^2 keV	Kitazoe, Y.; Yamamura, Y. hydrodynamical approach to non-linear effects in sputtering yields. Radiat. Eff. Lett. 50, 39 (1980) Japan
6512	D14 $Ne^+ + Al$	E	5 keV	Donnelly, S. E.; Debros, G.; Gilles, J.-M.; Lucot, P. A. The deformation of thin aluminium films under helium ion bombardment. Radiat. Eff. Lett. 50, 57 (1980) Belgium
6513	D02 Under D03 Under	T	Under	Carter, G.; Fisher, G.; Webb, R.; Saloba, S.; Kelly, R.; Audouard, C. On the surface-normal energy distribution of sputtered recoils. Radiat. Eff. 48, 45 (1979) United Kingdom
6514	C02 $H^+ + Ni$ C08 $H^+ + Ni$	E	200-400 keV	Hertler, G.; Fehse, B.; Kopitzki, P. A new method of target preparation for measuring stopping powers of metals for channelled ions in the low energy region. Radiat. Eff. 48, 53 (1979) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6515	D14 $\text{He}^+ + \text{Cu}; \text{He}^+ + \text{Nb}$	T	10-60 keV	Nartymenko, V. V. The theory of blister formation. Radiat. Eff. 48, 93 (1979) Soviet Union
6516	D15 $\text{Ar}^+ + \text{b}; \text{He}^+ + \text{b}$	E	3.2-3 keV	Webber, R. B.; Bell, J. R. The depth of sputtering damage in tungsten by field-ion microscopy. Radiat. Eff. 45, 111 (1979) United Kingdom
6517	D04 $\text{H}^+ + \text{Inconel}; \text{H}_2^+ + \text{Inconel}; \text{He}^+ + \text{Inconel}; \text{O}^+ + \text{Inconel}; \text{Ar}^+ + \text{Inconel}$	E	1.5-4.0 keV	Alenc, E. V.; Baragiot, R. A.; Ferrer, J.; Olive-Florio, A. Electron emission from Inconel under ion bombardment. Radiat. Eff. 45, 115 (1979) Argentina
6518	D02 $\text{H}_2^+ + \text{C}; \text{He}^+ + \text{C}$	E	20 keV	Guseva, M. I.; Busharov, M. P.; Krasulin, Y. L.; Rozina, I. A. Erosion of graphite cloth bombarded by 20-keV hydrogen and helium ions. Sov. Atomic Energy 44, 287 (1978) Soviet Union
6519	A03 $\text{He}^{2+} + \text{Al}; \text{He}^{2+} + \text{Ti}; \text{He}^{2+} + \text{Ni}; \text{He}^{2+} + \text{Ta}$ A05 $\text{He}^{2+} + \text{Al}; \text{He}^{2+} + \text{Ti}; \text{He}^{2+} + \text{Ni}; \text{He}^{2+} + \text{Ta}$	E	2.5-5.0 MeV	Brodskii, S. M.; Mamikonian, S. V.; Filatov, V. I. Cross sections for ionization of inner shells of atoms by α particles with energy of 2-5 MeV. Sov. Atomic Energy 44, 300 (1978) Soviet Union
6520	D14 $\text{He}^+ + \text{Ni}$	E	20 keV	Krotov, V. I.; Lebedev, S. Y. Some features of nickel blistering under irradiation with helium ions. Sov. Atomic Energy 44, 405 (1978) Soviet Union
6521	E10 $\alpha + \text{KI}$	E	230-1500 eV	Szajman, J.; Llesogang, J.; Lockey, B.C.G.; Jamlin, J. G. Photoelectron determination of mean free paths of 200-1500-eV electrons in potassium iodide. Phys. Rev. 18, 4810 (1978) Australia
6522	D15 $\text{H}^+ + \text{Ag}; \text{H}^+ + \text{Cu}; \text{He}^+ + \text{Ag}; \text{He}^+ + \text{Cu}; \text{Li}^+ + \text{Ag}; \text{Li}^+ + \text{Cu}; \text{C}^+ + \text{Ag}; \text{C}^+ + \text{Cu}; \text{N}^+ + \text{Ag}; \text{N}^+ + \text{Cu}; \text{O}^+ + \text{Ag}; \text{O}^+ + \text{Cu}; \text{Ne}^+ + \text{Ag}; \text{Ne}^+ + \text{Cu}; \text{Ar}^+ + \text{Ag}; \text{Ar}^+ + \text{Cu}; \text{Fe}^+ + \text{Ag}; \text{Fe}^+ + \text{Cu}; \text{Co}^+ + \text{Ag}; \text{Co}^+ + \text{Cu}; \text{Kr}^+ + \text{Ag}; \text{Kr}^+ + \text{Cu}; \text{Ag}^+ + \text{Ag}; \text{Ag}^+ + \text{Cu}; \text{Bi}^+ + \text{Ag}; \text{Bi}^+ + \text{Cu}; \text{Ba}^+ + \text{Ag}; \text{Zn}^+ + \text{Cu}$	E	17-855 eV	Averbeck, B. S.; Benedek, R.; Parkin, R. L. Ion-irradiation studies of the damage function of copper and silver. Phys. Rev. B 18, 4156 (1978) United States
6523	C08 $\text{H}^+ + \text{Si}$	T	3.2 MeV	Ellison, J. A.; Chui, S. T.; Gibber, B. R. Momentum-density calculations for axial channeling in thin crystals. Phys. Rev. B 18, 1563 (1978) United States
6524	C08 $\text{He}^+ + \text{Al}$	T	50-16000 keV	Kudo, M. Energy dependence of dechanneling by a dislocation loop. Phys. Rev. B 18, 5955 (1978) Japan
6525	D03 $\text{Ar}^+ + \text{C} + \text{Cu}$	T	607 eV	Garrison, B. J.; Vinograd, R.; Harrison, E. L., Jr. Atomic and molecular ejection from ion-bombarded reacted single-crystal surfaces. Oxygen on copper(100). Phys. Rev. B 18, 6000 (1978) United States
6526	C08 $\text{He}^{2+} + \text{ZnTe}$	T	1.3-2.0 MeV	Bontempo, A.; Fontenille, J. Computer simulation of axial channeling in monatomic and diatomic crystals. Multistring model and its application to foreign-atom location. Phys. Rev. B 18, 6302 (1978) France
6527	G03 $\alpha + \text{H}_2; \alpha + \text{CO}$ G05 $\alpha + \text{H}_2; \alpha + \text{CO}$ G08 $\alpha + \text{H}_2; \alpha + \text{CO}$	T	Undef	Reid, I. D. An investigation of the accuracy of numerical solutions of Boltzmann's equation for electron swarms in gases with large inelastic cross sections. Aust. J. Phys. 32, 221 (1979) Australia
6528	G03 $\alpha + \text{H}_2$ G05 $\alpha + \text{H}_2$ G09 $\alpha + \text{H}_2$	T	Undef	Reid, I. D.; Hunter, S. R. Comparison between the Boltzmann and Monte Carlo simulation methods for the determination of electron swarm transport coefficients in molecular hydrogen. Aust. J. Phys. 32, 265 (1979) Australia

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6529	D11 O + Si	E	300 K	Norton, D. A SIMS study of the adsorption of oxygen on ion-beam-etched silicon (111) surfaces. <i>Appl. Surf. Sci.</i> 5, 65 (1980) Hungary
6530	A06 O ²⁺ + R	T	10 ⁴ K	Pequignot, C. Charge transfer reactions: II. A photoionization model of the planetary nebula NGC 7662. <i>Astron. Astrophys.</i> 83, 52 (1980) France
6531	A03 N ₂ + OH	T	30-120 K	Flower, D. B. Rotational excitation of N ₂ by H ₂ at interstellar temperatures. <i>Astron. Astrophys.</i> 83, 22 (1980) United Kingdom
6532	E03 e + SiR ⁺	T	Undef	Carlsson, T. A.; Copley, J.; Duric, B.; Elander, B.; Erman, P.; Larsson, M.; Lyrra, M. The oscillator strengths and the dissociation energy of SiR ⁺ as determined from time resolved precision spectroscopy. <i>Astron. Astrophys.</i> 83, 230 (1980) Sweden
6533	A01 Undef B07 Undef	T	A21 Undef	Zhelezin, A. P. Collisional orientation of atoms and molecules in a resonance light field. <i>Sov. Phys.-JETP Lett.</i> 30, 395 (1975) Soviet Union
6534	A10 CD ₄ ⁺ + Ar; SF ₆ ⁺ + CH ₄	E	430-1500 K	Akhmetov, S. A.; Gordienko, V. M.; Lazarev, V. V.; Mikhayenko, A. V.; Parshenko, V. V. Vibrational relaxation of highly excited molecular gases. <i>Bull. Acad. Sci., USSR, Phys. Ser.</i> 43, 134 (1979) Soviet Union
6535	A10 Eu ²⁺ + Eu	E	Undef	Karlov, M. V.; Karpov, M. A.; Kravtchik, B. D.; Mishin, V. A.; Prokhorov, A. M.; Stelmakh, C. M. Study of collisional processes in laser isotope separation. <i>Bull. Acad. Sci., USSR, Phys. Ser.</i> 42, 158 (1979) Soviet Union
6536	H06 hv + Cs	E	2573 Å	Delone, M. B.; Fedorov, P. V. Polarization of electrons and nuclei in resonant multiphoton ionization of atoms. <i>Bull. Acad. Sci., USSR, Phys. Ser.</i> 43, 175 (1979) Soviet Union
6537	D16 Ti ⁴⁺ + Fe	E	180 keV	Follstaedt, D. P.; Myers, S. M. Microstructure of Fe implanted with Ti. <i>Radiat. Eff.</i> 48, 37 (1980) United States
6538	D15 Ag ⁺ + Fe	E	50 keV	Vejde, P.; Maury, F.; Lucasson, P.; Lucasson, P. Characterization of recovery stages in silver-implanted magnesium by subsequent electron irradiation. <i>Radiat. Eff.</i> 48, 41 (1980) France
6539	D15 Ar ⁺ + Cu; Ar ⁺ + Nb	E	5 keV	Hertel, B.; Kuehnholz, K.; Diehl, J. Sub-surface damage of metals after 5 keV argon-ion bombardment. <i>Radiat. Eff.</i> 48, 45 (1980) West Germany
6540	D16 He ⁺ + Al; C ⁺ + Al; C ⁺ + Al; Al ⁺ + Al; Si ⁺ + Al; Ge ⁺ + Al; N ⁺ + Al; D ⁺ + Al; B ⁺ + Mo; C ⁺ + Mo; N ⁺ + Mo; O ⁺ + Mo; Ne ⁺ + Mo; Al ⁺ + Mo; P ⁺ + Mo; S ⁺ + Mo; As ⁺ + Mo; Sb ⁺ + Mo; Bi ⁺ + Mo; Xe ⁺ + Mo; Mn ⁺ + Mo; Mn ⁺ + Pb; Mn ⁺ + Sn	E	Undef	Meyer, D. Ion implantation in superconductors. <i>Radiat. Eff.</i> 48, 51 (1980) West Germany
6541	D16 Al ⁺ + Al	E	30-500 keV	Ziemann, P.; Hein, G.; Buchel, W. Low temperature self-ion implantation into granular aluminum films. <i>Radiat. Eff.</i> 48, 75 (1980) West Germany
6542	D16 Undef D17 Undef	T	Undef	Winterbon, K. B. On the theory of recoil implantation. <i>Radiat. Eff.</i> 48, 57 (1980) Canada
6543	C04 N ₂ ⁺ + Fe; N ₂ ⁺ + Fe; N ₂ ⁺ + Ni; N ₂ ⁺ + Ni; N ₂ ⁺ + Zr; N ₂ ⁺ + Zr; N ₂ ⁺ + Au; N ₂ ⁺ + Au	E	25-200 keV	Lend, D. J.; Simons, D. G.; Brenner, J. G.; Brown, P. D.; Hirvonen, J. K.; Bierbach, J. F. Range distributions for 25-200 keV N ₂ ⁺ ions. <i>Radiat. Eff.</i> 48, 105 (1980) United States

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6544	D15 Cu ⁺ + Zr ₂ Al; C ⁺ + Zr ₂ Al; N ⁺ + Zr ₂ Al; Ar ⁺ + Zr ₂ Al	E	0.5-2.0 MeV	Howe, L. R.; Mainville, R. H. Ion bombardment of ordered Zr ₂ Al. Radiat. Eff. 48, 151 (1980) Canada
6545	D02 N ⁺ + S; N ⁺ + Si; N ⁺ + Ti; N ⁺ + Ta; N ⁺ + V; N ⁺ + B ₂ C; N ⁺ + SiC; N ⁺ + TiC; N ⁺ + TaC; N ⁺ + WC; D ⁺ + S; D ⁺ + Si; E ⁺ + Ti; E ⁺ + Ta; D ⁺ + W; D ⁺ + B ₂ C; E ⁺ + SiC; D ⁺ + TiC; D ⁺ + TaC; D ⁺ + WC; He ⁺ + S; He ⁺ + Si; He ⁺ + Ti; He ⁺ + Ta; He ⁺ + W; He ⁺ + B ₂ C; He ⁺ + SiC; He ⁺ + TiC; He ⁺ + TaC; He ⁺ + WC	E	30-8000 eV	Roth, J.; Bundesky, J.; Martinelli, A. F. Low energy light ion sputtering of metals and carbides. Radiat. Eff. 48, 213 (1980) West Germany
6546	D16 D ⁺ + BeC	E	5-7 keV	Behrloch, R.; Fleuer, R. S.; Schrems, J.; Langley, F.; Roth, J.; Scherzer, D.N.U.; Schulz, E. Implantation of 5 keV deuterium in BeO. Radiat. Eff. 48, 221 (1980) West Germany
6547	D16 D ⁺ + Ti	E	6.6 keV	Roth, J.; Eickstein, W.; Bohmann, J. Depth profiling of B implanted into Ti at different temperatures. Radiat. Eff. 48, 231 (1980) West Germany
6548	D15 Hg ⁺ + [Hg + Cd + Te] D16 Hg ⁺ + [Hg + Cd + Te]	E	250-300 keV	Bahir, G.; Bernstein, T.; Alish, F. Damage and lattice location studies in Hg implanted Mg _{(1-sub a)Cd(sub a)Te. Radiat. Eff. 48, 247 (1980) Israel}
6549	K02 Review K03 Review	T	Under	Benjamin, T.; McKay, V.; Schneider, E., Eds. Electron-Molecule and Photon-Molecule Collisions. Plenum Press, New York, 1975. United States
6550	K07 Review	T	Under	McDowell, R.H.C. Atomic collision processes in magnetic confinement controlled thermonuclear fusion research. p.1 in Atomic and Molecular Processes in Controlled Thermonuclear Fusion. Plenum Press, New York, 1980. United Kingdom
6551	K07 Review	E T	Under	Harrison, R.F.A. The relevance of atomic processes to magnetic confinement and the concept of a tokamak reactor. p.15 in Atomic and Molecular Processes in Controlled Thermonuclear Fusion. Plenum Press, New York, 1980. United Kingdom
6552	K07 Review	T	Under	Hogan, J. T. General principles of magnetic fusion confinement. p.71 in Atomic and Molecular Processes in Controlled Thermonuclear Fusion. Plenum Press, New York, 1980. United States
6553	D01 Review	E T	Under	Dietz, K. J.; Ali-Khan, I.; Waditschek, E.; Bleshold, P. Wall processes and impurity production due to hydrogen species. p.121 in Atomic and Molecular Processes in Controlled Thermonuclear Fusion. Plenum Press, New York, 1980. United Kingdom
6554	A11 Review E01 Review	T	Under	Joachim, C. J. Theoretical methods for atomic collisions: a general survey. p.147 in Atomic and Molecular Processes in Controlled Thermonuclear Fusion. Plenum Press, New York, 1980. Belgium
6555	A06 Review	T	1-2000 keV/amu	Brennan, B. M. Theoretical models for charge exchange. p.182 in Atomic and Molecular Processes in Controlled Thermonuclear Fusion. Plenum Press, New York, 1980. United Kingdom
6556	E05 e + H	T	1-10 Threshold	McCarthy, I. E.; Stelbovics, A. I. Theoretical methods for ionization. p.207 in Atomic and Molecular Processes in Controlled Thermonuclear Fusion. Plenum Press, New York, 1980. Australia
6557	E03 e + Fe ²⁰⁺ ; e + Fe ²¹⁺ ; e + Fe ²²⁺ ; e + Cr ²⁺ ; e + Cr ³⁺ ; e + Cr ⁴⁺ ; e + Fe ²⁴⁺ ; e + Fe ²⁶⁺	T	1-100 Threshold	Hobb, W. D. Theoretical studies of electron impact excitation of positive ions. p.242 in Atomic and Molecular Processes in Controlled Thermonuclear Fusion. Plenum Press, New York, 1980. United States

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6558	E06 Review	T	Undef	Bottcher, C. Theory of recombination processes. p.267 in Atomic and Molecular Processes in Controlled Thermonuclear Fusion. Plenum Press, New York, 1980. United States
6559	A06 H ⁺ + He ⁺ E03 Review E05 e + H; e + H ⁺ ; e + He ⁺ ; Review	E	A26 18-400 keV E03 3-1000 eV E05 10-1000 eV	Esler, K. T. Some experimental aspects of inelastic electron-atom collisions and excitations between charged particles. p.313 in Atomic and Molecular Processes in Controlled Thermonuclear Fusion. Plenum Press, New York, 1980. United Kingdom
6560	A06 Review A07 Review	E	1-1000 keV/mm	de Haer, F. J. Experiments on electron capture and ionization by ions. p.351 in Atomic and Molecular Processes in Controlled Thermonuclear Fusion. Plenum Press, New York, 1980. The Netherlands
6561	E07 Review	E	100-5000 Å	Hinno, E. Spectroscopy of highly ionized atoms in the interior of tokamak plasma. p.449 in Atomic and Molecular Processes in Controlled Thermonuclear Fusion. Plenum Press, New York, 1980. United States
6562	E07 Review	E	Undef	McDowell, R.R.C.; Ferencik, A. P. Atomic and Molecular Processes in Controlled Thermonuclear Fusion. Plenum Press, New York, 1980. United Kingdom
6563	H02 hv + ThF ₄ ; hv + LaF ₃	E	60-180 eV	Connerade, J. P.; Pantelouris, M.; Esig, R. A.; Martin, P.A.F.; Cahier, R. On the resonantly localized 5p, sp ² and 5d continua state in thorium. J. Phys. B 12, L357 (1980) France
6564	A12 Na + He; Na + Ne; Na + Ar; Na + Kr; Na + Xe	E	410 K	Kachra, R.; Mossberg, T. W.; Hertmann, S. R. Noble-gas broadening of the sodium D lines measured by photon echoes. J. Phys. B 13, L363 (1980) United States
6565	H02 hv + Ba H06 hv + Ba	E	580-600 Å	Connerade, J. P.; Martin, P.A.F. Confirmation of two-step autoionization in Ba I. J. Phys. B 13, L373 (1980) France
6566	H07 Undef	T	Undef	Noro, T.; Taylor, N. S. Resonance partial widths and partial photodetachment rate using the related-coordinate method. J. Phys. B 13, L377 (1980) United States
6567	H06 2hv + [Sr + Ca]	E	460 nm	Brechignac, C.; Cahuzac, P.; Debarre, A. Observation of laser-induced collisional two-photon ionization in a strontium-caesium mixture. J. Phys. B 12, L363 (1980) France
6568	A17 Au ₂	T	Undef	Grøiland, M. W. Einstein relativistic correction to the nucleus-nucleus interaction in molecules in the Born-Oppenheimer approximation. J. Phys. B 13, L385 (1980) Norway
6569	A06 Xe ⁺ + Xe ⁺ A07 Xe ⁺ + Xe ⁺	E	38-303 keV	Angel, G. C.; Dann, R. F.; Bell, J. A.; Gilbody, S. B. Charge transfer and ionization in Xe ⁺ -Xe ⁺ collisions. J. Phys. B 13, L391 (1980) United Kingdom
6570	E02 e + Hg E17 e + Hg	E	8-18 eV	Henne, G. F.; Ballath, K. J.; Bother, W. Electron spin polarization resulting from elastic scattering of electrons by mercury atoms between 8 and 18 eV collision energy. J. Phys. B 12, L255 (1980) France
6571	H07 e + He ⁺ E06 e + He ⁺	T	E06 Undef	Huber, W. A.; Bottcher, C. Dielectronic recombination in a magnetic field. J. Phys. B 12, L395 (1980) United States
6572	H02 Undef	T	Undef	Swain, S. Generalised multiphoton rate equations. J. Phys. B 13, 2375 (1980) United Kingdom

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6573	A03 Be ⁺ + Fe; Be ⁺ + Ne; Be ⁺ + Ar A10 Be ⁺ + Fe; Be ⁺ + Ne; Be ⁺ + Ar	E	1.5-15 keV	Andersen, R.; Andersen, T.; Olier, J. G.; Pedersen, E. M. Differential excitation studies of quasi-one-electron systems: III. Be II 2 ² F excitation, alignment and orientation in Be ⁺ -Ne, Ne, Ar collisions. J. Phys. B 13, 2421 (1980) Denmark
6574	A03 Be ⁺ + Ne; Be ⁺ + Ne; Mg ⁺ + Ne; Fe ⁺ + Ne A10 Be ⁺ + Fe; Be ⁺ + Ne; Mg ⁺ + Fe; Fe ⁺ + Ne	T	0.5-100 keV	Nielsen, S. E.; Dahler, J. S. Impact parameter theory for quasi-one-electron systems: ns-np excitation, alignment and orientation in Be ⁺ /Mg ⁺ -Ne/He collisions. J. Phys. B 13, 2435 (1980) Denmark
6575	A03 Ar ¹²⁺ + Ne; Ti ¹²⁺ + Ne; Ni ¹²⁺ + Ne; Kr ¹²⁺ + Ne; Xe ¹²⁺ + Ne; Pb ¹²⁺ + Ne; C ¹²⁺ + Ne A05 Ar ¹²⁺ + Ne; Ti ¹²⁺ + Ne; Ni ¹²⁺ + Ne; Kr ¹²⁺ + Ne; Xe ¹²⁺ + Ne; Pb ¹²⁺ + Ne; C ¹²⁺ + Ne	E	1.4 MeV/amu	Mayer, M. F.; Schartner, K.-H.; Folkmann, F. K x-ray transitions from highly charged very slow heavy ion impact. J. Phys. B 13, 2459 (1980) West Germany
6576	E03 e + He	E	50-150 eV	van Linden van den Heuvell, H. B.; van de Water, W.; Haldeman, F.G.M.; van Eck, J.; Peerman, L. Parity unfavored transitions; the excitation of the (2p ²) ³ P doubly excited state of helium by electrons. J. Phys. B 13, 2475 (1980) The Netherlands
6577	D09 Undef	T	Undef	Janev, R. K.; Vojvodic, S. B. Interaction of atomic particles with solid surfaces: IV. One-electron resonant processes in the presence of a surface sub-monolayer. J. Phys. B 13, 241 (1980) Yugoslavia
6578	H05 hv + He	E	65-160 eV	Woodruff, P. R.; Samson, J.A.R. Measured cross sections for photoionization of ground-state He to He ⁺ (n = 2). Phys. Rev. Lett. 45, 110 (1980) United States
6579	C06 PERT + C	E	0.5-1.0 eV	Lenard, W. M.; Phillips, D. Peak charge of ions (0 less than or equal to Z, less than or equal to 26) emerging from carbon foils; evidence for the effect of inner-shell vacancies. Phys. Rev. Lett. 45, 176 (1980) Canada
6580	D05 hv + Ba; hv + Ce	T	75-150 eV	Zengulli, A.; Scven, P. Resonant photoemission in barium and cerium. Phys. Rev. Lett. 45, 264 (1980) United States
6581	E03 e + H	E	54 eV	Frost, L.; Weigold, E. Ratio of 1s-2s and 1s-2p excitation of atomic hydrogen by electron impact. Phys. Rev. Lett. 45, 247 (1980) Australia
6582	A11 H + H + He G02 H + He	E	1 K	Hardy, W. M.; Morrow, M.; Jochimsen, R.; Stett, B. W.; Kubik, P. R.; Parnolain, R. M.; Berlinshy, A. J.; Landmann, A. Magnetic-resonance studies of gaseous atomic hydrogen confined at 1 K and zero magnetic field. Phys. Rev. Lett. 45, 482 (1980) Canada
6583	A06 H ⁺ + H	T	40 MeV	Shakeshaft, R.; Spruch, L. Mechanisms for charge transfer (or for the capture of an light particle) at asymptotically high impact velocities. Rev. Mod. Phys. 51, 369 (1979) United States
6584	G07 e + Ar	T	0.1-50 keV	Parikh, M. Energetic electron degradation spectra and initial yields in argon. J. Chem. Phys. 72, 52 (1980) United States
6585	H08 hv + H ₂ C	E	955-730 Å	Behmer, P. R.; Behmer, J. L.; Chupka, W. A. Effects of vibronic interaction and autoionization on the photoelectron spectrum of H ₂ O. J. Chem. Phys. 73, 126 (1980) United States
6586	A05 Ca ⁰ + C ₂	E	300 K	Irvin, J. A.; Eggdigan, P. J. Chemiluminescence from the Ca(4s3d ²) + O ₂ reaction: absolute cross sections, photon yield, and CaO dissociation energy. J. Chem. Phys. 73, 176 (1980) United States

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6587	A06 $[O^+]\bullet + N_2; [O^+]\bullet + O_2$	E	0-0 K	Jonsson, R.; Biondi, P. A. Charge transfer coefficients for the $O^+([{}^2D]) + N_2$ and $O^+([{}^2P]) + O_2$ excited ion reactions at thermal energy. <i>J. Chem. Phys.</i> 73, 198 (1980) United States
6588	A06 $[O^+]\bullet + N_2; [O^+]\bullet + O_2$ G06 $[O^+]\bullet + He$	E	0.04-0.2 eV	Powe, R. R.; Fahey, D. W.; Fensnerfeld, F. C.; Albritton, D. L. Rate constants for the reactions of metastable O^+ ions with N_2 and O_2 at collision energies 0.04 to 0.2 eV and the utilization of these ions at 300 K. <i>J. Chem. Phys.</i> 73, 194 (1980) United States
6589	A14 $H + N_2; D + N_2; T + N_2; H + N_2; H + D_2; T + T_2$ A10 $H + N_2; D + N_2; T + N_2; H + D_2; H + D_2; T + T_2$	T	0.25-0.65 eV	Payne, H. R. Quasiclassical trajectory studies of $H + N_2$ on an accurate potential energy surface: I. Isotope effects. <i>J. Chem. Phys.</i> 73, 217 (1980) West Germany
6590	A11 $D_2O^+ + D_2O; D_2O^+ + E_2; D_2O^+ + HD; D_2O^+ + h_2; D_2O^+ + He; D_2O^+ + Ar$	E	260-400 K	Miljanic, S. S.; Moore, C. B. Vibrational relaxation of $D_2O^+ ({}^2\Sigma)$. <i>J. Chem. Phys.</i> 73, 226 (1980) United States
6591	A14 $T + HD$	T	130-2400 K	Garrett, B. C.; Trunler, D. G.; Gray, H. E.; Walker, R. E. Comparison of variational transition state theory and the unified statistical model with vibrationally adiabatic transmission coefficients to accurate collision rate constants for $T + H_2 \rightarrow TH + H$. <i>J. Chem. Phys.</i> 73, 235 (1980) United States
6592	M05 $h\nu + O_2$	E	2400-1700 Å	Lee, L. C.; Black, G.; Sharpless, F. L.; Slanger, T. G. $O(^1S)$ yield from O_2 photodissociation at 1700-2400 Å. <i>J. Chem. Phys.</i> 73, 256 (1980) United States
6593	A05 $Cu + F_2$	E	2.5 kcal/mol	Schwenz, R. W.; Verschy, J. P. Molecular beam study of the $Cu + F_2$ chemiluminescent reaction. <i>J. Chem. Phys.</i> 73, 259 (1980) United States
6594	M05 $h\nu + H_2S$	E	193 nm	Hawkins, W. G.; Houston, P. L. 193 nm photodissociation of H_2S : the 2M internal energy distribution. <i>J. Chem. Phys.</i> 72, 257 (1980) United States
6595	E05 $e + NO_2$	E	11-180 eV	Stephan, K.; Helm, M.; Rie, T. B.; Seykora, G.; Hawler, J.; Grossi, M.; Park, E.; Park, T. E. Single and double ionization of nitrogen dioxide by electron impact from threshold up to 180 eV. <i>J. Chem. Phys.</i> 73, 363 (1980) Austria
6596	A17 $N_2 + N_2$	T	Under	Ree, F. H.; Winter, R. W. Ab initio and Gordon-Rice intermolecular potentials for two nitrogen molecules. <i>J. Chem. Phys.</i> 73, 222 (1980) United States
6597	A17 $C_2; C_2^-$	T	Under	Dupuis, M.; Liu, B. Theoretical study of C_2 and C_2^- . <i>J. Chem. Phys.</i> 73, 337 (1980) United States
6598	A17 $I_2; I_2^-; I_2^+$	T	Under	McLean, A. D.; Gropen, O.; Huzinega, S. Self Hartree-Fock calculations on I_2 and its positive and negative ions. <i>J. Chem. Phys.</i> 73, 296 (1980) United States
6599	A13 $Ar^+ + N_2; Ar^+ + D_2$	E	0.05-0.5 eV	Tanaka, K.; Durup, J.; Reto, F.; Koyano, I. Direct determination of individual reaction cross sections for the two spin-orbit states $Ar^+({}^2P_{1/2}, {}^2P_{3/2})$. <i>J. Chem. Phys.</i> 73, 566 (1980) Japan
6600	A11 $BaO^+ + Ar; BaO^+ + CCl_2$	E	700 K	Gottardo, R. A.; Field, R. W.; Neale, F.; Ellers, S. J. Simultaneous measurement of rotational and translational relaxation by sub-Doppler optical-optical double resonance spectroscopy: $BaO(A{}^1\Sigma^+)-Ar$ and $BaO(A{}^1\Sigma^+)-CCl_2$. <i>J. Chem. Phys.</i> 73, 559 (1980) United States
6601	D03 $Kr^+ + I_2; Ar^+ + Ba; Ne^+ + Ba; C_2^+ + Ba; h_2^+ + Be$	E	25-3000 eV	Wright, R. B.; Cruan, D. M. Incident ion energy dependence of the secondary photon emission of ion bombarded beryllium. <i>J. Chem. Phys.</i> 73, 664 (1980) United States

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6602	A06 $\text{N}^+ + \text{O}_2$ A13 $\text{N}^+ + \text{O}_2$	E	0.76-1.8 eV	Howarth, F.; Chan, I.; Fehsenfeld, F. C.; Albritton, D. L. Kinetic energy dependence of the branching ratios of the reaction of N^+ ions with O_2 . <i>J. Chem. Phys.</i> 73, 752 (1980) United States
6603	A14 $\text{H} + \text{O}_2 + \text{Ar}$	T	4°-1600 K	Elint, R. J. Calculation of the rate constant for the reaction of atomic hydrogen with molecular oxygen to form the free radical HO_2 . <i>J. Chem. Phys.</i> 73, 765 (1980) United States
6604	A11 $\text{Kr}^+ + \text{Ar}$ A17 $\text{Kr}^+ + \text{Ar}$	E	300 K	Chang, R.S.F.; Poriguchi, H.; Setser, D. W. Radiative lifetimes and two-body collisional deactivation rate constants in argon for $\text{Kr}(4p^53p)$ and $\text{Kr}(4p^53s)$ states. <i>J. Chem. Phys.</i> 73, 778 (1980) United States
6605	E03 $e + \text{H}_2$	E	13-500 eV	Zipf, E. C.; Gorman, M. A. Electron-impact excitation of the singlet states of H_2 : I. The Birge-Hopfield system [$b^1\sigma_g(\text{sub } u)-X^1\Sigma_g^+(\text{sub } g)^+$]. <i>J. Chem. Phys.</i> 73, 813 (1980) United States
6606	A03 $\text{C}_2 + \text{O}_2$ A11 $\text{C}_2 + \text{O}_2$	E	32° K	Frangle, M. S.; Feinler, H.; Wittig, C. The kinetics of free radicals generated by IR laser photolysis: III. Intersystem crossing between $\text{C}_2[2^1\Sigma_g^+(\text{sub } g)^+]$ and $\text{C}_2[2^3\Sigma_g^-(\text{sub } g)^-]$ induced by collisions with oxygen. <i>J. Chem. Phys.</i> 73, 825 (1980) United States
6607	A05 $\text{Sc} + \text{NC}_2$	E	33° K	Gola, J. L.; Pace, S. A. Nonequilibrium product distributions observed in the multiple collision chemiluminescent reaction of Sc with NO_2 . Perturbations, rapid energy transfer routes and evidence for a low-lying reservoir state. <i>J. Chem. Phys.</i> 73, 836 (1980) United States
6608	A17 $\text{O} + \text{O}$	T	Uninf	Saxon, R. P.; Liu, B. Ab initio configuration interaction study of the Rydberg states of O_2 : I. A general computational procedure for diabatic molecular Rydberg states and test calculations on the $2p(\text{sub } g)$ states of O_2 . <i>J. Chem. Phys.</i> 73, 870 (1980) United States
6609	A17 $\text{O} + \text{O}$	T	Uninf	Saxon, R. P.; Liu, B. Ab initio configuration interaction study of the Rydberg states of O_2 : II. Calculations on the $2i(\text{sub } g)$, $2e(\text{sub } g)$, $2e(\text{sub } g)$ and $2i(\text{sub } g)$ symmetries. <i>J. Chem. Phys.</i> 73, 876 (1980) United States
6610	A11 $\text{Ar}^+ + \text{Ar}$ A17 $\text{Ar}^+ + \text{Ar}$	T	Uninf	Vance, R. L.; Gallup, G. A. Theoretical potential curves for excited states of Ar^+ and the rate of collisional quenching of metastable Ar by He. <i>J. Chem. Phys.</i> 73, 894 (1980) United States
6611	A14 $\text{SO}_2 + \text{F}$	F	3320-3760 K	Slack, M.; Grillo, A. Rate coefficient measurements for $\text{SO}_2 + \text{O} = \text{SO} + \text{O}_2$. <i>J. Chem. Phys.</i> 72, 587 (1980) United States
6612	A03 $\text{He} + \text{H}_2$	T	0.58-0.81 eV	Lin, C. S. vibrationally inelastic integral cross sections for the scattering of He from H_2 : II. Transitions to the $v = 2$ level. <i>J. Chem. Phys.</i> 73, 1130 (1980) Canada
6613	A11 $\text{H}_2^+ + \text{He}$	T	50-500 eV	Lin, C. S. A study of vibrational relaxation of H_2^+ in He. <i>J. Chem. Phys.</i> 73, 1159 (1980) Canada
6614	A02 $\text{O} + \text{Ar}; \text{O} + \text{Kr}; \text{O} + \text{Xe}$	E	1.73-1.56 keV	Aquilanti, V.; Luzzatti, L.; Pirani, F.; Volpi, G. G. Scattering of magnetically selected (3P) atoms: characterization of the low lying states of the heavy rare gas oxides. <i>J. Chem. Phys.</i> 73, 1161 (1980) Italy
6615	A05 $\text{He}^+ + \text{Xe}$	F	10° eV	Jones, E. G.; Tiernan, T. D.; Lee, E. C.; Hughes, E. M. Distribution of internal energy in the products of the reactions of 100 eV He^+ with Xe. <i>J. Chem. Phys.</i> 72, 1200 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6616	A03 He + He ₂ ; K + CO	T	0.05-1.24 eV	Korsch, R. J.; Schinke, R. A uniform semiclassical sudden approximation for rotationally inelastic scattering. J. Chem. Phys. 72, 1222 (1980) West Germany
6617	A03 LiH + He	T	0.3 eV	Alexander, M. H.; Dagdigan, P. J. The failure of rigid shell models for rotationally inelastic LiH-He collisions. J. Chem. Phys. 72, 1232 (1980) United States
6618	M08 hv + O ₂ hv + O ₂	E	248 nm	Amimoto, S. Y.; Force, A. P.; Wiesenfeld, J. B.; Young, E. M. Direct observation of O(2P[set j]) in the photolysis of O ₂ at 248 nm. J. Chem. Phys. 73, 1244 (1980) United States
6619	M08 hv + OCS	E	4 μ	Handlich, R. L.; Flynn, G. W. Vibrational energy transfer map for OCS. J. Chem. Phys. 73, 1265 (1980) United States
6620	A07 K ₂ + F ₂ ; K ₂ + Cl ₂ ; K ₂ + Br ₂ ; K ₂ + I ₂ ; Cu ₂ + F ₂ ; Cu ₂ + Cl ₂ ; Cu ₂ + Br ₂ ; Cu ₂ + I ₂	E	0.5 eV	Wells, G. J.; Reck, G. P.; Foth, E. W. Ionization reactions of halogens and metal polyhalides with alkali atoms and dimers: absolute cross sections. J. Chem. Phys. 73, 1280 (1980) United States
6621	A14 OH + H ₂ C ₂	E	250-459 K	Sridharan, U. C.; Reimann, B.; Kaufman, F. Kinetics of the reaction CH + H ₂ O ₂ + NO ₂ + H ₂ O. J. Chem. Phys. 73, 1286 (1980) United States
6622	A17 F ⁻ + Kr; F ⁻ + Xe G06 F ⁻ + Kr; F ⁻ + Xe	E	Undef	Thackston, M. G.; Eisale, F. L.; Pope, W. P.; Ellis, H. W.; McDaniel, E. W. Mobilities and longitudinal diffusion coefficients for F ⁻ ions in Kr and Xe. J. Chem. Phys. 73, 1477 (1980) United States
6623	A03 C ²⁺ + B; C ²⁺ + F; N ²⁺ + B; N ²⁺ + F; O ²⁺ + B; O ²⁺ + F A07 C ²⁺ + B; C ²⁺ + F; N ²⁺ + B; N ²⁺ + F; O ²⁺ + B; O ²⁺ + F	E	0.75-2.5 MeV	Kobayashi, M.; Paede, B.; Rejzka, T.; Akerman, S.; Sakisaka, M. K shell excitations for Boron and fluorine by heavy and light ion bombardments. J. Phys. Soc., Jap. 47, 625 (1979) Japan
6624	G06 He ⁺ + He; Ar ⁺ + He	E	82-390 K	Kozumi, T.; Kobayashi, M.; Kureha, Y. Mobilities of He ⁺ and Ar ⁺ ions in He gas at 82 K. J. Phys. Soc., Jap. 48, 1678 (1981) Japan
6625	A03 H ⁺ + CH	T	0.04-0.1 eV	Sakimoto, K. Low-energy ion-molecule collision-further study in perturbed rotational state approach. J. Phys. Soc., Jap. 48, 1883 (1980) Japan
6626	A03 H ⁺ + PERT A04 H ⁺ + PERT A14 H ⁺ + PERT	T	10 ⁹ cm/s	Kreinev, V. P.; Yudin, G. L. Angular and energy distributions of electrons ejected from internal atomic shells by fast protons. Sov. Phys.-Usp. 24, 931 (1979) Soviet Union
6627	A03 H ⁺ + Cu; D ⁺ + Cu; He + Cu; Be + Cu; O + Cu A14 H ⁺ + Cu; D ⁺ + Cu; He + Cu; Be + Cu; O + Cu	T	0.5-2 MeV	Anhalt, R. Molecular theory of K-vacancy production in heavy-ion-atom collisions at small impact parameters. Z. Phys. A 285, 201 (1980) United States
6628	A06 He ²⁺ + H	T	0.1-100 MeV/amu	Eichler, J.; Marumi, M. On the classical-trajectory, orbital approximation for electron capture into multicharged ions. Z. Phys. A 261, 265 (1980) Japan
6629	F02 e + He F17 e + He	T	10-5000 eV	Mahan, M.; Vidhani, T. Cluster exchange amplitudes for electron-helium scattering. Z. Phys. A 261, 215 (1980) West Germany
6630	A03 U + Pb	T	3-7 MeV/amu	Bosch, F.; Liesen, D.; Armbruster, F.; Meier, E.; Mohler, P. M.; Scheidt-Bocking, K.; Schuch, R. The quasimolecular 1 s sigma orbital in collision systems e (Z ₁ + Z ₂) greater than or approximately equal to 1, its excitation and spectroscopy. Z. Phys. A 266, 11 (1980) West Germany

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6631	A14 $\text{CO}_2\text{CO}_2^+ + \text{SO}_2; \text{CO}_2\text{CO}_2^+ + \text{D}_2; \text{CO}_2\text{CO}_2^+ + \text{C}_2\text{H}_2; \text{CO}_2\text{CO}_2^+ + \text{CO}; \text{CO}_2\text{CO}_2^+ + \text{NH}_3; \text{CCl}_2\text{CO}_2 + \text{CS}_2$	E	Thermal	Rehault, A. B.; Varneck, P. Routes to the formation of association products in CO_2 from reactions of $\text{CO}_2^+ + \text{CO}_2^+$ ions with several neutral molecules. 2. Waterforch. A 35, 368 (1968) West Germany
6632	K01 Review K02 Review	E T	Undef	Rossby, Sir Norris F.B.S. Atomic and Molecular Collisions. Taylor and Francis Ltd, London, 1979. United Kingdom
6633	A12 $\text{Na} + \text{Kr}$ A17 $\text{Na} + \text{Kr}$	E	Undef	Seller, J. R.; Lewis, E. L. A measurement of the far-wing radiation and potentials of sodium-krpton molecules. J. Phys. B 13, L315 (1980) United Kingdom
6634	A06 $\text{H}^+ + \text{He}; \text{Si}^{10+} + \text{Si}$	T	0.1-70 V/e.u.	Shevelkin, V. P. On the relation between quantum-mechanical and impact parameter amplitudes in charge exchange. J. Phys. B 13, L215 (1980) Soviet Union
6635	A07 Undef E05 Undef H05 Undef	T	0-10 Ry	Rossby, S. T.; Imshut, M. Near-threshold structure in the atomic K-shell spectra for ionisation by photons or fast charged particles. J. Phys. B 13, L323 (1980) United States
6636	A17 $\text{H} + \text{H}$	T	Undef	Magilevsky, G. A.; Vukajlovic, F. S. Asymptotic form of the electron repulsion matrix elements for hydrogen molecules in the adiabatic representation. J. Phys. B 13, 1547 (1980) Soviet Union
6637	E05 $e + \text{Na}; e + \text{Sr}$	T	Undef	McGill, J. F.; Heighman, P. Calculation of the electron binding energies of atomic Zn, Cd and Hg: evidence of a many-electron shift in the gas phase x-ray photoemission spectra of core levels. J. Phys. B 13, 1553 (1980) Soviet Union
6638	H08 $\text{hv} + \text{Fe}; \text{hv} + \text{Co}; \text{hv} + \text{Ni}; \text{hv} + \text{Cu}; \text{hv} + \text{Zn}; \text{hv} + \text{Ga}; \text{hv} + \text{Ge}; \text{hv} + \text{As}; \text{hv} + \text{Se}; \text{hv} + \text{Br}$	E	Undef	Gordon, M.; Hobbs, M. C.; Peacock, A. J. Classification of the x-ray spectra of transitions in the Fe, F and O L isoelectronic sequences of the elements from iron to bromine and in the He I isoelectronic sequence of gallium to bromine. J. Phys. B 13, 1945 (1980) United Kingdom
6639	H05 Undef	T		Rabin, Y.; Ben-fouven, A. Resonance fluorescence and resonance Raman lineshapes in strong radiation fields. J. Phys. B 13, 2011 (1980) Israel
6640	H04 $2\text{hv} + \text{Hg}$ H08 $2\text{hv} + \text{Hg}$	E	300-217 A/nm	Falsai, F.-M.-; Vollenstein, R.; Teets, B. Time-resolved fluorescence spectroscopy of two-photon excited singlet states of mercury. J. Phys. B 13, 2027 (1980) West Germany
6641	H06 $\text{hv} + \text{Xe}; \text{hv} + \text{Cl}; \text{hv} + \text{Cd}$ H08 $\text{hv} + \text{Xe}; \text{hv} + \text{Cl}; \text{hv} + \text{Cd}$	T	Undef	Klar, W. Polarisation of fluorescence radiation following atomic photoionisation. J. Phys. B 13, 2037 (1980) West Germany
6642	E03 $e + \text{Ti}^+$	E	Undef	Ganzmann, R.; Koch, R. Oscillator strengths of Ti II from combined absorption and emission measurements. J. Phys. B 13, 2051 (1980) West Germany
6643	H06 $\text{hv} + \text{Na}; \text{hv} + \text{K}; \text{hv} + \text{Rb}; \text{hv} + \text{Cs}$ H08 $\text{hv} + \text{Na}; \text{hv} + \text{K}; \text{hv} + \text{Rb}; \text{hv} + \text{Cs}$	E	40-4 eV	Sager, S.; Brauckmann, B.; Mensel, H.; Thiedelau, C. E.; Reinhorn, W. Photoelectron spectra of outer p shells of alkali metal atoms using He resonance radiation: multiplet and satellite structure. J. Phys. B 13, 2061 (1980) West Germany
6644	A03 $\text{H}^+ + \text{Li}$ A07 $\text{H}^+ + \text{Li}$	E	22.5-500 keV	Zhao, P.; Schilling, R.; Cheng, T. C.; Reinhardt, W.; Schweser, W.H.E. Li is core-excitation cross sections. Correlation and reorganization effects. J. Phys. B 13, 2071 (1980) West Germany

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6645	A87 N + Ar; N + Kr; N + Xe; D + Ar; D + Kr; E + Xe	E	12-100 eV	Aberle, W.; Gresser, J.; Kruger, W. Ion pair formation in N, D + Ar, Kr, Xe collisions from threshold to 100 eV. <i>J. Phys. B</i> 13, 2023 (1980); West Germany
6646	A88 N + Ne; N + Ar A18 N + Ne; N + Ar	T	0.3-0.5 MeV	Jakubassa, D. M. Electron loss from medium-energy projectiles in collisions with heavy target atoms. <i>J. Phys. B</i> 13, 2659 (1980); Norway
6647	A87 Under	E	Under	Hartmann, E.; Arndt, E.; Brunner, G. On the electron rearrangement after inner-shell ionization by the impact of heavy charged particles. <i>J. Phys. B</i> 13, 2169 (1980); West Germany
6648	E85 e + Ba; e + La; e + Ce; e + Pr; e + Nd; e + Pm; e + Sm; e + Eu; e + Gd; e + Tb; e + Dy; e + Ho; e + Er; e + Tm; e + Yb; e + Lu; e + Hf; e + Ta; e + W; e + Re; e + Os; e + Ir; e + Pt; e + Au; e + Hg; e + Tl; e + Pb; e + Bi	T	1.74-1.76 MeV	Moffat, J. T.; Ralib, F. B. Calculations of the L ₂ ionization cross sections of elements between 56 and 83 by 1.84, 1.39 and 1.76 MeV electrons in the relativistic plane-wave Born approximation. <i>J. Phys. B</i> 13, 2117 (1980); United States
6649	H82 Zn + Pb	T	Under	Moloney, J. V.; Folsel, F.-H.R. Propagation of a Gaussian pulse under two-photon rear-resonant conditions. <i>J. Phys. B</i> 13, 2137 (1980); West Germany
6650	E83 e + Si ²⁺	T	Under	Buleje, K. L.; Hibbert, A. Oscillator strengths for Si III. <i>J. Phys. E</i> 13, L327 (1980); United Kingdom
6651	B87 Under	T		Rabin, Y.; Mahamel, S. Unified theory of collisional dephasing in strong radiation fields. A generalization of the Karpman-Schwinger formula. <i>J. Phys. B</i> 12, L221 (1980); West Germany
6652	E83 e + Na E85 e + Na	T	17.5-20.5 eV	Taubjerg, K. On the interference between overlapping autoionization lines. <i>J. Phys. E</i> 12, L227 (1980); Denmark
6653	E83 e + H E17 e + H	E	55-100 eV	Slevin, J.; Emswary, M.; Woolsey, J. P.; Veseliev, G.; Porter, M. G. Electron-photon angular correlation measurements for excitation of the 2F state of hydrogen at 55 and 100 eV. <i>J. Phys. B</i> 13, L341 (1980); United Kingdom
6654	E83 e + H	T	0.15-0.18 Ry	Mate, J.; Morgan, L. A.; McDowell, R. R. C. Electron impact excitation of the n = 2 to n = 3 transition in atomic hydrogen near threshold. <i>J. Phys. B</i> 13, L347 (1980); United Kingdom
6655	E12 e ⁺ + H ₂ ; e ⁺ + O ₂ ; e ⁺ + N ₂ ; e ⁺ + CO ₂ ; e ⁺ + CH ₄	E	15-600 eV	Charlton, M.; Griffith, T. C.; Heyland, G. H.; Wright, G. L. Total scattering cross sections for intermediate-energy positrons in the molecular gases H ₂ , O ₂ , N ₂ , CO ₂ and CH ₄ . <i>J. Phys. E</i> 13, L352 (1980); United Kingdom
6656	A17 H ₂ ⁺ ; N ₂	T	Under	Vukajlovic, F. F.; Mogilevsky, O. P. Electron repulsion potentials of diatomic molecules in the adiabatic basis. <i>J. Phys. B</i> 13, 2127 (1980); Soviet Union
6657	B87 Ar ⁺ + Al	E	6.5 keV	Leleuter, M.; Joyce, P. An initial study of some configurations of Al ₂ ⁺ , Al ₂ and Al ₂ ⁺ . <i>J. Phys. B</i> 12, 2165 (1980); France
6658	A12 Under H86 Under	T	Under	Nienhuis, G.; Schuller, F. Collisional broadening of saturated resonance fluorescence spectra by two-state atoms irradiated by monochromatic light. <i>J. Phys. E</i> 13, 2205 (1980); The Netherlands
6659	B87 Under	T		Nienhuis, G. Collisional broadening of resonance fluorescence with excitation by intense radiation of finite bandwidth. <i>J. Phys. B</i> 12, 2217 (1980); Denmark

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6660	H06 Under	T	Under	Robinson, E. J. Pulse area effects in resonant multiphoton ionisation. <i>J. Phys. B</i> 13, 2242 (1980); United States
6661	A03 $H^+ + Au; He^{2+} + Au; C^+ + Au; N^+ + Au; O^+ + Au$ A05 $H^+ + Au; He^{2+} + Au; C^+ + Au; N^+ + Au; O^+ + Au$ A07 $H^+ + Au; He^{2+} + Au; C^+ + Au; N^+ + Au; O^+ + Au$	E	1.4-3.4 MeV	Sarkadi, L.; Puhayama, T. Measurements of L x-ray production and subshell ionisation cross sections of gold by light- and heavy-ion bombardment in the energy range 0.4-3.4 MeV. <i>J. Phys. B</i> 13, 2255 (1980); Hungary
6662	A05 $H^+ + Li^+$ A07 $H^+ + Li^+$	E	62-350 keV	Sawell, E. C.; Angel, G. C.; Burr, R. F.; Gliboff, B. E. Ionisation and charge transfer in fast H^+-Li^+ collisions. <i>J. Phys. B</i> 13, 2261 (1980); United Kingdom
6663	A06 $Li^+ + H; Li^{2+} + H; Li^{3+} + H$	T	66-1500 keV	Crothers, D.S.F.; Todd, A. F. One-electron capture by fast multiply charged ions in $H; q^3$ scaling. <i>J. Phys. B</i> 13, 2277 (1980); United Kingdom
6664	E02 $e + He$ E17 $e + He$	T	10 ⁻⁴ -590 eV	Roy, A. C.; Sil, M. C. Elastic scattering of electrons from atomic helium in the second-order optical approximation. <i>J. Phys. B</i> 13, 2255 (1980); India
6665	E02 $e + HCl$ E17 $e + HCl$	T	0.3-5 eV	Collins, L. A.; Henry, R.J.W.; McCreese, E. W. Electron collisions with polar molecules: exchange and polarisation in elastic scattering by HCl. <i>J. Phys. B</i> 13, 2299 (1980); United States
6666	E03 $e + He$	T	81-20 ⁴ eV	Fon, B. C.; Berrington, K. A.; Kingston, S. E. The 1 ¹ S-2 ¹ S and 1 ¹ S-2 ³ P excitation of helium by electron impact. <i>J. Phys. B</i> 13, 2305 (1980); United Kingdom
6667	E03 $e + CO$ E17 $e + CO$	E	1-30 eV	Tronc, M.; Azria, R.; Le Coat, Y. Vibrational excitation via high-energy shape resonances in molecules: $v = 0 + 1$ excitation in CO. <i>J. Phys. B</i> 13, 2327 (1980); France
6668	H06 $h\nu + Kr; h\nu + Ar$	E	80-70 nm	Helmenstein, U.; Schafer, J. Spin-polarised photoelectrons from krypton and argon atoms exposed to circularly polarised synchrotron radiation. <i>J. Phys. B</i> 13, L415 (1980); West Germany
6669	H06 Under	T	Under	Crance, M.; Ayer, M. Dynamics of multiphoton ionisation to multiple continua. <i>J. Phys. B</i> 12, L421 (1980); France
6670	E12 $e^+ + Hg$	T	0-22 eV	Sin Fai Lee, L. T. Scattering of low-energy positrons by mercury atoms. <i>J. Phys. B</i> 12, L427 (1980); Australia
6671	E03 $e + Mn$	T	Under	Becker, U.; Kwiekowsky, M.; Tappner, U.; Zimmermann, P. Lifetime measurements of stepwise collisional and radiative excited Mn I levels. <i>J. Phys. B</i> 12, 2501 (1980); West Germany
6672	H06 $h\nu + He; 2h\nu + He; 3h\nu + He$	T	0-1 Ry	Ayer, M.; Crance, M. Theory of two- and three-photon ionisation of metastable helium atoms. <i>J. Phys. B</i> 13, 2827 (1980); France
6673	H06 $h\nu + CF_3; h\nu + COS; h\nu + CF_2$	E	15-21 eV	Potts, A. W.; Fethallah, G. P. High-resolution ultraviolet photoelectron spectroscopy of CF_3 , COS and CF_2 . <i>J. Phys. B</i> 13, 2145 (1980); United Kingdom

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6674	A07 H ⁺ + Co; H ⁺ + Ni; H ⁺ + Cu; H ⁺ + Zn; H ⁺ + Ge; H ⁺ + Se; D ⁺ + Co; D ⁺ + Ni; D ⁺ + Cu; D ⁺ + Zn; D ⁺ + Ge; D ⁺ + Se A19 H ⁺ + Co; H ⁺ + Ni; H ⁺ + Cu; H ⁺ + Zn; H ⁺ + Ge; H ⁺ + Se; D ⁺ + Co; D ⁺ + Ni; D ⁺ + Cu; D ⁺ + Zn; D ⁺ + Ge; D ⁺ + Se	E	0.2-0.9 MeV/amu	Jones, A. P.; Lopes, J. S. Nuclear Coulomb effects in ion-induced K-shell ionization. <i>J. Phys. B</i> 13, 2265 (1980) Portugal
6675	A17 Ca + He W02 He + [Ca + He]	E	6850-5350 Å	Ferraz, M.; Visticot, J. P.; Lesinget, J.; Seyer, E. Spectroscopic investigation of the Ca(7s _{1/2} and 5d _{3/2} (sub m)= _{3/2})-He interaction. <i>J. Phys. B</i> 13, 2571 (1980) France
6676	A06 Cl ⁺ + NH ₃ ; Cl ⁺ + H ₂ S; Cl ⁺ + O ₂ ; Cl ⁺ + CH ₃ Cl; Cl ⁺ + HD; Cl ⁺ + CCl ₄ ; Cl ⁺ + C ₂ H ₆ ; Cl ⁺ + H ₂ ; Cl ⁺ + CH ₄ ; Cl ⁺ + H ₂ O A13 Cl ⁺ + HF ₂ ; Cl ⁺ + H ₂ S; Cl ⁺ + O ₂ ; Cl ⁺ + CH ₃ Cl; Cl ⁺ + HD; Cl ⁺ + CCl ₄ ; Cl ⁺ + C ₂ H ₆ ; Cl ⁺ + H ₂ ; Cl ⁺ + CH ₄ ; Cl ⁺ + H ₂ O	E	339 Å	Baouf, A.S.M.; Jones, J.L.C.; Lister, D. G.; Birchinshe, K.; Toldy, M. E. Reactions of Cl ⁺ at room temperature. <i>J. Phys. B</i> 13, 2581 (1980) United Kingdom
6677	E06 Underf	T	Underf	Bates, D. R. Classical theory of electron-ion recombination in an ambient gas. <i>J. Phys. E</i> 12, 2227 (1980) United Kingdom
6678	A06 H ⁺ + He A17 H ⁺ + He	T	293 keV	Riverola, B. D.; Piacentini, R. C.; Solin, A.; Belkic, E. The influence of the static potential in high-energy K-shell electron capture collisions. <i>J. Phys. B</i> 13, 2661 (1980) Argentina
6679	E04 e + H ₂ ; e + HD; e + D ₂ ; e + F ₂ ; e + Cl ₂ E09 e + H ₂ ; e + HD; e + D ₂ ; e + F ₂ ; e + Cl ₂ E17 e + H ₂ ; e + HD; e + D ₂ ; e + F ₂ ; e + Cl ₂	T	3-5.5 eV	Drukerov, G.; Podnuev, S. Dissociative attachment of an electron to hydrogen and halogen molecules. <i>J. Phys. B</i> 13, 2611 (1980) Soviet Union
6680	E02 e + H ₂ ⁺	T	Underf	Tahagi, M.; Nakamura, M. Elastic scattering of electrons from p _{1/2} phase shifts, quantum defects and two-electron excited states. <i>J. Phys. B</i> 12, 2615 (1980) Japan
6681	E02 e + He E03 e + He E17 e + He	E	10-54.4 eV	Srivastava, S. R.; Vashovic, L. Elastic and inelastic scattering of electrons by He. <i>J. Phys. E</i> 12, 2622 (1980) United States
6682	E05 e + H freq	T	3-5 Threshold	Golden, L. B.; Sampson, D. H. Ionization from the 4s, 4p, 4d and 4f sublevels of highly charged ions. <i>J. Phys. B</i> 12, 2645 (1980) United States
6683	D03 He ⁺ + Ni; Ar ⁺ + Ni; Ne ⁺ + Ni; Ne ⁺ + CO + Ni; Ar ⁺ + CO + Ni; He ⁺ + CO + Ni D13 He ⁺ + CO + Ni; Ne ⁺ + CO + Ni; Ar ⁺ + CO + Ni	E	1-2 keV	MacDonald, R. J.; Tagliavini, E.; Belland, W. The effect of CO adsorption on ion and photon yields from ion bombardment metal surfaces. <i>Appl. Surf. Sci.</i> 5, 157 (1980) West Germany
6684	D16 D + Fe D17 Y ⁺ + Fe	T	D16 15 keV D17 180 keV	Myers, S. P.; Picraus, S. I.; Stoltz, R. E. Deep deuterium traps in Y-implanted Fe. <i>Appl. Phys. Lett.</i> 37, 168 (1980) United States
6685	A03 H ⁺ + CC	T	0.2-1.0 eV	Gianturco, F. A.; Lamanna, U. T.; Attiello, M. Proton-molecule collisional interactions. Vibrational threshold effects in computed cross sections for CC targets. <i>Chem. Phys. Lett.</i> 71, 45 (1980) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6686	A02 H + Co A06 H + Co A18 H + Co	E	30-520 eV	Pradel, P.; El Poddari, M.; Valence, A. Differential electron attachment and elastic scattering of atomic hydrogen colliding with a cesium vapor target. <i>Chem. Phys. Lett.</i> 71, 55 (1980) France
6687	H06 xhv + Xe	E	Undef	Compton, R. N.; Miller, J. C.; Carter, A. E.; Krutz, P. Resonantly enhanced multiphoton ionization of xenon: photoelectron energy analysis. <i>Chem. Phys. Lett.</i> 71, 87 (1980) United States
6688	H05 hv + LiI	E	312-270 nm	Lehmann, B. E.; Kramer, S. D.; Alliser, S. L.; Hurst, G. S.; Payne, R. G. Photodissociative cross section of LiI. <i>Chem. Phys. Lett.</i> 71, 51 (1980) United States
6689	A19 HgBr + O ₂ ; HgBr + H ₂ ; HgBr + H ₂ ; HgBr + He; HgBr + Ne; HgBr + Ar; HgBr + Kr; HgBr + Xe All HgBr + C ₂ ; HgBr + H ₂ ; HgBr + H ₂ ; HgBr + He; HgBr + Ne; HgBr + Ar; HgBr + Kr; HgBr + Xe	E	335 K	Neivajian, M.; Pangir, M.; Wittig, C. Vibrational relaxation in HgBr(X ¹ Σ _g ⁺). <i>Chem. Phys. Lett.</i> 71, 177 (1980) United States
6690	A11 Bi ₂ * + Bi ₂	E	1040 K	Blondeau, J. M.; Gandra, G.; Corotte, P.; Nesselyn, J. Lifetimes of the A Q(sub u) ⁻ state and quenching cross sections of Bi ₂ . <i>Chem. Phys. Lett.</i> 71, 246 (1980) France
6691	A11 HF* + HF; HF* + CH ₄ ; HF* + CD ₄	E	77 K	Lampert, J. K.; Jursich, G. P.; Criss, F. F. Collisional relaxation of HF(v=3,4) by HF, CH ₄ , and CD ₄ . <i>Chem. Phys. Lett.</i> 71, 258 (1980) United States
6692	A17 Na + CC ₂	T	Undef	Gdiot, S.; Canters, J. L.; Filozov, I. On the anisotropy of the intermolecular potential of the CO ₂ -Na system in the repulsive short-range region. <i>Chem. Phys. Lett.</i> 71, 307 (1980) France
6693	G07 e + Ar; e + C ₂ H ₆ G10 e + Ar	E	0-64 eV	Haylen, A.E.D. Primary ionization coefficients for argon gas in a crossed magnetic field. <i>Int. J. Electron.</i> 48, 129 (1980) United Kingdom
6694	D14 H + Mo	E	20-20000 eV	Okuda, S.; Imoto, S. Formation of large blisters on rolled Mo surface bombarded with hydrogen ions. <i>Jap. J. Appl. Phys.</i> 19, 571 (1980) Japan
6695	D02 D* + Al; He* + Al D15 D* + Al; He* + Al	E	3.5-20 keV	Lee, I. K.; Kominshy, M. Sputtering of annealed aluminum and of sintered aluminum powder (99.995%) under D* and He* bombardment: study of microstructural effects. <i>J. Nucl. Mater.</i> 85, 285 (1980) United States
6696	D02 Review J04 Review	E T	0.1-4000 keV	Krauss, A. R.; Bright, R. B. Energy and size distributions of sputtered particles. <i>J. Nucl. Mater.</i> 89, 229 (1980) United States
6697	D14 e + [Cu + Fe]	E	650 keV	Takayama, T.; Ohnuki, S.; Takahashi, M. The effect of precipitation or void formation in copper-iron alloy during electron irradiation. <i>J. Nucl. Mater.</i> 89, 283 (1980) Japan
6698	D15 e + Zr	E T	Undef	Buckley, S. M.; Bullough, R.; Payne, R. H. The direct observation of irradiation damage in zirconium and its alloys. <i>J. Nucl. Mater.</i> 85, 282 (1980) United Kingdom
6699	D15 n + SS	F	3.1-1.0 MeV	Foster, J. P.; Bolton, A. Correlation of irradiation creep data obtained in fast and thermal neutron spectra with displacement cross-sections. <i>J. Nucl. Mater.</i> 85, 331 (1980) United States
6700	D15 n + SS	T	Undef	Dimelft, R. J.; Kramer, J. H. Modeling the effects of fast-neutron irradiation on the subsequent mechanical behaviour of type 316 stainless steel. <i>J. Nucl. Mater.</i> 89, 328 (1980) United States

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6701	D14 n + SS	T	Undef	Ghoniem, M. M. The early stages of void and interstitial loop evolution in pulsed fusion reactors. J. Nucl. Mater. 89, 359 (1980) United States
6702	D15 He ⁺ + Be D16 He ⁺ + Be	E	22 keV	Ross, G.; Terrault, B. Compage de surface et profil de teneur en gaz piégé dans le beryllium sous irradiation d'He ⁺ de 22 keV. J. Nucl. Mater. 89, 263 (1980) Canada
6703	D14 He ⁺ + Cu D15 He ⁺ + Cu D16 He ⁺ + Cu	E	22 keV	Terrault, B.; Veilleux, G. Compage de surface et profil de teneur en gaz piégé dans le cuivre sous irradiation d'He ⁺ de 22 keV. J. Nucl. Mater. 89, 352 (1980) Canada
6704	D14 e + Zr; n + Zr	T	1 MeV	Bullough, R.; Wood, R. M. Mechanisms of radiation induced creep and growth. J. Nucl. Mater. 50, 1 (1980) United Kingdom
6705	D14 Undef D15 Undef	T	Undef	Scattergood, P. G. Irradiation-enhanced mass flux and dislocation interactions. J. Nucl. Mater. 50, 22 (1980) United States
6706	D1 Undef D15 Undef	T	Undef	Nichols, F. A. Bias factors for radiation creep, growth and swelling. J. Nucl. Mater. 90, 25 (1980) United States
6707	D14 e + Zr D15 e + Zr	T	Undef	Bullough, R.; Hayns, M. R.; Wood, R. M. Sink strengths for thin film surfaces and grain boundaries. J. Nucl. Mater. 90, 44 (1980) United Kingdom
6708	D15 Undef	T	Undef	Manser, L. E.; Felley, T. C. Irradiation creep by dislocation glide enabled by preferred absorption of point defects - theory and experiment. J. Nucl. Mater. 90, 60 (1980) United States
6709	D15 n + SS	T	Undef	Chin, B. A.; Straalsund, J. L.; Gilbert, L. H. Development of the climb induced glide concept to describe in-reactor creep of fcc metals. J. Nucl. Mater. 90, 68 (1980) United States
6710	D15 n + Zr	T	Undef	Adams, D. L.; Clevering, G. S.; Birb, J. F. An upper-bound evaluation of interactive creep and growth in textured Zircaloy. J. Nucl. Mater. 50, 75 (1980) United States
6711	D14 Undef D15 Undef	T	Undef	Savino, E. J.; Laciens, C. L. Radiation induced creep and growth of zirconium alloys. J. Nucl. Mater. 50, 89 (1980) Argentina
6712	D14 n + Zr D15 n + Zr	T	1 MeV	MacEwen, S. R.; Carpenter, G. J. C. Calculations of irradiation growth in zirconium. J. Nucl. Mater. 50, 108 (1980) Canada
6713	D14 Undef	T	Undef	Guroi, H. A statistical theory of void growth and time-lag. J. Nucl. Mater. 50, 132 (1980) United States
6714	D15 n + Ni	T	Undef	Volobuev, A. V.; Gann, V. V.; Bereznyak, F. A.; Kirzhik, N. P. Investigation of pulsed irradiation effects on interstitial loop growth in metals. J. Nucl. Mater. 50, 144 (1980) Soviet Union
6715	D15 n + UO ₂ ; n + UC	T	Undef	Kirihara, T.; Otsu, H.; Nakae, H. Transient induced creep for irradiated fuels. J. Nucl. Mater. 50, 146 (1980) Japan
6716	D15 Undef	T	Undef	Biedersich, H.; MacEwen, S. R. Isotope effects on radiation-induced creep and growth. J. Nucl. Mater. 90, 127 (1980) United States

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6717	D15 n + Zr; n + [Zr + Nb]	E	1 MeV	Buckley, S. H.; Maathorpe, S. P. Dislocation loop nucleation and growth in zirconium-2.5 wt% niobium alloy during 1 MeV electron irradiation. J. Nucl. Mater. 90, 165 (1980) United Kingdom
6718	D15 n + Ni; n + Fe	T	1 MeV	Wolfer, W. G. Correlation of radiation creep theory with experimental evidence. J. Nucl. Mater. 90, 171 (1980) United States
6719	D14 n + Zr D15 n + Zr	T	1 MeV	Mott, R. A. Microstructure dependence of irradiation creep and growth of zirconium alloys. J. Nucl. Mater. 90, 153 (1980) Canada
6720	D14 n + SS D15 n + SS	E	1 MeV	Lenthwaite, G. B.; Mossdale, D. The effects of temperature and dose-rate variations on the creep of austenitic stainless steels in the Scouters fast reactor. J. Nucl. Mater. 90, 205 (1980) United Kingdom
6721	D14 n + SS; n + Inconel; n + Zircaloy; n + Ti; n + Zr; n + Nb; n + Zr ₂ Al D15 n + SS; n + Inconel; n + Zircaloy; n + Ti; n + Zr; n + Nb; n + Zr ₂ Al	E	1 MeV	Causey, A. R.; Carpenter, G. J. C.; MacEwen, S. R. In-reactor stress relaxation of selected metals and alloys at low temperatures. J. Nucl. Mater. 90, 211 (1980) Canada
6722	D14 n + [Zr + Nb] D15 n + [Zr + Nb]	E	1 MeV	Goncharov, V. V.; Platonov, P. A.; Ivanov, A. M.; Frolov, I. A. Investigation of in-reactor creep and irradiation growth of zirconium-2.5 wt% niobium channel tubes. J. Nucl. Mater. 90, 224 (1980) Soviet Union
6723	D14 n + UO ₂ ; n + UC D15 n + UO ₂ ; n + UC	E	1 MeV	Muller-Lyde, I.; Dierckx, W. A assessment of the irradiation-induced creep of mixed carbide nuclear fuel. J. Nucl. Mater. 90, 232 (1980) Belgium
6724	D15 n + Zr; n + [Zr + Nb]	E	Unif	Murgatroyd, R. A.; Rogerson, A. An assessment of the influence of microstructure and test conditions on the irradiation growth phenomena in zirconium. J. Nucl. Mater. 90, 240 (1980) United Kingdom
6725	D14 n + Zircaloy D15 n + Zircaloy	F	1 MeV	Marbott, J. E.; Marbott, F. Shape and volume changes during irradiation growth of Zircaloy-2. J. Nucl. Mater. 90, 245 (1980) United Kingdom
6726	D14 n + [Zr + Al] D15 n + [Zr + Al]	F	1 MeV	Faulker, D.; Fostinger, M. E.; Styles, R. L. The effects of neutron irradiation on the dimensional stability, structure and mechanical properties of zirconium-aluminum alloys. J. Nucl. Mater. 90, 251 (1980) Canada
6727	D15 D ⁺ + SE	F	5 MeV	Schuelger, C.; Jung, P.; Ullmaier, H. Irradiation creep in deuterium bombarded stainless steel. J. Nucl. Mater. 90, 261 (1980) West Germany
6728	D15 He ⁺ + SE	F	60 MeV	Reilly, T. C.; Aubin, R. L.; Sternin, K. H. Irradiation creep under 40 MeV alpha irradiation. J. Nucl. Mater. 90, 271 (1980) United States
6729	D15 n + Ni	T	1 MeV	Simons, E. P. Irradiation creep in transient irradiation environments. J. Nucl. Mater. 90, 282 (1980) United States
6730	D15 D ⁺ + Ni	F	17 MeV	Maneger, C. M.; Brinham, J. L.; Slachem, L. P. Creep in nickel bombarded with 17 MeV electrons. J. Nucl. Mater. 90, 294 (1980) United States
6731	D15 H ⁺ + U	F	3.5 MeV	Peterson, R. J. Irradiation growth during fission fragment and proton bombardment of uranium. J. Nucl. Mater. 90, 297 (1980) United Kingdom

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6732	D14 $e + Zr$ D15 $e + Zr$	E	1 MeV	Faulkner, E.; Woo, C. M. Void swelling in zirconium. <i>J. Nucl. Mater.</i> 90, 307 (1980) Canada
6733	D15 $H^+ + Cu$	E	15 keV	Johnson, P. B.; Pacey, D. J. hydrogen gas-bubble structure in proton-irradiated copper at 200 K. <i>J. Nucl. Mater.</i> 91, 41 (1980) New Zealand
6734	D15 $H^+ + C$; $D^+ + C$; $C^+ + C$	E	70-100 keV	Bacon, D. J.; Rao, A. S. The structure of graphite bombarded with light, gaseous ions. <i>J. Nucl. Mater.</i> 91, 170 (1980) United Kingdom
6735	D02 $H + C$	E	400-1200 K	Abe, T.; Obara, K.; Murahashi, Y. Conditioning of graphite surface by atomic hydrogen. <i>J. Nucl. Mater.</i> 91, 223 (1980) Japan
6736	D16 $H_2^+ + Ti$	E	10 keV	Pontus, A. E.; Wilson, R. L.; Graulich, F.; Hoggarth, L. G. The nucleation and growth of $11B_2$ in deuterium-implanted titanium. <i>J. Nucl. Mater.</i> 91, 243 (1980) United States
6737	A14 $OH + H_2$	E	296 K	Sworski, T. J.; Hochanadel, C. J.; Eggen, F. J. Flash photolysis of H_2O vapor in CH_4 . H and OH yields and rate constants for CH_4 reactions with H and OH . <i>J. Phys. Chem.</i> 84, 129 (1980) United States
6738	A13 $H_2O^+ + H_2C$; $H_2O^+ + C_2D$	E	0.60-5.0 eV	Ryan, P. W.; Blakley, C. R.; Ventel, M. L.; Futrell, J. H. Crossed-beam study of the reaction $H_2O^+(B_2\Sigma, H_2O)D_2+C^+$. <i>J. Phys. Chem.</i> 84, 561 (1980) United States
6739	A14 $O + HO_2$	E	298 K	Lii, F.-R.; Sauer, M. C., Jr.; Gordon, S. Rate constant of the reaction of $O(^3P)$ with HO_2 . <i>J. Phys. Chem.</i> 84, 817 (1980) United States
6740	A14 $OH + HC_2$	E	328 K	Lii, F.-R.; Gorse, R. A., Jr.; Sauer, M. C., Jr.; Gordon, S. Rate constant for the reaction of OH with HO_2 . <i>J. Phys. Chem.</i> 84, 815 (1980) United States
6741	A14 $Cl + Cl_2O$	E	298 K	Ray, G. W.; Kayser, L. F.; Watson, E. T. Kinetics study of the $Cl(^2P) + Cl_2O + Cl_2 + ClC$ reaction at 298 K. <i>J. Phys. Chem.</i> 84, 1674 (1980) United States
6742	A14 $H + Cl_2$	T	250-1000 K	Garrett, B. C.; Truhlar, D. G.; Gray, R. L. Application of variational transition-state theory and the unified statistical model to $H + Cl_2 + HCl + Cl$. <i>J. Phys. Chem.</i> 84, 1749 (1980) United States
6743	A14 $F + HO + He$; $F_2 + HO + HO$	E	195-288 K	Kim, P.; MacLennan, D. I.; Valance, b. G. ESR spectroscopic studies of the kinetics of the $F + H_2 + H$ and $F_2 + HO$ reactions. <i>J. Phys. Chem.</i> 84, 1806 (1980) United States
6744	H10 $H_2 + HBr + DBr$	E	25.17 Å	O'Leary, T. J. Photolysis of hydrogen bromide-deuterium bromide mixtures at 2537 Å. <i>J. Phys. Chem.</i> 84, 2316 (1980) United States
6745	J01 Review J03 Review	E	Undef	Baulch, D. L.; Cox, R. A.; Hampson, F. F., Jr.; Kerr, J. A.; Troe, J.; Watson, R. T. Evaluated kinetic and photochemical data for atmospheric chemistry. <i>J. Phys. Chem. Ref. Data</i> 9, 295 (1980) United States
6746	A17 H_2	E T	Undef	Poules, J. G.; Core, J. C.; Case, E. K. The structural second virial coefficient, the intermolecular potential for nitrogen and the magnetic scattering for the oxygen molecule. <i>Mol. Phys.</i> 40, 153 (1980) United Kingdom
6747	A14 $OH + Br_2$	E	0.2 eV	Valtman, I.; Eurnin, A.; Smith, E. J.; Grice, K. Reactive scattering of hydroxyl radicals $OH + Br_2$. <i>Mol. Phys.</i> 40, 213 (1980) United Kingdom

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5748	C02 H ⁺ + Be	F	20-120 keV	Brunner, K.; Mink, M.; Roth, M. Stopping power for H ⁺ in Be (20-120 keV). Nucl. Instrum. Methods 173, 387 (1980) West Germany
5749	D12 e + Pb; e + Cu	E	15-33 MeV	Tonleau, Y. Angular distributions of emitted X rays from thick 70° sector-type Pb and Cu targets bombarded by 15-33 Mev electrons. Nucl. Instrum. Methods 173, 371 (1980) Japan
5750	C02 H ⁺ + Au C05 He ²⁺ + H ₂ ; He ²⁺ + O ₂ ; He ²⁺ + H ₂ O He ²⁺ + H ₂ O	T	0.01-1.0 MeV	Young, T. R.; Watt, D. E. Multiple scattering corrections to energy loss measurements for slow ions. Nucl. Instrum. Methods 173, 375 (1980) United Kingdom
5751	D16 H ⁺ + Be; He ⁺ + Be; Li ⁺ + Be; B ⁺ + Be; Ne ⁺ + Be; Al ⁺ + Be; Ti ⁺ + Be; V ⁺ + Be; Cr ⁺ + Be; Co ⁺ + Be; Au ⁺ + Be; Mo ⁺ + Be; Sb ⁺ + Be; I ⁺ + Be; Xe ⁺ + Be; Cs ⁺ + Be; Ba ⁺ + Be; Cd ⁺ + Be; Ta ⁺ + Be; W ⁺ + Be; Pt ⁺ + Be; U ⁺ + Be; Th ⁺ + Be; U ⁺ + Be	E	7-200 keV	Visenden, R.; Kaufmann, E. H.; Goeger, J. H. Impurity lattice location in ion-implanted teryllium: measurements and systematics. Phys. Rev. B 22, 63 (1980) United States
5752	D04 H ⁺ + Al; D ⁺ + Al; H ₂ ⁺ + Al; D ₂ ⁺ + Al; He ⁺ + Al; B ⁺ + Al; C ⁺ + Al; N ⁺ + Al; O ⁺ + Al; F ⁺ + Al; Ne ⁺ + Al; Si ⁺ + Al; Cl ⁺ + Al; Ar ⁺ + Al; Kr ⁺ + Al; Xe ⁺ + Al	E	1.2-50 keV	Alonso, E. V.; Boraglole, R. A.; Ferron, J.; Jahan, M. P.; Olive-Fioric, A. Z ₁ dependence of ion-induced electron emission from aluminum. Phys. Rev. B 22, 80 (1980) Argentina
5753	C67 C117 ⁺ + Au; O ⁺ + Au; C117 ⁺ + C; O ⁺ + C C08 C117 ⁺ + Au; O ⁺ + Au; C117 ⁺ + C; O ⁺ + C	T	10-200 MeV	Jachson, S. A.; Pletzman, P. M. Electron pickup from a free-electron gas by channelled heavy ions. Phys. Rev. B 22, 88 (1980) United States
5754	C02 Under C08 Under	T	Under	Fathak, A. P. Systematic study of channeling stopping-power oscillations for low-velocity heavy ions. Phys. Rev. B 22, 96 (1980) India
5755	A17 LiF; LiCl; LiBr; LiI; NaF; NaCl; NaBr; NaI; KF; KCl; KBr; KI; RbF; RbCl; RbBr; RbI; CsF; CsCl; CsBr; CsI	T	Under	Shanker, ...; Agrawal, M. B. Electronic polarization, ionic radii, and repulsive potential parameters for diatomic alkali halide molecules. Can. J. Phys. 58, 550 (1980) India
5756	A03 Rb + CH ₄ ; Fb + CH ₂ D ₂ ; Rb + CD ₄	E	300-650 K	Phaneuf, R. A.; Krauss, L. D ² F _{3/2} going to or coming from D ² F _{3/2} excitation transfer in rubidium induced in collisions with CH ₄ , CH ₂ D ₂ , and CD ₄ molecules. Can. J. Phys. 58, 1047 (1980) Canada
5757	D15 e + Cu; n + Cu	F	1.0-14 MeV	Coldstone, J. A.; Parkin, D. M.; Slegson, M. R. A comparison of initial damage rates due to electron and neutron irradiation measured by internal friction techniques: I. Flux and temperature dependencies; scaling law. J. Appl. Phys. 51, 2824 (1980) United States
5758	D15 e + Cu; e + Au; n + Cu; n + Au	F	1.0-23.4 MeV	Coldstone, J. A.; Parkin, D. M.; Slegson, M. R. A comparison of initial damage rates due to electron and neutron irradiations measured by internal friction techniques: II. Neutron energy dependence. J. Appl. Phys. 51, 3690 (1980) United States
5759	C04 Li ⁺ + Si; Be ⁺ + Si; B ⁺ + Si C04 Li ⁺ + Si; Be ⁺ + Si; B ⁺ + Si	F	10 ⁴ keV	Comas, J.; Wilson, R. G. Channeling and random equivalent depth distributions of 120 keV Li, Be, and B implanted in Si. J. Appl. Phys. 51, 3667 (1980) United States
5760	C04 e + Si; e + Si	T	Under	Rhoifeto, E.; Knight, T. Radiation spectra and angular distribution of emitted quanta for planar channelled particles: radiation of single particle. J. Appl. Phys. 51, 3862 (1980) United States

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6761	H92 $h\nu + Al; h\nu + In; h\nu + Tl$	E	113-145 nm	Krylov, B. E.; Rozlov, M. G. Absorption spectra of atces in the 130-150 nm region; constants of the $s^2p-s^2p(2P)$ np transitions. Comparison with aluminum and thallium spectra. Opt. Spectrosc. 47, 575 (1975) Soviet Union
6762	A03 $He^+ + He$	E	300-1400 K	Kostenko, V. A.; Tolmachev, Y. A. Dependence of the rate constant of $He(2^1S_g)-He$ inelastic collisions on the temperature of the gas. Opt. Spectrosc. 47, 582 (1975) Soviet Union
6763	A12 $N_2 + He$	E	300 K	Kochubei, S. A.; Chapowski, P. L. Broadening and shift of lines of the 1^- system of nitrogen bands. Opt. Spectrosc. 47, 588 (1975) Soviet Union
6764	A11 $SO_2^+ + SO_2$	E	300 K	Slobodskaya, P. V.; Pityn, E. A. Study of the vibrational relaxation process in the SO_2 molecule by the phase spectrophone method. Opt. Spectrosc. 47, 591 (1975) Soviet Union
6765	E12 $e^+ + NaCl; e^+ + KCl$	T	Unif	Ramesam, S.; Nagarajan, T.; Jayalishai, K. Annihilation of positrons in A-centres of alkali halides. Physica B+C 100, 207 (1980) India
6766	G02 $He + Kr$	E	300-1300 K	Reus, K. W.; Zwikhals, C. J.; Salt, J. A. Measurement of diffusion coefficients via diffusion in flowing gas: I. Method. Physica B+C 100, 221 (1980) The Netherlands
6767	G02 $He + Ar; He + Kr; He + Xe; Ne + He; Ne + Ar; Ne + Xe; Ne + Ne; Kr + Ne; Kr + Ar; Kr + Xe; Xe + Ar$	E	300-1300 K	Zwikhals, C. J.; Reus, K. W. Measurement of diffusion coefficients via diffusion in flowing gas: II. Results. Physica B+C 100, 231 (1980) The Netherlands
6768	E02 $e + HCl; e + LiF; e + H_2O$ E03 $e + HCl; e + LiF; e + H_2O$ E17 $e + HCl; e + LiF; e + H_2O$	T	3.54-5.4 eV	Fabrikant, I. I. Differential cross sections for electron scattering by polar molecules. Elastic scattering and vibrational excitation. Phys. Lett. 77A, 421 (1980) Soviet Union
6769	C06 $Hg^{2+} + C$ C07 $Hg^{2+} + C$	E	640 keV	Buchet, J. P.; Buchet-Faulizac, P. L.; Ceyzerlat, F. Beam-foil spectroscopy of Hg III-V between 100 and 400 Å. Phys. Lett. 77A, 424 (1980) France
6770	A19 $Cu + Cu$	E	80-120 MeV	Shima, K.; Uetani, K.; Mikumo, T.; Kano, H.; Tajishi, Y.; Yamanouchi, P.; Yamaguchi, H.; Iguchi, Y. Target thickness dependence of Au x-ray energy shifts in 80 and 120 MeV Cu + Cu collisions. Phys. Lett. 77A, 427 (1980) Japan
6771	H04 $3h\nu + H$	T	210-1900 Å	Kiersfeld, S.; Paquet, A. Pade-Sturmian approach to multi-photon ionization in hydrogenlike atces. Phys. Lett. 78A, 40 (1980) France
6772	E05 $e + O^{2+}; e + Fe^{22+}$	T	0.12-40 keV	Hahn, Y. Auger contributions to electron impact ionization of Li-like ions. Phys. Lett. 78A, 27 (1980) United States
6773	C06 $Mo^+ + C$ C07 $Mo^+ + C$	E	22-200 MeV	Johnson, B. M.; Jones, R. W.; Cecchi, J. L.; Kruse, L. M. ELV spectra of Mo XIV to Mo XIX. Phys. Lett. 78A, 61 (1980) United States
6774	D17 $C^+ + Kr$	F	65 MeV	Kiura, K.; Mochizuki, K.; Fujisawa, T.; Isomura, P. Measurement of the decay and time-resolved spectra of the emission from sigma-excited Kr in the nanosecond range, produced by heavy-ion irradiation. Phys. Lett. 78A, 108 (1980) Japan
6775	E03 $e + He^+$	T	Unif	Wahid, S.; Callaway, J. Scattering of electrons from He^+ targets for energies up to the $n = 3$ threshold. Phys. Lett. 78A, 137 (1980) United States

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6776	A12 He + He	E	77-273 K	Malvern, A. R.; Pinder, A. C.; Stacey, D. H.; Thompson, R. C. Self-broadening in singlet spectral lines of helium. <i>Proc. R. Soc. London Ser. A</i> 371, 259 (1966) United Kingdom
6777	C99 Review L04 Review	E T	Undef	Wedell, N. Electromagnetic radiation of relativistic positrons and electrons during axial and planar channelling in monocrystals. <i>Phys. Status Solidi B</i> 59, 11 (1980) East Germany
6778	C09 Undef	T	Undef	Baryshevskii, V. G.; Dubovskaya, I. V.; Grubich, A. C. On photon production by channelled electrons (positrons). <i>Phys. Status Solidi B</i> 59, 205 (1980) Soviet Union
6779	C02 He ⁺ + Si; H ⁺ + Si C08 He ⁺ + Si; H ⁺ + Si	T	0-10 MeV	Burenkov, A. F.; Komarov, F. F.; Kusanov, R. A. Energy loss of charged particles in crystals. <i>Phys. Status Solidi B</i> 59, 417 (1980) Soviet Union
6780	D12 e + RbI; He ⁺ + RbI	E	1.5-2.0 MeV	Mitsunuma, Y.; Itoh, M. Luminescence of RbI above liquid nitrogen temperature. <i>Phys. Status Solidi B</i> 59, 429 (1980) Japan
6781	C02 PERT ⁺ + C	T	1 a.u.	Cruz, S. A.; Vargas, C.; Brice, E. A. Critical analysis of the modified Firsov model sensitivity to the choice of atomic wavefunctions. <i>Radiat. Eff. Lett.</i> 43, 75 (1979) Mexico
6782	C06 Undef	T	Undef	Morgan, D. V. A simple model for planar channelling calculations. <i>Radiat. Eff. Lett.</i> 42, 57 (1975) United Kingdom
6783	D15 n + [Fe + Co]	E	1 MeV	Riviere, J. P.; Dinnat, J. L. Damage rates in neutron irradiated FeCo and FeCo2V ordered and disordered alloys. <i>Radiat. Eff. Lett.</i> 42, 161 (1975) France
6784	D02 Undef	T	Undef	Collins, R. Note on the time constant for preferential binary sputtering. <i>Radiat. Eff. Lett.</i> 42, 111 (1975) United Kingdom
6785	D15 He ⁺ + C	E	2 MeV	Stumpe, H.; Veprek, S.; Webb, A. F. A note on the depth dependence and current density effects upon the radiation damage in graphite. <i>Radiat. Eff. Lett.</i> 42, 133 (1979) Switzerland
6786	C02 Undef	T	Undef	Komarov, F. F. Comment on critical analysis of the modified Firsov model, sensitivity to the choice of atomic wave functions by S. A. Cruz, C. Vargas and E. A. Brice. <i>Radiat. Eff. Lett.</i> 42, 125 (1975) Denmark
6787	C02 H ⁺ + H; H ⁺ + H ₂	T	25 keV	Brice, D. K.; Cruz, S. A. Electronic stopping power; Bragg's rule and Firsov's theory. <i>Radiat. Eff. Lett.</i> 43, 141 (1975) United States
6788	D02 Ar ⁺ + Ag	E	0-6 keV	Lee, H. Y. Temperature dependence in sputtering. <i>Radiat. Eff. Lett.</i> 43, 161 (1979) Japan
6789	A03 Zn ⁺ + Ar D03 Ar ⁺ + Zn	E	50 keV	Snowden, K. J.; Carter, G.; Armour, E. G.; Andersen, B.; Vejse, E. Observed equivalence of arc, sputtering, and gas phase single collision relative populations for some 2nd levels. <i>Radiat. Eff. Lett.</i> 43, 201 (1975) United Kingdom
6790	A03 Undef	E T	Undef	Snowden, K. J.; Andersen, B.; Vejse, E. Conditions for the indistinguishability of thermal equilibrium and single atomic collision relative level populations. <i>Radiat. Eff. Lett.</i> 43, 205 (1975) United Kingdom
6791	C09 H ⁺ + Si	T	1-10 keV	Kuhel, E.; Wedell, N. The oscillatory behavior of backscattering spectra from small depths in planar channelling. <i>Radiat. Eff. Lett.</i> 42, 253 (1975) East Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6792	D02 Undef	T	Undef	Williams, R.M.B. The intensity of sputtered atoms from a half-space and its dependence on the angle of incidence. Radiat. Eff. Lett. 27, 3 (1980) United Kingdom
6793	D02 $\text{H}^+ + \text{Ni}$; $\text{He}^+ + \text{Ni}$; $\text{N}^+ + \text{Ni}$; $\text{Ar}^+ + \text{Ni}$; $\text{Xe}^+ + \text{Ni}$	T	50-50000 eV	Matsunami, N.; Yamazawa, Y.; Itihara, Y.; Itoh, R.; Kazumata, Y.; Miyagawa, S.; Morita, K.; Schinzawa, S. A semiclassical formula for the energy dependence of the sputtering yield. Radiat. Eff. Lett. 57, 15 (1980) Japan
6794	C04 $\text{He}^+ + \text{Si}$	E	40 ⁰ -1000 keV	Anttila, A.; Hirvonen, J.; Koutala, R. Recoil ranges of 400-1000 keV He^+ ions in Si measured via blistering. Radiat. Eff. Lett. 57, 41 (1980) Finland
6795	D15 $\text{Cu}^+ + \text{Cu}$	E	40 keV	van Wyk, G. N. The dependence of ion bombardment induced preferential orientation on the direction of the ion beam. Radiat. Eff. Lett. 57, 45 (1980) Australia
6796	D12 $\alpha + \text{Cu}$	T	Undef	Melotnik, N. I. Hot cathodoluminescence of copper. Sov. Phys. Solid State 22, 152 (1980) Soviet Union
6797	D06 $\alpha + \text{Be}$; $\alpha + \text{C}$; $\alpha + \text{Al}$; $\alpha + \text{Ti}$; $\alpha + \text{Fe}$; $\alpha + \text{Cu}$; $\alpha + \text{Nb}$; $\alpha + \text{Ag}$; $\alpha + \text{Ta}$; $\alpha + \text{Au}$; $\alpha + \text{U}$	E	15-60 keV	Neubert, G.; Nagaschewski, S. Backscattering coefficient measurements of 15 to 60 keV electrons for solids at various angles of incidence. Phys. Status Solidi A 59, 3E (1980) East Germany
6798	D13 $\text{D}_2^+ + \text{Pd}$; $\text{D}_2^+ + \text{Cu}$; $\text{D}_2^+ + \text{Ni}$	E	300 K	Couss, G.; David, R.; Schumacher, R.-J. Fast cationic molecules desorbing from metals. Surface Sci. 56, L210 (1980) West Germany
6799	D07 $\text{He} + \text{Ag}$	T	300 K	Borher, J. A.; Elen, D. R.; Merrill, B. P. Classical surface scattering computations: rainbow and energy exchange. Surface Sci. 95, 15 (1980) United States
6800	D03 $\text{Ar}^+ + \text{Cu} + [\text{Pd} + \text{Ag}]$ D11 $\text{Cu} + [\text{Pd} + \text{Ag}]$	E	D03 3 keV D11 300 K	Slusser, G. J.; Vinograd, N. SIMS/XPS study of CO chemisorption on polycrystalline Pd, Ag and a Pd/Ag alloy. Surface Sci. 95, 52 (1980) United States
6801	D07 $\text{He} + \text{Cu}$; $\text{He} + \text{Cu}$	E	300 K	Lapujolade, J.; Lefay, Y.; Arnaud, C. The thermal attenuation of coherent elastic scattering of noble gas from metal surfaces. Surface Sci. 56, 187 (1980) France
6802	D11 $\text{CO} + \text{Pt}$	E	300 K	Crossley, A.; King, D. A. Adsorbate island dimensions and interaction energies from vibrational spectra: CO on Pt(001) and Pt(111). Surface Sci. 95, 121 (1980) United Kingdom
6803	D11 $\text{O}_2 + \text{Ni}$	E	330 K	Smeets, R. G.; Tromp, R. N.; van der Veen, J. F.; Saris, F. V. A quantitative ion-scattering study of the Ni(110) surface during the early stages of oxidation. Surface Sci. 95, 186 (1980) The Netherlands
6804	D11 $\text{I}_2 + \text{V}$	E	300 K	Rawlings, L. J.; Price, G. G.; Nephine, B. J. A LEIS and AES study of the adsorption of iodine on W(100) at room temperature. Surface Sci. 91, 245 (1980) United Kingdom
6805	A10 $\text{He} + \text{CCl}_2$	T	100-1000 K	Billing, G. D. Semiclassical calculation of energy transfer in polyatomic molecules: II. Rate constants for energy transfer in $\text{He} + \text{CCl}_2$. Chem. Phys. 49, 285 (1980) Dordrecht
6806	A14 $\text{C}_2\text{O} + \text{NO}$; $\text{C}_2\text{O} + \text{O}_2$; $\text{C}_2\text{O} + \text{N}_2$; $\text{C}_2\text{O} + \text{CO}_2$	E	298 K	Bonnally, V. R.; Pitts, W. N.; McDonald, J. R. $\text{C}_2\text{O}(^4\Pi^-)$: absolute reaction rates measured by laser induced fluorescence. Chem. Phys. 49, 285 (1980) United States
6807	D13 $\text{H}_2 + \text{Nb}$	T	300-700 K	Johnson, R. A.; Bienen, G. J. Kinetics of two-state chemisorption: hydrogen on niobium. Phys. Rev. B 21, 3137 (1980) United States

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6888	A95 $O^{+} + He; C^{+} + He; C^{+} + He; C^{+} + He$	E	15-100 keV/amu	Dayfield, J. E.; Gardner, L. B.; Fulbich, Y. Z.; Seidler, T. K.; Sharma, S. D. Charge exchange measurements in helium using a double tandem accelerator-accelerator source of low energy highly stripped oxygen ions. <i>Rev. Sci. Instrum.</i> 51, 651 (1980) United States
6889	H96 $h\nu + Ca^{+}$	T	37-700 eV	Koch, P. P.; Micronyous, M.; van Rapp, A. F. J.; Reith, B. Direct observation of the interaction between Rydberg atoms and blackbody radiation. <i>Phys. Lett.</i> 75A, 273 (1980) East Germany
6910	D92 Review	T	0.1-19.7 keV	Sigmund, P. Scattering of single- and multiple-component materials. <i>J. Vac. Sci. Technol.</i> 17, 356 (1980) Denmark
6911	CC4 Under	T	0.1-19.7 keV/amu	Infrate, G. J.; Ziegler, J. F.; Kass, M. J. Application of Lindhard's dielectric theory to the stopping of ions in solids. <i>J. Appl. Phys.</i> 51, 524 (1980) United States
6912	A13 $H_2O^{+} + NO_2; H_2O^{+} + C_2; H_2O^{+} + NO; H_2O^{+} + C_2H_6; H_2O^{+} + CO; H_2O^{+} + CH_4; H_2O^{+} + H_2$	E	0.4-2.2 eV	Dolan, I.; Lindinger, W.; Buey, L.; Fehey, E. W.; Fehsenfeld, F. C.; Albritton, D. L. Rate constants for the reactions of H_2O^{+} with $Al_2, C_2, NO, C_2H_6, CO, CH_4$, and H_2 measured at relative kinetic energies 0.04-2 eV. <i>Chem. Phys. Lett.</i> 72, 67 (1980) United States
6913	A93 $CO + N_2$	T	40-77 K	Louney, J. M. Sudden approximation relations between ionization cross sections for the collision of the diatomic molecules. <i>Chem. Phys. Lett.</i> 72, 182 (1980) France
6914	A14 $Cl + Cl$	E	96-2000 K	Belokhvintskij, N. S.; Kurnositskiy, L. P.; Shpak, R. T. The kinetics of chlorine atom photorecombination. <i>Chem. Phys. Lett.</i> 72, 199 (1980) Soviet Union
6915	E12 $e^{+} + e$	T	Under	Oliva, J. Inelastic positron scattering in an electron gas. <i>Phys. Rev. B</i> 21, 4985 (1980) United States
6916	C92 $e^{+} + Al$ C94 $e^{+} + Al$	T	0.23-230 eV	Oliva, J. New calculational scheme for particle range and an application to a positron entering a metal. <i>Phys. Rev. B</i> 21, 4918 (1980) United States
6917	D12 $e + H_2 + K$	E	20 eV	Adams, A.; Randall, R. W.; Best, M. F.; Brails, M. F.; Hanson, P. K.; Patil, M. Luminescence and nonradiative energy transfer to surfaces. <i>Phys. Rev. B</i> 21, 2822 (1980) United States
6918	D13 $e + F + U; e + O + V; e + Cl + V; h\nu + F + U; h\nu + O + V; h\nu + Cl + V$	E	25-40 eV	Woodruff, D. P.; Trano, M. P.; Farrell, M. H.; Smith, R. V.; Johnson, P. D.; King, S. P.; Sander, R. L.; Moryet, Z. Photon- and electron-stimulated desorption from a metal surface. <i>Phys. Rev. B</i> 21, 2842 (1980) United States
6919	D91 $H^{+} + Al$	T	0.1-10 MeV	Echenique, P. M.; Ritchie, R. H. Wake-binding energies in the random-phase approximation. <i>Phys. Rev. B</i> 21, 5254 (1980) United Kingdom
6920	D91 $P^{+} + Sn + C$ D16 $P^{+} + Sn + C$	T	100 keV	Botogonov, M. A.; Biglov, P. U.; Postikov, V. I.; Rumokhov, R. A. Theory of implantation recoil atoms. <i>Phys. Status Solidi A</i> 59, 835 (1980) Soviet Union
6921	H92 $h\nu + Co; h\nu + Sr$ H94 $h\nu + Co; h\nu + Sr$	E	2722-1366 Å	Connerode, J. P.; Belg, P. P.; Gertsen, B. A. J.; Hameca, G. M. Potential barrier effects on double excitation series of Co I and Sr I. <i>Proc. R. Soc. London Ser. A</i> 371, 296 (1980) United Kingdom
6922	D92 $Ar^{+} + Cu$ D97 $Ar^{+} + Cu$	T	1-40 keV	Zhuiga, V. I. Ejection of fast recoils under ion bombardment of crystals. <i>Radiat. Eff.</i> 57, 1 (1980) Soviet Union

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
6823	C02 Under	T	Under	Williams, R.H.B. Stowing down approximations to the Boltzmann equation: I. Applications to energy deposition and ion implantation. Radiat. Eff. 51, 11 (1980) United Kingdom
6824	C04 $\text{Xe}^+ + \text{Si}$; $\text{Al}^+ + \text{Si}$	T	25-100 keV	Rautala, M. Monte-Carlo calculation of low energy ion collection in the presence of sputtering, range shortening, knock-on and diffusion. Radiat. Eff. 51, 35 (1980) Finland
6825	D01 $\text{Xe}^+ + \text{Au}$; $\text{Xe}^+ + \text{RbBr}$	T	6 keV	Sandars, J. B. Time evolution of collision induced processes. Radiat. Eff. 51, 43 (1980) The Netherlands
6826	D15 $\alpha + [\text{Al} + \text{Si}]$	E	1 MeV	Tjibbe, E.; Wilkes, P.; Kucinski, S. L. Irradiation-induced precipitation of Al-Si alloys in the HVEM. Radiat. Eff. 51, 45 (1980) United States
6827	D15 $\alpha + \text{Hg}$	E	2 MeV	Syme, E. A.; Jackson, J. J.; Lohr, V. B. Defect production and recovery of electron irradiated mercury. Radiat. Eff. 51, 69 (1980) United States
6828	D03 $\text{Ar}^+ + \text{Ge}$; $\text{Kr}^+ + \text{Ge}$ D04 $\text{Ar}^+ + \text{Ge}$; $\text{Kr}^+ + \text{Ge}$	E	35-70 keV	Lebedev, S. Y.; Gromovskiy, V. V. Relaxation effect of ion-ion and ion-electron collisions of germanium monocrystal. Radiat. Eff. 51, 55 (1980) Soviet Union
6829	C04 $\text{P}^+ + \text{Si}$; $\text{In}^+ + \text{Si}$; $\text{B}^+ + \text{Si}$; $\text{As}^+ + \text{Si}$; $\text{Sb}^+ + \text{Si}$	E	25-300 keV	Yamamura, Y. Applications of Fock approximations to range calculations. Radiat. Eff. 51, 81 (1980) Japan
6830	C04 $\text{S}^+ + \text{Al}$; $\text{Cu}^+ + \text{Al}$; $\text{Cu}^+ + \text{Al}$; $\text{Ga}^+ + \text{Al}$; $\text{Ge}^+ + \text{Al}$; $\text{Cu}^+ + \text{Al}$ D15 $\text{S}^+ + \text{Al}$; $\text{Cu}^+ + \text{Al}$; $\text{Cu}^+ + \text{Al}$; $\text{Ga}^+ + \text{Al}$; $\text{Ge}^+ + \text{Al}$; $\text{Ge}^+ + \text{Al}$; $\text{Cu}^+ + \text{Al}$	E	60-220 keV	Hussain, T.; Linzer, G. Radiation disorder and lattice location in ion implanted aluminum crystals. Radiat. Eff. 51, 103 (1980) West Germany
6831	C08 $\text{H}^+ + \text{Si}$; $\text{D}^+ + \text{Si}$; $\text{H}^+ + \text{Ge}$; $\text{D}^+ + \text{Ge}$	T	0.3-2.5 MeV	Matsumoto, M.; Howe, L. P. A diffusion calculation of axial dechanneling in Si and Ge. Radiat. Eff. 51, 111 (1980) Canada
6832	C10 $\text{H}^+ + \text{Ta}$	E	3.6 MeV	Shattacharya, P. K.; Chevallier, J.; Uggerhoj, E.; Mory, J.; Guere, Y. Short concentration. Evidence for dechanneling by dislocations. Radiat. Eff. 51, 127 (1980) Denmark
6833	D13 $\text{He} + \text{CuC}$	E	10000 Å ²	Ranttilä, V. V.; Grigorev, L. N. Description of positive and negative ions from cupric oxide by a low-power laser beam. Sov. Tech. Phys. Lett. 5, 418 (1979) Soviet Union
6834	D16 $\text{He}^+ + \text{Si}$	E	230 keV	Wiggers, L. V.; Koshchek, M. G.; Bitt, A. W.; Seris, F. V.; Reenders, M. E. Damage production at the surface of Si single crystals by 200 keV He^+ bombardment. Radiat. Eff. 42, 77 (1975) The Netherlands
6835	D16 $\text{He}^+ + \text{Si}$; $\text{Xe}^+ + \text{Si}$	E	0.25-1.5 keV	Kernelsen, E. V.; van Gorkum, A. A. Attachment of mobile particles to non-saturable traps: II. The trapping of helium at xenon atoms in tungsten. Radiat. Eff. 42, 113 (1979) Canada
6836	D15 $\text{H}^+ + \text{Si}$; $\text{He}^+ + \text{Si}$	E	1-3 MeV	Wiggers, L. V.; Seris, F. V. Beam-energy dependence of displacement effects in Si. Radiat. Eff. 42, 163 (1979) The Netherlands
6837	D16 $\text{Kr}^+ + \text{Ni}$	E	1-3 keV	Donnelly, S. E.; Ingram, D. C.; Fraser, E. G. An experimental study of the trapping and release of krypton in nickel. Radiat. Eff. 42, 179 (1979) United Kingdom
6838	D03 Under	T	Under	Shawchen, R. J. Relation of the photon yield from a sputtering source to the population distribution and excitation function. Radiat. Eff. 42, 188 (1979) United Kingdom

PL. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6839	C84 Eu ⁺ + Si; Cu ⁺ + Al; La ⁺ + Al; Au ⁺ + Al; Pd ⁺ + Al; Al ⁺ + Ti; Al ⁺ + Ta C85 Eu ⁺ + Si; Cu ⁺ + Al; La ⁺ + Al; Au ⁺ + Al; Pd ⁺ + Al; Al ⁺ + Ti; Al ⁺ + Ta	T	2K-250 keV	Bisler, M.; Noutale, M.; Jantti, M. Cooperation of experimental and theoretical ranges of Be ⁺ ions in the low energy region. Radiat. Eff. 42, 261 (1975) Finland
6840	D14 Na ⁺ + Bi; Na ⁺ + Ni	E	3K-850 keV	Kaneko, K.; Morimoto, M. Flaking and blistering on Bi and Ni bombardments. Radiat. Eff. 42, 265 (1975) Japan
6841	D15 e + Al	E	25 ⁺ keV	Saito, K.; Nishie, M.; Gomez-Giraldez, C. Observation of triangular loops at a twin boundary in electron irradiated high purity aluminum. Radiat. Eff. 42, 227 (1975) West Germany
6842	D07 Ar ⁺ + Cu D08 Ar ⁺ + Cu	E	18 keV	Luitjens, S. D.; Aigra, A. J.; Bours, A. L. Letter to the Editor [Radiat. Eff. 40, 23 (1975)]. Radiat. Eff. 42, 253 (1975) The Netherlands
6843	D15 Br ⁺ + Si; Fe ⁺ + Si	E	23-40 keV	Grant, M. A.; Whitten, J. L.; Billings, J. S. Ion bombardment induced amorphous layers on single crystal stainless steel—a combined Rutherford backscattering and transmission electron microscopy study. Radiat. Eff. 40, 65 (1980) Denmark
6844	D16 PERT ⁺ + Cu; PERT ⁺ + Ni; PERT ⁺ + Fe	E T	Under	Perte, J. N. Implantation into metals for metastable alloy formation. Radiat. Eff. 40, 21 (1980) United States
6845	C84 H ⁺ + Si; H ⁺ + SiO ₂	E	4K-700 keV	Mittelschach, J.; Gortler, K. Proton ranges in silicon and in Si-SiO ₂ double layers. Radiat. Eff. 40, 113 (1980) East Germany
6846	D02 e + H ₂ C; H ⁺ + H ₂ O; He ⁺ + H ₂ C; H ⁺ + H ₂ O; e + Xe; H ⁺ + Xe; He ⁺ + Xe; H ⁺ + Xe; e + CO ₂ ; H ⁺ + CO ₂ ; He ⁺ + CO ₂ ; H ⁺ + CCl ₄ ; e + SF ₆ ; H ⁺ + SF ₆ ; He ⁺ + SF ₆ ; H ⁺ + SF ₆	E	0.0003-2.0 MeV	Bottiger, J.; Cavies, J. A.; L'ecuyer, J.; Patenaude, M.; Ollerhead, S. Erosion of frozen-gas films by positive ions. Radiat. Eff. 40, 115 (1980) Canada
6847	D16 Ar ⁺ + Cu; Te ⁺ + Cu	E	15 ⁺ keV	Muroran, J. H.; Poole, J. H.; Liou, Z. L.; Meyer, J. W. Sputtering limitations for high-dose implantations. Radiat. Eff. 40, 125 (1980) United States
6848	D07 U + Al ₂ O ₃ D11 U + Al ₂ O ₃	E	1-200 eV	Libbrecht, K. G.; Griffith, J. L.; Heller, R. A.; Tombrello, T. A. Energy dependence of the trapping of uranium atoms by aluminum oxide surfaces. Radiat. Eff. 40, 155 (1980) United States
6849	D02 H ⁺ + Xe; He ⁺ + Xe; H ⁺ + Xe; Ar ⁺ + Xe	E	0.3-2.0 MeV	Ollerhead, M. W.; Bottiger, J.; Cavies, J. A.; L'ecuyer, J.; Neuge, M. E.; Matsuzaki, H. Evidence for a thermal spike mechanism in the erosion of frozen xenon. Radiat. Eff. 40, 203 (1980) Canada
6850	D07 H + Ti	T	5-200 eV	Jochims, D. P. The influence of surface trapping on low energy light ion reflection. Radiat. Eff. 40, 233 (1980) Canada
6851	D11 Nb + Al ₂ O ₃ ; Rh + Al ₂ O ₃	E	3K K	Heller, R. A.; Tombrello, T. A. Surface sticking probabilities for sputtered atoms of ⁹² Nb and ¹⁰³ Rh. Radiat. Eff. 40, 235 (1980) United States
6852	C08 Under	T	Under	Yamamoto, Y.; Takahashi, M. Ion focusing effects on total reflection coefficient near the surface channel direction. Radiat. Eff. 40, 261 (1980) Japan
6853	D02 Xe ⁺ + Au; Xe ⁺ + Ag; Xe ⁺ + Pt; Xe ⁺ + AgBr; Ar ⁺ + Cu	E T	Under	Szymorski, M.; de Vries, A. L. Letter to the Editor [VIII Int. Conf. on Atomic Collisions in Solids, Hamilton (1979)] Radiat. Eff. 40, 266 (1980) The Netherlands

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6854	H06 hv + O	T	504-504 Å ⁰	Prodhon, A. R. Branching ratios for the photoionization cross section of atomic oxygen. <i>Planet. Space Sci.</i> 20, 165 (1969); United States
6855	E03 e + K Ieq	T	Undef	Curtis, L. J.; Ellis, B. G. Calculations for transition probabilities of the K X isoelectronic sequence. <i>J. Phys. B</i> 13, 1431 (1980); United States
6856	E08 e + Ne ⁺	E T	9.4-19.9 eV	Kellner, E.; Jones, L. A. Stark broadening of He II 6686 Å: a direct comparison of predictions from the theories with experiment. <i>J. Phys. B</i> 12, 1437 (1979); United States
6857	E05 e + Ar E15 e + Ar	T	1-25 Threshold	Borzhukov, E. G.; Kobachuk, N. N. A study of the inner-shell alignment of atoms in the distorted-wave approximation. <i>J. Phys. B</i> 13, 1478 (1980); Soviet Union
6858	E09 e + O ₂ ; e + [O ₂ + N ₂]	E	294 K	Crichton, R. B.; Hegerberg, G.; Skillerud, N. K. The effect of attachment cooling in oxygen and oxygen-nitrogen mixtures. <i>J. Phys. E</i> 12, 1450 (1979); Australia
6859	E03 e + Kr ²⁺ ; e + Kr ³⁺ ; e + Xe ³⁺	E	Undef	Fawcett, D. C.; Armstrong, G. L. Classification of krypton IV, V and xenon VI spectral lines. <i>J. Phys. B</i> 13, 2711 (1980); United Kingdom
6860	H60 Undef	T	Undef	Blind, B.; Fontana, P. R.; Thomas, F. Resonance fluorescence spectrum of intense amplitude modulated laser light. <i>J. Phys. B</i> 13, 2717 (1980); United States
6861	H03 Undef H04 Undef	T	Undef	Villagay, A. A.; Freed, K. F. Intensity correlation function for a resonant weak light field scattered by a many-particle system. The bunched and antibunched components. <i>J. Phys. B</i> 13, 2725 (1980); United States
6862	A12 Cd ⁰ + Ne; Cd ⁰ + Ar	E	230-290 °C	Blitz, K. J.; Babkovicz, P.; Kluge, H. J.; Kuhl, T.; Schussler, H. P. Pressure broadening and pressure shift of the cadmium intercombination line at lambda = 3261 Å. <i>J. Phys. B</i> 13, 2745 (1980); West Germany
6863	B05 nhv + Ne	E		Deubert, B. J.; Part, G. J.; Scott, A. W. Quenching of high Rydberg states of sodium in strong 1.06 μm laser fields. <i>J. Phys. B</i> 13, 2751 (1980); United Kingdom
6864	A05 N ⁰ + Ti; N ⁰ + Cr; N ⁰ + Mn; N ⁰ + Co; N ⁰ + Ni; N ⁰ + Cu; N ⁰ + Zn; N ⁰ + Ga A19 N ⁰ + Ti; N ⁰ + Cr; N ⁰ + Mn; N ⁰ + Co; N ⁰ + Ni; N ⁰ + Cu; N ⁰ + Zn; N ⁰ + Ga	E	2.6 MeV	Mohayana, T.; Sarkadi, L.; Baranyi, E.; Koltay, E. K-shell x-ray production of eight elements from Ti to Cu by 10-MeV bombardment. <i>J. Phys. B</i> 13, 2772 (1980); Hungary
6865	A06 Na ⁰ + Ne; Na ⁰ + Ar; Na ⁰ + Kr; Na ⁰ + Xe; Ar ⁰ + Ne; Ar ⁰ + Ar; Ar ⁰ + Kr; Ar ⁰ + Xe; Kr ⁰ + Ne; Kr ⁰ + Ar; Kr ⁰ + Kr; Kr ⁰ + Xe; Xe ⁰ + Ne; Xe ⁰ + Ar; Xe ⁰ + Kr; Xe ⁰ + Xe	E	300 K	Smith, D.; Adams, H. G.; Alge, E.; Billinger, H.; Lindinger, V. Reactions of Na ⁰ , Ar ⁰ , Kr ⁰ and Xe ⁰ with the rare gases at low energies. <i>J. Phys. E</i> 12, 2787 (1979); United Kingdom
6866	E03 e + Ne; e + Ne	E T	2-600 eV	Meijer, H.G.M.; van de Venter, B.; von Pöegestel, L.J.M. The effect of long-range electron correlations on the polarization of atomic line radiation, excited by electron impact. <i>J. Phys. B</i> 12, 2801 (1979); The Netherlands
6867	E03 e + N	E	10.3-10.8 eV	Spence, D.; Burrow, P. D. Cross sections for excitation of the (2s ² 2p ² 3s) ⁴ P and (2s2p ³) ⁴ P states of atomic nitrogen by near-threshold electron impact. <i>J. Phys. B</i> 12, 2809 (1979); United States
6868	E03 e + Ne E17 e + Ne	E	6-100 eV	Mitchell, P.; Baxter, J. A.; Cramer, J. Electron energy-loss study of the 2s2p ² 3s ns 2s2p ² 3p configurations of neon. <i>J. Phys. B</i> 13, 2817 (1980); United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6869	E82 Undef E83 Undef	T	Undef	Beuche, V.; Coderbauer, L. S. Vibration-induced narrowing of electron scattering resonances near threshold. <i>J. Phys. B</i> 13, 2829 (1980) West Germany
6870	E18 $e + N_2$	E	0.2-100 eV	Delba, G.; Farvacini, P.; Lazzizzera, I.; Benicvi, G.; Zacca, A. Measurements of total absolute cross sections for 0.2-100 eV electrons on N_2 . <i>J. Phys. E</i> 13, 2839 (1980) Italy
6871	E93 $e + C_2F_2$	E	7-11 eV	Wilder, B. G.; Comer, J.; Taylor, E. Energy-loss spectroscopy of the higher excited states of acetylene. <i>J. Phys. B</i> 13, 2849 (1980) United Kingdom
6872	A93 $H^+ + C; H^+ + Ne; H^+ + Ar$ A96 $H^+ + C; H^+ + Ne; H^+ + Ar$	T	0.2-7 MeV	Brundson, P. A.; Jakubowski, M. Charge transfer in asymmetric heavy-ion collisions. <i>J. Phys. E</i> 13, 1467 (1980) Norway
6873	E83 $e + H$ E17 $e + H$	T	544 eV	Ernstov, A. M.; Walters, N.R.J. Exact second Born amplitude for the electron impact excitation of the $1s + 2s$ transition in atomic hydrogen. <i>J. Phys. E</i> 13, 1473 (1980) United Kingdom
6874	E93 $e + H$ E99 $e + H$ H87 $h\nu + H^-$	T	Undef	Callisto, R. On the series of double-excited states for the H^- ion below the $n = 3$ threshold. <i>J. Phys. E</i> 13, 1479 (1980) Soviet Union
6875	H87 Undef	T	Undef	Flutsk, J.; van Kraanden, J. The effect of collisions on resonance fluorescence and Rayleigh scattering at high intensities. <i>J. Phys. E</i> 13, 2865 (1980) Poland
6876	H86 $h\nu + Ca^+$	T	Undef	Kallath, K. J. Theory for inner photoionization of excited atoms: $n^2P_{3/2,1/2}$ states of Ca. <i>J. Phys. B</i> 13, 2501 (1980) West Germany
6877	H84 $2h\nu + He$	T	0-0.75 a.u.	Shorer, P. An R-matrix approach to the calculation of dynamic dipole polarisabilities and two-photon photoionization cross sections. <i>J. Phys. B</i> 13, 2621 (1980) United Kingdom
6878	H86 $h\nu + Ca$	E	172 nm	Gration, K.T.V.; Hutchinson, M.H.R.; Theodorou, E. S. Absolute determination of the photoionization cross section for ground-state atomic calcium in the vacuum ultraviolet. <i>J. Phys. B</i> 13, 2921 (1980) United Kingdom
6879	H84 $h\nu + Pb$ H86 $h\nu + Pb$	E	37-105 eV	Sondner, N.; Schmidt, V.; Muhlhorn, B.; Billewicz, F.; Adam, R. Y.; Bascious, J. S. Electron spectra of atomic lead using synchrotron radiation between 37 and 105 eV. <i>J. Phys. B</i> 13, 2937 (1980) West Germany
6880	H83 $h\nu + Ne; h\nu + Al; h\nu + Ar; h\nu + Kr$	T	17.4 MeV	Sharma, B. S.; Tripathi, A. N. Impulse approximation Compton profile incoherent scattering factors for Ne, Al, Ar and Kr. <i>J. Phys. B</i> 13, 2947 (1980) India
6881	A93 $H^+ + Au; H^+ + Pb$ A97 $H^+ + Au; H^+ + Pb$	E	0.6-3.0 MeV	Cohen, D. S. Thick and thin Au and Pb L-subshell ionization cross sections for protons. <i>J. Phys. B</i> 13, 2953 (1980) Australia
6882	A93 $C^+ + Ne; C^{2+} + Ne; C^{3+} + Ne; H^+ + Ne; H^{2+} + Ne; H^{3+} + Ne; O^+ + Ne; O^{2+} + Ne; C^{3+} + Ne$ A96 $C^+ + Ne; C^{2+} + Ne; C^{3+} + Ne; H^+ + Ne; H^{2+} + Ne; H^{3+} + Ne; O^+ + Ne; O^{2+} + Ne; C^{3+} + Ne$	E	60-256 keV	Verbeeke, P. M.; de Waard, M. V.; Saris, F. W. A new charge exchange contribution to B-vacancy production. <i>J. Phys. B</i> 13, 2965 (1980) The Netherlands
6883	A96 $H^+ + H$ Seq	T	10-10000 MeV	Meiselsch, B. L.; Stockmann, S. G. Electron capture by charged particles at relativistic energies. <i>J. Phys. B</i> 13, 2975 (1980) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6884	A07 $\text{He}^+ + \text{He}$ E05 $e + \text{He}^+$	T	0.02-1000 keV	Taylor, I. B.; Bell, K. L.; Krogstad, A. E. Electron and proton impact ionization of the metastable states of helium. <i>J. Phys. B</i> 13, 2953 (1980) United Kingdom
6885	E03 $e + \text{H}$	T	3.0-3 Ry	Post, N. Symmetrically coupled partial differential equations in scattering: I. Model electron-hydrogen collisions. <i>J. Phys. B</i> 13, 2655 (1980) United Kingdom
6886	E03 $e + \text{He}$ E17 $e + \text{He}$	E	63-80 eV	Slavie, J.; Porter, M. Q.; Enayen, P.; Sefrance, A.; Vassilev, G. Electron-photon angular correlation measurements for the 2^1P state of helium. <i>J. Phys. B</i> 13, 3009 (1980) United Kingdom
6887	E03 $e + \text{He} \text{ Sing}$	T	Under	Tully, J. A. The Coulomb Cohn-Ridge approximation applied to excitation of triplet levels in helium-like ions. <i>J. Phys. B</i> 13, 3023 (1980) France
6888	B06 $e + \text{Al}; e + \text{Cu}; e + \text{Ag}; e + \text{Au}; e + \text{Bi}; e + \text{Br}; e + \text{Ce}; e + \text{Pb}$	E T	20-53 keV	Egner, M. R. An empirical study of electron backscattering from thin films. <i>J. Appl. Phys.</i> 51, 4417 (1980) United States
6889	B03 $\text{H}_2^+ + \text{H}; \text{H}_2^+ + \text{U}; \text{H}_2^+ + \text{Cu}; \text{H}_2^+ + \text{Ca}$ B07 $\text{H}_2^+ + \text{U}; \text{H}_2^+ + \text{V}; \text{H}_2^+ + \text{Ca}; \text{H}_2^+ + \text{Cu}$	E T	0.1-3.0 keV	McCoughan, D. V.; Slocum, R. M.; Geddes, J. Secondary ions from hydrogen ion bombardment of metal surfaces. <i>J. Appl. Phys.</i> 51, 4426 (1980) United Kingdom
6890	E02 $e + \text{H}_2$	T	20-120 eV	Hisher, J. B. Cross sections for the vibrational excitation of the $\text{H}_2[X^1\Sigma^+g]$ state via electron collisional excitation of the higher singlet states. <i>J. Appl. Phys.</i> 51, 4552 (1980) United States
6891	C04 $\text{Bi}^+ + \text{C}; \text{Bi}^+ + \text{Si}; \text{Bi}^+ + \text{Ge}$	E	0.2-1 MeV	Ishizawa, N.; Pechintosh, V. D. Backscattering measurements of implanted ion distributions in double-layer structures. <i>J. Appl. Phys.</i> 51, 4729 (1980) Canada
6892	R06 $\text{He} + \text{He}$	T	0-1 e.u.	Miller, D. L.; Starace, A. F. Photoionization cross section for He in the hyperspherical coordinate method. <i>J. Phys. B</i> 13, L525 (1980) United States
6893	A03 $\text{He}^{2+} + \text{He}$ A06 $\text{He}^{2+} + \text{He}$	E	15-50 keV	Blie, E.; Winter, M. Excitation in electron capture collisions of He^{2+} (15-50 keV) with He. <i>J. Phys. B</i> 13, L331 (1980) Australia
6894	E02 $e + \text{N}; e + \text{Ne}$	T	5-19.3 eV	Balocane, V.; Leonardi, B. Bremsstrahlung of low-energy electrons on neutral atoms. <i>J. Phys. B</i> 13, L537 (1980) Italy
6895	E03 $e + \text{Si}^{2+}$	T	0.5-0.75 Ry	Bolija, K. L.; Burke, P. G.; Kingston, A. E. Electron impact excitation of $3p^2 \ ^3P + 2s2p \ ^3P^o$ in Si III. <i>J. Phys. B</i> 13, L543 (1980) United Kingdom
6895	A03 $\text{Li} + \text{Ne}; \text{Li} + \text{Ne}; \text{Li} + \text{Ar}; \text{Li} + \text{Kr}; \text{Li} + \text{Xe}$ A10 $\text{Li} + \text{Ne}; \text{Li} + \text{Ne}; \text{Li} + \text{Ar}; \text{Li} + \text{Kr}; \text{Li} + \text{Xe}$	E	1000 eV	Blattmann, K. M.; Dold, R.; Schauble, W.; Zehnis, L.; Kempter, V. Differential cross sections for Li(2p) excitation in Li-inert-gas collisions from photon-scattered-ion coincidence measurements. <i>J. Phys. B</i> 13, 3349 (1980) West Germany
6897	A03 $\text{H}^+ + \text{H}$ A06 $\text{H}^+ + \text{H}$ A10 $\text{H}^+ + \text{H}$	T	25-4000 keV	Roy, P. K.; Saha, B. C.; Sil, A. C. Formation of hydrogen atoms in arbitrary excited states by electron capture in p-H collisions. <i>J. Phys. B</i> 12, 3401 (1980) India

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6998	A ¹³ H ⁺ + He ⁺ ; H ⁺ + Li ²⁺ ; H ⁺ + Be ³⁺ ; H ⁺ + C ⁴⁺ ; He ²⁺ + He ⁺ ; He ²⁺ + Li ²⁺ ; He ²⁺ + Be ³⁺ A ¹⁶ H ⁺ + He ⁺ ; H ⁺ + Li ²⁺ ; H ⁺ + Be ³⁺ ; H ⁺ + C ⁴⁺ ; He ²⁺ + He ⁺ ; He ²⁺ + Li ²⁺ ; He ²⁺ + Be ³⁺	T	57-2000 keV	Mukherjee, S.; Sill, B. C. Ion-ion capture collisions in the continuous distorted-wave approximation. J. Phys. B 12, 3421 (1980) India
6999	A ¹⁶ He ²⁺ + He; C ⁴⁺ + He	T	2-50 keV	Grozdanov, T. P.; Janov, R. K. Two-electron capture in slow ion-atom collisions. J. Phys. E 12, 3431 (1980) Yugoslavia
6990	E ¹³ e + H E ¹⁷ e + H	T	3-100 eV	Ray, P.; Ray, K.; Sill, B. C. Evaluation of electron-hydrogen ionization amplitudes. J. Phys. E 13, 3443 (1980) India
6991	E ¹² e + He G ¹⁵ e + He	E	3-2 eV	O'Malley, T. F.; Crompton, B. V. Electron-atom scattering length and S-wave phase shifts from drift velocities. J. Phys. B 13, 3481 (1980) Australia
6992	E ¹² e + He E ¹⁷ e + He	E	3-20 eV	Marsden, M. U.; Hertel, I. V.; Kelley, P. K. Orientation in the 3P-2S transition in sodium induced by electron impact. J. Phys. E 12, 3465 (1980) West Germany
6993	E ¹² e + N ₂	E, T	26-2000 eV	van Bingerden, E.; Vliegenhart, R. V.; de Haer, F. J. Total cross sections for electron scattering by molecular hydrogen. J. Phys. B 13, 3481 (1980) The Netherlands
6994	E ¹³ e + KI E ¹⁷ e + KI	T	6.74 eV	Allan, R. J.; Dickinson, A. I. Electron scattering by state-selected polar molecules. J. Phys. E 12, 3492 (1980) United Kingdom
6995	M ¹⁴ hv + Se ₂ M ¹⁴ hv + Se ₂	E	4131 Å	Prosser, S. J.; Earrow, R. F.; Vargas, J.; Effantin, C.; d'Incan, J. The b ¹ I(sub g) ⁺ state of Se ₂ . J. Phys. B 13, L447 (1980) United Kingdom
6996	M ¹⁴ hv + Ne M ¹⁶ hv + Ne	T	65-170 eV	Cheng, T. M. Photoionization of helium to He ⁺ (n=2). J. Phys. B 12, L551 (1980) United States
6997	A ¹⁹ He + O	T	1.7 e.u.	Stellmacher, H. Model calculations for the impact parameter dependence of the R-vacancy transfer in slow ion-atom collisions. J. Phys. B 12, L555 (1980) West Germany
6998	T ¹⁴ Under	T	Under	Farago, P. I. Spin-dependent features of electron scattering from optically active molecules. J. Phys. B 13, L567 (1980) United Kingdom
6999	D ¹² Fe ⁺ + C; Kr ⁺ + C; Nb ⁺ + C	T	8.5 MeV	Fortner, R. J.; Howell, R. P.; Matthews, E. L. Fe, Kr and Nb x-ray spectra produced in 8.5 MeV cm ⁻¹ ion-solid collisions. J. Phys. E 12, 3545 (1980) United States
6910	A ¹³ Li + H ₂ + H ₂	E	1-60 eV	Blattmann, R. H.; Penner, B.; Schottke, H.; Staudenmayer, P.; Zehle, L.; Reepker, V. Li(2p) excitation by low-energy collisions with H ₂ and H ₂ . J. Phys. B 13, 3635 (1980) West Germany
6911	A ¹⁶ F ⁻ + He + He ⁺ ; F ⁻ + He + He ⁺ ; F ⁻ + Ar + Ar ⁺ ; F ⁻ + Ar + Kr ⁺ ; F ⁻ + Xe + Xe ⁺ A ¹⁹ F ⁻ + He + He ⁺ ; F ⁻ + He + He ⁺ ; F ⁻ + Ar + Ar ⁺ ; F ⁻ + Ar + Kr ⁺ ; F ⁻ + Xe + Xe ⁺	T	Under	Slattery, R. B. Ion-ion recombination in (X ⁺ + Y ⁻ → X) systems at low gas densities I. Symmetrical resonance charge transfer contribution. J. Phys. B 12, 3645 (1980) United Kingdom
6912	A ¹⁴ H ⁺ + He; H ⁺ + He; H ⁺ + Ar; H ⁺ + Kr; H ⁺ + Xe; O ⁺ + He; C ⁺ + He; C ⁺ + Ar; C ⁺ + Kr; C ⁺ + Xe	E, T	2-2999 eV	Matlo, M.; Sidi, V.; Vujovic, M.; Cebic, B. Near-resonant charge transfer in collisions of H ⁺ and C ⁺ ions with inert gases. J. Phys. B 12, 3655 (1980) Yugoslavia

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6913	E03 $e + H$; $e + He$ E17 $e + H$; $e + He$	T	20-200 eV	Sharma, P. K.; Gupta, G. P.; Mathur, R. C. Excitation of hydrogen and helium from the metastable excited Σ states by electron impact. J. Phys. B 12, 3677 (1980) India
6914	E03 $e + He$	E	29.6-51.2 eV	McAdams, R.; Hollywood, P. T.; Crowe, A.; Williams, J. F. Alignment and orientation of the 2^3P state of helium by electron impact at 25-eV and 51.2 eV. J. Phys. B 13, 3651 (1980) United Kingdom
6915	E03 $e + He^+$; $e + Li^{2+}$; $e + C^{3+}$; $e + He^{++}$ E05 $e + He^+$; $e + Li^{2+}$; $e + C^{3+}$; $e + He^{++}$	T	3.24 Ry	Pargen, L. A. A hybrid multicenter algebraic variational method: application to electron scattering by hydrogenic ions. J. Phys. B 12, 3702 (1980) United Kingdom
6916	E03 $e + Eu$; $e + Yb$	T	2-600 eV	Peterkop, R. E. Calculation of cross sections for electron-impact excitation of europium and ytterbium atoms. Opt. Spectrosc. 40, 4 (1980) Soviet Union
6917	A11 $Ti^0 + Co$	E T	350 eV	Aleksandrov, E. B.; Baranov, A. V. Relaxation of the $6^3P_{3/2}$ state of thallium in collisions with cesium atoms. Opt. Spectrosc. 40, 166 (1980) Soviet Union
6918	E02 $e + He$ E03 $e + He$	T	19.8-20.8 eV	Fabrizant, I. I. Formation mechanism of resonances in the electron excitation of the 2^3S state of the helium atom. Opt. Spectrosc. 40, 122 (1980) Soviet Union
6919	A12 $NH_3^+ + h\nu$; $NH_3^+ + CO_2$	T	233-500 K	Petrova, A. I.; Cherkasov, M. F. Collision broadening of lines of the ammonia inversion spectrum. Broadening by the quadrupole gases CO_2 and $h\nu$. Opt. Spectrosc. 40, 144 (1980) Soviet Union
6920	A07 $K^+ + K$	E	579 K	Klyucharev, A. A.; Lazarenko, A. V. Collision ionization processes in the optical excitation of Rydberg states of potassium. Opt. Spectrosc. 40, 225 (1980) Soviet Union
6921	A03 $Na + He$ A08 $Na + He$ E03 $e + He^{++}$ E06 $e + He_2^+$	E	A03: A08 1200 eV E03 2-20 eV E06 1.5-10 eV	Gostev, V. A.; Eshkhovskii, D. V.; Zaitsev, Y. V.; Luizova, L. A.; Khakhaev, A. D. Interaction of fast neutral Na atom with an electron beam and with atoms of a gas target. Opt. Spectrosc. 40, 251 (1980) Soviet Union
6922	E02 $e + H$ E17 $e + H$	T	20-50 eV	Das, J. N.; Biswas, A. K. Elastic scattering of electrons by atomic hydrogen at intermediate energies. Phys. Lett. 78A, 319 (1980) India
6923	N02 Undef	T	Undef	Nienhuis, G. Saturated two-photon absorption by atoms in a perturber gas. Physica B+C 101, 255 (1980) The Netherlands
6924	A10 $Ar^+ + Co$	T	0.5-10 keV	Falduto, G.; Gliva, A. Numerical calculation of differential scattering cross section using the Brinkman potential. Physica B+C 101, 271 (1980) Italy
6925	N02 Undef	T	Undef	Parzynski, R. Effects of light polarization in near-resonant two-photon two-light beam ionization of spin-polarized alkali atoms. Physica B+C 101, 276 (1980) Poland
6926	A12 $Ne^+ + He$; $Ne^+ + Ne$ A17 $Ne^+ + He$; $Ne^+ + Ne$	E	320 K	Sluski, A.; Sokorne, W.; Szudzy, J.; Welnicki, J. Low pressure broadening and shift of the 840.06 nm line of neon. Physica B+C 101, 112 (1980) Poland
6927	E03 $e + Mg$ E06 $e + Mg$	E	70-1000 eV	Vukobrat, V. S.; Zhuravsk, Y. V.; Fustel, L. N. Radiative decay of certain excited states of MgI and $MgII$. Sov. Phys. JETP Lett. 20, 261 (1980) Soviet Union

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6928	A83 $\text{He}^+ + \text{H}_2$ A84 $\text{He}^+ + \text{H}_2$ A85 $\text{He}^+ + \text{H}_2$ A87 $\text{He}^+ + \text{H}_2$	E	0.2-10 keV	Gochitskii, P. R.; Akhmedov, V. A.; Lourev, V. P.; Kikani, D. I. Excitation processes in collisions of He^+ ions with H_2 molecules. <i>Sov. Phys.-tech. Phys.</i> 24, 1303 (1980) Soviet Union
6929	A87 $\text{He}^+ + \text{H}_2$	T	100-400 K	Klement'ov, G. V.; Kartashkin, V. A.; Mel'nikov, V. S. Classical description of the chemical ionization of atoms and molecules with an exponential representation of the real and imaginary parts of the complex interaction potential. <i>Sov. Phys. tech. Phys.</i> 24, 1360 (1980) Soviet Union
6930	E*2 $e + \text{He}$	T	57-58 eV	Chung, K. T. Triply excited 3F and 3D resonance of He^- . <i>Phys. Rev. A</i> 22, 1341 (1980) United States
6931	B87 Under M04 Under	T	M04 Under	Yeh, F.; Berman, P. R. Theory of collisionally aided radiative excitation in three-level systems. <i>Phys. Rev. A</i> 22, 1402 (1980) United States
6932	E*5 $e + \text{He I} \text{ eq}$	T	0.702-7.5 keV	Younger, S. M. Electron-impact-ionization cross sections for highly ionized heliumlike atoms. <i>Phys. Rev. A</i> 22, 1422 (1980) United States
6933	A13 $\text{He}^+ + 2\text{He}; \text{He}^+ + 3\text{He}; \text{He}^+ + 2\text{He};$ $\text{He}^+ + \text{He} + \text{He}; \text{He}^+ + 2\text{He}$	E	255 K	de Vries, C. P.; Uehara, H. J. Four-body conversion of atomic helium ions. <i>Phys. Rev. A</i> 22, 1429 (1980) United States
6934	D12 $e + \text{HeF}; e + \text{HeF}_2; e + \text{PF}_2; e +$ $\text{HeF}; e + \text{Na}_2\text{AlF}_6; e + \text{CuF}_2$ E05 $e + \text{HeF}; e + \text{HeF}_2; e + \text{PF}_2; e +$ $\text{HeF}; e + \text{Na}_2\text{AlF}_6; e + \text{CuF}_2$ M05 $h\nu + \text{HeF}; h\nu + \text{HeF}_2; h\nu + \text{PF}_2; h\nu +$ $\text{HeF}; h\nu + \text{Na}_2\text{AlF}_6; h\nu + \text{CuF}_2$	E	D12; E05 9 keV M06 50 keV	Endo, M.; Ueda, P.; Honda, K. Influence of the chemical bond on the intensities of F K α x-ray satellites produced by electron and photon impacts. <i>Phys. Rev. A</i> 22, 1426 (1980) Japan
6935	A06 $\text{H}^+ \text{ Seq} + \text{H Seq}$	T	2.5-10 MeV/cm	Pecch, J. M.; Shakeshaft, R. Second Born approximation with the Coulomb Green's function: electron capture from a hydrogenlike ion by a bare ion. <i>Phys. Rev. A</i> 22, 1441 (1980) United States
6936	A07 $\text{Ni}^+ + \text{Al}; \text{Al}^+ + \text{Cu}; \text{Ni}^+ + \text{Rb}$	E	54-90 MeV	Schuch, R.; Hille, G.; Schmidt-Rohling, W. Experimental K-vacancy production probabilities of nearly symmetric heavy-ion collision systems in comparison with the 2p-2p spin rotational-coupling model. <i>Phys. Rev. A</i> 22, 1447 (1980) West Germany
6937	A*6 $\text{H} + \text{H}$	T	1-1000 keV	Bengard, K. E.; Shirkcliffe, G. W. Charge exchange between simple structured projectiles in high-energy collisions. <i>Phys. Rev. A</i> 22, 1452 (1980) United Kingdom
6938	E*3 $e + \text{He}^+$ E17 $e + \text{He}^+$	T	50-500 eV	Gupta, G. P.; Mathur, K. C. Triplet-triplet excitation in helium. <i>Phys. Rev. A</i> 22, 1455 (1980) India
6939	A*3 $\text{H}^+ + \text{H}; \text{H} + \text{H}$ A06 $\text{H}^+ + \text{H}$	E	1.9-92 keV	Morgan, T. J.; Stone, J.; Raye, P. $\text{H}(2s)$ formation in H^+-H and $\text{H}-\text{H}$ collisions. <i>Phys. Rev. A</i> 22, 1460 (1980) United States
6940	A06 $\text{Ba}^+ + \text{Ba}^+$ A17 $\text{Ba}^+ + \text{Ba}^+$	T	25-500 keV	Strand, S. J.; Pecch, J. M.; Gellug, G. A. Computed cross sections for electron transfer in $\text{Ba}^+ + \text{Ba}^+$ collisions. <i>Phys. Rev. A</i> 22, 1467 (1980) United States
6941	A07 $\text{H}^+ + \text{H}; \text{H} + \text{H}$	T	5-500 keV	Unnikrishnan, K.; Prasad, R. A. Effect of electron exchange in ionizing collisions between hydrogen atoms. <i>Phys. Rev. A</i> 22, 1472 (1980) India

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
6942	A04 $H_2^+ + H_2; H_2^+ + Ar; H_2^+ + Air$ A06 $H^+ + H_2; H^+ + Ar; H^+ + Air$ A07 $H + H_2; H + Ar; H + Air$ C06 $H_2^+ + F_2; H_2^+ + Ar; H_2^+ + Pir$	E	250-600 keV	Mir, E.; Neuen, E.; Fenn, A.; Sauer, B. Pre-equilibrium distributions of the charge states of H_2^+ fragments in the sub-MeV energy region in H_2 , air, and argon targets. Phys. Rev. A 22, 1422 (1980) Israel
6943	A12 $Na^+ + Ar$	T	450 K	Erickson, G. J.; Sando, K. R. Molecular-dynamics simulation of pressure broadening of sodium resonance line by argon. Phys. Rev. A 22, 1560 (1980) United States
6944	B04 $2hv + A; 2hv + D; 2hv + Cl$	T	2340-2067 Å	Coldwar, K. Two-photon excitation cross section in light and intermediate atoms in frozen-core LS-coupling approximation. Phys. Rev. A 22, 1576 (1980) United States
6945	B06 $hv + He$	T	10-120 eV	Ishihara, T.; Mizuno, J.; Matsumoto, T. Conjugate shake-up process of neon due to K-shell photoionization. Phys. Rev. A 22, 1552 (1980) Japan
6946	A03 $CH_4 + He^+; CH_4 + C_2D_4$	E	30° K	Saffinger, K. A.; Gallagher, T. F. Collisional angular momentum mixing of Na he states by CH_4 and C_2D_4 . Phys. Rev. A 22, 1522 (1980) United States
6947	C07 $He + C$	E	30-1000 keV	Schechter, R. M.; Night, R. D.; Chen, S. T.; Curtis, L. J.; Berry, M. G.; Gay, T. J.; Esserich, R. Orientation and alignment of the 3p ² and 4d ² levels of neutral helium. Phys. Rev. A 22, 1591 (1980) United States
6948	E05 $e + Ag$	E	3 keV	Vaynsman, J.; Abela, S.; Kellchenko, M.; Abela, R. $M_{2,3}M_{2,3}L$ Auger electron spectra of free silver atoms. Phys. Rev. A 22, 1610 (1980) Finland
6949	A12 $Ca^+ + He; Ca^+ + Kr; Ca^+ + Ar; Ca^+ + Xe$	T	33° K	Boyer, A. Shift, width, and asymmetry of pressure-broadened spectral lines of intermediate densities. Phys. Rev. A 22, 1625 (1980) Canada
6950	B03 $hv + He; hv + Ne; hv + Ar$	T	Under	Chou-Naghami, V.; May, A. C. Calculation of the Rayleigh-Brillouin spectrum of He, Ne, and Ar with a generalized Enskog theory. Phys. Rev. A 22, 1626 (1980) Canada
6951	B03 $hv + Fe; hv + Ni; hv + Cu; hv + Zn; hv + Au; hv + Se; hv + Br$	E	279 keV	Verna, S. L.; Allawadhi, K. L.; Ioca, B. S. Determination of integral Compton-scattering cross sections at 279-keV gamma rays from K-shell electrons in Fe, Ni, Cu, Zn, Au, Se, and Br. Phys. Rev. A 22, 1753 (1980) India
6952	A07 $H^+ + Yb; H^+ + Pb$	E	0.4-2.2 MeV	Gray, T. J. Energy dependence of L _α -to-L _β x-ray intensity ratios for Yb and Pb produced by heavy-ion bombardment. Phys. Rev. A 22, 1712 (1980) United States
6953	B07 $hv + H^-$	T	Under	Fene, U.; Greene, C. M. Unfavorable angular distributions. Phys. Rev. A 22, 1740 (1980) United States
6954	B01 $e + Be; e + Ba; e + Al; e + Au; e + Cu$ B04 $e + Be; e + Ba; e + Al; e + Au; e + Cu$	E	0.2-7 keV	Brennstein, I. M.; Stozharov, V. M. New data on the angular and energy distribution of secondary electrons. Bull. Acad. Sci., USSR, Phys. Ser. 43, 43 (1979) Soviet Union
6955	C02 $e + Ba$	E	2-200 eV	Gorodetski, D. A.; Gorchinski, A. G. Characteristic electron energy loss in monatomic films of barium on (110) W. Bull. Acad. Sci., USSR, Phys. Ser. 43, 52 (1979) Soviet Union
6956	B08 $H^+ + Nb; H^+ + Au; H^+ + Ni$	T	4-16 keV; 0.5-8 keV; 1-12 keV	Parillo, E. S.; Parleger, V. K. Charge composition of light ions scattered by a metal surface. Bull. Acad. Sci., USSR, Phys. Ser. 43, 53 (1979) Soviet Union

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
6957	D01 Ar ⁺ + Cu D07 Ar ⁺ + Cu	E	10-35 keV	Balashova, L. L.; Borison, V. P.; Pashkova, E. S.; Reichenov, V. P. Effect of double scattering of recoil atoms. Bull. Acad. Sci., USSR, Phys. Ser. 43, 59 (1979) Soviet Union
6958	D15 Si + Si; He + Si; Ar + Si; N + Si; Ga + Ga	E	0.5-10 keV	Ivanov, M. A.; Eymann, V. F.; Reichenov, V. R. Radiation damage to silicon and germanium by moderate-energy ions. Bull. Acad. Sci., USSR, Phys. Ser. 43, 102 (1979) Soviet Union
6959	C02 He ⁺ + C; He ⁺ + Ag; He ⁺ + C; Ar ⁺ + C C05 He ⁺ + C; He ⁺ + Ag; He ⁺ + C; Ar ⁺ + C	T	4-7 keV	Rikhshev, S. Y.; Ryzhev, Y. A.; Strizhenov, E. S. Use of the Monte-Carlo method to compute the passages of particles through thin layers of material with allowance for inelastic energy loss. Bull. Acad. Sci., USSR, Phys. Ser. 43, 105 (1979) Soviet Union
6960	C02 He ⁺ + C; He ⁺ + Cu; He ⁺ + Ag; He ⁺ + C; Ar ⁺ + C	E	6-7 keV	Ryzhev, Y. A.; Rikhshev, S. Y.; Strizhenov, E. S.; Shkharin, I. I. Investigation of energy and angular distributions of He ⁺ , He ²⁺ , Ar ⁺ ions with E ₀ = 2-5 keV, transmitted through films of C, Cu, Ag. Bull. Acad. Sci., USSR, Phys. Ser. 43, (No. 3) 110 (1979) Soviet Union
6961	D03 Ar ⁺ + BaCO ₃ D12 Ar ⁺ + BaCO ₃	E	30 keV	Klynn, Y. S.; Gritsyna, V. V. Effect of near-radiation processes on emission of excited Ba atoms ejected from the surface of BaCO ₃ by Ar ⁺ ions. Bull. Acad. Sci., USSR, Phys. Ser. 43, 122 (1979) Soviet Union
5962	D03 Kr ⁺ + Cu; Kr ⁺ + Cu; He ⁺ + Cu; He ⁺ + Cu	E	8 keV	Ishomaliyev, M. B.; Kurbanov, R. I. Investigation of sputtering of copper in the form of clusters. Bull. Acad. Sci., USSR, Phys. Ser. 43, 132 (1979) Soviet Union
6963	D04 Al ⁺ + NaCl; Al ²⁺ + NaCl; Al ³⁺ + NaCl; Al ⁴⁺ + NaCl; Al ⁵⁺ + NaCl; Al ⁶⁺ + NaCl; Al ⁷⁺ + NaCl; Al ⁸⁺ + NaCl; Al ⁹⁺ + NaCl; Al ¹⁰⁺ + NaCl; Al ¹¹⁺ + NaCl; Al ¹²⁺ + NaCl; Al ¹³⁺ + NaCl; Al ¹⁴⁺ + NaCl; Al ¹⁵⁺ + NaCl; Al ¹⁶⁺ + NaCl; Al ¹⁷⁺ + NaCl; Al ¹⁸⁺ + NaCl; Al ¹⁹⁺ + NaCl; Al ²⁰⁺ + NaCl; Al ²¹⁺ + NaCl; Al ²²⁺ + NaCl; Al ²³⁺ + NaCl; Al ²⁴⁺ + NaCl; Al ²⁵⁺ + NaCl; Al ²⁶⁺ + NaCl; Al ²⁷⁺ + NaCl; Al ²⁸⁺ + NaCl; Al ²⁹⁺ + NaCl; Al ³⁰⁺ + NaCl; Al ³¹⁺ + NaCl; Al ³²⁺ + NaCl; Al ³³⁺ + NaCl; Al ³⁴⁺ + NaCl; Al ³⁵⁺ + NaCl; Al ³⁶⁺ + NaCl; Al ³⁷⁺ + NaCl; Al ³⁸⁺ + NaCl; Al ³⁹⁺ + NaCl; Al ⁴⁰⁺ + NaCl; Al ⁴¹⁺ + NaCl; Al ⁴²⁺ + NaCl; Al ⁴³⁺ + NaCl; Al ⁴⁴⁺ + NaCl; Al ⁴⁵⁺ + NaCl; Al ⁴⁶⁺ + NaCl; Al ⁴⁷⁺ + NaCl; Al ⁴⁸⁺ + NaCl; Al ⁴⁹⁺ + NaCl; Al ⁵⁰⁺ + NaCl; Al ⁵¹⁺ + NaCl; Al ⁵²⁺ + NaCl; Al ⁵³⁺ + NaCl; Al ⁵⁴⁺ + NaCl; Al ⁵⁵⁺ + NaCl; Al ⁵⁶⁺ + NaCl; Al ⁵⁷⁺ + NaCl; Al ⁵⁸⁺ + NaCl; Al ⁵⁹⁺ + NaCl; Al ⁶⁰⁺ + NaCl; Al ⁶¹⁺ + NaCl; Al ⁶²⁺ + NaCl; Al ⁶³⁺ + NaCl; Al ⁶⁴⁺ + NaCl; Al ⁶⁵⁺ + NaCl; Al ⁶⁶⁺ + NaCl; Al ⁶⁷⁺ + NaCl; 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REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
6965	H06 2hr + Ca	T	2-6 eV	Edwards, R.; Armstrong, L., Jr. Variation of the effective order of non-linearity near a minimum in the two-photon ionisation cross section of Ca. <i>J. Phys. B</i> 13, L497 (1980) United States
6966	A16 H ⁻ + He	T	1-100 eV	Gauyacq, J. P. Electron detachment in low-energy H ⁻ -He collisions: evidence of a purely dynamical phenomenon. <i>J. Phys. B</i> 13, L501 (1980) France
6967	E03 e + HBr E04 e + HBr E05 e + HBr	E	0.6-0.7 eV	Auris, R.; Le Csat, Y.; Collot, J. P. Negative-ion contribution to threshold peaks observed in vibrational excitation spectra of molecules by electron impact. <i>J. Phys. B</i> 13, L505 (1980) France
6968	H03 hv + H ₂ ; hv + Ar	T	Undef	Norman, A.; Pannat, P. V.; Kober, D. G. Compton profiles for neon and argon from x-ray wavefunctions. <i>J. Phys. B</i> 13, 3075 (1980) India
6969	E03 e + Ne Seq	T	Undef	Godfreid, M.; Verhaegen, G. PCDF calculations of electric dipole and quadrupole oscillator strengths along the helium isoelectronic sequence. <i>J. Phys. B</i> 13, 3681 (1980) Belgium
6970	H06 hv + Xe	T	Undef	Klar, M. Angular distribution of spin-polarised photoelectrons. <i>J. Phys. B</i> 12, 2117 (1979) West Germany
6971	E03 e + O ²⁺ H06 hv + O ²⁺	T	Undef	Soraph, M. E. G IV: bound states, oscillator strengths and photoionisation cross sections. <i>J. Phys. B</i> 13, 3129 (1980) United Kingdom
6972	H06 hv + Ag	E	160-160 nm	Meinmann, U.; Wolke, A.; Kessler, J. Polarised photoelectrons from silver atoms. <i>J. Phys. B</i> 13, 3149 (1980) West Germany
6973	H06 hv + Pb	E	17-50 keV	Arora, S. K.; Allawadhi, R. L.; Edd, B. S. Measured energy dependence of L-shell photoelectric cross sections of lead in the energy region 17-50 keV. <i>J. Phys. B</i> 13, 3157 (1980) India
6974	B07 Undef H06 Undef	T	H06 Undef	Crance, M.; Feneuille, S. The influence of radiative collisions on two-photon atomic ionisation. <i>J. Phys. B</i> 13, 3165 (1980) France
6975	H04 3hr + Pd; 3hr + Bi	E	Undef	Young, W. A.; Mirza, R. Y.; Duley, W. W. Three-photon excitation of Rydberg series in lead and bismuth. <i>J. Phys. B</i> 13, 3175 (1980) Canada
6976	A01 Undef	T	Undef	Dickinson, A. S.; Richards, D. Scattering of state-selected molecules in the sudden approximation. <i>J. Phys. B</i> 13, 3189 (1980) United Kingdom
6977	A30 D + H ₂ A11 D + H ₂	T	6-13 keV	Matsuoka, R. Fast collisions of high-Rydberg atoms (ions) with neutral species. <i>J. Phys. B</i> 13, 3201 (1980) Japan
6978	A03 H ⁺ + H	T	200-1000 keV	Bend, Y. B. High-energy proton-hydrogen-atom excitation multipole moments. <i>J. Phys. B</i> 13, 3215 (1980) Israel
6979	A07 H ⁺ + Ti; H ⁺ + Fe; H ⁺ + Cu; H ⁺ + Zr; H ⁺ + Ag; He ⁺ + Ti; He ⁺ + Fe; He ⁺ + Cu; He ⁺ + Zr; He ⁺ + Ag	E	86-796 keV	Benke, O.; Geretschläger, K-shell ionisation cross sections for Ti, Fe, Cu, Zr and Ag L ₂ protons and He ions in the energy range 86-796 keV. <i>J. Phys. B</i> 13, 3223 (1980) Austria
6980	A06 Kr ⁺ + CH ₄ ; Kr ⁺ + CO; Xe ⁺ + CH ₄ ; Xe ⁺ + CO; Xe ⁺ + H ₂ O A11 Kr ⁺ + CH ₄ ; Kr ⁺ + CO; Xe ⁺ + CH ₄ ; Xe ⁺ + CO; Xe ⁺ + H ₂ O	E	300 K	Adams, M. G.; Smith, D.; Alge, E. Reactions of the ² P _{3/2} and ² P _{1/2} doublet ground states of Kr ⁺ and Xe ⁺ at 300 K. <i>J. Phys. B</i> 13, 3235 (1980) United Kingdom

REF. NO.	REACTANTS	EXP OF THEORY	ENERGY RANGE	REFERENCE
6901	A13 Na ⁺ + [He + He]: Na ⁺ + [Ne + Ne]: Ar ⁺ + [Ar + Ar]: Kr ⁺ + [Ar + Ar]	E	100-300 K	Jones, J.D.C.; Lister, B. G.; Hareling, B. P.; Tully, R. D. The temperature dependence of the three-body reaction rate coefficient for some rare-gas atomic ion-atom reactions in the range 100-300 K. <i>J. Phys.</i> B 13, 3247 (1980); United Kingdom
6902	E95 e + H E17 e + H	T	100-250 eV	Pathak, A.; Srivastava, M. K. Polarized Coulomb-projected Born approximation for the triple differential cross section for electron impact ionization of atomic hydrogen. <i>J. Phys.</i> E 13, 3227 (1980) India
6903	E03 e + Ne	E	2.5 keV	Hitchcock, A. P.; Brion, C. E. Neon K-shell excitation studied by electron energy-loss spectroscopy. <i>J. Phys.</i> P 13, 3269 (1980) Canada
6904	E94 e + N ₂ E09 e + N ₂	E	9.7-11.6 eV	Rontz, A.; Gratonau, F.; Nazoum, J. Dissociative attachment in N ₂ . <i>J. Phys.</i> B 12, 2275 (1979) France
6905	A03 Mg ²⁺ + Hg A06 Mg ²⁺ + Pb	E	25-500 keV	Anderson, I.; Blagard, P.; Morcau-Pajaron, E. Formation of excited Mg ⁺ states in Mg ²⁺ -Hg collisions (25-500 keV). <i>Phys. Rev. A</i> 22, 812 (1980) Denmark
6906	A06 H + Na; H + Ne; H + Ar; H + Kr; H + Xe; H + Li; H + Be; H + B; H + C; H + N; H + O; H + F; H + Si; H + P; H + S; H + Cl; H + Br; H + I; H + As; H + Se; H + Te; H + Po; H + At; H + Fr; H + Ra; H + Ac; H + Th; H + Pa; H + U; H + Np; H + Pu; H + Am; H + Cm; H + Bk; H + Cf; H + Es; H + Fm; H + Md; H + No; H + Lr; H + Yb; H + Tl; H + Pb; H + Bi; H + Po; H + At; H + Fr; H + Ra; H + Ac; H + Th; H + Pa; H + U; H + Np; H + Pu; H + Am; H + Cm; H + Bk; H + Cf; H + Es; H + Fm; H + Md; H + No; H + Lr; H + Yb; H + Tl; H + Pb; H + Bi; H + Po; H + At; H + Fr; H + Ra; H + Ac; H + Th; H + Pa; H + U; H + Np; H + Pu; H + Am; H + Cm; H + Bk; H + Cf; H + Es; H + Fm; H + Md; H + No; H + Lr; H + Yb; H + Tl; H + Pb; H + Bi; H + Po; H + At; H + Fr; H + Ra; H + Ac; H + Th; H + Pa; H + U; H + Np; H + Pu; H + Am; H + Cm; H + Bk; H + Cf; H + Es; H + Fm; H + Md; H + No; H + Lr; H + Yb; H + Tl; H + Pb; H + Bi; H + Po; H + At; H + Fr; H + Ra; H + Ac; H + Th; H + Pa; H + U; H + Np; H + Pu; H + Am; H + Cm; H + Bk; 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REF. NO.	REACTANTS	EXP. JR. TMEOR.	ENERGY RANGE	REFERENCE
6992	A03 $H^+ + Ar; H^+ + Kr; H^+ + Xe; H^+ +$ PERT A07 $H^+ + Ar; H^+ + Kr; H^+ + Xe; H^+ +$ PERT	T	0.01-10 MeV	McGuire, E. J. Scaled proton ionization cross sections in the Born approximation. <i>Phys. Rev. A</i> 22, 866 (1980) United States
6993	E03 $e + Fe^{20+}; e + Kr^{36+}$	T	6.7-15 keV	Pindzole, R. S.; Carter, S. L. Electron-impact excitation of Fe XXV and Kr XXV in the relativistic distorted-wave approximation. <i>Phys. Rev. A</i> 22, 856 (1980) United States
6994	A03 $B^+ + Ar; C^+ + Ar; N^+ + Ar; O^+ +$ Ar; $Ne^+ + Ar$ A07 $B^+ + Ar; C^+ + Ar; N^+ + Ar; O^+ +$ Ar; $Ne^+ + Ar$	E	30-600 keV	Reed, E. J.; Garcia, J. B.; Fortner, S. J.; Stollerfoht, N.; Schneider, D. K- and L-shell vacancy sharing between light projectiles and argon targets. <i>Phys. Rev. A</i> 22, 903 (1980) United States
6995	B07 Undef E11 Undef	T	E11 Undef	Schlossinger, L.; Bright, J. A. High-energy bremsstrahlung in an intense laser field. <i>Phys. Rev. A</i> 22, 985 (1980) United States
6996	E02 $e + He$ E17 $e + He$	E	2-400 eV	Shyn, T. W. Angular distribution of electrons elastically scattered from gases: 2-400 eV on He. I. <i>Phys. Rev. A</i> 22, 916 (1980) United States
6997	E02 $e + N_2$ E03 $e + N_2$ E17 $e + N_2$	E	1.5-400 eV	Shyn, T. W.; Corrignon, G. Angular distribution of electrons elastically scattered from gases: 1.5-400 eV on N_2 . II. <i>Phys. Rev. A</i> 22, 922 (1980) United States
6998	A03 $H^+ + He^+$ A06 $H^+ + He^+$	T	1.6-14 keV	Winter, T. G.; Patton, G. J.; Lere, R. F. Molecular-state treatment of collisions between protons and He^+ ions. <i>Phys. Rev. A</i> 22, 926 (1980) United States
6999	A03 $He^+ + H$	T	0-360 keV	Francis, V. Collisions between hydrogen atoms and helium ions. <i>Phys. Rev. A</i> 22, 937 (1980) United States
7000	E03 $e + He^+; e + Na^+; e + Ca^+; e + He^+;$ $e + PERT$ E05 $e + He^+; e + Na^+; e + Ca^+; e + He^+;$ $e + PERT$ E07 $e + He^+$ $e + Na^+; e + Ca^+; e + He^+; e +$ PERT	T	1-10 ⁵ eV	Vriens, L.; Smeets, A.-M.-N. Cross-section and rate formulas for electron-impact ionization, excitation, deexcitation, and total depopulation of excited atoms. <i>Phys. Rev. A</i> 22, 940 (1980) The Netherlands
7001	E02 $e + He$ E03 $e + He$	T	Undef	Vadehra, J. R.; Spruch, L. Large-momentum-transfer limit of some matrix elements. <i>Phys. Rev. A</i> 22, 946 (1980) United States
7002	E12 $e^+ + H$	T	20-200 eV	Shakenhaft, R.; Vadehra, J. R. Distorted-wave Born approximation for inelastic collisions: application to electron capture by positrons from hydrogen atoms. <i>Phys. Rev. A</i> 22, 968 (1980) United States
7003	H02 $h\nu + Be Seq$ H06 $h\nu + Be Seq$	T	Undef	Lee, C. N.; Johnson, W. R. Scattering and spectroscopy: relativistic multichannel quantum-defect theory. <i>Phys. Rev. A</i> 22, 979 (1980) United States
7004	H06 $h\nu + Ar; h\nu + Kr; h\nu + Xe$	T	1020-782 Å	Johnson, W. R.; Cheng, K. Y.; Huang, K.-h.; Le Dourneuf, M. Analysis of Beutler-Pano autoionizing resonances in the rare-gas atoms using the relativistic multichannel quantum-defect theory. <i>Phys. Rev. A</i> 22, 989 (1980) United States
7005	C07 $C^{10} + C$	E	80 MeV	Berry, M. G.; DeSorio, R.; Livingston, A. L. Wavelengths and fine structure of 2s-2p transitions in two- and three-electron ions. <i>Phys. Rev. A</i> 22, 996 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7006	A12 $\text{Eh}^+ + \text{Ne}; \text{Ne}^+ + \text{Ne}; \text{Ne}^+ + \text{Ar}; \text{Ne}^+ + \text{Kr}; \text{Ne}^+ + \text{Xe}$	E	453 K	Brillet, M.-U.L.; Gallagher, A. Inert-gas collisional broadening and shifts of Rydberg states. <i>Phys. Rev. A</i> 22, 1012 (1980) United States
7007	404 $\text{h}\nu + \text{K}^-$ 407 $\text{h}\nu + \text{K}^-$	E	17030-20400 cm^{-1}	Falk, R. A.; Loop, D.; Catalio, S. Photoelectron of K^- to the $4^2\text{S}_{1/2}$, $4^2\text{P}_{1/2}$, and $4^2\text{F}_{3/2}$ levels of K . <i>Phys. Rev. A</i> 22, 1095 (1980) United States
7008	402 $\text{h}\nu + \text{GeCl}_4; \text{h}\nu + \text{GeH}_4$	T	10911-10964 eV	Antoni, C. R.; Plesner, R. E.; Benesch, S.; Kutzler, J. W. First-principles calculation of x-ray absorption-edge structure in molecular clusters. <i>Phys. Rev. A</i> 22, 1104 (1980) United States
7009	C07 $\text{Kr}^+ + \text{C}$	E	714 keV	Dietrich, B. B.; Leavitt, J. A.; Gould, H.; Morron, R. Radiative decay of the $2p\ ^2\text{F}_{5/2,3/2}$ states of lithiumlike krypton ($Z=36$) and the $2p\ ^2\text{P}$ state of berylliumlike krypton. <i>Phys. Rev. A</i> 22, 1109 (1980) United States
7010	E03 $e + \text{Br}_2; e + \text{Kr}$ E05 $e + \text{Br}_2; e + \text{Ar}$	E	3 keV	Annis, M.; Annis, S.; Vaynsman, J.; Thoen, T. L. $L_{2,3}M_{2,3}N$ Auger electron spectra of Br_2 and Kr ; occasional $L_{2,3}M_{2,3}N$ spectra. <i>Phys. Rev. A</i> 22, 1116 (1980) Finland
7011	H08 Underf	T	Underf	Drummond, P. B. Observables and aspects of cooperative resonance fluorescence. <i>Phys. Rev. A</i> 22, 1179 (1980) United States
7012	E08 $e + \text{Ne}$	T	$18 \times 10^{-5} - 49 \times 10^3$ K	Bessolo, J. M.; Cattani, M.; Walzer, V. S. Semiclassical convergent calculations for the electron-impact broadening and shift of some lines of neutral helium in a hot plasma. <i>Phys. Rev. A</i> 22, 1194 (1980) Brazil
7013	H02 Underf	T	Underf	Li, M. C. Resonance fringes in the two-photon absorption with a Doppler shift. <i>Phys. Rev. A</i> 22, 1323 (1980) United States
7014	E09 $e + \text{SF}_6$ G06 $\text{SF}_6^- + \text{SF}_6 + \text{N}_2$	E	1.2-4 eV	Lakshmin, V. K.; Moruzzi, J. L. Measurements of attachment coefficients and ionic mobilities in SF_6 -nitrogen mixtures over the low-energy range 1.2-4.0 eV. <i>J. Phys. D</i> 13, 1435 (1980) United Kingdom
7015	A11 $\text{O}_2^+ + \text{CCl}_4; \text{O}_2^+ + \text{H}_2\text{C}; \text{O}_2^+ + \text{I}_2$	E	350 K	Aviles, R. G.; Muller, D. F.; Houston, P. L. Quenching of laser-excited O_2^+ [$b^1\Sigma^+(g)$] by CO_2 , H_2C , and I_2 . <i>Appl. Phys. Lett.</i> 37, 358 (1980) United States
7016	E16 $e + [\text{Ar} + \text{CF}_3\text{I} + \text{WF}_6]$	E	Underf	Hutchison, S. B.; Eden, J. G.; Verdayen, J. T. Iodine monofluoride emission spectrum and formation kinetics in electron-beam-produced plasmas. <i>Appl. Phys. Lett.</i> 37, 374 (1980) United States
7017	D17 $\text{Xe}^+ + [\text{Ag} + \text{Ni}]$	E	300 keV	Tsaur, B. Y.; Meyer, J. W. Supersaturated metastable Ag-Ni solid solutions formed by laser beam sintering. <i>Appl. Phys. Lett.</i> 37, 309 (1980) United States
7018	E10 $e + [\text{Ar} + \text{Kr} + \text{F}_2]$	E	400 keV	Jacob, J. H.; Trainor, D. V.; Fehni, P.; Nish, J. C. Accessibility of the $\text{Kr}^+(B)$ state to laser photons. <i>Appl. Phys. Lett.</i> 37, 322 (1980) United States
7019	D04 $\text{Ar} + \text{Cu}$	E	1-5 keV	Ohya, K.; Mori, I. A simple method to determine the energy of keV neutrals. <i>Jap. J. Appl. Phys.</i> 19, L281 (1980) Japan
7020	G06 $\text{H}^+ + \text{He}$	E	10-60 Td	Moruzzi, J. L.; Kondo, Y. The mobility of H^+ ions in helium. <i>Jap. J. Appl. Phys.</i> 19, 1411 (1980) United Kingdom
7021	D14 Underf + SS	T	Underf	Hayne, M. R.; Wood, M. M. The effect of vacancy loops on the swelling expected for 316 steel under dual-beam irradiation. <i>J. Nucl. Mater.</i> 92, 26 (1980) United Kingdom

REF. NO.	REACTANTS	EXP. OR THEORY	ENERGY RANGE	REFERENCE
7035	E92 $e + H$ Seq E93 $e + H$ Seq E12 $e + H$ Seq E17 $e + H$ Seq	T	0.1-1.0 MeV	Shiong, R.; Reiten, A. Relativistic Giant amplitudes for elastic and inelastic scattering of electrons and positrons by hydrogen atoms and hydrogen-like ions. <i>Phys. Scripta</i> 22, 367 (1980) Norway
7036	E63 $e + H$ J06 Review	E	Under	Huber, H.C.E.; Sandeman, R. J. Transition probabilities and their accuracy. <i>Phys. Scripta</i> 22, 373 (1980) Switzerland
7037	A97 $H^+ + H$; $H^+ + He$; $H^+ + Li$; $H^+ + Be$; $H^+ + B$; $H^+ + C$; $H^+ + N$; $H^+ + O$; $H^+ + F$; $H^+ + Ne$; $H^+ + Ar$; $H^+ + Kr$; $H^+ + Xe$; $H^+ + Rn$	E, T	70-500 keV	Pashkov, V. P.; Romanovskii, E. A.; Karpov, N.; Kraych, G. Proton-induced L-shell ionization cross sections of elements with Z (less than or equal to) 22 (less than or equal to) 79 for projectile energies between 70 and 500 keV. <i>Phys. Status Solidi A</i> 60, 75 (1980) Soviet Union
7038	C06 $e + Under$ H12 $He + e$	T	Under	Bazylev, V. A.; Zhavago, N. A. Scattering of photons by channelled particles. <i>Phys. Status Solidi B</i> 57, 63 (1980) Soviet Union
7039	C02 $e + He$	E	56 keV	Manzke, R. Optical properties of solids due to electron energy loss spectroscopy. <i>Phys. Status Solidi B</i> 97, 157 (1980) West Germany
7040	C06 $e + C$; $e + C$ D12 $e + C$; $e + C$	T	5 GeV	Kuchkov, N. A.; Trifanov, C. G. Higher harmonics of spontaneous radiation of ultrarelativistic channelled particles. <i>Phys. Status Solidi B</i> 59, 445 (1980) Soviet Union
7041	D05 $He + Al$	T	0-140 eV	Barto, I.; Raco, F. Photoemission cross sections of oriented orbitals. <i>Phys. Status Solidi B</i> 99, 755 (1980) Czechoslovakia
7042	C04 $e + KCl$; $e + KI$	E	30-60 KeV	Basu, C.; Choudhuri, S.; Goussard, F.; Choudhuri, A. Effect of thermally created lattice vacancies on range-energy relation of electrons in KCl and KI crystals. <i>Phys. Status Solidi B</i> 65, 1137 (1980) India
7043	C05 Under D07 Under	T	Under	Karpuzov, D. S. Ejection angles of ions after double scattering on solid-target atoms. <i>Phys. Status Solidi B</i> 99, 1161 (1980) Bulgaria
7044	D15 $H^+ + Al$	E	Under	Erwin, M. V.; Melikov, Y. V.; Tolstov, A. F. Study of the positions of Al atoms displaced from lattice sites by radiation damage. <i>Sov. Phys.-Solid State</i> 22, 340 (1980) Soviet Union
7045	D04 $e + Be$	E	1000 eV	Branshtein, I. M.; Khinich, I. I. Secondary electron emission from beryllium in a narrow solid angle. <i>Sov. Phys.-Solid State</i> 22, 354 (1980) Soviet Union
7046	D13 $He^+ + O_2 + Si$	E	1 keV	Onsgaard, J.; Hailand, H.; Tagliero, E. Adsorption and desorption of oxygen and carbon monoxide on the Si(111) surface studied by ion scattering spectroscopy. <i>Surface Sci.</i> 95, 112 (1980) West Germany
7047	D12 $e + Ag_2O_3$; $e + Ga_2O_3$	E	100-300 eV	McKnight, S. W.; Polik, E. B. Cathodoluminescence studies of anodic oxides on GaAs. <i>J. Vac. Sci. Technol.</i> 17, 667 (1980) United States
7048	D13 $e + O + W$; $e + H + W$; $e + F + W$; $e + Cl + W$	E	100 eV	Tramm, M. P.; Woodruff, D. P. Time-of-flight measurements with a CRA for simultaneous energy and mass determinations of desorbed ions. <i>J. Vac. Sci. Technol.</i> 17, 1202 (1980) United States
7049	D16 $H + Si$; $H + TiC$; $H + VB_2$; $D + Si$; $D + TiC$; $D + VB_2$	T	1-14 keV	Doyle, B. L.; Bridge, D. R.; Haspler, W. R. A local mixing model for deuterium replacement in solids. <i>Radiat. Eff. Lett.</i> 27, 61 (1980) United States

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7050	A17 H + H	T	Under	Pacul, R.; Lee, A. An initial simplified calculation of the intermolecular interaction energy. <i>Acta Phys. Pol. A</i> 57, 745 (1980) Poland
7051	A12 Hg + Hg A17 Hg + Hg	E	306.2-564.4 K	Kacprzyk, R. Shape of the $h\nu$ 2537 Å resonance line in the presence of $Hg(6^3P_1)-Hg(6^3S_1)$ interactions. <i>Acta Phys. Pol. A</i> 57, 773 (1980) Poland
7052	E02 $e + He; e + H_2; e + C_2; e + Ba$ E17 $e + He; e + H_2; e + O_2; e + Ba$	T	530-1000 eV	Najmudar, E. Elastic scattering of electrons by atoms at intermediate energy. <i>Acta Phys. Pol. A</i> 57, 873 (1980) India
7053	D03 $Ar^+ + Cu; Ar^+ + Zn; Ar^+ + Cu(sub n)Zn; Ar^+ + Cu(sub n)Zn; Ar^+ + Cu(sub n)Zn$	E	6 keV	Szymanski, R. Sputtering of Cu and Zn atoms from elemental alloy targets. <i>Appl. Phys. (Germany)</i> 22, 89 (1980) Poland
7054	E04 $e + CCl_4; e + CHCl_3; e + CH_2Cl_2; e + CH_3Cl$ E09 $e + CCl_4; e + CHCl_3; e + CH_2Cl_2; e + CH_3Cl$	E	0-10 eV	Schwenemann, H.-G.; Illenberger, E.; Baumgartel, H. Dissociative electron attachment to CCl_4 , $CHCl_3$, CH_2Cl_2 , and CH_3Cl . <i>Ber. Bunsenges, Phys. Chem.</i> 84, 800 (1980) West Germany
7055	A13 $H_2^+ + F_2; H_2^+ + Kr; H_2^+ + CO; H_2^+ + CO_2; H_2^+ + N_2C; H_2^+ + CN; H_2^+ + SO_2; H_2^+ + CF_3Cl; H_2^+ + O_2; H_2^+ + C_2H_2; H_2^+ + NH_3; H_2^+ + C_2H_4; H_2^+ + NO$	E	Under	McCrush, J. L.; Ranshit, A. D.; Barnack, P. Reactions of H_2^+ ions with a variety of neutral molecules. <i>Ber. Bunsenges, Phys. Chem.</i> 84, 677 (1980) West Germany
7056	A14 HCl + C	E	1000-2500 K	Beth, P.; Lohr, R.; Hermanns, H. D. Shock wave measurements on the kinetics of the reaction $HCl + C$. <i>Ber. Bunsenges, Phys. Chem.</i> 84, 825 (1980) West Germany
7057	H05 $h\nu + C_2$	E	300 nm	Steldi, A.; Alenda, W.; Dernecht, J.; Harnack, F. Photochemical decomposition of gaseous carbon disulfide as perturbation effect at gas lasers. <i>Ber. Bunsenges, Phys. Chem.</i> 84, 848 (1980) West Germany
7058	A10 $HCl + H_2; HCl + NO; HCl + CH_4$	E	1.0-300 K	Schraab, B.; Rapp, M. Vibrational relaxation of $HCl(v=1)$ at low temperatures. <i>Ber. Bunsenges, Phys. Chem.</i> 84, 856 (1980) West Germany
7059	H06 $h\nu + TeCl_4; h\nu + TeBr_4$	E	21 eV	Jonkers, G.; de Lange, C. A.; Inijders, J. C. Effects of relativity in the $He(I)$ photoelectron spectroscopy of the transient species $TeCl_4$ and $TeBr_4$. <i>Chem. Phys.</i> 80, 11 (1980) The Netherlands
7060	A04 $UD^+ + Pr; UD^+ + Ar$	E	8-70 eV	Armentrout, P. E.; Beauchamp, J. L. Collision-induced dissociation of UD^+ and UD_2^+ . <i>Chem. Phys.</i> 50, 21 (1980) United States
7061	A13 $U^+ + O_2; U^+ + CO; U^+ + COS; U^+ + CS_2; U^+ + B_2O; U^+ + CO_2; U^+ + O_2; UD^+ + CO; UD^+ + COS; UD^+ + CS_2; UD^+ + B_2O; UD^+ + CO_2$	E	1-30 eV	Armentrout, P. E.; Beauchamp, J. L. Reactions of U^+ and UD^+ with C_2 , CO , CO_2 , CS_2 , CS , and CS_2 . <i>Chem. Phys.</i> 50, 27 (1980) United States
7062	A13 $NI^+ + H_2; NI^+ + HD; NI^+ + D_2$	E	2-12 eV	Armentrout, P. E.; Beauchamp, J. L. Endothermic reactions of NI^+ with H_2 , HD and D_2 . <i>Chem. Phys.</i> 86, 37 (1980) United States
7063	A10 $CO + H_2$	T	50-350 K	Billing, G. D. Vibration/vibrational energy transfer in CO colliding with $^{13}H_2$, $^{13}H^{13}N$ and $^{13}H_2$. <i>Chem. Phys.</i> 80, 145 (1980) Denmark
7064	A10 $He + H_2$	T	20-300 kcal/mol	Lova, J. E.; Raynor, S.; Taitelbaum, M. A quasiclassical trajectory study of molecular energy transfer in H_2 -He collisions. <i>Chem. Phys.</i> 50, 171 (1980) Canada

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7065	A13 $N_2^+ + F_2$	E	6.92-4.0 eV	Niort, P. P.; Herman, Z. Crossed beam study of the reaction $N_2^+ + F_2 \rightarrow N_2F^+ + F$. <i>Chem. Phys.</i> 50, 245 (1980) Czechoslovakia
7066	A03 $He + CC$ A17 $He + CC$	T	0-100 cm ⁻¹	Thomas, L. D.; Kraemer, W. F.; Bierbaum, G. H. Rotational excitation of CD by He impact. <i>J. Chem. Phys.</i> 51, 121 (1980) United States
7067	A17 $IBr; ICl$	E	Undef	de Bruijs, M. J.; van Veen, H. J. A.; Hutchings, P.; de Bruijs, A. E. Curve crossing and repulsive potentials probed by laser induced half collisions: ICl and IBr. <i>Chem. Phys.</i> 51, 159 (1980) The Netherlands
7068	A17 O_2^+	E	Undef	Grieman, F. J.; Mosley, J. T.; Saepe, M. J.; Cooby, P. C. Spectroscopic determination of the dissociative $F^+(sub g)$ potential curve of O_2^+ . <i>Chem. Phys.</i> 51, 165 (1980) United States
7069	H05 $Na + Li_2$	T	Undef	Wier, T.; Dalgaard, A. The photodissociation of Li_2 . <i>Chem. Phys.</i> 51, 271 (1980) United States
7070	H08 $hv + BC; hv + BC_2$	E	434-314 nm	Clyne, M. A. A.; Heaven, R. C. Laser-induced fluorescence of the B0 and B0 ₂ free radicals. <i>Chem. Phys.</i> 51, 295 (1980) United Kingdom
7071	A02 $H_2 + He; H_2 + Ne; H_2 + Ar; H_2 + Kr$ A03 $H_2 + He; H_2 + Ne; H_2 + Ar; H_2 + Kr$	T	3500-5400 eV/sec	Jacobs, M.; Reuss, J.; van de See, J. Distorted wave and close coupling calculation of cross sections for H_2 -inert gas systems, mainly above the rotational threshold. <i>Chem. Phys.</i> 51, 427 (1980) The Netherlands
7072	E04 $e + CS_2$ E05 $e + CS_2$	E	15-20 eV	Niletic, M.; Eres, D.; Veljovic, P.; Zebec, R. F. Post spectroscopic study of the ionization and fragmentation of carbon disulfide by nonenergetic electron impact. <i>Int. J. Radiat. Spectrosc. Ion Phys.</i> 25, 221 (1980) Yugoslavia
7073	A06 $Kr^{2+} + H_2; Kr^{2+} + N_2; Kr^{2+} + C_2;$ $Kr^{2+} + CO; Kr^{2+} + CO_2; Kr^{2+} + CH_4;$ $Ne^{2+} + H_2; Ne^{2+} + N_2; Ne^{2+} + C_2;$ $Ne^{2+} + CO; Ne^{2+} + CO_2; Ne^{2+} + CH_4$	E	300 K	Adams, M. G.; Smith, D. Charge transfer reactions of Kr^{2+} and Ne^{2+} ions with several molecular gases at 300 K. <i>Int. J. Mass Spectrom. Ion Phys.</i> 35, 335 (1980) United Kingdom
7074	B07 Undef	T		Kurbatov, A. A.; Popova, T. Y. Nonlinear polarization effects in the spectrum of a gas in a magnetic field. <i>J. Appl. Spectrosc.</i> 31, 1446 (1980) Soviet Union
7075	H02 Undef	T	Undef	Pakogen, R. M.; Ponomarev, V. A. Importance of the pulse shape in the study of absorption saturation in gases by the optoacoustic method. <i>J. Appl. Spectrosc.</i> 31, 1506 (1980) Soviet Union
7076	A05 $N_2^+ + H_2^+$	E	Undef	Golubavskii, Y. B.; Teleshko, V. M. Excitation of H_2^+ molecular ions in the positive column of a medium-pressure nitrogen discharge. <i>J. Appl. Spectrosc.</i> 32, 111 (1980) Soviet Union
7077	D15 $Ar^+ + FeS; Ar^+ + CoS; Ar^+ + NiS;$ $Ar^+ + CuS; Ar^+ + ZnS; O_2^+ + FeS;$ $O_2^+ + CoS; O_2^+ + NiS; O_2^+ + CuS;$ $O_2^+ + ZnS$	E	1 keV	Coyle, G. J.; Tsang, T.; Adler, I. XPS studies of ion-beam-induced damage of transition metal sulfides. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 20, 169 (1980) United States
7078	H06 $hv + H_2; hv + N_2; hv + O_2; hv + Ar;$ $hv + Kr; hv + Xe; hv + CC_2$	E	21 eV	Krell, J.; Schmalz, A. Photoelectron asymmetry parameters of $Ar, Kr, Xe, H_2, N_2, O_2, CC$ and CC_2 ; new measurements and a reconsideration of literature data. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 20, 151 (1980) West Germany
7079	E05 $e + N_2$	E	400-1200 eV	Suzuki, I. M.; Hargold, L.; Briar, C. E. Electron coincidence spectroscopy of C_2 ; valence electron momentum distributions and binding energies. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 20, 265 (1980) Australia

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7000	C64 e + CdTe	E	352-1450 eV	Szejian, J.; Luchay, R.C.G.; Liseegang, J.; Jenkins, J. C. Electron mean free path in CdTe: 350-1450 eV. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 20, 223 (1980) Australia
7001	E75 e + HF; e + HCl	E	407-1200 eV	Brion, C. E.; Dood, S. T.; Suzuki, I. N.; Belgica, E.; Williams, G.W.J. Momentum distributions and ionization potentials for the valence orbitals of hydrogen fluoride and hydrogen chloride. <i>J. Electron. Spectrosc. Relat. Phenomena</i> 21, 71 (1980) Australia
7002	H08 hv + Br	E	6764-5200 Å ⁰	Rezach, R. S.; Kennedy, A. F.; McAtee, K. E., Jr. Krypton ion laser-excited fluorescence in bromine. <i>J. Mol. Spectrosc.</i> 80, 239 (1980) United States
7003	H08 hv + H2O	E	16420-16520 cm ⁻¹	Hakimoto, N.; Saito, S.; Hirata, E. Doppler-limited dye laser excitation spectroscopy of the H2O radical. <i>J. Mol. Spectrosc.</i> 80, 234 (1980) Japan
7004	H02 hv + C ₂ D ₂	E	2580-2043 cm ⁻¹	Poussigue, G.; Terrage, G.; Cordinet, P.; Valentin, A. Absorption of acetylenecarotene ¹³ CH ₂ E at 4.5 pH, analysis of the overtone band 2v ₉ . <i>J. Mol. Spectrosc.</i> 82, 35 (1980) France
7005	H05 hv + D ₂ C	E	1302-1216 Å ⁰	Gradenham, A. The photodissociation of D ₂ C by vacuum ul.aviolet excitation sources. <i>J. Pol. Spectrosc.</i> 82, 246 (1980) Israel
7006	A17 Cl ₂	T	Undef	Coxon, J. A. Revised molecular constants, RKR potential, and long-range analysis for the E ² II([C(sub a) ⁰]) state of Cl ₂ , and rotationally dependent Franck-Condon factors for Cl ₂ (E (reaction goes both right and left) X ¹ I(sub g) ⁰). <i>J. Pol. Spectrosc.</i> 82, 264 (1980) Canada
7007	A12 HF + Ne; HF + Ar	E	3644 cm ⁻¹	Pine, A. S. Collisional narrowing of HF fundamental band spectral lines by neon and argon. <i>J. Pol. Spectrosc.</i> 82, 435 (1980) United States
7008	A12 C ₂ H ₂ + C ₂ H ₂	E	15680 cm ⁻¹	Wong, J. S. Pressure broadening of single vibrational-rotational transitions of acetylene at v=3. <i>J. Mol. Spectrosc.</i> 82, 449 (1980) United States
7009	A17 PH	T	Undef	Tang, S. C.; Pich, Y. K.; Verma, P. K.; Stuelley, B. C. The RKR potential energy curves for the X ¹ I ⁰ and A ¹ I ⁰ states of PH. <i>J. Mol. Spectrosc.</i> 83, 304 (1980) Taiwan
7010	A17 RbH	T	Undef	Pich, Y. K.; Tang, S. C.; Tan, P. C.; Verma, P. K.; Stuelley, B. C. The RKR potential energy curves for the X ¹ I ⁰ and A ¹ I ⁰ states of RbH. <i>J. Pol. Spectrosc.</i> 83, 311 (1980) Taiwan
7011	E02 e + N ₂ ; e + N ₂ E03 e + N ₂ ; e + N ₂ E17 e + N ₂ ; e + N ₂	T	10-50 eV	Gianterco, F. A.; Lamanna, U. I. The Glauber approximation to molecular scattering: III. Electron collisions with N ₂ and h ₂ at intermediate energies. <i>Rel. Phys.</i> 40, 793 (1980) Italy
7012	A17 N ₂ + N ₂	T	Undef	Pride, S. L.; Stone, A. J. Evaluation of anisotropic model intermolecular pair potentials using an ab initio SCF-CI surface. <i>Rel. Phys.</i> 40, 865 (1980) United Kingdom
7013	A14 H + HCO	T	335-1000 K	Farantos, S. C.; Murrell, J. N. A classical trajectory study of the reaction H + HCO → H ₂ + CO. <i>Rel. Phys.</i> 40, 883 (1980) United Kingdom
7014	A13 CO + NO	E	2.5-13 eV	Jarrold, M. F.; Hirst, D. P. A crossed beam study of the reaction CO + NO → CO ₂ + N. <i>Rel. Phys.</i> 40, 1197 (1980) United Kingdom

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7095	A17 Ar + Ar	T	Undef	Spiegelmann, F.; Malrieu, J.-P. At isotropic calculations of intermolecular potentials. The ground state of the Ar ₂ van der Waals dimer. <i>Helv. Phys.</i> 40, 1273 (1980) France
7096	A05 Ba ⁰ + Ti ⁰	E	17 ⁰⁰ K	Falcom, R. W.; Zdenek, G. A. Facetive collisional fluorescence observed from thermally excited atoms. <i>Opt. Lett.</i> 5, 365 (1980) United States
7097	B02 hv + Na ₂	E	2.5-8.83 μ	Vasilakis, A.; Bhaskar, R. S.; Kupper, W. New infrared absorption bands of sodium vapor. <i>J. Chem. Phys.</i> 73, 1498 (1980) United States
7098	A11 NO ₂ ⁰ + NO ₂	E	235-368 K	Kell, D. G.; Bernolly, V. R.; Bauman, P. Fluorescence lifetime studies of NO ₂ : IV. Temperature dependence of fluorescence spectra and of collisional quenching of fluorescence. <i>J. Chem. Phys.</i> 72, 1210 (1980) United States
7099	A07 Ba + Cl ₂ A14 Ba + Cl ₂	E	0.15-0.30 eV	Burton, R. M.; Zephery, J. M.; Pinn, C. A.; Acen, J. Molecular beam study of the chemi-ionization reaction: BaCl ₂ +BaCl ₂ +Cl ₂ . <i>J. Chem. Phys.</i> 72, 1212 (1980) United States
7100	A19 Ca ⁰ + He; Ca ⁰ + Ne; Ca ⁰ + Ar; Ca ⁰ + Kr; Ca ⁰ + Xe; Sr ⁰ + He; Sr ⁰ + Ne; Sr ⁰ + Ar; Sr ⁰ + Kr; Sr ⁰ + Xe	E	850 K	Wright, J. J.; Belling, L. C. ¹ F ₃ , ³ P ₁ excitation transfer for Ca and Sr with the noble gases. <i>J. Chem. Phys.</i> 73, 1617 (1980) United States
7101	A14 NO ₂ + C ₃	E	245-365 K	Zahniser, W. E.; Howard, C. J. Kinetics of the reaction of NO ₂ with ozone. <i>J. Chem. Phys.</i> 73, 1226 (1980) United States
7102	A13 H ₂ ⁰ + Ar	E	0.4-7.8 eV	Billette, R. M.; Prauninger, P. H.; Farrar, J. M. Crossed beam studies of low energy proton transfer reactions: H ₂ ⁰ (Pr,H)HAr ⁰ from 0.4 to 7.2 eV (c.e.). <i>J. Chem. Phys.</i> 73, 1637 (1980) United States
7103	B08 hv + SiCl ₄	E	470-270 nm	Welch, G. L.; Weston, R. E., Jr.; Flynn, G. W. Infrared multiphoton excitation and inverse electronic relaxation in SiCl ₄ . <i>J. Chem. Phys.</i> 72, 1845 (1980) United States
7104	A11 HCl ⁰ + Cl; HCl ⁰ + Br; HCl ⁰ + H A14 HCl ⁰ + Cl; HCl ⁰ + Br; HCl ⁰ + H	E	295-400 K	Macdonald, R. G.; Moore, C. B. Reaction and deactivation of HCl(v=1,2) by Cl, Br, and H atoms. <i>J. Chem. Phys.</i> 72, 1681 (1980) United States
7105	A03 H + Br ₂ ; H + H ₂ ; Cs + H ₂	T	0-1 eV	Barr, R.; Broisbagen, G.; Tzantris, J. P. The adiabatic-diabatic approach to vibrational inelastic scattering: theory and study of a single collisional model. <i>J. Chem. Phys.</i> 73, 1650 (1980) West Germany
7106	A19 He + H ₂ ; H + H ₂ ; Ar + H ₂	T	0-5.6 eV	Scherzinger, A. L.; Sorensen, D. The influence of the molecule continuum on inelastic vibrational energy transfer in atom-molecule collisions. <i>J. Chem. Phys.</i> 73, 1706 (1980) United States
7107	A13 Na ⁰ + He + He; Na ⁰ + Ne + Ne; Ar ⁰ + Ar + Ar	E	76-340 K	Johnson, B.; Chen, A.; Biondi, M. J. Three-body association reactions of Na ⁰ , He ⁰ , and Ar ⁰ ions in their parent gases from 76 to 306 K. <i>J. Chem. Phys.</i> 73, 1717 (1980) United States
7108	A17 Na ⁰ + H ₂ O	T	Undef	Bentley, J. Potential energy surfaces for excited neon atoms interacting with water molecules. <i>J. Chem. Phys.</i> 73, 1808 (1980) United States
7109	A17 NO ₂ ⁻ + H ₂ O	T	Undef	Banerjee, A.; Shepard, R.; Simons, J. Monte Carlo simulation of small hydrate clusters of NO ₂ ⁻ . <i>J. Chem. Phys.</i> 73, 1814 (1980) United States
7110	A17 CH ⁰	T	Undef	Saxon, R. P.; Kirby, K.; Liu, E. Excited states of CH ⁰ : potential curves and transition moments. <i>J. Chem. Phys.</i> 73, 1873 (1980) United States

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7111	A17 Ne + N ₂	T	Under	Peyer, W.; Norlheron, P. C.; Kutzelnigg, W. Refined ab initio calculation of the potential energy surface of the Ne-N ₂ interaction with special emphasis to the region of the van der Waals minimum. <i>J. Chem. Phys.</i> 73, 1488 (1980); West Germany
7112	G94 Ne ⁺ + Kr; Ne ⁺ + Xe G96 Ne ⁺ + Kr; Ne ⁺ + Xe	E	3-6 eV	Thackston, R. G.; Sanchez, P. S.; Seeley, G. W.; Peyer, W. M.; Elsele, F. L.; Gatland, I. R.; McDaniel, E. b. Mobilities and longitudinal diffusion coefficients for Ne ⁺ ions in Kr and Xe. <i>J. Chem. Phys.</i> 73, 2012 (1980); United States
7113	A95 C ⁺ + F ₂ ; C ⁺ + D ₂	E	1-7 eV	Kusumaki, I.; Ottinger, C. Triplet CH ⁺ (³ Σ ⁺) emission from chemiluminescent ion-molecule reactions C ⁺ (³ P) ⁺ N ₂ (¹ Σ _g ⁺). <i>J. Chem. Phys.</i> 73, 2065 (1980); West Germany
7114	C98 D ⁺ + H	T	80 eV	Adams, J. E.; Bell, J. E. Dynamics of ion channeling at low energies: preliminary trajectory studies. <i>J. Chem. Phys.</i> 72, 2137 (1980); United States
7115	A10 HF ⁺ + PF	T	300 K	Coltrin, R. E.; Marcus, B. A. The role of vibrational-rotational coupling V-V and V-S,T energy transfer. <i>J. Chem. Phys.</i> 73, 1171 (1980); United States
7116	A13 H ₂ O ⁺ + D ₂ ; H ₂ O ⁺ + H ₂	E	2.1-6.3 eV	Johgo, A.; Morita, Y. Dynamics of the reaction of H ₂ O ⁺ with D ₂ and H ₂ . <i>J. Chem. Phys.</i> 72, 2162 (1980); Japan
7117	A95 F + H ₂ ; F + HI; F + HBr; F + HCl; F + CH ₄	E	300 K	Taniguchi, K.; Jettner, D. W.; Sung, J. P. Energy disposal by F atom abstraction reactions: HF vibrational-rotational distributions from F+Phr and HI. <i>J. Chem. Phys.</i> 73, 2203 (1980); United States
7118	A14 C ₂ + H ₂ ; C ₂ + CO ₂ ; C ₂ + H ₂ C; C ₂ + NO; C ₂ + H ₂ ; C ₂ + CF ₄ ; C ₂ + Ar; C ₂ + Kr; C ₂ + Xe; C ₂ + O ₂	E	330 K	Reisler, H.; Rongir, M. S.; Wittig, C. Kinetics of free radicals generated by IR laser photolysis: II. Intersystem crossings and reactions of C ₂ (³ Π(sub 2)) and C ₂ (³ Π(sub 2)) in the gas phase. <i>J. Chem. Phys.</i> 73, 2289 (1980); United States
7119	A17 N ₂ ; N ₂ ⁺	T	Under	Ernst, W. C.; McLean, A. D. The effects of basis set quality and configuration mixing in ab initio calculations of the ionization potentials of the nitrogen molecule. <i>J. Chem. Phys.</i> 73, 2267 (1980); United States
7120	A17 HCO	T	Under	Runnig, T. W., Jr. Theoretical characterization of the potential energy surface of the ground state of the HCO system. <i>J. Chem. Phys.</i> 72, 2184 (1980); United States
7121	A17 NeNe; Ne ⁺ Ne; Ne ⁺ + Ne	T	Under	Sisto, P. E. One-electron model potential calculations: II. 1E ⁺ and 1E ⁺ excited states of NeNe relevant to electronic energy transfer. <i>J. Chem. Phys.</i> 73, 2277 (1980); United States
7122	G96 NO ₂ ⁻ + H ₂ ; NO ₂ ⁻ + H ₂ ; CO ₂ ⁻ + H ₂	E	217-675 K	Elsele, F. L.; Porhins, P. L.; McDaniel, E. b. Mobilities of NO ₂ ⁻ , NO ₂ ⁻ , and CO ₂ ⁻ in H ₂ over the temperature range 217-675 K. <i>J. Chem. Phys.</i> 73, 2117 (1980); United States
7123	A14 CdHg + CdHg; CdHg + Cd + Hg H92 Hv + CdHg; Hv + Cd ₂ Hg H10 Hv + Hg ₂ + Cd	E	A14 330 K H02 567-400 nm H17 266 nm	McGeech, M. W. The CdHg (a) state: fluorescence kinetics and absorption. <i>J. Chem. Phys.</i> 73, 2134 (1980); United Kingdom
7124	A95 Ne ⁺ + CF A97 Ne ⁺ + CS	E	300 K	Tsuji, M.; Otsu, M.; Ishiura, Y. CS ⁺ (² Π ⁺ - ² Π ⁺) emission produced from Penning ionization of the CS(¹ Π ⁺) radical. <i>J. Chem. Phys.</i> 73, 2678 (1980); Japan

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
7125	A13 Ar ⁺ + CC; Ar ⁺ + N ₂ ; Ar ⁺ + C ₂ ; Ar ⁺ + NO; Ar ⁺ + H ₂ O; Ar ⁺ + CO ₂ ; Ar ⁺ + N ₂ G06 Ar ⁺ + Ar	E	30° K	Pakshil, A. B.; Bernack, P. Thermal rate coefficients for reactions involving ³⁹ K ⁺ and ⁴¹ K ⁺ argon ions and several neutral molecules. J. Chem. Phys. 72, 2672 (1980); West Germany
7125	E02 e + CN E03 e + CO E17 e + CO G09 e + CO	T	1° eV	Gomb, K.; Truhler, D. G. Quantum mechanical study of elastic scattering and rotational excitation of CG by electrons. J. Chem. Phys. 73, 2666 (1980) United States
7127	A11 Hg ⁺ + F ₂	E	612-841 K	Breckenridge, W. H.; Nibbel, W. L. Temperature dependence of the quenching of Hg(³ P _{sub} 1) by F ₂ : evidence for a change from physical to chemical exit-channel control. J. Chem. Phys. 73, 2763 (1980) United States
7128	A10 HCl ⁺ + HCN; HCl ⁺ + DCM; HBr ⁺ + HCN; HBr ⁺ + CCM; HCl ⁺ + HF; HCl ⁺ + HCl; HCl ⁺ + BCl; HCl ⁺ + HBr; HCl ⁺ + DBr	E	297 K	Arnold, G. S.; Fernando, R. P.; Smith, I. B. H. Vibrational energy transfer between HCl and [CH and hydrogen and deuterium halides. J. Chem. Phys. 72, 2773 (1980) United States
7129	A17 Ne ₂ ⁺ ; Ar ₂ ⁺ ; Kr ₂ ⁺ ; Xe ₂ ⁺	T	Undef	Vallee, O.; Trar Pinb, B.; Chagelle, J. The interaction between excited and ground state rare gas atoms: II. Mononuclear excimers with spin-orbit coupling. J. Chem. Phys. 73, 2784 (1980) France
7130	A03 He + CC; He + HCl; He + HE A16 He + CC; He + HCl; He + HD	T	50-250 cm ⁻¹	Shore, W.; Fitz, D. E.; Kouri, D. J. Effect of phase and orbital wave parameter choices on CS and ICS degeneracy averaged differential cross sections. J. Chem. Phys. 72, 2892 (1980) United States
7131	A16 H ⁺ + Na; H ⁺ + K; H ⁺ + Rb; H ⁺ + Cs A17 NaH; NaH ⁺	T	A16 20-400 eV A17 Undef	Cison, R. E.; Liu, B. Interaction energies for low-lying electronic states of NaH and NaH ⁺ : scattering of H ⁺ by alkali atoms. J. Chem. Phys. 72, 2817 (1980) United States
7132	A16 Li + HF; Li + HCl	T	2-9 kcal/mol	Escher, C. H.; Casavacchia, P.; Tiesemann, P. W.; Valentini, J. J.; Lee, Y. I. Study of the reaction dynamics of Li + HF, HCl by the crossed molecular beam method. J. Chem. Phys. 73, 2832 (1980) United States
7133	A17 HgO	T	Undef	Kauschlicher, C. W., Jr.; Silver, L. W.; Yarbrough, L. R. An SCF and MCSCF description of the low-lying states of HgO. J. Chem. Phys. 73, 2867 (1980) United States
7134	A05 Xe + Br ₂ A14 Xe + Br ₂ A17 Xe + Br ₂	T	30° K	Cherlich, D. J.; Cogged, R. P., Jr. Formation of the XeBr excimer by Xe-Br ₂ (D ⁺) collisions. J. Chem. Phys. 73, 3028 (1980) United States
7135	A17 Xe ₂ H08 hv + Xe	T	A17 Undef H08 2100-2000 Å	Leuillet, O.; Costes, M. C.; Le Calve, J.; Lovelace, P. Synchrotron radiation study of the molecular xenon fluorescence around 2000 Å. J. Chem. Phys. 73, 3167 (1980) France
7136	A16 Cl ⁻ + H ₂ ; Cl ⁻ + D ₂	T	5-50 eV	Cheung, J. Y.; Sata, S. Electron detachment from Cl ⁻ in collisions with H ₂ and D ₂ [E approximately greater than E(sub rel) approximately greater than 80 eV]. J. Chem. Phys. 73, 3155 (1980) United States
7137	A13 C ⁺ + H ₂ ; C ⁺ + N ₂ ; C ⁺ + O ₂ ; C ⁺ + H ₂ ; C ⁺ + H ₂ ; C ⁺ + D ₂ ; C ⁺ + He	T	75-300 K	Johnson, R.; Chen, A. H.; Biondi, P. A. Associative reactions of C ⁺ ions with H ₂ and D ₂ molecules at 78 and 300 K. J. Chem. Phys. 73, 3184 (1980) United States
7138	A17 Cl ⁻ + Xe G06 Cl ⁻ + Xe	T	Undef	Thackston, M. G.; Eisold, F. L.; Pepe, W. P.; Ellis, R. W.; McDaniel, L. W.; Gelland, J. R. Mobility of Cl ⁻ ions in Xe gas and the Cl ⁻ -Xe interaction potential. J. Chem. Phys. 73, 3183 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7139	A11 HCl + HCl; DCl + DCl	T	200-600 K	Shin, H. K.; Kim, Y. H. Temperature dependence of near-resonant vibration-vibration energy exchange in $H^{35}Cl + H^{37}Cl$ and $D^{35}Cl + D^{37}Cl$ collisions. <i>J. Chem. Phys.</i> 73, 2188 (1980) United States
7140	A11 HF + HF; HF + DF; DF + HF; DF + DF	T	300-2400 K	Wilkins, R. L.; Kueh, M. A. Temperature dependence of vibrational relaxation from the upper vibrational levels of HF and DF. <i>J. Chem. Phys.</i> 73, 2158 (1980) United States
7141	B10 He + H	T	Undef	Gerber, R. B.; Yinnon, A. T. Approximate solution of the inversion problem for atom-surface scattering. <i>J. Chem. Phys.</i> 73, 3232 (1980) Israel
7142	A09 F + He* + He; F + He* + He; F + Ar* + Ar; F + Kr* + Kr; F + Xe* + Xe	T	300 K	Flannery, P. B.; Yang, T. P. Three-body recombination of rare gas atomic ions X^+ with F^- in a low-density gas. <i>J. Chem. Phys.</i> 73, 2235 (1980) United States
7143	B02 Ar* + CO + H	T	600 eV	Winegrad, R.; Garrison, B. J.; Herrlich, E. E., Jr. Mechanism of CO ejection from ion bombarded single crystal surfaces. <i>J. Chem. Phys.</i> 72, 3472 (1980) United States
7144	B11 CO + Pt D13 CO + Pt	E	195-625 K	Fair, J.; Nadix, P. J. Low and high coverage determinations of the rate of carbon monoxide adsorption and desorption from Pt(110). <i>J. Chem. Phys.</i> 73, 3400 (1980) United States
7145	A17 He ₂	T	Undef	Kemleby, M. E. *Erratum: new spectroscopic constants and RBR potential for the $A^1\Sigma^+_g$ state of He ₂ . <i>J. Chem. Phys.</i> 66, 4951 (1977). <i>J. Chem. Phys.</i> 73, 2526 (1980) United States
7146	A10 HF + HF; DF + DF	T	300 K	Coltrin, M. E.; Koszykowski, M. L.; Percus, R. A. Cross-correlation trajectory study of V-V energy transfer in HF-HF and DF-DF. <i>J. Chem. Phys.</i> 73, 3443 (1980) United States
7147	A06 Ar* + I ₂ ; K + I ₂	T	25-154 eV	Nicholls, A. P.; Gillen, K. T. Comparison of ion pair formation in the systems $Ar^+ + I_2$ and $K + I_2$. <i>J. Chem. Phys.</i> 73, 3472 (1980) United States
7148	A11 OCS* + He; OCS* + Ar; OCS* + Kr; OCS* + Xe	E	377 K	Mandich, W. L.; Flynn, G. W. Collisional relaxation of vibrationally excited OCS in rare gas mixtures. <i>J. Chem. Phys.</i> 72, 3675 (1980) United States
7149	A04 He* + CO ₂ ; He* + CO ₂ ; O* + CO ₂ A07 He* + CO ₂ ; He* + CO ₂ ; O* + CO ₂	E	1 MeV	Wood, R. W.; Edwards, A. K.; Stolar, P. J.; Rance, P. H.; Shah, A. V. The dissociative ionization of CO ₂ by fast heavy ions. <i>J. Chem. Phys.</i> 72, 3705 (1980) United States
7150	A13 He* + H ₂	E	0.7-3.6 eV	Manser, S. G.; Ferrar, J. P.; Pater, B. M. Synthesis of the reaction of He* with H ₂ : V. Reactive and nonreactive scattering of He*(⁴ S) at relative energies below 3.6 eV. <i>J. Chem. Phys.</i> 72, 3750 (1980) United States
7151	E05 e + He; e + He; e + Ar; e + Kr	E	1 ⁺ -100 eV	Stephan, K.; Helm, M.; Park, T. E. Photo spectroscopic determination of partial electron impact ionization cross sections of He, He, Ar and Kr from threshold ω_0 to 100 eV. <i>J. Chem. Phys.</i> 73, 2742 (1980) Austria
7152	A10 LIN + HCl; LIN + DCl; LIN + HCN; HF + HF	T	0.7-1.6 eV	Alexander, M. H.; Jandrek, L. F.; Ingdigion, P. J. Validity of energy gap representations of rotationally inelastic cross sections between polar molecules. <i>J. Chem. Phys.</i> 73, 3797 (1980) United States
7153	E03 e + (Ne Seq)	T	0.01-5 keV	Ganes, P. S.; Green, A. E. S. Electron impact excitation of the neon isoelectronic sequence. <i>J. Chem. Phys.</i> 73, 3891 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7154	NO2 hv + Ne ₂ ⁺ ; hv + Ar ₂ ⁺ ; hv + Kr ₂ ⁺ ; hv + Xe ₂ ⁺ NO4 hv + Ne ₂ ⁺ ; hv + Ar ₂ ⁺ ; hv + Kr ₂ ⁺ ; hv + Xe ₂ ⁺	T	60°-100 nm	Wadt, W. R. The electronic states of Ne ₂ ⁺ , Ar ₂ ⁺ , Kr ₂ ⁺ , and Xe ₂ ⁺ . II. Absorption cross sections for the 1(1/2)(sub u) + 1(3/2)(sub g), 1(1/2)(sub g), 2(1/2)(sub g) transitions. J. Chem. Phys. 73, 3915 (1980); United States
7155	GO4 K ⁺ + N ₂ ; K ⁺ + Ar GO6 K ⁺ + N ₂ ; K ⁺ + Ar	E	Undef	Takebe, M.; Setch, Y.; Iinuma, K.; Seto, K. Mobilities and longitudinal diffusion coefficients for K ⁺ ions in nitrogen and argon. J. Chem. Phys. 73, 4871 (1980); Japan
7156	E05 e + Ne; e + N ₂ ⁺ E17 e + Ne; e + N ₂ ⁺	T	0-200 eV	Tsuji, A.; Kotagawa, M.; Harumi, M. Ethereal approach to break-up processes of hydrocarbon ions. J. Phys. Soc., Jap. 48, 2762 (1980); Japan
7157	AP6 H ⁺ + Cs; H ⁺ + Rb; H ⁺ + K; H ⁺ + Na; H + Cs; H + Rb; H + K; H + Na	E	0.4-5.0 keV	Nagata, T. Charge changing collisions of atomic beams in alkali-metal vapors: IV. Total cross sections for single-electron capture by H ⁺ for end H(1s) state. J. Phys. Soc., Jap. 48, 2060 (1980); Japan
7158	A13 NH ₃ ⁺ + NH ₃ ; H ⁺ + NH ₃ ; C ⁺ + HCN	T	10 ⁻⁶ -10 ⁻¹ eV	Sakimoto, K.; Takayanagi, K. Influence of the dipole interaction on the low-energy ion-molecule reactions. J. Phys. Soc., Jap. 48, 2076 (1980); Japan
7159	A12 Rb + Xe MO4 hv + Rb + Xe	E	31207-33193 cm ⁻¹ ; 3213-3200 Å	Leda, K.; Fukuda, K. Collision-induced dipole transitions associated with Rydberg states of rubidium in xenon. J. Phys. Soc., Jap. 48, 421 (1980); Japan
7160	A10 He + He ⁺ E07 e + He ⁺	E	A10 320 K E07 4.6-6.4 K	Yasunuma, K.; Ohsu, S.; Fujimoto, T.; Fukuda, K. Selective-excitation study of collisional excitative transfer for helium 3 ¹ S ₁ and 1 states. J. Phys. Soc., Jap. 48, 656 (1980); Japan
7161	A12 Ba + Ar; Ba + Kr; Ba + Xe MO2 hv + Ba + Ar; hv + Ba + Kr; hv + Ba + Xe	E	2499-2593 Å	Ueda, K.; Fujimoto, T.; Fukuda, K. Collision-induced dipole transitions associated with high-lying states. I. Absorption studies of barium in rare gases. J. Phys. Soc., Jap. 48, 1147 (1980); Japan
7162	A10 HF + HF	T	0.15-1 eV	Naoshi, M.; Tsuchiya, S.; Takayanagi, K. A perturbed rotational state treatment of collisional tetramer polar molecules. J. Phys. Soc., Jap. 48, 1486 (1980); Japan
7163	B01 N ₂ ⁺	T		Ogaki, J.; Tomishima, Y. Monte Carlo solutions of Schrödinger's equation of N ₂ ⁺ ion in strong magnetic fields. J. Phys. Soc., Jap. 49, 1457 (1980); Japan
7164	AN8 He + N ₂ ; He + Ne; He + N ₂ ; He + O ₂ ; He + CO ₂ ; He + CH ₄ ; He + C ₂ H ₆ ; He + C ₂ H ₂	E	0.7-2.0 MeV	Itok, A.; Chisaki, K.; Fukuzawa, F. Charge-changing collisions of 0.7-2.0 MeV helium beams in various gases. II. Electron loss. J. Phys. Soc., Jap. 46, 1813 (1980); Japan
7165	A05 He ⁺ + He A10 He ⁺ + He	E	Thermal	Iida, T.; Mosce, M.; Urabe, I. Kinetic processes of the scintillation in helium excited by alpha particles. J. Phys. Soc., Jap. 49, 1615 (1980); Japan
7166	MO2 hv + CH ₄	T	1259-1266 cm ⁻¹	Orton, G. S.; Abbette, A. G. A line parameter list for the ν ₂ and ν ₃ bands of ¹² CH ₄ and ¹³ CH ₄ , extended to J' = 25 and its application to planetary atmospheres. J. Quant. Spectr. & Radiat. Transfer 24, 81 (1980); United States
7167	MO8 hv + HgII*	T	Undef	Irons, F. E. The escape factor in plasma spectroscopy: IV. The case of an overlapping doublet. J. Quant. Spectrosc. Radiat. Transfer 24, 115 (1980); Australia
7168	MO4 hv + Sb	E	40°-180 nm	Guern, Y.; Lotrian, J. Transition probabilities derived from emission measurements for the system Sp ² -Sp ³ of neutral antimony. J. Quant. Spectrosc. Radiat. Transfer 24, 133 (1980); France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7169	A12 $\text{NH}_3^+ + \text{Ne}; \text{NH}_3^+ + \text{Ar}$	T	3:3 K	Yamanoto, Y.; Cattani, M. On pressure broadening of the ammonia inversion spectrum by inert gases (Ne, Ar). J. Quant. Spectrosc. Radiat. Transfer 24, 137 (1986) Brazil
7170	M02 $h\nu + \text{Ca}; h\nu + \text{Sr}; h\nu + \text{Na}; h\nu + \text{In}$ M08 $h\nu + \text{Ca}; h\nu + \text{Sr}; h\nu + \text{Na}; h\nu + \text{In}$	E	4101-6407 Å	Omeretto, M.; Bower, J.; Bradshaw, J.; van Eijk, C. A.; Blumfeldner, J. D. A theoretical and experimental approach to laser saturation broadening in flames. J. Quant. Spectrosc. Radiat. Transfer 24, 147 (1986) United States
7171	A12 $\text{CH}_3\text{O}^+ + \text{CH}_3\text{O}; \text{CH}_3\text{O}^+ + \text{Ar}; \text{CH}_3\text{O}^+ + \text{H}_2\text{O}$ M02 $h\nu + \text{CP}_2\text{O}$	E	A12 309 K M02 3.5 μ	Kline, J. N.; Panner, S. S. Measurements of off-peak spectral absorption coefficients (in CH_3O^+) for an isolated Voigt line. J. Quant. Spectrosc. Radiat. Transfer 24, 165 (1980) United States
7172	M02 $h\nu + \text{H}_2\text{O}; h\nu + \text{CO}_2$	T	0-2100 cm^{-1}	Aoki, T. An accurate representation of the transmission functions of the H_2O and CO_2 infrared bands. J. Quant. Spectrosc. Radiat. Transfer 24, 151 (1980) Japan
7173	M02 $h\nu + \text{PH}_3$	E	850-1350 cm^{-1}	Goldman, A.; Cook, G. R.; Bando, E. S. Quantitative laboratory spectra and spectral line parameters for the ν_2 and ν_3 bands of PH_3 applicable to spectral radiative models of the atmosphere of Jupiter. J. Quant. Spectrosc. Radiat. Transfer 24, 211 (1980) United States
7174	M04 $h\nu + \text{NO}; h\nu + \text{CO}$	E	170-540 nm	Kuz'menko, M. E.; Kuznetsova, L. A.; Moryshin, A. P.; Kuz'yakov, Y. Y. Probabilities for electronic transitions of molecular systems of high-temperature air components: 1. The γ and β systems of NO and the (4+) system of CO. J. Quant. Spectrosc. Radiat. Transfer 24, 215 (1980) Soviet Union
7175	B01 Undef	T		Faulstich, R. On the transfer of line radiation in random magnetic fields. J. Quant. Spectrosc. Radiat. Transfer 24, 225 (1980) West Germany
7176	A12 $\text{NO}^+ + \text{H}_2; \text{NO}^+ + \text{CO}_2; \text{NO}^+ + \text{CCl}_4; \text{NO}^+ + \text{CH}_4; \text{NO}^+ + \text{Ar}$ M02 $h\nu + \text{NC}$	E	A12 300 K M02 226 nm	Dodge, L. G.; Busch, J.; Zdzienicki, R. F. Line broadening and oscillator strength measurements for the nitric oxide $\gamma(0,0)$ band. J. Quant. Spectrosc. Radiat. Transfer 24, 237 (1980) United States
7177	M08 $h\nu + \text{Ar}^+$	E	476-488 nm	Shaw, G. B., Jr. Statistical inference of four $\text{Ar}(\text{sub II})$ transition probabilities. J. Quant. Spectrosc. Radiat. Transfer 24, 255 (1980) United States
7178	M02 $h\nu + \text{HCCl}_2; h\nu + \text{OBF}$	E	2.7-6.0 μ	Boyer, D. W. Shock-tube measurements of the band strengths of HNO and OBF in the short wavelength infrared. J. Quant. Spectrosc. Radiat. Transfer 24, 269 (1980) United States
7179	A12 Undef	T	Undef	Park, C. Curves of growth for van der Waals broadened spectral lines. J. Quant. Spectrosc. Radiat. Transfer 24, 289 (1980) United States
7180	M08 $h\nu + \text{I}_2$	E	615-696 nm	Murthy, M. S.; Tagore, S. P. Intensity measurements and relative band strengths of the fluorescent bands of the (B-X) system of I_2 . J. Quant. Spectrosc. Radiat. Transfer 24, 319 (1980) India
7181	A12 $\text{CO}_2^+ + \text{CO}_2; \text{CO}_2^+ + \text{H}_2$	E	300 K	Tetteer, G. L.; Planet, M. G. Intensities and pressure-broadened widths of CO_2 R-branch lines at 10 μm from tunable laser measurements. J. Quant. Spectrosc. Radiat. Transfer 24, 343 (1980) United States
7182	Z08 $\alpha + \text{S}^{2+}; \alpha + \text{S}^{3+}$	T	28500 K	Hey, J. D.; Brager, P. Calculated Stark widths of isolated S(III) and S(IV) lines. J. Quant. Spectrosc. Radiat. Transfer 24, 427 (1980) South Africa

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7183	E88 e + C ²⁺ ; e + Si ²⁺ ; e + S ²⁺ ; e + Ar ²⁺ ; e + Al ²⁺ ; e + Si ³⁺ ; e + S ³⁺ ; e + Cl ²⁺ ; e + Ar ³⁺ ; e + O ²⁺ ; e + Ne ⁺	T	Undef	Dimitrijevic, M. S.; Konjevic, M. Stark widths of doubly and triply ionized atom lines. J. Quant. Spectrosc. Radiat. Transfer 24, 411 (1980) Yugoslavia
7184	A05 H ₂ ⁺ + C ₂ H ₂ ; H ₂ ⁺ + BrCN; H ₂ ⁺ + C ₂ H ₂ ; H ₂ ⁺ + BrCN	E	500-2500 K	Gerbel, R. R.; Savadatti, M. I. Spectral study of reactions involving organic vapors and the plasma afterglow of nitrogen. J. Quant. Spectrosc. Radiat. Transfer 24, 471 (1980) India
7185	A12 CO ⁺ + H ₂ ; CO ⁺ + Ar H08 H ₂ + CC + H ₂ ; H ₂ + CO + Ar	E	A12 273 K H08 2113-2230 cm ⁻¹	Varghese, P. L.; Hanson, R. E. Tunable infrared diode laser measurements of line strengths and collisional widths of ¹² C ¹⁸ O at room temperature. J. Quant. Spectrosc. Radiat. Transfer 24, 475 (1980) United States
7186	E06 e + O ²⁺ ; e + Ar ¹⁰⁺ ; e + Fe ²²⁺ ; e + Ne ¹⁰⁺	T	4.3 Ry	Hahn, Y.; Gany, J. M.; Luddy, R.; Date, M.; Shkolnik, M. Dielectronic recombination rate for the Be-sequence. J. Quant. Spectrosc. Radiat. Transfer 24, 505 (1980) United States
7187	H02 H ₂ + O ₂	T	1215 Å	Chiang, C.-C.; Skinner, G. E. Absorption of h and I Ly-α radiation by O ₂ molecules at high temperatures. J. Quant. Spectrosc. Radiat. Transfer 24, 525 (1980) United States
7188	H06 H ₂ + C ₂ ; H ₂ + NO	E	123 nm	Zacharias, M.; Fothke, M.; Helge, P. H. Photoionization of CO and NO by tunable VUV laser radiation. Opt. Commun. 31, 181 (1980) West Germany
7189	A04 H ₂ ⁺ + H ₂ ; H ₂ ⁺ + D ₂ ; D ₂ ⁺ + H ₂ ; D ₂ ⁺ + D ₂ A06 H ₂ ⁺ + H ₂ ; H ₂ ⁺ + D ₂ ; D ₂ ⁺ + H ₂ ; D ₂ ⁺ + D ₂ A07 H ₂ ⁺ + H ₂ ; H ₂ ⁺ + D ₂ ; D ₂ ⁺ + H ₂ ; D ₂ ⁺ + D ₂	E	10 ⁻⁵ -500 eV	Huber, B. A.; Schulz, U.; Wiesner, K. Cross sections for slow ion production and charge transfer in H ₂ ⁺ (D ₂ ⁺)-H ₂ (D ₂) collisions. Phys. Lett. 79A, 56 (1980) West Germany
7190	E02 e + H E17 e + H	T	15.5-30 eV	Srivastava, M. K. A simple two-piece procedure for electron-atom elastic scattering at low intermediate energies. Phys. Lett. 79A, 61 (1980) India
7191	D02 Ar ⁺ + Cu	E	51-90 eV	Cooper, C. B.; Woodyard, J. M. Low energy scattering of neutral Cu ₂ molecules. Phys. Lett. 79A, 124 (1980) United States
7192	A07 D ⁺ + Cu; D ⁺ + Ag; D ⁺ + Tb; He ²⁺ + Cu; He ²⁺ + Ag; He ²⁺ + Tb	E	0.3-0.7 MeV/amu	Chang, C. H.; Liu, Y. C.; Huang, S. L.; Yeh, S. C. The binding charge effect on the K-shell ionization by 0.3-0.7 MeV/amu deuterons and alpha particles. Phys. Lett. 79A, 301 (1980) Taiwan
7193	A07 H ⁺ + He; H ⁺ + H ₂ ; H ₂ ⁺ + He; H ₂ ⁺ + H ₂ ; He ⁺ + He; He ⁺ + H ₂ A04 H ⁺ + He; H ⁺ + H ₂ ; H ₂ ⁺ + He; H ₂ ⁺ + H ₂ ; He ⁺ + He; He ⁺ + H ₂	E T	0.5 MeV/amu	Kover, A.; Riez, S.; Szabo, G.; Serenyi, E.; Molloy, E.; Vegh, J. Electron spectra from the collisions of simple systems at 0.5 MeV/amu projectile energy. Phys. Lett. 79A, 305 (1980) Hungary
7194	C06 P + C	E	85 ⁺ keV	Lennard, M. W.; Jackson, T. L.; Phillips, E. The charge state equilibration distance for phosphorus ions in carbon. Phys. Lett. 79A, 205 (1980) Canada
7195	E12 e ⁺ + Ar	E	Undef	Albrecht, R. S.; Jones, G. Influence of self-nucleating clusters on the annihilation of positrons in low temperature argon gas. Phys. Lett. 79A, 417 (1980) Canada
7196	E03 e + N ₂ E04 e + N ₂ E05 e + N ₂	T	Undef	Bacri, J.; Mader, A. Electron-atomic molecule weighted total cross-section calculation: I. Principles for calculation. Physics B+C 1C1, 399 (1980) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7197	E03 e + N ₂ E04 e + N ₂ E05 e + N ₂	T	7-100 eV	Bacri, J.; Nedap, A. Electron elastic molecule weighted total cross section calculation: II. Application to the nitrogen molecule. <i>Physica E+C</i> 101, 410 (1980) France
7198	A03 Be ⁺ + Be; Be ²⁺ + Be A05 Be ⁺ + Be; Be ²⁺ + Be A07 Be ⁺ + Be; Be ²⁺ + Be	E	0.6-2.3 MeV	Takahashi, K.; Shima, K. He K-shell fluorescence yield in collisions between He-atom and He-ions at 0.6-2.3 MeV. <i>Physica E+C</i> 101, 420 (1980) Japan
7199	D07 H ⁺ + B ⁺ ; H ⁺ + C; H ⁺ + Cu; H ⁺ + Nb; H ⁺ + Au; H ⁺ + SS; H ₂ ⁺ + Be; H ₂ ⁺ + C; H ₂ ⁺ + Cu; H ₂ ⁺ + Nb; H ₂ ⁺ + Au; H ₂ ⁺ + SS D08 H ⁺ + Be; H ⁺ + C; H ⁺ + Cu; H ⁺ + Nb; H ⁺ + Au; H ⁺ + SS; H ₂ ⁺ + Be; H ₂ ⁺ + C; H ₂ ⁺ + Cu; H ₂ ⁺ + Nb; H ₂ ⁺ + Au; H ₂ ⁺ + SS	E	5-30 keV	Marrian, J. E.; Young, R.; Thomas, E. W. Scattering of 5- to 30-keV hydrogen from surfaces. <i>J. Appl. Phys.</i> 51, E244 (1980) United States
7200	B03 hv + H ⁻ H07 hv + H ⁻	T	H07 10.6 μm	Reise, M. B. Effect of an intense electromagnetic field on a weakly bound system. <i>Phys. Rev. A</i> 22, 1706 (1980) United States
7201	B07 Undef	T		Berman, P. R. Coherence effects in radiatively assisted inelastic collisions: general theory. <i>Phys. Rev. A</i> 22, 1838 (1980) France
7202	B07 Undef	T		Berman, P. R. Theory of coherence produced by radiatively assisted inelastic collisions: weak-field impact-core limit. <i>Phys. Rev. A</i> 22, 1848 (1980) France
7203	F12 e + Kr; e + Xe E18 e + Kr; e + Xe	E	0.35-100 eV	Debabrah, M. S.; Kaupplie, W. E.; Louning, J. P.; Laperriere, F.; Pol, V.; Smart, J. K.; Stein, I. S. Measurements of total scattering cross sections for low-energy positrons and electrons colliding with krypton and xenon. <i>Phys. Rev. A</i> 22, 1872 (1980) United States
7204	H06 hv + Na ⁺ ; hv + Ar ⁺ ; hv + Kr ⁺ ; hv + Xe ⁺	T	580-88 nm	Euzy, C.; Hyman, M. A. Photoionization of excited rare-gas atoms. <i>Phys. Rev. A</i> 22, 1878 (1980) United States
7205	C06 B + C; C + C; N + C; O + C; Ar + C C07 B + C; C + C; N + C; O + C; Ar + C	E	50-500 keV	Garcia, J. D.; Fortner, B. J.; Werrer, M. C.; Schneider, D.; Stolterfoht, R.; Fickers, E. Quasimolecular inner-shell charge-transfer cross sections for light projectiles in solids. <i>Phys. Rev. A</i> 22, 1884 (1980) United States
7206	A03 H ⁺ + Ni; H ⁺ + Pd; H ⁺ + Ag; H ⁺ + Au; D ⁺ + Ni; D ⁺ + Pd; D ⁺ + Ag; D ⁺ + Au; He ⁺ + Ni; He ⁺ + Pd; He ⁺ + Au; He ⁺ + Au A07 H ⁺ + Ni; H ⁺ + Pd; H ⁺ + Ag; H ⁺ + Au; D ⁺ + Ni; D ⁺ + Pd; D ⁺ + Ag; D ⁺ + Au; He ⁺ + Ni; He ⁺ + Pd; He ⁺ + Au; He ⁺ + Au	E	65-300 keV	Lapich, G.; Lambert, R.; Branc, b. Coulomb-deflection effect in inner-shell ionization by heavy charged particles. <i>Phys. Rev. A</i> 22, 1885 (1980) United States
7207	A06 H ⁺ Seq + PERT; H Seq + PERT; He Seq + PERT	T	0.1-20 MeV	Lapich, G.; McDaniel, F. C. Electron capture from K shells by fully stripped ions. <i>Phys. Rev. A</i> 22, 1886 (1980) United States
7208	E03 e + H ₂ ; e + D ₂ E04 e + H ₂ ; e + D ₂	E	20-100 eV	Spezzetti, J. J.; Kalman, O. P.; McIntyre, L. C., Jr. Time-of-flight study of H(2S) and D(2S) produced by electron impact on H ₂ and D ₂ : fast peaks. <i>Phys. Rev. A</i> 22, 1906 (1980) United States
7209	E03 e + He	E	50-2000 eV	van Zyl, B.; Born, G. M.; Chaoterleir, G.; Heddle, B.W.D. Benchmark cross sections for electron-impact excitation of n 1S levels of He. <i>Phys. Rev. A</i> 22, 1916 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7210	A06 $H^+ + He; He^+ + He; He^{2+} + He; Au^{9+} + He; Au^{8+} + He; Au^{7+} + He; Au^{6+} + He; Au^{5+} + He; Au^{4+} + He; Au^{3+} + He; Au^{2+} + He; Au^{1+} + He; Au^{12+} + He; Au^{13+} + He; Au^{14+} + He; Au^{15+} + He; Au^{16+} + He; Au^{17+} + He; Au^{18+} + He; Au^{19+} + He; Au^{20+} + He; Au^{21+} + He; C^{3+} + He; O^{4+} + He; O^{5+} + He; O^{6+} + Fe; O^{7+} + Fe; C^{8+} + He$ A07 $H^+ + He; He^+ + He; He^{2+} + He; Au^{9+} + He; Au^{8+} + He; Au^{7+} + He; Au^{6+} + He; Au^{5+} + He; Au^{4+} + He; Au^{3+} + He; Au^{2+} + He; Au^{1+} + He; Au^{12+} + He; Au^{13+} + He; Au^{14+} + He; Au^{15+} + He; Au^{16+} + He; Au^{17+} + He; Au^{18+} + He; Au^{19+} + He; Au^{20+} + He; Au^{21+} + He; C^{3+} + He; O^{4+} + He; O^{5+} + He; O^{6+} + Fe; O^{7+} + Fe; O^{8+} + He$	E	0.5-20 MeV	Hvelplund, P.; Paugen, H. R.; Knudsen, N. Single- and double-electron loss from helium by collisions with v_0 greater than or equal to v_0 multiply charged ions. Phys. Rev. A 22, 1930 (1980) Denmark
7211	A06 $H^+ + H$ A18 $H^+ + H$	T	15-1000 keV	Satapathy, U. C.; Rao, B. R.; Tripathy, L. N. Charge transfer in proton-hydrogen collisions: II. Phys. Rev. A 22, 1541 (1980) India
7212	A12 $Na + Na^+; CO + Na^+$	E	400 K	Kachru, R.; Posenberg, T. W.; Mortmann, S. W. Na_2 and CO -induced collisional broadening of forbidden ground-to-Sydberg-state transitions in sodium as measured by trilevel echoes. Phys. Rev. A 22, 1552 (1980) United States
7213	A12 $He + Na^+; He + Na^+; Ar + He^+; Kr + Na^+; Xe + He^+$	E	430 K	Posenberg, T. W.; Whitaker, E.; Kachru, R.; Mortmann, S. W. Noble-gas-induced collisional broadening of the $3P_{1/2}-3P_{3/2}$ transition of sodium measured by the trilevel-echo technique. Phys. Rev. A 22, 1562 (1980) United States
7214	H03 $h\nu + Pt; h\nu + Al; h\nu + Zn; h\nu + Mg; h\nu + Ag$	T	1.3-2750 eV	Kissel, L.; Pratt, R. M.; Roy, S. C. Rayleigh scattering by neutral atoms, 100 at to 10 MeV. Phys. Rev. A 22, 1578 (1980) United States
7215	A12 Under H02 Under H03 Under H08 Under	T	Under	Burnett, K.; Cooper, J.; Bellagh, S. J.; Smith, L. W. Collisional redistribution of radiation: I. The density matrix. Phys. Rev. A 22, 2002 (1980) United States
7216	A12 Under H02 Under H03 Under H08 Under	T	Under	Burnett, K.; Cooper, J. Collisional redistribution of radiation: II. The effects of degeneracy on the equations of motion for the density matrix. Phys. Rev. A 22, 2027 (1980) United States
7217	A12 Under H02 Under H03 Under H08 Under	T	Under	Burnett, K.; Cooper, J. Collisional redistribution of radiation: III. The equation of motion for the correlation function and the scattered spectrum. Phys. Rev. A 22, 2044 (1980) United States
7218	H03 $h\nu + H$ H04 $h\nu + H$	T	Under	Poole, W. E. Resonance scattering of Lyman- α radiation by hydrogen in the ground state. Phys. Rev. A 22, 2065 (1980) United States
7219	E11 Under	T	Under	Cory, J. R.; Ewen, T. J. L. Two-dimensional theory of free-electron lasers. Phys. Rev. A 22, 2088 (1980) United States
7220	H04 Under	T	Under	Casagrande, G.; Persico, F. Canonical transformation for single-atom resonance fluorescence: the strong-driving-field limit. Phys. Rev. A 22, 2106 (1980) Italy

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7221	N01 Under	T	Under	Thomas, J. E.; Culvers, W. L., Jr. Transit-time effects in optically pumped coupled three-level systems. <i>Phys. Rev. A</i> 22, 2115 (1980) United States
7222	A03 He + F ⁷⁺ ; He + Si ¹²⁺ ; Ne ⁹⁺ + F ⁷⁺ ; Ne ⁷⁺ + Si ¹²⁺	T	5-60 MeV	McGuire, J. M.; Simons, F. E. Calculation of cross sections for 2s-2p excitation of one-electron ions by He ⁷⁺ and Ne ⁹⁺ . <i>Phys. Rev. A</i> 22, 2276 (1980) United States
7223	E03 e + H	T	10-300 eV	Glen, T. T. Polarization fractions of Lyman- α radiation in e--H(1s) collisions. <i>Phys. Rev. A</i> 22, 2274 (1980) Canada
7224	A04 H ₂ + H ₂	T	10 keV	Watson, J.R.G. Predissociation spectrum of an excited electronic state of the H ₂ molecule. <i>Phys. Rev. A</i> 22, 2275 (1980) Canada
7225	E12 e + Ar; e + Xe	T	2-50 eV	Coleman, P. G.; McMutt, J. E.; Clara, L. P.; Mutton, J. T. Measurement of total cross sections for the scattering of positrons by argon and xenon atoms. <i>Phys. Rev. A</i> 22, 2290 (1980) United States
7226	A06 Ar ²⁰⁺ + Ar; Ar ²⁰⁺ + Ar; Ar ²⁰⁺ + Ar; Ar ²⁰⁺ + Ar; Ar ²⁰⁺ + Ar; Ar ²⁰⁺ + Ar; Ar ²⁰⁺ + Ar; Ar ²⁰⁺ + Ar; Ar ²⁰⁺ + Ar; Ar ²⁰⁺ + Ar; Ar ²⁰⁺ + Ar	E	1.2-80 keV	Aubert, J.; Bilean, S.; Geller, F.; Jacquet, B.; van Moutte, D. Charge-changing collisions of argon ions on argon gas. One-electron capture. <i>Phys. Rev. A</i> 22, 2403 (1980) France
7227	A02 Na ⁸⁺ + He; Na ⁸⁺ + Ne; Na ⁸⁺ + Ar; Na ⁸⁺ + Kr; Na ⁸⁺ + Xe A03 Under A07 Under	T	43° K	Flannery, M. R. Theoretical treatment of collisions of Rydberg atoms with neutral atoms and molecules. Sequential, impulse, and multistate-orbital theories. <i>Phys. Rev. A</i> 22, 2462 (1980) United States
7228	A02 PERT + PERT A03 PERT + PERT	T	10 ⁻⁷ -10 ¹² MeV	Gillespie, G. P.; Indutni, P. Systematics of electron collision strengths at high speeds. <i>Phys. Rev. A</i> 22, 2430 (1980) United States
7229	E02 e + H ₂ E17 e + H ₂	T	50-1000 eV	Jhanwar, B. L.; Khare, S. P.; Eshwar, M. K. Exchange effects in the independent-atom model for electron-hydrogen-molecule elastic scattering. <i>Phys. Rev. A</i> 22, 2451 (1980) India
7230	C05 Under	T	Under	Ruhn, S. Integral approach of successive collisions to linear charged-particle transport through a slab. <i>Phys. Rev. A</i> 22, 2460 (1980) Austria
7231	A10 Na ⁸⁺ + Na M04 hv + Na M06 hv + Na M09 hv + Na	E	A10 300 K M04; M06; M09 589 nm	Kushawaha, V. S.; Leventhal, J. J. Energy pooling in Na 3p-Na 3p collisions. <i>Phys. Rev. A</i> 22, 2468 (1980) United States
7232	E03 e + H ₂ ⁺ M06 hv + H ₂ ; hv + H ₂	T	0.74-1.0 Ry	Robb, W. D.; Collins, L. A. Iterative static-exchange techniques applied to low-energy collisions of electrons with molecular ions: H ₂ ⁺ , CH ⁺ , and H ₂ ⁺ . <i>Phys. Rev. A</i> 22, 2474 (1980) United States
7233	B07 Under	T		Rosenberg, L. Almost degenerate perturbation theory for scattering in a laser field. <i>Phys. Rev. A</i> 22, 2465 (1980) United States
7234	A06 D + Cs A16 D ⁺ + Cs C06 D ⁺ + Cs; D ⁺ + Rb; D ⁺ + Na	E	0.5-10 keV	Schlachter, A. S.; Stalder, R. H.; Stearns, J. W. L ⁻ production by charge transfer of 0.2-10-keV L ⁻ , D ⁺ , and L ⁻ in cesium, rubidium, and sodium-vapor targets. <i>Phys. Rev. A</i> 22, 2494 (1980) United States

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7235	C82 $\text{He}^{2+} + \text{Al}; \text{He}^{2+} + \text{Cu}; \text{He}^{2+} + \text{Pt}$	T	37-3720 GeV	Mostgl, M. L.; Turner, J. E.; Luang, P. I. Stopping power of matter for alpha particles at extreme relativistic energies. <i>Phys. Rev. A</i> 22, 2510 (1980) United States
7236	A03 $\text{Nb}^+ + \text{Fe}$ A07 $\text{Nb}^+ + \text{Fe}$ A18 $\text{Nb}^+ + \text{Fe}$	E	143 MeV	Schuch, R.; Guehler, G.; Melte, G.; Jones, R. W.; Johnson, B. M. Impact-parameter dependence of $2p$ sigma and $1s$ sigma molecular-orbital x rays produced by He-Nb collisions at 143 MeV. <i>Phys. Rev. A</i> 22, 2512 (1980) West Germany
7237	E03 $e + \text{H}_2$ E17 $e + \text{H}_2$	T	17-40 eV	Weatherford, C. A. Excitation of the $b^3\Pi(\text{sub } \sigma)^0$ state of H_2 by electron impact: semiclassical exchange potentials at intermediate energies. <i>Phys. Rev. A</i> 22, 2519 (1980) United States
7238	B07 Underf	T		Farrante, G. Quasistatic-field approximation to laser-assisted particle scattering. <i>Phys. Rev. A</i> 22, 2525 (1980) Italy
7239	A03 $\text{H}^+ + \text{Y}; \text{H}^+ + \text{Sn}; \text{H}^+ + \text{Au}; \text{H}^+ + \text{Bi}$ A07 $\text{H}^+ + \text{Y}; \text{H}^+ + \text{Sn}; \text{H}^+ + \text{Au}; \text{H}^+ + \text{Bi}$	E T	3.7-40 MeV	Sara, K.; Ishii, K.; Yamadera, A.; Kameoka, A.; Kashi, M.; Sebata, P.; Morita, S.; Chu, T. C. L- and P-shell ionization cross sections for 2-40-MeV-proton bombardments. <i>Phys. Rev. A</i> 22, 2526 (1980) Japan
7240	E05 $e + \text{C}; e + \text{N}; e + \text{O}; e + \text{Ne}$	T	27-1000 eV	Tang, C. J. Sum-rule-constrained classical binary-collision model for inner-shell ionizations. <i>Phys. Rev. A</i> 22, 2550 (1980) Taiwan
7241	A03 $\text{H}^+ + \text{H}; \text{He}^+ + \text{H}$ A18 $\text{H}^+ + \text{H}; \text{He}^+ + \text{H}$	T	1-100 keV	Theodosiou, C. E. Excitation of atomic hydrogen by protons and helium ions. <i>Phys. Rev. A</i> 22, 2556 (1980) West Germany
7242	A10 Underf	T	Underf	Bosanac, S. Two-dimensional model of rotationally inelastic collisions. <i>Phys. Rev. A</i> 22, 2617 (1980) United States
7243	F12 $e^+ + \text{He}$	T	26-2900 eV	Pandey, P.; Guha, S.; Sili, N. C. Scattering-helium collisions: positronium formation into an arbitrary excited S state. <i>Phys. Rev. A</i> 22, 2623 (1980) India
7244	A06 $\text{Ba}^+ + \text{Ba}$ A10 $\text{Ba}^+ + \text{Ba}$	T	0-900 keV	Strauch, S. J. Computed cross section for resonant charge transfer in $\text{Ba}^+ + \text{Ba}$ collisions. <i>Phys. Rev. A</i> 22, 2630 (1980) United States
7245	B01 Underf	T		DeTemple, T. A.; Peluchowski, S. J.; Chung, P. K. Semiclassical treatment of multiphoton interactions: ac Stark shifts. <i>Phys. Rev. A</i> 22, 2626 (1980) United States
7246	B01 Underf	T		Chung, H. K.; DeTemple, T. P. Semiclassical treatment of multiphoton interactions: signal-flow-graph approach. <i>Phys. Rev. A</i> 22, 2647 (1980) United States
7247	E05 Underf	T	Underf	Fano, U. Wave propagation and diffraction on a potential ridge. <i>Phys. Rev. A</i> 22, 2660 (1980) United States
7248	H02 $\text{hv} + \text{Ge}$ H06 $\text{hv} + \text{Ge}$	E	12.2-12.8 keV	Salem, S. I.; Dev, B.; Lee, P. L. Evidence of one-photon, two-electron excitation in the x-ray absorption spectra of germanium. <i>Phys. Rev. A</i> 22, 2676 (1980) United States
7249	H04 $\text{hv} + \text{Pc Seq}$	T	Underf	Younger, S. M. Theoretical line strengths for the $4d^{10} \rightarrow 5s-4d^{9} 4f$ $1P^0$ resonance transition in the palladium isoelectronic sequence. <i>Phys. Rev. A</i> 22, 2682 (1980) United States
7250	A12 $\text{Cs}^+ + \text{He}; \text{Cs}^+ + \text{Ne}; \text{Cs}^+ + \text{Ar}; \text{Cs}^+ + \text{Kr}; \text{Cs}^+ + \text{Xe}; \text{Cs}^+ + \text{H}_2; \text{Cs}^+ + \text{N}_2$	E	295 K	Bernabeu, E.; Alvarez, J. P. Shift and broadening of hyperfine components of the first doublet of cesium perturbed by foreign gases. <i>Phys. Rev. A</i> 22, 2696 (1980) Spain

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7251	A11 Na ⁰ + Fe; Na ⁰ + Xe; Na ⁰ + R ₂	E	300 K	Bhaskar, M. D.; Hou, W.; Ligare, W.; Suleman, B.; Rapper, M. Role of Na-Xe molecules in spin relaxation of optically pumped Na in Xe gas. <i>Phys. Rev. A</i> 22, 2710 (1980) United States
7252	E06 e + Ar ¹⁰⁺	E T	0.2-5.0 keV	Brau, A.; van Geeler, S.; Bitter, P.; Cousp, R. D.; Eames, D.; Hill, K.; Southoff, M.; Silver, E.; Stodiek, V. Observations of giant recombination edges on the Princeton Large Torus tokamak induced by particle transport. <i>Phys. Rev. A</i> 22, 2749 (1980) United States
7253	R04 he + Fe	T	1.0 keV	Gabriel, D. V.; Pratt, R. H. Intra-shell bound-bound generalized oscillator strengths for screened potentials. <i>Phys. Rev. A</i> 22, 2785 (1980) United States
7254	E06 e + Na Seq; e + Ne Seq	T	1.0 keV	Mahn, Y. Scaling properties of the dielectronic recombination rate. <i>Phys. Rev. A</i> 22, 2856 (1980) United States
7255	E03 e + He; e + Ne; e + Ar; e + Kr; e + Xe	E	10-20 eV	Tarr, S. M.; Schiavone, J. A.; Freund, R. D. Direct excitation of high-orbital-angular-momentum states of rare-gas atoms by electron impact. <i>Phys. Rev. A</i> 22, 2856 (1980) United States
7256	A17 Na + Ne	T	0-0.4 Ry	Neunow-Suenus, F.; Philippe, M. Methode de potentiel modele: application au systeme sodium-neon. <i>J. Phys. (Paris) Colloq.</i> 41, C3-125 (1980) France
7257	E06 e + Fe ²⁰⁺	T	2 x 10 ³ K	Bauer, P. Etude de l'ionosphere par diffusion incohérente dans la perspective du projet EISCAT. <i>J. Phys. (Paris) Colloq.</i> 41, C3-141 (1980) France
7258	E03 e + H ⁰	T	10 ³ K	Boumier, J.; Delpech, J. F.; Devos, F.; Gauthier, J. C. Transferts d'excitation atomique par collisions électroniques. <i>J. Phys. (Paris) Colloq.</i> 41, C2-211 (1980) France
7259	A17 H + He ⁰ ; H + Li ²⁺ ; He ⁰ + He ⁰ ; Li ²⁺ + Li ²⁺ ; He ⁰ + Li ²⁺	T	Under	Younif, F. M.; Shukla, G. C. Dispersion interaction between the hydrogen atom and hydrogen like ions. <i>J. Phys. (Paris)</i> 41, 101 (1980) Iraq
7260	A03 Na ⁰ + Fe	E T	137-157 eV	Rahmat, G.; Vassiliev, G.; Boudon, M. Excitation of 2 1S, 2P and 3 2P, 3 2P levels of helium in Fe ⁰ and He collisions at a few hundreds eV. <i>J. Phys. (Paris)</i> 41, 319 (1980) France
7261	C04 O ⁰ + Al; O ⁰ + Cu; O ⁰ + Ni C08 O ⁰ + Al; O ⁰ + Cu; O ⁰ + Ni D16 O ⁰ + Al; O ⁰ + Cu; O ⁰ + Ni	E	10-45 keV	Royer, M.; El Kouch, C.; Marbezat, S. Implantation of ¹⁶ O ions in channelling directions of aluminium, copper, and nickel single crystals: I. Experimental conditions and range profile determination. <i>J. Phys. (Paris)</i> 41, 402 (1980) France
7262	C04 O ⁰ + Al; O ⁰ + Cu; O ⁰ + Ni C08 O ⁰ + Al; O ⁰ + Cu; O ⁰ + Ni D16 O ⁰ + Al; O ⁰ + Cu; O ⁰ + Ni	E	10-45 keV	Royer, M. Implantation of ¹⁶ O ions in channelling directions of aluminium, copper, and nickel single crystals: II. Stopping power determination by maximum range measurements. <i>J. Phys. (Paris)</i> 41, 405 (1980) France
7263	A11 Hg ⁰ + Re; Hg ⁰ + Ne; Hg ⁰ + Ar; Hg ⁰ + Kr; Hg ⁰ + Xe A12 Hg ⁰ + Re; Hg ⁰ + Ne; Hg ⁰ + Ar; Hg ⁰ + Kr; Hg ⁰ + Xe	T	295 K	Vienne-Casalta, D.; Margerie, J.; Gay, J. C. Rare gas collisional perturbation of the (6 ² S _{1/2} , 6 ² P _{1/2}) levels of mercury: a theoretical estimate. <i>J. Phys. (Paris)</i> 41, 503 (1980) France
7264	C02 PER ⁰ + C	T	0.01-10 MeV/amu	Garnier-Monjole, F. S.; Garnier, M. J.; Boudier-Robinet, Y.; Duport, P. L. Empirical relation for electronic stopping power of heavy ions in carbon. <i>J. Phys. (Paris)</i> 41, 595 (1980) Belgium
7265	A10 Na ⁰ + Re; Na ⁰ + Ne	T	300 K	Pinard, M.; Leduc, F. The role of the Pauli principle in metastability exchange collisions. <i>J. Phys. (Paris)</i> 41, 769 (1980) France

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7266	D11 Undef	T	Undef	Eyzen, G. Model for handling the transmission problem in stitching at cold solid surfaces. Phys. Rev. B 22, 457 (1980) West Germany
7267	D13 Undef	T	Undef	Gortel, Z. W.; Kruzezer, M. J.; Testine, P. Multiphoton processes in a quantum-statistical theory of desorption. Phys. Rev. B 22, 512 (1980) Canada
7268	C85 He ⁺ + Au C88 He ⁺ + Au	T	1-35 MeV	Yamashita, Y.; Ohtsuki, Y. P. Feasibility of the Okorchoff effects for heavy ions in a crystal. Phys. Rev. E 22, 1182 (1980) Japan
7269	D11 Undef	T	Undef	Schottlander, K.; Gunnarsson, O. Stitching probability on metal surfaces: contribution from electron-hole-pair excitations. Phys. Rev. B 22, 1825 (1980) United States
7272	P15 n + Cu	E T	5-25 MeV	Howell, R. H. Positron-lifetime study of copper irradiated by d-T fusion neutrons. Phys. Rev. E 22, 1722 (1980) United States
7271	D44 e + Al; e + C; He ⁺ + Al; He ⁺ + C	T	0.8-1000 keV	Schow, J. Transport theory for kinetic emission of secondary electrons from solids. Phys. Rev. B 22, 2141 (1980) Denmark
7272	C82 He ⁺ + Polystyrene	T	2.2-5.9 MeV	Porter, L. E. X-ray excitation energy of polystyrene extracted from proton-stopping-power measurements. Phys. Rev. B 22, 2221 (1980) United States
7273	D01 e ⁺ + Undef	T	Undef	Nicolson, R. W.; Oliva, J. Theory of positronium formation and positron emission at metal surfaces. Phys. Rev. B 22, 2226 (1980) United States
7274	D12 e + [Li + Al]; e + [Li + Mg]	E	2- keV	Tagle, J. A.; Arakawa, E. T.; Collette, L. A. Soft-x-ray emission from Li-Al and Li-Mg alloys. Phys. Rev. E 22, 2716 (1980) United States
7275	D92 Ar ⁺ + Cu; Ar ⁺ + Si	T	20 eV	Luzin, A. N.; Tyshkev, A. N. Splitting of crystals and surface migration of atoms caused by slow-ion bombardment. Sov. Phys.-Tech. Phys. 24, 1508 (1979) Soviet Union
7276	A96 Undef	T	Undef	Aleksandrov, M. L. Charge exchange of a negative ion with a low binding energy and a polyatomic molecule. Sov. Phys.-Tech. Phys. 25, 21 (1980) Soviet Union
7277	A96 He ⁺ + PERT	T	Undef	Berezko, E. G. Effect of the proton polarization on the angular distribution of light emitted by hydrogen atoms. Sov. Phys.-Tech. Phys. 25, 223 (1980) Soviet Union
7278	D94 He ⁺ + LiF; He ⁺ + LiF; He ⁺ + LiF; He ⁺ + NaCl; Ar ⁺ + NaCl; He ⁺ + NaCl	E	1-100 eV	Rakhlov, R.; Galpov, S. Ion-electron emission by alkali-halide crystals in the near-threshold region of the potential energy of the system. Bull. Acad. Sci., USSR, Phys. Ser. 43, 52 (1979) Soviet Union
7279	D88 He ⁺ + Au D92 He ⁺ + Au	T	Undef	Kishnaya, S. L.; Parillo, E. S.; Farleyer, V. K. Charge composition of ions scattered by the surface of a single crystal. Bull. Acad. Sci., USSR, Phys. Ser. 43, 102 (1979) Soviet Union
7280	D97 Ar ⁺ + Al	E	6 keV	Evdolov, I. N. Small-angle scattering of intermediate-energy ions by crystal surfaces. Bull. Acad. Sci., USSR, Phys. Ser. 43, 106 (1979) Soviet Union
7281	M16 hv + He ⁺	E	17-175 nm	Gratten, R.T.V.; Hutchinson, M. P.; Theodorakis, L. I. Measurement of the wavelength-dependent photoionization cross section of He ⁺ (1S) in the spectral region of 170-175 nm. Brit. J. Quantum Electron. 4-16, 1176 (1980) United Kingdom

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7282	H05 Undef K03 Undef	E T	Undef	Bernaba, R. Molecular photoionization by an ultraviolet photon. IEEE J. Quantum Electron. G6-16, 1260 (1980) United States
7283	A03 He + H ₂	T	Undef	Gerratt, J.; Wilson, I.D.L. L ² S-matrix studies of molecular collision processes - energy dependence of sigma (sub wj going to sub w'j') for He + H ₂ . Proc. Roy. Soc., London A 372, 215 (1980) United Kingdom
7284	H02 Undef H13 Undef	T	Undef	Gora, V. B.; Koranzin, Y. N.; Subbarakov, A. P. Self-interaction of optical beam: laser resonance absorption conditions. Sov. J. Quantum Electron. 16, 411 (1980) Soviet Union
7285	B03 Undef H06 Undef	T	H06 Undef	Andryushin, A. I.; Fedorov, N. V. Resonance ionization of atoms in a strong spatially inhomogeneous electromagnetic field. Sov. J. Quantum Electron. 16, 454 (1980) Soviet Union
7286	H01 Undef H03 Undef	T	Undef	Zel'dovich, B. Y.; Yanovleva, T. V. Spatial-polarization wavefront reversal in stimulated scattering of the Rayleigh line brig. Sov. J. Quantum Electron. 10, 571 (1980) Soviet Union
7287	H05 h ν + SF ₆	E	937-548 cm ⁻¹	Bagratskhvili, V. N.; Kolchinskii, Y. M.; Rylov, L. A.; Starodubtsev, A. I. Two-frequency dissociation of SF ₆ molecules in a strong infrared field of a CO ₂ laser. Sov. J. Quantum Electron. 10, 628 (1980) Soviet Union
7288	H02 h ν + Air	E	627 nm	Baev, V. N.; Kovalenko, S. A.; Sviridenkov, L. A.; Suchkov, A. F.; Ioptugin, D. D. Multichannel recording of absorption spectra obtained by intracavity laser spectroscopy. Sov. J. Quantum Electron. 10, 628 (1980) Soviet Union
7289	B07 h ν + e H12 h ν + e	T	H12 Undef	Zhukovskii, V. C.; Khaid, S. P. Resonant Caspion effect in superstrong magnetic fields. Sov. Phys. J. 22, 1235 (1979) Soviet Union
7290	H02 h ν + Si	E	251-263 nm	Bohova, N. A.; Ivasenko, N. I.; Pel'tanek, V. S.; Pozdeev, V. V. Reabsorption of the line radiation of a plasma. Sov. Phys. J. 22, 1265 (1979) Soviet Union
7291	E11 Undef	T	Undef	Sokolov, A. A.; Ternov, I. P.; Zhukovskii, V. C.; Borisov, A. V. Quantum effects in synchrotron radiation. Sov. Phys. J. 22, 1267 (1979) Soviet Union
7292	G02 Undef	T	Undef	Zarychev, V. T.; Spitsyn, V. G. Source function of diffusion of an ideal gas. Sov. Phys. J. 22, 1211 (1979) Soviet Union
7293	G05 Review K02 Review K05 Review	E T	4.2-300 K	Khrapak, A. G.; Yekubov, I. T. Electrons and positrons in dense gases. Sov. Phys.-Usp. 22, 703 (1979) Soviet Union
7294	K01 Review K02 Review	T	Undef	Vinogradov, A. V.; Shobolev, I. Y.; Yukov, E. A. Elementary processes and x-ray spectra of multiply charged ions in dense high-temperature plasmas. Sov. Phys.-Usp. 22, 771 (1979) Soviet Union
7295	C02 Review	T	0.1-3.6 10 ⁹ cm/s	Akhiezer, I. A.; Davydov, L. N. Theory of electronic stopping of heavy ions in metals. Sov. Phys.-Usp. 22, 804 (1979) Soviet Union
7296	A03 C ⁺⁺ + q	T	1.4-2.5 MeV/cm	Yudin, G. L. Coulomb excitation of an atom by a fast multiply charged ion. Sov. Phys.-Doklady 24, 152 (1979) Soviet Union

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7297	A12 Ar ⁺ + F E08 e + H	T	1 ⁺ K	Seldel, J. Hydrogen Stark broadening by different kinds of model microfields. Z. Naturforsch. A 35, 479 (1980); best Germany
7298	A12 Fe ⁺ + Ar	E	2730-3000 K	Steinwandel, J.; Joss, V. E.; Hauser, M.; Lietz, T. Specific line-broadening of the iron-resonance-line 3055.51 Å by collisions with argon atoms at high temperatures. (in German) Z. Naturforsch. A 35, 624 (1980); best Germany
7299	A07 Ne ⁺ + H; Ar ⁺ + H A14 Ne ⁺ + H; Ar ⁺ + H	E	Thermal	Lorenzen, J.; Natop, M.; Ruf, P.-M.; Margrer, M. Rovibronic structure in the electron energy spectrum for associative ionization: Ne(² P ₂), Ar(² P ₂) + H. Z. Phys. A 257, 15 (1980); best Germany
7300	M04 hv + Kr	E	2 keV	Kdre, A.; Hribar, M.; Pahor, J. Electrons ejected in resonant Raman scattering of X-rays on krypton. Z. Phys. A 257, 25 (1980); Yugoslavia
7301	F05 e + Au; e + Pb; e + Bi E15 e + Au; e + Pb; e + Bi	E	67-600 keV	Pallikau, J.; Schlenk, B. L-subshell ionization cross sections for Au, Pb, and Bi by 60-600 keV electron impact. Z. Phys. A 297, 25 (1980); Hungary
7302	A10 Pb + Pt; Bi + Bi A19 Pb + Pt; Bi + Bi	E	4.2-4.8 MeV/amu	Steller, C.; Porenzoni, E.; Wolfli, b.; Meyerhof, b. E.; Fehmann, F.; Vincent, F.; Pchier, P. H.; Armbruster, P. NO x-ray angular distributions from 1 GeV ²⁰⁸ Pb + ²⁰⁸ Pb and ²⁰⁸ Pb + ²⁰⁸ Bi collisions. Z. Phys. A 257, 52 (1980); Switzerland
7303	A06 H ⁺ + Ne; H ⁺ + Ar A10 H ⁺ + Ne; H ⁺ + Ar	T	6.7-10 MeV	Jahnke-Abundsen, D. H.; Amundsen, F. A. On the semiclassical impulse approximation for electron capture in asymmetric ion atom collisions. Z. Phys. A 257, 203 (1980); Norway
7304	F02 e + He	T	30 ⁺ eV	Mohan, M.; Videnti, T. Exchange corrected Eikonal-Ecm approximation for elastic scattering of electrons by helium. Z. Phys. A 257, 285 (1980); best Germany
7305	A03 Pb + Au; Pb + Th; Pb + Hf; Pb + U; Pb + Pt; Pb + Yb; U + Au; L + Th; U + Hf; U + U; U + Pb; U + Yb A19 Pb + Au; Pb + Th; Pb + Hf; Pb + U; Pb + Pt; Pb + Yb; U + Au; L + Th; U + Hf; U + U; U + Pb; U + Yb	E	1.4-5.9 MeV/amu	Hagmann, S.; Armbruster, P.; Behrke, M.-H.; Liesen, C.; Mckler, P. P. Study of the 2p _{1/2} sigma excitator probability in collision systems with Z ₁ + Z ₂ > 150 using line width analysis. Z. Phys. A 258, 1 (1980); best Germany
7306	D16 D ⁺ + W	E	250 eV	Kellogg, G. L.; Panitz, J.K.G. A direct observation of the trapping of deuterium ions at a grain boundary in tungsten. Appl. Phys. Lett. 27, 425 (1980); United States
7307	E04 e + KrF ⁺ ; e + ArF ⁺ E07 e + KrF ⁺ ; e + ArF ⁺	F	1 eV	Trainor, D. W.; Jacob, J. H. Electron quenching of KrF ⁺ and ArF ⁺ . Appl. Phys. Lett. 27, 425 (1980); United States
7308	M08 hv + N ₂	E	5762-4869 Å	Davis, S. J.; Hanho, L. Optically pumped iodine monofluoride B ¹ l(C ⁺)-X ¹ IE ⁺ laser. Appl. Phys. Lett. 37, 652 (1980); United States
7309	D03 Ar ⁺ + Cu; Ar ⁺ + Ni; Ar ⁺ + Co; Ar ⁺ + Fe	E	1-3 keV	Monde, F.; Fukuda, Y.; Mi, S.-I.; Katsuda, J. b. Temperature dependence of positive secondary ion yields from Fe, Co, Ni, Cu and Cu(sub 0.5)bi(sub 0.5). Appl. Surf. Sci. 6, 47 (1980); United States
7310	A17 RPHCl; RPHCl; ArPHBr; ArPHr	T	Under	Hutson, J. M.; Eyrton, A. L.; Lergridge-Smith, P.H.K.; Howard, B. J. Intermolecular potential energy surfaces for R...HCl and Ar...HBr. Chem. Phys. Lett. 73, 218 (1980); United States

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7311	A11 $\text{BF}^+ + \text{EF}$	T	0-7 eV	Gianterco, F. A.; Lemaire, U. T.; Battaglia, L. Isotope effect in vibrational relaxation: inelastic scattering of EF molecules via a model quantum treatment. Chem. Phys. Lett. 72, 224 (1980) West Germany
7312	H10 $\text{hv} + \text{LiCa}$	E	515 nm	Neumann, B. K.; Benard, B. J.; Nichols, R. R. Laser chemiluminescence of LiCa. Chem. Phys. Lett. 72, 243 (1980) United States
7313	A04 $\text{Ne}^+ + \text{SO}_2$ A05 $\text{Ne}^+ + \text{SO}_2$ A06 $\text{Ne}^+ + \text{SO}_2$	E	380 K	Tsuji, N.; Yanoigawa, C.; Endoh, P.; Higashimura, Y. $\text{SO}^+[\text{A}^2\Pi-\text{X}^2\Pi(\text{sub } r)]$ emission produced from a dissociative charge-transfer reaction of Ne^+ with SO_2 at thermal energy. Chem. Phys. Lett. 73, 407 (1980) Japan
7314	H08 $\text{hv} + \text{OCS}$ H10 $\text{hv} + \text{OCS}$	E	193 nm	Shaw, R. J.; Gower, R. C.; Salt, S. Quantum yields for $\text{Se } ^1\text{S}_0$, $^1\text{D}_2$ and $^3\text{P}(\text{sub } 0,1,2)$ atoms in ArF laser photolysis of OCS. Chem. Phys. Lett. 72, 478 (1980) United Kingdom
7315	A14 $\text{H} + \text{HCl}$ A17 $\text{H} + \text{HCl}$	T	Undef	Levi, I.; Baer, M. Semi-empirical potential energy surfaces for the reactions $\text{H} + \text{HCl} \rightarrow \text{H}_2 + \text{Cl}$ and $\text{H}^+ + \text{HCl} \rightarrow \text{H}^+\text{Cl} \rightarrow \text{H}$. Chem. Phys. Lett. 73, 214 (1980) Israel
7316	A05 $\text{Ca}^+ + \text{HCl}; \text{Sr}^+ + \text{Cl}_2$	E	300 K	Brinkmann, U.; Schmidt, V. H.; Telle, M. The luminescence in reactions of metastable Ca and Sr atoms: $\text{Ca}^+ + \text{HCl}$, $\text{Sr}^+ + \text{Cl}_2$ under higher resolution. Chem. Phys. Lett. 73, 220 (1980) West Germany
7317	A11 $\text{SeO}_2^+ + \text{Ar}; \text{SeO}_2^+ + \text{N}_2; \text{SeCl}_2^+ + \text{CO}_2$	E	300 K	Niziolah, A. W. Radiative lifetime and quenching rates of SeCl_2 vapor. Chem. Phys. Lett. 74, 22 (1980) United States
7318	A14 $\text{CH} + \text{O}$	E	330 K	Reusing, I.; Corrington, T.; Filseth, S. V.; Jodkowski, C. P. Absolute rate constant for the $\text{CH} + \text{O}$ reaction. Chem. Phys. Lett. 74, 56 (1980) Canada
7319	A10 $\text{S}^+ + \text{CS}_2; \text{S}^+ + \text{OCS}; \text{S}^+ + \text{CH}_4$	E	295 K	Addison, R. C.; Donovan, R. J.; Fetsch, C. Resonance fluorescence study of electronically excited sulphur atoms: reactions of $\text{S}(^3\text{P}_2)$. Chem. Phys. Lett. 74, 50 (1980) United Kingdom
7320	H06 $\text{hv} + \text{N}_2; \text{hv} + \text{O}_2$	T	15-45 eV	Hirota, F. Photoionization cross sections of N_2 and O_2 in the static approximation. Chem. Phys. Lett. 74, 67 (1980) Japan
7321	A11 $\text{N}_2^+ + \text{Hg}; \text{N}_2^+ + \text{HgBr}_2; \text{N}_2^+ + \text{HgCl}_2$	E	300 K	Drilling, T. D.; Sauer, D. W. Quenching of $\text{N}_2[\text{A}^2\Pi(\text{sub } u)]^+$ by $\text{Hg}(\text{II})$ halides. Chem. Phys. Lett. 74, 211 (1980) United States
7322	A14 $\text{NH}_2 + \text{C}_2$	E	300 K	Bulatov, V. P.; Bulayev, A. A.; Cheskin, S. G.; Kozlov, M. Z.; Sarkisov, C. P.; Iremkin, P. I. On the reaction of the NH_2 radical with acetylene. Chem. Phys. Lett. 74, 280 (1980) Soviet Union
7323	A11 $\text{Ca}^+ + \text{Ne}; \text{Ca}^+ + \text{Ne}; \text{Ca}^+ + \text{Ar}; \text{Ca}^+ + \text{Kr}; \text{Ca}^+ + \text{Xe}; \text{Ca}^+ + \text{Co}; \text{Ca}^+ + \text{Hg}$	E	300 K	Malina, R. J.; Benard, D. J. Reactions of metastable calcium ^3P : quenching by $\text{Ca}(^1\text{S})$, $\text{Mg}(^1\text{S})$ and inert gases. Chem. Phys. Lett. 74, 321 (1980) United States
7324	G02 $\text{Ne}^+ + \text{N}_2$	F	300 K	Cernogora, C.; Sadeghi, R. Diffusion coefficients of $\text{Ne}^+(\text{D})$ and $\text{Ne}^+(\text{P})$ in N_2 . Chem. Phys. Lett. 74, 417 (1980) France
7325	A10 $\text{Xe}^+ + \text{N}_2$	E	0.04-0.2 eV	Del Bruno, J.; Frenos, J. Formation of $\text{N}_2[\text{B}^2\Pi(\text{sub } g)]$ in collisions between metastable $\text{Xe}(\text{B}^2\Pi(2,0))$ and $\text{N}_2[\text{X}^1(\text{sub } g)]$. Chem. Phys. Lett. 74, 420 (1980) United States
7326	A02 $\text{Li}^+ + \text{CO}$ A10 $\text{Li}^+ + \text{CO}$	T	4.3 eV	Thomas, L. D.; Brauner, W. F.; Bierchen, G. H. F. Low-angle scattering of Li^+ by CO. Chem. Phys. Lett. 74, 445 (1980) United States

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7327	A83 He + CC ₂ ; He + OCS	T	6.1-6.7 eV	Clary, D. C. The significance of Fermi resonance for the collisions of triatomic molecules with atoms. <i>Chem. Phys. Lett.</i> 74, 454 (1980) United Kingdom
7328	H82 hv + HgBr ₂	E	247-190 nm	Wilcoxon, B. S.; Barnham, D.; Bjew, A. UV absorption cross section and fluorescence efficiency of HgBr ₂ . <i>Chem. Phys. Lett.</i> 72, 229 (1980) United States
7329	A11 ND ⁺ + Fe A17 ND ⁺ + Fe	T	6.7-1.9 eV	Billing, G. B. Semiclassical calculation of cross sections and rate constants for vibrational deactivation of ND(v=1) colliding with ⁵⁶ Fe. <i>Chem. Phys. Lett.</i> 72, 234 (1980) Germany
7330	A ² He + HCl; He + HBr A17 He + HCl; He + HBr A19 He + HCl; He + HBr	E	75 meV	Held, M. D.; Fieger, E.; Ringer, G.; Tennyson, J. P. Isotropic interaction potentials for He-HCl and He-HBr from differential scattering cross-section measurements. <i>Chem. Phys. Lett.</i> 72, 280 (1980) West Germany
7331	A13 Cl ⁺ + H ₂ ; Cl ⁺ + CO; Cl ⁺ + CC ₂ ; Cl ⁺ + O ₂ ; Cl ⁺ + N ₂ ; Cl ⁺ + NO; Cl ⁺ + NH ₃ ; Cl ⁺ + CH ₄	E	300 K	Bakshit, A. B. Reaction of the ground and metastable excited Cl ⁺ ions with several neutral molecules at 300 K. <i>Chem. Phys. Lett.</i> 72, 283 (1980) West Germany
7332	A79 F ⁻ + X + Na ⁺ ; F ⁻ + X + K ⁺ ; F ⁻ + X + Rb ⁺ ; Cl ⁻ + X + Na ⁺ ; O ₂ ⁻ + X + C ₂ ⁺	T	300 K	Ratan, D. B. Universal curve for ion-molecule ionic recombination coefficients. <i>Chem. Phys. Lett.</i> 72, 469 (1980) United Kingdom
7333	A10 CO ₂ ⁺ + D ₂ ; CO ₂ ⁺ + O ₂ ; CN ⁺ + CC ₂ A11 CN ₂ ⁺ + H ₂ ; CO ₂ ⁺ + J ₂ ; CO ⁺ + CC ₂	F	17-370 K	Taine, J.; Lepoutre, F. Determination of energy transferred to rotation-translation in deactivation of CO ₂ (0001) by H ₂ and O ₂ and of CC(1) by C ₂ . <i>Chem. Phys. Lett.</i> 72, 440 (1980) France
7334	A11 CO ₂ ⁺ + He; CO ₂ ⁺ + Ne; CN ₂ ⁺ + Ar; CO ₂ ⁺ + Kr; CO ₂ ⁺ + Xe; CO ₂ ⁺ + D; CO ₂ ⁺ + CO ₂	T	17-370 K	Taine, J.; Lepoutre, F. Temperature dependence of the CO ₂ (010) collisional deactivation rate constants between 170 and 490 K. <i>Chem. Phys. Lett.</i> 72, 452 (1980) France
7335	A10 I ⁺ + H ₂	E	300 K	Hunter, T. F.; Kristjansson, K. S. Electronic to vibrational energy transfer, I[(² P _{1/2}) to ² P _{3/2}], measured by an optoacoustic technique. <i>Chem. Phys. Lett.</i> 72, 436 (1980) United Kingdom
7336	A14 F + H ₂	T	0.13-0.23 eV	Jellinek, J.; Beer, M.; Khara, V.; Acurl, L. J. Integral cross sections for the reaction F + H ₂ [v(ut 1)-0] + HF[v(ut 1)-0, 1, 2] + H: a quantum-mechanical calculation within the infinite order sudden approximation. <i>Chem. Phys. Lett.</i> 72, 460 (1980) Israel
7337	H98 hv + I ₂	E	570-290 nm	Newhall, M.; Collins, G. J. Laser excited fluorescence of I ₂ . <i>Chem. Phys. Lett.</i> 72, 418 (1980) United States
7338	H96 hv + O ₂	E	20-45 eV	Gustafsson, T. Partial photochemical cross sections of molecular oxygen. <i>Chem. Phys. Lett.</i> 72, 305 (1980) United States
7339	A86 O ⁺ + O ₂ ; C ₂ ⁺ + O ₂ A13 O ⁺ + O ₂ ; O ₂ ⁺ + O ₂	E	0.4-2.1 eV	Dotan, Y. Rate constants and branching ratios for the reactions of O ⁺ and O ₂ ⁺ ions with O ₂ measured at relative kinetic energies 0.04-2 eV. <i>Chem. Phys. Lett.</i> 72, 385 (1980) Israel
7340	A17 O ₂	T	Undef	Wright, J. S.; Fish, S.; Buerher, F. J. At initial potential surface for ozone decomposition. <i>Chem. Phys. Lett.</i> 72, 513 (1980) Canada
7341	D85 hv + KCl	F	1.0-6.0 eV	Kasai, A.; Ohishi, K. Photoelectric emission from KCl in the photon energy region from 1.0 to 6.0 eV. <i>Jap. J. Appl. Phys.</i> 19, 1452 (1980) Japan

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7342	E15 e + He; e + Ar; e + Kr; e + Xe	E	60-9 keV	Ono, K. Laser action of ionized rare neutral atomic lines in electron-beam-produced rare gas plasmas. Jap. J. Appl. Phys. 19, 1515 (1980) Japan
7343	D84 Ar ⁺ + Si; Ar ⁺ + Ni ₂ Si; Ar ⁺ + NiSi; Ar ⁺ + Pd ₂ Si; Ar ⁺ + PdSi	E	3 keV	Iwami, H.; Kio, S. C.; Katocho, Y.; Iwano, I.; Hirah, P.; Fujimoto, F. Origin of Si(LPM) Auger electron emission from silicon and Si-alloys by hot Ar ⁺ ion bombardment. Jap. J. Appl. Phys. 15, 1627 (1980) Japan
7344	D87 He ⁺ + Cu D88 He ⁺ + Cu	E	3-20 keV	Bhattacharya, R. S. Measurement of charge transfer in ion-surface scattering. J. Vac. Sci. Technol. 17, 1375 (1980) United States
7345	D82 Review K81 Review	T	0.1-19 keV	Sigmund, P. Sputtering of single and multiple component materials. J. Vac. Sci. Technol. 17, 356 (1980) Denmark
7346	D87 He ⁺ + Fe; He ⁺ + Al	E T	0.5-1.0 MeV	Barrett, J. H.; Appleton, B. R.; McIlenn, L. W. Study of reversibility in enhanced ion backscattering near 180 degree scattering angle. Phys. Rev. B 22, 4166 (1980) United States
7347	C82 e + N ₂ ; e + O ₂ ; e + Ar; e + Kr; e + Xe C84 e + N ₂ ; e + O ₂ ; e + Ar; e + Kr; e + Xe	E	0.1-3.0 keV	Adams, A.; Mansour, P. K. Fractional range and energy loss of 0.1-3-keV electrons in thin films of N ₂ , O ₂ , Ar, Kr, and Xe. Phys. Rev. B 22, 4256 (1980) United States
7348	D85 hv + TiC	E	8-70 eV	Loeber, J. H.; Bradshaw, A. R.; van der Veen, J. F.; Ringsel, F. J.; Eastman, D. L.; Smith, C. Angle-resolved photoemission studies of TiC(111) and TiC(100). Phys. Rev. B 22, 4521 (1980) United States
7349	C81 Under C84 Under C89 Under	T	Under	Pathak, A. P. Systematic study of channeling stopping-power oscillations for low-velocity heavy ions: II. Phys. Rev. B 22, 5544 (1980) India
7350	D14 Under	T	Under	Payer, R. M.; Brown, L. M.; Gosale, L. Nucleation and growth of voids by radiation. Preface to a series of seven papers. J. Nucl. Mater. 53, 44 (1980) United Kingdom
7351	D14 n + Ni; n + Cu; n + Al; e + Ni; e + Cu	T	Under	Payer, R. M.; Brown, L. M. Nucleation and growth of voids by radiation: I. Formulation of the problem. J. Nucl. Mater. 52, 46 (1980) United Kingdom
7352	D14 Under	T	Under	Payer, R. M.; Brown, L. M. Nucleation and growth of voids by radiation: II. Differential equations. J. Nucl. Mater. 52, 58 (1980) United Kingdom
7353	D14 Under	T	Under	Gosale, U.; Payer, R. M. Nucleation and growth of voids by radiation: III. The role of sink strengths in the kinetics of swelling. J. Nucl. Mater. 53, 64 (1980) West Germany
7354	D14 e + Ni; e + Cu	T	Under	Payer, R. M. Nucleation and growth of voids by radiation: IV. Void growth under electron irradiation. J. Nucl. Mater. 93, 75 (1980) United Kingdom
7355	D14 e + Ni; e + Cu; n + Cu; Ni ⁺ + Ni; Cu ⁺ + Cu	T	Under	Payer, R. M. Nucleation and growth of voids by radiation: V. Role of gas. J. Nucl. Mater. 53, 83 (1980) United Kingdom
7356	D14 n + Ni; n + Cu; n + Al	T	Under	Payer, R. M.; Brown, L. M. Nucleation and growth of voids by radiation: VI. Role of silying atoms. J. Nucl. Mater. 53, 92 (1980) United Kingdom

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7357	D14 e + Ni; m + Ni; Ni + Ni; r + Cu; Cu + Cu	T	Undef	Payer, R. P. Nucleation and growth of voids by radiation: VII. Correlation of charged particle and neutron irradiations. J. Nucl. Mater. 52, 100 (1974) United Kingdom
7358	D14 e + SS	E T	1 MeV	Fahin, M. J.; Walters, G. P.; Foreman, A.J.E. The void swelling behaviour of electron irradiated type 316 austenitic steel. J. Nucl. Mater. 52, 122 (1974) United Kingdom
7359	D14 n + Zr ₃ Al	E	1 MeV	Posinger, H. E. Effect of fast neutron irradiation on the properties of Zr ₃ Al-based alloys. J. Nucl. Mater. 55, 171 (1974) Canada
7360	D15 Undef	T	Undef	Coulter, C. A.; Peralin, D. P. Total and net displacement functions for amorphous materials. J. Nucl. Mater. 55, 192 (1974) United States
7361	D13 Ar + [Zr + C] D13 Ar + [Zr + C]	E	Undef	Ducrocq, C.; Roques-Carnes, C.; Emerger, G. Determination comparative du profil de concentration en oxygène dissous dans le zirconium après oxydation à 2900°C par émission ionique secondaire et par la réaction nucléaire ¹⁶ O(d,p) ¹⁷ O. J. Nucl. Mater. 55, 291 (1974) France
7362	G15 e + Ar; e + N ₂	E	0-1.0 V cm/ Torr	Al-Ergazelli, S. S.; Ariyaratne, I. R.; Treane, J. P.; Handi, B. C. Measurement of the drift velocity of electrons in an argon nitrogen mixture using a scintillation drift chamber. Nucl. Instrum. Methods 176, 523 (1980) United Kingdom
7363	C12 He ²⁺ + Al C15 He ²⁺ + Al	E	Undef	Kemper, J.; McFarlane, R. Determination of the energy straggling of He ²⁺ particles in aluminium foils. Nucl. Instrum. Methods 176, 243 (1980) West Germany
7364	A17 Undef	T	Undef	Sarkadi, L.; Mukoyama, T. Plane-wave Born-approximation calculations of L-shell ionization cross sections. Nucl. Instrum. Methods 176, 659 (1980) Hungary
7365	A18 U ⁺ + N; U ²⁺ + N; U ³⁺ + N; U ⁴⁺ + N; U ⁵⁺ + N; U ⁶⁺ + N; U ⁷⁺ + N; U ⁸⁺ + N; U ⁹⁺ + N; U ¹⁰⁺ + N; U ¹¹⁺ + N; U ¹²⁺ + N; U ¹³⁺ + N; U ¹⁴⁺ + N; U ¹⁵⁺ + N; U ¹⁶⁺ + N; U ¹⁷⁺ + N; U ¹⁸⁺ + N; U ¹⁹⁺ + N; U ²⁰⁺ + N; U ²¹⁺ + N; U ²²⁺ + N; U ²³⁺ + N; U ²⁴⁺ + N; U ²⁵⁺ + N; U ²⁶⁺ + N; U ²⁷⁺ + N; U ²⁸⁺ + N; U ²⁹⁺ + N; U ³⁰⁺ + N; U ³¹⁺ + N; U ³²⁺ + N; U ³³⁺ + N; U ³⁴⁺ + N; U ³⁵⁺ + N; U ³⁶⁺ + N; U ³⁷⁺ + N; U ³⁸⁺ + N; U ³⁹⁺ + N; U ⁴⁰⁺ + N; U ⁴¹⁺ + N; U ⁴²⁺ + N; U ⁴³⁺ + N; U ⁴⁴⁺ + N; U ⁴⁵⁺ + N; U ⁴⁶⁺ + N; U ⁴⁷⁺ + N; U ⁴⁸⁺ + N; U ⁴⁹⁺ + N; U ⁵⁰⁺ + N; U ⁵¹⁺ + N; U ⁵²⁺ + N; U ⁵³⁺ + N; U ⁵⁴⁺ + N; U ⁵⁵⁺ + N; U ⁵⁶⁺ + N; U ⁵⁷⁺ + N; U ⁵⁸⁺ + N; U ⁵⁹⁺ + N; U ⁶⁰⁺ + N; U ⁶¹⁺ + N; U ⁶²⁺ + N; U ⁶³⁺ + N; U ⁶⁴⁺ + N; U ⁶⁵⁺ + N; U ⁶⁶⁺ + N; U ⁶⁷⁺ + N; U ⁶⁸⁺ + N; U ⁶⁹⁺ + N; U ⁷⁰⁺ + N; U ⁷¹⁺ + N; U ⁷²⁺ + N; U ⁷³⁺ + N; U ⁷⁴⁺ + N; U ⁷⁵⁺ + N; U ⁷⁶⁺ + N; U ⁷⁷⁺ + N; U ⁷⁸⁺ + N; U ⁷⁹⁺ + N; U ⁸⁰⁺ + N; U ⁸¹⁺ + N; U ⁸²⁺ + N; U ⁸³⁺ + N; U ⁸⁴⁺ + N; U ⁸⁵⁺ + N; U ⁸⁶⁺ + N; U ⁸⁷⁺ + N; U ⁸⁸⁺ + N; U ⁸⁹⁺ + N; U ⁹⁰⁺ + N; U ⁹¹⁺ + N; U ⁹²⁺ + N; U ⁹³⁺ + N; U ⁹⁴⁺ + N; U ⁹⁵⁺ + N; U ⁹⁶⁺ + N; U ⁹⁷⁺ + N; U ⁹⁸⁺ + N; U ⁹⁹⁺ + N; U ¹⁰⁰⁺ + N; U ¹⁰¹⁺ + N; U ¹⁰²⁺ + N; U ¹⁰³⁺ + N; U ¹⁰⁴⁺ + N; U ¹⁰⁵⁺ + N; U ¹⁰⁶⁺ + N; U ¹⁰⁷⁺ + N; U ¹⁰⁸⁺ + N; U ¹⁰⁹⁺ + N; U ¹¹⁰⁺ + N; U ¹¹¹⁺ + N; U ¹¹²⁺ + N; U ¹¹³⁺ + N; U ¹¹⁴⁺ + N; U ¹¹⁵⁺ + N; U ¹¹⁶⁺ + N; U ¹¹⁷⁺ + N; U ¹¹⁸⁺ + N; U ¹¹⁹⁺ + N; U ¹²⁰⁺ + N; U ¹²¹⁺ + N; U ¹²²⁺ + N; U ¹²³⁺ + N; U ¹²⁴⁺ + N; U ¹²⁵⁺ + N; U ¹²⁶⁺ + N; U ¹²⁷⁺ + N; U ¹²⁸⁺ + N; U ¹²⁹⁺ + N; U ¹³⁰⁺ + N; U ¹³¹⁺ + N; U ¹³²⁺ + N; U ¹³³⁺ + N; U ¹³⁴⁺ + N; U ¹³⁵⁺ + N; U ¹³⁶⁺ + N; U ¹³⁷⁺ + N; U ¹³⁸⁺ + N; U ¹³⁹⁺ + N; U ¹⁴⁰⁺ + N; U ¹⁴¹⁺ + N; U ¹⁴²⁺ + N; U ¹⁴³⁺ + N; U ¹⁴⁴⁺ + N; U ¹⁴⁵⁺ + N; U ¹⁴⁶⁺ + N; U ¹⁴⁷⁺ + N; U ¹⁴⁸⁺ + N; U ¹⁴⁹⁺ + N; U ¹⁵⁰⁺ + N; U ¹⁵¹⁺ + N; U ¹⁵²⁺ + N; U ¹⁵³⁺ + N; U ¹⁵⁴⁺ + N; U ¹⁵⁵⁺ + N; U ¹⁵⁶⁺ + N; U ¹⁵⁷⁺ + N; U ¹⁵⁸⁺ + N; U ¹⁵⁹⁺ + N; U ¹⁶⁰⁺ + N; U ¹⁶¹⁺ + N; U ¹⁶²⁺ + N; U ¹⁶³⁺ + N; U ¹⁶⁴⁺ + N; U ¹⁶⁵⁺ + N; U ¹⁶⁶⁺ + N; U ¹⁶⁷⁺ + N; U ¹⁶⁸⁺ + N; U ¹⁶⁹⁺ + N; U ¹⁷⁰⁺ + N; U ¹⁷¹⁺ + N; U ¹⁷²⁺ + N; U ¹⁷³⁺ + N; U ¹⁷⁴⁺ + N; U ¹⁷⁵⁺ + N; U ¹⁷⁶⁺ + N; U ¹⁷⁷⁺ + N; U ¹⁷⁸⁺ + N; U ¹⁷⁹⁺ + N; U ¹⁸⁰⁺ + N; U ¹⁸¹⁺ + N; U ¹⁸²⁺ + N; U ¹⁸³⁺ + N; U ¹⁸⁴⁺ + N; U ¹⁸⁵⁺ + N; U ¹⁸⁶⁺ + N; U ¹⁸⁷⁺ + N; U ¹⁸⁸⁺ + N; U ¹⁸⁹⁺ + N; U ¹⁹⁰⁺ + N; U ¹⁹¹⁺ + N; U ¹⁹²⁺ + N; U ¹⁹³⁺ + N; U ¹⁹⁴⁺ + N; U ¹⁹⁵⁺ + N; U ¹⁹⁶⁺ + N; U ¹⁹⁷⁺ + N; U ¹⁹⁸⁺ + N; U ¹⁹⁹⁺ + N; U ²⁰⁰⁺ + N; U ²⁰¹⁺ + N; U ²⁰²⁺ + N; U ²⁰³⁺ + N; U ²⁰⁴⁺ + N; U ²⁰⁵⁺ + N; U ²⁰⁶⁺ + N; U ²⁰⁷⁺ + N; U ²⁰⁸⁺ + N; U ²⁰⁹⁺ + N; U ²¹⁰⁺ + N; U ²¹¹⁺ + N; U ²¹²⁺ + N; U ²¹³⁺ + N; U ²¹⁴⁺ + N; U ²¹⁵⁺ + N; U ²¹⁶⁺ + N; U ²¹⁷⁺ + N; U ²¹⁸⁺ + N; U ²¹⁹⁺ + N; U ²²⁰⁺ + N; U ²²¹⁺ + N; U ²²²⁺ + N; U ²²³⁺ + N; U ²²⁴⁺ + N; U ²²⁵⁺ + N; U ²²⁶⁺ + N; U ²²⁷⁺ + N; U ²²⁸⁺ + N; U ²²⁹⁺ + N; U ²³⁰⁺ + N; U ²³¹⁺ + N; U ²³²⁺ + N; U ²³³⁺ + N; U ²³⁴⁺ + N; U ²³⁵⁺ + N; U ²³⁶⁺ + N; U ²³⁷⁺ + N; U ²³⁸⁺ + N; U ²³⁹⁺ + N; U ²⁴⁰⁺ + N; U ²⁴¹⁺ + N; U ²⁴²⁺ + N; U ²⁴³⁺ + N; U ²⁴⁴⁺ + N; U ²⁴⁵⁺ + N; U			

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7370	E06 $e + Fe^{2+}$; $e + Zr^{2+}$ K02 Review	T	10^4 - 10^6 K	Dubau, J.; Volante, S. Dielectronic recombination and its applications in astronomy. <i>Fortsch. Phys.</i> 43, 155 (1980) India
7371	E04 $e + N_2^+$ E96 $e + N_2^+$	T	1-6 eV	Kulander, K. C.; Guest, M. F. Excited electronic states of N_2 and their role in the dissociative recombination of N_2^+ . <i>J. Phys. E</i> 12, L111 (1980) United Kingdom
7372	D03 $Ar^+ + Si$ D04 $Ar^+ + Si$	E	35-70 keV	Lebedev, S. Y.; Oznobishin, V. V. Observation of relaxation of ion-ion emission from the (111) surface of Si. <i>Sov. Phys.-Solid State</i> 22, 501 (1980) Soviet Union
7373	C04 Under	T	Under	Farpuzov, D. S.; Rubakha, E. A. Simulated influence of an amorphous layer on ion range in crystals. <i>Thin Solid Films</i> 71, L12 (1980) Soviet Union
7374	D02 $D^+ + TiO_2$; $Hu^+ + TiO_2$	E	3-15 keV	Chlidal, I.; Navratil, K. Optical analysis of non-absorbing double layers by means of internal reflectometry: II. Solid state laserion method. <i>Thin Solid Films</i> 73, 91 (1980) United States
7375	D16 $D_2^+ + VB_2$	E	10 keV	Pontau, A. E.; Wilson, K. L. VB_2 : a thin film coating on vanadium for reduced tritium inventory in controlled fusion devices. <i>Thin Solid Films</i> 72, 105 (1980) United States
7376	D02 $Ar^+ + [Cu + Ni]$ D17 $Ar^+ + [Cu + Ni]$	E	5 keV	Rehn, L. E.; Wiedersich, M. Sputter-induced modification of alloy composites in near-surface regions. <i>Thin Solid Films</i> 73, 135 (1980) United States
7377	D09 $He^+ + CO + Pd$	T	300 K	Wang, S.-W.; Ertl, G. Theory of Penning ionization of adsorbed CO by metastable helium (2^1S , 2^3S ; <i>trans.</i> Surface Sci. 92, L75 (1980) West Germany
7378	D07 $He + Ag$; $H_2 + Ag$	E	63-66 meV	Horne, J. M.; Yarnes, S. C.; Miller, D. P. An experimental investigation of the elastic scattering of He and H_2 from Ag(111). <i>Surface Sci.</i> 92, 47 (1980) United States
7379	D13 $e + CO + W$	E	150 eV	Jaeger, R.; Menzel, D. ESCDAD from CO on W(100): evidence for non-vertically adsorbed CO. <i>Surface Sci.</i> 93, 71 (1980) West Germany
7380	D12 $Ar^+ + Ti$; $O_2^+ + Ti$; $Ar^+ + TiO_2$; $O_2^+ + TiO_2$	E	55 keV	Loston, C. R.; MacDonald, R. J.; Martin, F. J. The influence of non-radiative transitions on backscattered induced photon emission from Ti and Ti oxide. <i>Surface Sci.</i> 93, 24 (1980) Austria
7381	D09 $Li + Re$; $Na + Re$ D10 $Li + Re$; $Na + Re$	T	0-1000 K	Rasser, B.; Remy, M. Long-range and temperature-dependent interaction between an alkali atom and a metallic surface: application to surface ionization. <i>Surface Sci.</i> 93, 223 (1980) France
7382	D07 $H_2 + W$ D11 $H_2 + W$	F	300-2400 K	Janda, K. C.; Harris, J. F.; Becker, C. A.; Cowin, J. P.; Wharton, L.; Auerbach, D. J. Direct inelastic and trapping-desorption scattering of H_2 from polycrystalline W: elementary steps in the chemisorption of nitrogen. <i>Surface Sci.</i> 93, 270 (1980) United States
7383	D02 $Ar^+ + Ti$; $Ar^+ + Zr$; $Ar^+ + TiO_2$; $Ar^+ + ZrO_2$; $O^+ + Ti$; $O^+ + Zr$; $C^+ + TiO_2$; $C^+ + ZrO_2$ D03 $Ar^+ + Ti$; $Ar^+ + Zr$; $Ar^+ + TiO_2$; $Ar^+ + ZrO_2$; $O^+ + Ti$; $O^+ + Zr$; $C^+ + TiO_2$; $C^+ + ZrO_2$	F	0.5-2.0 keV	Steinbruehl, C.; Gruen, D. H. Absolute measurement of sputtered ion fractions using matrix isolation spectroscopy. <i>Surface Sci.</i> 93, 255 (1980) United States
7384	D11 $H_2 + Nb$	T	10^4 -800 K	Pick, M. A.; Greene, M. G. The sticking coefficient of hydrogen on niobium. <i>Surface Sci.</i> 92, L125 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7385	D11 Cu + GaP; Cu + GaSb D13 Cu + GaP; Cu + GaSb	E	300 K	van Bommel, A. J.; Cronsteun, J. E. The adsorption and desorption of Cu on GaP and GaSb (111), (112), (111), and (111) surfaces, studied by LEEI, AES and photoemission. Surface Sci. 53, 282 (1980) The Netherlands
7386	D09 O ₂ + Pt D11 O ₂ + Pt	E	100 K	Gland, J. L. Molecular and atomic adsorption of oxygen on the Pt(111) and Pt(5)-12(111)-(111) surfaces. Surface Sci. 52, 487 (1980) United States
7387	D07 D ₂ + C; H ₂ + C D10 D ₂ + C; H ₂ + C	E	73-74 meV	Mattara, L.; Ronstelli, F.; Salvic, C.; Tognolini, F.; Valbusa, U.; Vignali, G. Selective adsorption of H ₂ and D ₂ on the (0001) graphite surface. Surface Sci. 53, 515 (1980) Italy
7388	D10 H ₂ + V	T	Undef	Jayasekariya, U. A.; Chesters, P. A.; Howard, N. B.; Kettle, S.F.A.; Powell, D. B.; Steggars, A. Vibrational spectroscopic characterization of hydrogen bridged between metal atoms: a model for the adsorption of hydrogen on low-index faces of tungsten. Surface Sci. 93, 526 (1980) United Kingdom
7389	D07 H ⁺ + Au; H ⁺ + U; H ⁺ + Mo; H ⁺ + Ni; H ⁺ + Ti; H ⁺ + Si; H ⁺ + C; H ⁺ + WO ₃ ; H ⁺ + TiH ₂ ; H ⁺ + Si ₃ N ₄ ; D ⁺ + Au; D ⁺ + U; D ⁺ + Mo; D ⁺ + Ni; D ⁺ + Ti; D ⁺ + Si; D ⁺ + C; D ⁺ + WO ₃ ; D ⁺ + TiH ₂ ; D ⁺ + Si ₃ N ₄ ; He ⁺ + Au; He ⁺ + U; He ⁺ + Mo; He ⁺ + Ni; He ⁺ + Ti; He ⁺ + Si; He ⁺ + C; He ⁺ + WO ₃ ; He ⁺ + TiH ₂ ; He ⁺ + Si ₃ N ₄ D ¹⁸ H ⁺ + Au; H ⁺ + U; H ⁺ + Mo; H ⁺ + Ni; H ⁺ + Ti; H ⁺ + Si; H ⁺ + C; H ⁺ + WO ₃ ; H ⁺ + TiH ₂ ; H ⁺ + Si ₃ N ₄ ; D ⁺ + Au; D ⁺ + U; D ⁺ + Mo; D ⁺ + Ni; D ⁺ + Ti; D ⁺ + Si; D ⁺ + C; D ⁺ + WO ₃ ; D ⁺ + TiH ₂ ; D ⁺ + Si ₃ N ₄ ; He ⁺ + Au; He ⁺ + U; He ⁺ + Mo; He ⁺ + Ni; He ⁺ + Ti; He ⁺ + Si; He ⁺ + C; He ⁺ + WO ₃ ; He ⁺ + TiH ₂ ; He ⁺ + Si ₃ N ₄	E	3-20 keV	Bhattacharya, R. S.; Eckstein, W.; Verbeek, H. Positive charge fractions of H, U, and Mo backscattered from solid surfaces. Surface Sci. 53, 563 (1980) West Germany
7390	A07 He ⁺ + Fe; He ⁺ + He A08 He ⁺ + Fe; He ⁺ + He	E	7-140 keV	Gleizes, A.; Bordenave-Montesquieu, A.; Benoit-Cattin, P. Consequences of the collision geometry on the observed electron spectra produced by autoionization. J. Phys. B 13, L577 (1980) France
7391	A07 H ⁺ + H; H ⁺ + He; H ⁺ + H Sec	T	Undef	Sidorovich, V. P.; Nikolaev, V. P.; Beloshitsky, V. V.; Goloviznin, V. V. Role of transitions with different changes of the electron orbital angular momentum projection in the proton ionization of the 1s and 2s states of hydrogen-like ions. J. Phys. B 13, L583 (1980) Soviet Union
7392	A07 H ⁺ + He ⁺ ; He ²⁺ + H	T	20-5000 keV	Belkic, D. Charge dependence of ionization cross sections. J. Phys. B 13, L585 (1980) United States
7393	A01 Undef F01 Undef	T	Undef	Dawson, D. P. On higher order Born approximations in atomic scattering calculations. J. Phys. B 13, L586 (1980) United Kingdom
7394	E12 e ⁺ + He	T	0-1 keV	Nowak, E. J.; Rosenberg, L.; Spruch, L. Method for phase-shift analysis of e ⁺ -atom elastic scattering. J. Phys. B 13, L585 (1980) United States
7395	E03 e ⁺ + He ⁺	T	40-100 eV	Wahid, S. A.; Callaway, J. Electron impact excitation of He ⁺ . J. Phys. B 13, L605 (1980) United States
7396	F01 Undef	T	Undef	Rudge, M.H.H. A variational procedure for multi-channel scattering. J. Phys. B 13, 3717 (1980) United Kingdom
7397	F03 e ⁺ + F; e ⁺ + F ⁺ ; e ⁺ + F ₂ ; e ⁺ + F ₂ ⁺	E	Undef	Schulz-Gude, E.; Venzel, A. Experimental F II/F I and F II/F I line transition probability ratios. J. Phys. B 13, 3733 (1980) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7398	A03 N ⁺ + Ar A07 N ⁺ + Ar A18 N ⁺ + Ar E03 e + Ar E05 e + Ar E17 e + Ar	E	A03; A07; A18 253-2000 keV E03; E05; E17 270-1000 eV	DuBois, R.; Redtro, P. Near-threshold alignment and post-collisional interactions for argon L _{2,3} -P _{3,2} ² (¹ S ₀) Auger electron. J. Phys. E 13, 3725 (1980) Denmark
7399	N05 hν + N ₂ ⁺	T	1200-500 Å	Saha, S.; Eatta, K. K.; Basu, L.; Sarma, P. K. Photodissociation of N ₂ ⁺ by the 1s sigma(sub g)-2p sigma(sub u) transition. J. Phys. B 13, 3725 (1980) India
7400	N06 hν + N ⁺	T	1.15-1.45 Ry	Zeippen, C. J.; Le Dournneuf, M.; Lax, V. K. The photoionisation of the 2D ⁰ and 2F ⁰ metastable states of atomic nitrogen. J. Phys. B 13, 2763 (1980) France
7401	N08 hν + PbS	E	4580 Å	Burtin, B.; Carleer, M.; Collin, F.; Creze, C.; Adihugana, T. Laser-induced fluorescence of gaseous PbS. J. Phys. B 13, 3783 (1980) Belgium
7402	A01 Undef	T	Undef	Ponomarev, L. I.; Slavyanov, S. Y.; Sosov, L. N. Non-adiabatic matrix elements connecting the continuous spectrum states of the two-centre problem in quantum mechanics. J. Phys. B 13, 3757 (1980) Soviet Union
7403	A07 I ⁺ + Ag	E	63 MeV	Anholt, R.; Stiller, C.; Meyerhof, W. E. Impact parameter dependence of Ag K-vacancy production by 63 MeV I ions. J. Phys. B 13, 3807 (1980) United States
7404	A12 Na ⁺ + Na; Na ⁺ + Na; Na ⁺ + Pr; Na ⁺ + Kr; Na ⁺ + Xe	E	450 K	Kielkopf, J. F. Measurement of the width, shift and asymmetry of the sodium D lines broadened by active gases. J. Phys. B 13, 3812 (1980) United States
7405	A06 H ⁺ + Cu; H ⁺ + Cu A16 H ⁺ + Cu	E	0.1-2 keV	Mayer, F. W. Single electron capture and loss by H ⁺ , H ⁰ and H ⁻ in Cu vapour in the energy range 0.1-2.0 keV. J. Phys. B 13, 3823 (1980) United States
7406	A07 H ⁺ + Au; He ⁺ + Au A19 H ⁺ + Au; He ⁺ + Au	E	0.6-1.5 MeV	Pallikha, J.; Sarkadi, L.; Schlenk, E. L ₂ -subshell alignment in gold following low-velocity proton and He ⁺ impact ionisation. J. Phys. B 13, 3825 (1980) Hungary
7407	A06 O ²⁺ + H; He ²⁺ + H; Si ²⁺ + H; Ar ²⁺ + H; Fe ²⁺ + H; Kr ²⁺ + H	T	0.5-100 keV/amu	Grozdanov, T. P. Classical model for electron capture in collisions of highly charged, fully stripped ions with hydrogen atoms. J. Phys. B 13, 3831 (1980) Yugoslavia
7408	E07 e + U	E	11.6-12 keV	Salgueiro, L.; Ferreira, J. G.; Carvalho, M. L.; Rescu, P. T. L subshell ionisation of tungsten by low-energy electrons. J. Phys. B 13, 3849 (1980) Portugal
7409	E18 e + Ne; e + Ar; e + Kr; e + Xe	E	25-750 eV	Veganeer, R. W.; de Haer, F. J. Total cross sections for electron scattering from Ne, Ar, Kr and Xe. J. Phys. B 13, 3855 (1980) The Netherlands
7410	E03 e + CH ⁺ E04 e + CH ⁺ E06 e + CH ⁺	T	Undef	Giusti, A. A multichannel quantum defect approach to dissociative recombination. J. Phys. E 13, 3867 (1980) France
7411	A06 Fe ²²⁺ + H; Fe ²³⁺ + H	E	1-100 keV	Hulse, R. A.; Cost, D. E.; Rikhsaev, D. R. Charge exchange as a recombination mechanism in high-temperature plasmas. J. Phys. E 13, 3855 (1980) United States
7412	N06 Undef	T	Undef	Andryushin, A. I.; Kozlov, A. L. Polarised electrons and two-photon-resonant ionisation of unpolarised atoms. J. Phys. B 13, L605 (1980) Soviet Union

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7413	E03 $e + CO_2$	T	16 eV	Talrossel, D.; Unde, K.; Traubler, E. G. Excitation of the asymmetric stretch mode of CO_2 by electron impact. J. Phys. B 12, 1619 (1980); United States
7414	A09 Undef	T	Undef	Bates, D. E. Temperature scaling of the coefficient for ionic recombination in an ambient gas. J. Phys. B 13, L623 (1980); United Kingdom
7415	E03 $e + PEST$	T	Undef	Edlabadkar, V. S.; Khare, F. L.; Narde, C. Transition rates of some forbidden lines in x-ray spectra. J. Phys. B 13, 2921 (1980); India
7416	H04 $h\nu + B\ Seq$	T	Undef	Farrag, A.; Luc-Koenig, E.; Sirzelle, J. Systematic trends of the relativistic f values for electric dipole transitions within the ground complex of E-like ions. J. Phys. B 13, 2929 (1980); France
7417	H04 $h\nu + Kr$	E	Undef	Fonseca, V.; Campos, J. Experimental transition probabilities of $5s-4p(n=5,6)$ transitions of Kr I. J. Phys. B 13, 2927 (1980); Spain
7418	H04 $h\nu + Ce$	E	Undef	Kerhchff, M.; Schmidt, M.; Tappner, L.; Zimmermann, F. Radiative lifetimes of excited triplet states in Ce I. J. Phys. B 12, 3969 (1980); West Germany
7419	H06 $h\nu + Au$	F	662 keV	Gomes, P.M.S.; Byrne, J. Measurement of the transverse polarisation of K-shell photoelectrons produced by 662 keV unpolarised photons in gold. J. Phys. B 13, 3575 (1980); United Kingdom
7420	H04 $h\nu + N_2$	E	44-65 eV	Krummacher, S.; Schmidt, V.; Willemsier, F. Inner-shell photoionisation in molecules: the nitrogen case. J. Phys. B 13, 3992 (1980); West Germany
7421	A03 $H^+ + He; D^+ + Be; He^+ + Be; Li^+ + Be; Be^+ + Be; B^+ + Zn$ A07 $H^+ + Be; D^+ + Be; He^+ + Be; Li^+ + Be; Be^+ + Be; B^+ + Zn$ D12 $H^+ + Be; D^+ + Be; He^+ + Be; Li^+ + Be; Be^+ + Be; B^+ + Zn$	E	1-120 keV/amu	Schornagl, T.; Pink, W. X-ray production cross sections for a thin solid Be target with light ions. J. Phys. B 13, 4721 (1980); West Germany
7422	A05 $H^+ + H\ Seq$	T	10^{-10} eV/amu	Polsewitsch, E. L.; Stockman, S. O. Non-orthogonality of atomic wavefunctions in electron capture at relativistic energies. J. Phys. B 13, 4021 (1980); United Kingdom
7423	A06 $H^+ + D; D^+ + H$ A16 $H^+ + D; D^+ + H$ A18 $H^+ + D; D^+ + H$	E	10^{-10} eV	Esaulov, V. A. Electron detachment and charge exchange in H^+ scattering by atomic deuterium. J. Phys. B 12, 4025 (1980); West Germany
7424	A03 $H^+ + He; H^+ + Ne; H^+ + Ar; H^+ + Kr; H^+ + Xe$ A06 $H^+ + He; H^+ + Ne; H^+ + Ar; H^+ + Kr; H^+ + Xe$	E	12-28 keV	Shah, M. B.; Geddes, J.; Gilbody, M. B. Absolute cross sections for $H(2s)$ formation in electron capture by protons in gases. J. Phys. B 12, 4645 (1980); United Kingdom
7425	A06 $He^{2+} + Ar; Li^{2+} + Ar; Be^{2+} + Ar; B^{2+} + Ar; C^{2+} + Ar$	T	1-3 MeV/amu	Becker, R. L.; Ford, A. L.; Seeding, J. L. Contributions of multi-electron processes to inner-shell charge transfer and vacancy production: projectile charge dependence in collisions of bare nuclei with argon. J. Phys. B 13, 4655 (1980); United States
7426	E12 $e^+ + He; e^+ + Ar; e^+ + Kr; e^+ + Xe$	E	1-6 eV	Sinapius, G.; Reith, W.; Wilson, W. G. Scattering of low-energy positrons from noble-gas atoms. J. Phys. B 13, 4679 (1980); West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7427	N06 nhv + He	E	5590 Å	Possel, F.; Dreger, P.; Spiess, G.; Manus, C.; Goltman, S. Evidence of super-elastic effects in laser-induced ionisation of He vapour. <i>J. Phys. B</i> 13, 1631 (1980) France
7428	N06 Under N08 Under	T	Under	Shinner, C. H. Comment on 'The effect of radiation trapping of high-intensity scattered radiation on multiphoton ionisation rates and resonance fluorescence.' <i>J. Phys. B</i> 13, 1627 (1980) West Germany
7429	N06 Under N08 Under	T	Under	McIlrath, T. J.; Lucatorto, T. B. Comment on 'The effect of radiation trapping of high-intensity scattered radiation on multiphoton ionisation rates and resonance fluorescence.' <i>J. Phys. B</i> 13, 1641 (1980) United Kingdom
7430	N06 hv + H	T	Under	Cordes, J. G.; Colkin, W. G. Photoionisation and the Born approximation. <i>J. Phys. E</i> 13, 4111 (1980) Canada
7431	N06 Under	T	Under	Delone, N. B.; Kovarski, V. A.; Pashkev, P. V.; Parelman, M. F. The resonant ionisation of atoms under multifrequency laser radiation. <i>J. Phys. E</i> 13, 4115 (1980) Soviet Union
7432	N06 nhv + Cs	T	9200-24000 cm ⁻¹	Crance, M.; Aymar, M. Non-resonant multiphoton ionisation of caesium in strong fields. <i>J. Phys. E</i> 13, 4129 (1980) France
7433	A07 He ⁺ + He A18 He ⁺ + He	E	52-207 meV	Haberland, H.; Weber, W. Optical interaction potentials from differential cross section measurements at thermal energies III: He(2 ¹ S) + He. <i>J. Phys. B</i> 13, 4147 (1980) West Germany
7434	A03 Under	T	Under	Bhattacharya, S. S.; Dickinson, A. S. On the infinite-order sudden approximation for rotational excitation. <i>J. Phys. B</i> 13, 4157 (1980) United Kingdom
7435	A03 Li ₂ ⁺ + He; Li ₂ ⁺ + Ne; Li ₂ ⁺ + Kr; Li ₂ ⁺ + Xe N04 hv + Li ₂	E	600 °C	Ottinger, C.; Schroder, P. Collision-induced rotational transitions of dye laser excited Li ₂ (A ¹ (sub v)) molecules: cross sections and their $\Delta J/\Delta J$ asymmetry. <i>J. Phys. B</i> 13, 4163 (1980) West Germany
7436	A03 H ⁺ + O A06 H ⁺ + O	T	10-1000 K	Chabaud, G.; Leunay, J. M.; Levy, E.; Millie, F.; Poueff, E.; Tran Minh, F. Charge exchange and fine-structure excitation in O-H ⁺ collisions. <i>J. Phys. B</i> 13, 4205 (1980) West Germany
7437	A03 N ⁺ + He A06 N ⁺ + He	E	500-2000 eV	Thielmann, U.; Krutain, J.; Berat, P. Collision spectroscopy of open-shell systems II. N ⁺ -He collisions. <i>J. Phys. B</i> 13, 4217 (1980) West Germany
7438	A03 H ⁺ + H Seq A07 H ⁺ + H Seq	T	1-1900 keV	Janez, R. R.; Presnyakov, L. P. Single-electron excitation and ionisation processes in atom-multipharged-ion collisions. <i>J. Phys. E</i> 13, 4223 (1980) Yugoslavia
7439	A06 He ²⁺ + H; Li ²⁺ + H; Be ²⁺ + H; F ²⁺ + H	T	0.44-2.8 a.u.	Bransden, B. H.; Newby, C. W.; Nish, C. J. Electron capture by fully stripped ions of helium, lithium, beryllium and boron from atomic hydrogen. <i>J. Phys. E</i> 13, 4245 (1980) United Kingdom
7440	A03 N ₂ ⁺ + Ar A06 N ₂ ⁺ + Ar	E	2° eV	Campbell, P. M.; Browning, R.; Lattier, C. J. Charge transfer between N ₂ ⁺ and Ar: the effect of molecular vibration studied using photoelectron-photoion coincidence spectroscopy. <i>J. Phys. E</i> 13, 4257 (1980) United Kingdom
7441	E03 O + O	E	1 ⁰⁰ -500 eV	Rahoe, M. A.; Hewell, W. R.; Smith, A. C. H. Electron impact excitation of the ² P- ² S transition in atomic oxygen. <i>J. Phys. B</i> 13, 4261 (1980) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOP	ENERGY RANGE	REFERENCE
7442	E03 $e + S^{2+}$	T	2.5-6 Ry	Coftar, P. L.; Kingston, A. L. Electron impact excitation of the $3P^o-^1P^o$ and $^3P^o-^1P^o$ transitions in S IV. J. Phys. B 12, 4277 (1980) United Kingdom
7443	E03 $e + He$	T	Unref	Normann, H. W.; Hertel, I. V. Orientation in atomic collisions: correspondence of classical model and partial-wave analysis. J. Phys. B 13, 4225 (1980) West Germany
7444	E03 $e + Fe^{22+}$	T	7-25 Ry	Scott, M. S.; Burke, P. C. Electron scattering by atoms and ions using the Breit-Pauli Hamiltonian: an R-matrix approach. J. Phys. B 13, 4255 (1980) United Kingdom
7445	E03 $e + N_2$; $e + NO$; $e + N_2O$; $e + CO$; $e + CO_2$ E05 $e + N_2$; $e + NO$; $e + N_2O$; $e + CO$; $e + CO_2$	E	394-499 eV	King, G. C.; McConkey, J. B.; Lead, F. W.; Lehn, E. Negative-ion resonances associated with inner-shell excited states of N_2 , NO, N_2O , CO and CO_2 . J. Phys. B 13, 4215 (1980) United Kingdom
7446	D02 $Ar^+ + Ag$; $Ne^+ + Ag$	T	Unref	Kuvshin, M. V.; Lushnikov, A. V.; Mctavish, R. A.; Yurascu, V. E. Surface-barrier shape and sputtered-atom spectra. Sov. Tech. Phys. Lett. 5, 203 (1979) Soviet Union
7447	D02 $O_2 + [Ca-Cu]$	E	Unref	Grankin, V. P.; Stoyov, V. V. Positive-ion emission in the adsorption of gas molecules on a solid surface. Sov. Tech. Phys. Lett. 5, 219 (1979) Soviet Union
7448	L01 Review L02 Review L03 Review	E T	Unref	IAEA. An index to the literature on atomic and molecular collision data relevant to fusion research. International Atomic Energy Agency, Vienna, 1980. Austria
7449	D04 $e + C$	E	25 keV	Gornyi, B. B.; Pakarova, L. N. Interpretation of the experimental data on secondary electron emission from thin graphite films. Sov. Phys.-Solid State 21, 1228 (1979) Soviet Union
7450	D02 $e + Al$; $e + Ag$; $e + Au$	E	40-60 keV	Pogachev, A. T.; Volkov, V. A. Interrelation of the energy losses suffered by electrons on passage through thin films. Sov. Phys.-Solid State 21, 1517 (1979) Soviet Union
7451	D02 Unref	T	Unref	Kuvshin, M. V.; Lushnikov, A. V.; Mctavish, R. A. Influence of the curvature of a surface barrier on the sputtering characteristics. Sov. Phys.-Solid State 21, 1457 (1979) Soviet Union
7452	E04 $e + CH_4$; $e + CO_2$	E	47-130 eV	Polyakova, G. N.; Ranyuk, A. I.; Eruc, V. I. Kinetic energies of excited hydrogen and deuterium atoms produced by the dissociation of CH_4 and CD_4 by electron impact. High Energy Chem. 12, 406 (1978) Soviet Union
7453	G10 $e + F_2$	E	Unref	Zaitsev, V. V.; Zverevskaya, L. V.; Alimov, V. I.; Bozhac, A. V.; Kutyagov, P. E. Ionization of molecules and plasma parameters in the positive column of a glow discharge in fluorine. High Energy Chem. 12, 420 (1978) Soviet Union
7454	E03 $e + He$; $e + Ar$; $e + Ne$	E	1 st -5 th eV	Stepanov, A. M.; Kabanov, S. P.; Percov, A. A.; Kupriyandov, S. E. Ionization processes in collisions of long-lived excited rare gas atoms with unexcited CS_2 , CF_4 , and $(C_2H_5)_2CC$ molecules. High Energy Chem. 13, 1 (1979) Soviet Union
7455	M04 $h\nu + TiN_2$	E	300-425 nm	Zekharov, V. A.; Mikhalev, V. I.; Leshutsev, V. S. Low-temperature photolysis and luminescence of lead, silver, and thallium azides. High Energy Chem. 12, 56 (1979) Soviet Union

REF. NO.	REACTANTS	EXP OR TECH	ENERGY RANGE	REFERENCE
7456	B17 $e + Al_2O_3$	E	6-10 keV	Belon, G. B.; Pol'yakova, A. A.; Pagar, L. L. Transformations in alumina exposed to a high-energy electron beam. High Energy Chem. 12, 81 (1975) Soviet Union
7457	H06 $h\nu + NCCON$	E	11-21 eV	Golevin, A. V.; Akopyan, N. L.; Vilesov, F. I.; Sergeev, Y. L. Ion-electron coincidence study of the photoionization of formic and acetic acid. High Energy Chem. 12, 171 (1975) Soviet Union
7458	A06 $CH_3^+ + Mg$; $CH_3^+ + Mg$; $CH_3^+ + Mg$; $C_2H_5^+ + Mg$; $C_2H_5^+ + Mg$; $C_2H_5^+ + Mg$; $C_2H_5^+ + Mg$; $C_2H_5^+ + Mg$; $C_2H_5^+ + Mg$	E	5-200 eV	Kir'yakov, N. V.; Markin, N. I.; Tel'vaze, L. L. Charge transfer from organic ions to magnesium atoms. High Energy Chem. 12, 175 (1975) Soviet Union
7459	E03 $e + N_2$	T	Under	Son, E. E. Effect of vibrational temperature on the rate of electronic excitation of diatomic molecules. High Temp. 16, 599 (1978) Soviet Union
7460	E03 $e + N_2$; $e + O_2$ E05 $e + N_2$; $e + C_2$	T	Under	Aleksandrov, N. L.; Ronchakov, A. P.; Son, E. E. Excitation of electronic levels in a gas-discharge nitrogen plasma. High Temp. 17, 175 (1979) Soviet Union
7461	A17 $N + Li$; $N + Na$; $N + K$; $N + Rb$; $N + Cs$	T	6-10.5 e.u.	Shpil'man, E. I.; Polishchuk, A. Y. Potentials of the interaction between hydrogen atoms and alkali metals. High Temp. 17, 240 (1979) Soviet Union
7462	G07 $e + Xe$	T	10×10^{-3} - 14×10^{-3} eV	Guravich, I. P. Calculation of the Coulomb cross section of a weakly nonideal degenerate plasma of inert gases. High Temp. 17, 720 (1979) Soviet Union
7463	G02 $H + H_2$	E	1.4-2 kPa	Aleksandrov, E. I.; Amirov, F. B.; Vasiliyev, L. R.; Markovets, V. V. Measurement of diffusion coefficient of atomic hydrogen. High Temp. 17, 725 (1979) Soviet Union
7464	E02 $e + N_2$; $e + O_2$; $e + NO$; $e + H$; $e + O$	T	0-6 eV	Pazhenova, T. V.; Dzagurov, L. Y.; Lebantsev, Y. S. Effect of dependence of collision cross section on electron velocity on interaction of electrons with an air plasma. High Temp. 17, 742 (1979) Soviet Union
7465	E03 $e + F_2$ G08 $e + He$	E, T	6×10^{-3} - 10×10^{-3} eV/cm 6×10^{-3} - 15×10^{-3} eV/cm	Eletska, A. V.; Kulagin, V. D. Rate constant of vibrational excitation of F_2 molecules by electron impact. High Temp. 17, 906 (1979) Soviet Union
7466	G08 Under	T	Under	Baleutsev, A. A. Relaxation theory for electron energy distribution. High Temp. 17, 520 (1979) Soviet Union
7467	A04 PERT	T	0.1-1000 eV	Duman, E. L.; Spirnov, B. M. Tables of cross section of resonance charge transfers for transition elements. High Temp. 17, 1104 (1979) Soviet Union
7468	A17 NaH ; $NaCl$; KH ; KCl	E	Under	Giroux, R.; Madelon, D. Spectroscopy of the hoh, hcl, kh, and ko X^{12} ground state by laser excited fluorescence in a high frequency discharge. J. Chem. Phys. 73, 4151 (1980) United States
7469	A05 $Sc + Cl_2$; $Sc + Br_2$; $Sc + F_2$; $Sc + I_2$; $Y + Cl_2$; $Y + Br_2$; $Y + F_2$; $Y + I_2$ A14 $Sc + Cl_2$; $Sc + Br_2$; $Sc + F_2$; $Sc + I_2$; $Y + Cl_2$; $Y + Br_2$; $Y + F_2$; $Y + I_2$	F	30° K	Brayman, N. C.; Fischell, D. R.; Cecil, T. A. Spectroscopic studies of the products of reactions of yttrium and scandium atoms with halogen molecules: 1. The origin of chemiluminescence. J. Chem. Phys. 72, 4247 (1980) United States

REF. NO.	REACTANTS	EXP CP TMEOR	ENERGY RANGE	REFERENCE
7473	A95 Sc + Cl ₂ ; Sc + Br ₂ ; Sc + F ₂ ; Sc + I ₂ ; Y + Cl ₂ ; Y + Br ₂ ; Y + F ₂ ; Y + I ₂ A14 Sc + Cl ₂ ; Sc + Br ₂ ; Sc + F ₂ ; Sc + I ₂ ; Y + Cl ₂ ; Y + Br ₂ ; Y + F ₂ ; Y + I ₂	E	300 K	Fischell, E. R.; Brayman, M. C.; Cecil, T. A. Spectroscopic studies of the products of reactions of yttrium and scandium atoms with halogen molecules: II. Laser induced fluorescence from yttrium and scandium monohalides. J. Chem. Phys. 73, 4260 (1980) United States
7471	A14 D + H ₂ ⁺	T	0.40 eV	Choi, B. H.; Foe, R. T.; Sur, J. C.; Tong, A. Y. Reactive scattering of rotationally excited target molecules with adiabatic theory. J. Chem. Phys. 72, 4321 (1980) United States
7472	A11 HF ⁺ + HF	T	300 K	Coltrin, M. E.; Marcus, R. A. Cross-correlation trajectory study of vibrational relaxation of HF(v=7) by HF(v=3). J. Chem. Phys. 72, 4256 (1980) United States
7473	D09 H ₂ + LiF	T	0.5-0.9 eV	Geroer, R. B.; Yinnon, A. T.; Shimoni, Y.; Acuri, E. J. Rotationally inelastic molecule-surface scattering in the sudden approximation. J. Chem. Phys. 72, 4257 (1980) Israel
7474	A95 Cs + O ₂ A07 Cs + O ₂	T	21-1000 eV	Nickman, A. P. Model for fast, nonradiative collisions between alkali atoms and diatomic molecules. J. Chem. Phys. 73, 4413 (1980) United States
7475	M07 hv + C ₂ ⁻	E	1.75-2.5 eV	Jones, P. L.; Pead, R. B.; Achler, E. E.; Mcsner, S. E.; Lineberger, W. C. Photodetachment spectroscopy of C ₂ ⁻ autodetaching resonances. J. Chem. Phys. 73, 4415 (1980) United States
7476	A04 Kr + CsI; Kr + CsBr; Kr + RbI; Kr + KI; Xe + CsI; Xe + CsBr; Xe + RbI; Xe + KI A07 Kr + CsI; Kr + CsBr; Kr + RbI; Kr + KI; Xe + CsI; Xe + CsBr; Xe + RbI; Xe + KI	E	4-10 eV	Tully, F. P.; Cheung, R. H.; Haeroland, H.; Lee, Y. T. Mass and orientation effects in dissociative collisions between rare gas atoms and alkali halide molecules. J. Chem. Phys. 73, 4463 (1980) United States
7477	A17 MeH ₂ ⁺	T	Undef	Hopper, D. G. Potential energy hypersurface for the 12s(12B, 12A double prime) Rydberg state of the MeH ₂ ⁺ system. J. Chem. Phys. 73, 4228 (1980) United States
7478	A14 Na + O ₂	E	300 K	Iannuzzi, M. P.; Kaufman, F. Rates of some reactions of Na ⁺ and Na ⁺ near 300 K. J. Chem. Phys. 73, 4761 (1980) United States
7479	H05 hv + NC	E	1340-1189 Å	Ono, Y.; Linn, S. H.; Prest, M. F.; Ag, C. Y.; Plescher, E. Higher resolution photoionization study of NO near the threshold. J. Chem. Phys. 73, 4252 (1980) United States
7483	H05 hv + NaK H08 hv + NaK	F	5145-4765 Å	Kato, H.; Hada, C. Laser-induced fluorescence of NaK and the dissociated atoms. J. Chem. Phys. 73, 4548 (1980) Japan
7481	A17 MeH ⁺ + H ₂ ; MeH ⁺ + O ₂ ; MeH ⁺ + Kr; H ₂ ⁺ + F ₂ ; H ₂ ⁺ + Kr; H ₂ ⁺ + CH ₄ ; H ₂ ⁺ + C ₂ H ₆ ; H ₂ ⁺ + O ₂ ; C ₂ H ₆ ⁺ + H ₂ ; C ₂ H ₆ ⁺ + Kr; O ₂ ⁺ + O ₂ ; KrH ⁺ + H ₂ ; KrH ⁺ + O ₂ ; KrH ⁺ + H ₂ ; CH ₄ ⁺ + O ₂ ; CH ₄ ⁺ + CO; CH ₄ ⁺ + CO; H ₂ N ⁺ + O ₂ ; CH ₃ ⁺ + O ₂ ; CH ₃ ⁺ + CO; CH ₃ ⁺ + CO; H ₂ C ⁺ + CO	E	300 K	Bohme, D. K.; Mackay, G. I.; Schiff, M. I. Determination of proton affinities from the kinetics of proton transfer reactions: VII. The proton affinities of C ₂ , H ₂ , Kr, C, N ₂ , Xe, Cl ₂ , CH ₄ , H ₂ C, and CO. J. Chem. Phys. 73, 4976 (1980) Canada
7482	A02 H ⁺ + CCl A03 H ⁺ + CCl	T	3-1 eV	Droisdagen, G.; Gianturco, F. A.; Iannini, J. P. Proton-molecule collisional interaction: IV. Core-excited resonances in H ⁺ -CCl inelastic scattering. J. Chem. Phys. 73, 5013 (1980) West Germany

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
7483	A10 $B + O_2; B + H_2O$	E	3C° K	Hanner, A. W.; Cole, J. L. Evidence for ultrafast V-E transfer in boron oxide (BO). J. Chem. Phys. 73, 2625 (1980); United States
7484	A06 $He^+ + Hg; He^+ + Hg; Ar^+ + Hg; Kr^+$ $+ Hg; Xe^+ + Hg; Ne_2^+ + Hg; Ne_2^+ +$ $Hg; Ar_2^+ + Hg; Kr_2^+ + Hg; Xe_2^+ +$ Hg	E	3C° K	Johnson, R.; Biemdi, M. A. Charge transfer to atomic and molecular rare-gas ions with mercury atoms at thermal energy. J. Chem. Phys. 72, 5045 (1980); United States
7485	A06 $He^+ + Hg; He^+ + HgBr_2; He^+ + Hg;$ $Ne^+ + HgBr_2; Ne^+ + Hg; Ar^+ + HgBr_2;$ $Kr^+ + Hg; Kr^+ + HgBr_2; Kr^+ + Hg;$ $Xe^+ + HgBr_2; Xe^+ + Hg; Ne_2^+ + HgBr_2;$ A13 $He^+ + Hg; He^+ + HgBr_2; He^+ + Hg;$ $Ne^+ + HgBr_2; Ne^+ + Hg; Ar^+ + HgBr_2;$ $Kr^+ + Hg; Kr^+ + HgBr_2; Kr^+ + Hg;$ $Xe^+ + HgBr_2; Xe^+ + Hg; Ne_2^+ + HgBr_2;$	E	331 K	Johnson, R.; Biemdi, M. A. Ion-molecule reactions of $He^+, Ne^+, Ar^+, Kr^+, Xe^+,$ and Ne_2^+ ions with Hg atoms and $HgBr_2$ molecules at thermal energy. J. Chem. Phys. 73, 5045 (1980); United States
7486	A13 $O_2^+ + O_2 + C_2; O_2^+ + H_2O + C_2; O_2^+ +$ H_2O	E	3C° K	Rahshit, A. B.; Morneck, V. A drift chamber study of the formation of water cluster ions in oxygen. J. Chem. Phys. 73, 5076 (1980); West Germany
7487	A83 $Na + He$ A10 $Na + He$ A16 $Na + He$	T	0.04-0.05 eV	Fitz, D. E.; Kouri, D. J. CS and ICJ approximations for fine structure transitions in $Na(^2P)-He(^1S)$ collisions. J. Chem. Phys. 72, 5115 (1980); United States
7488	A05 $F_2 + I_2; F_2 + Br_2; F_2 + ClI$ A14 $F_2 + I_2; F_2 + Br_2; F_2 + ClI$	E	J-31 kcal/mol	Köhler, C. C.; Lee, Y. T. Crossed molecular beam studies of chemiluminescent reactions: $F_2 + I_2, Br_2,$ and ClI . J. Chem. Phys. 73, 2122 (1980); United States
7489	A17 $N_2 + N_2$	T	Undef	Lee, E.; Kim, Y. S. N_2-N_2 repulsive interactions obtained through a combining rule. J. Chem. Phys. 72, 5121 (1980); Korea
7490	A07 $HF + HF$ A10 $HF + HF$	T	0.5-1.5 eV	Alexander, M. H. Close-coupling studies of rotationally inelastic HF-HF collisions at hypersonic energies. J. Chem. Phys. 73, 5131 (1980); United States
7491	A17 $He + Ar; Na + Kr; Na + Xe; K + Ar$	T	Undef	Burns, R.; Moritz, G. Improved local calculations for the alkali-van der Waals interaction. J. Chem. Phys. 72, 5155 (1980); West Germany
7492	A17 TiH	T	Undef	Christiansen, P. A.; Pittzer, E. J. Electronic structure for the ground state of TiH from relativistic configuration SCF calculations. J. Chem. Phys. 73, 5160 (1980); United States
7493	A17 S_2	T	Undef	Saxon, R. P.; Liu, B. Ab initio calculations on the $^2\Sigma(\text{sub } g)^-, ^1\Sigma(\text{sub } g)^+, ^3\Pi(\text{sub } g),$ and $^1\Delta(\text{sub } u)$ symmetries of S_2 : valence, ion pair, and Rydberg states. J. Chem. Phys. 72, 5174 (1980); United States
7494	A17 H_2O	T	Undef	Wright, J. S.; Shih, S.-K. BMCS-CI potential surface for $H_2O + OH + h\nu$. J. Chem. Phys. 72, 5204 (1980); Canada
7495	A17 H_2	T	Undef	Beckel, C. L.; Kwong, K. M.; Masfouz-Attar, A.-E. Potential fraction representation of atomic vibrational potentials: II. Application to H_2 ground state. J. Chem. Phys. 73, 5265 (1980); United States
7496	A17 H_2^+	T	Undef	Beckel, C. L.; Scaggs, E. M.; Kwong, K. M. Potential fraction representation of diatomic vibrational potentials: III. Application to H_2^+ ($\pi p(\text{sub } u)$) electronic state. J. Chem. Phys. 72, 5258 (1980); United States

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7497	A17 H_2^+	T	Undef	Sonnleitner, S. A.; Becket, C. L. Rationale fractice representation of diatomic vibrational potentials: 1b. The 2σ vibron (out u) van der Waals state of H_2^+ . J. Chem. Phys. 73, 5404 (1980) United States
7498	A83 $D_2 + He$ A17 $D_2 + He$	E	85 meV	Andree, J.; Bach, U.; Hutshen, F.; Schleusser, J.; Turek, F. The anisotropic interaction potential of D_2 He from state-to-state differential cross sections for rotational excitation. J. Chem. Phys. 73, 5626 (1980) West Germany
7499	A95 $He^+ + D_2$; $He^+ + D_2$ A27 $He^+ + D_2$; $He^+ + D_2$ A13 $He^+ + D_2$; $He^+ + D_2$	E	3.3-150 eV	Jones, E. G.; Wu, B.-L.-C.; Hughes, E. P.; Tierman, T. C.; McPerry, D. G. Collisional studies of the excited state potential energy surfaces of HeH_2^+ ; energy thresholds and cross sections for reactions of helium ions with hydrogen yielding H^+ , H_2^+ , H_2^+ HeH^+ , and $He(H)$. J. Chem. Phys. 72, 5621 (1980) United States
7501	A11 $H + Br_2$; $H + SF_6Br$; $H + PBr_3$; $H + SF_6$; $H + SF_6$ A17 $H + Br_2$; $H + SF_6Br$; $H + PBr_3$; $H + SF_6$; $H + SF_6$ A14 $H + Br_2$; $H + SF_6Br$; $H + PBr_3$; $H + SF_6$; $H + SF_6$	E	30° K	Palino, R. J.; Setser, D. W. Fate of products and vibrational energy disposal for reaction of H atoms with Br_2 , SF_6Br , PBr_3 , SF_6 , and SF_6 . J. Chem. Phys. 73, 5666 (1980) United States
7501	A97 $U + O_2$ A14 $U + O_2$	E	2250 K	Halle, J. C.; Le, M. H.; Fite, W. L. Associative ionization of uranium atoms and oxygen molecules. J. Chem. Phys. 72, 5681 (1980) United Kingdom
7502	A95 $F + He_2$ A14 $F + He_2$	E	30° K	Arrowsmith, P.; Bartoszewski, J. E.; Bly, S.-H.-P.; Carrington, T., Jr.; Charters, P. E.; Polanyi, J. C. Chemiluminescence during the course of a reactive encounter: $F + He_2 \rightarrow FHe + He$. J. Chem. Phys. 73, 5655 (1980) Canada
7503	A95 $He + He_2$	E	10-31 eV	Carlson, T. A.; Krause, P. C.; Peheffy, L.; Taylor, J. W.; Grime, F. A.; Allen, J. E., Jr. Angular distribution in the photoelectron spectrum of the ground and first excited vibrational levels of the $2^1(\text{out } g)^+$ state in He_2^+ measured as a function of photon energy. J. Chem. Phys. 73, 4858 (1980) United States
7504	A14 $D + He_2$	T	0.2-0.5 eV	Sun, J. C.; Choi, B. H.; Pao, F. T.; Tang, K. T. Three-dimensional quantum mechanical studies of $D + He_2 \rightarrow HD + H$ reactive scattering: IV. Cross sections and rate constants with rotationally excited target molecules. J. Chem. Phys. 73, 4855 (1980) United States
7505	A92 $H_2 + H_2$	T	1017-2500 m/sec	Ponchick, L.; Schaefer, J. Theoretical studies of H_2-H_2 collisions: II. Scattering and transport cross sections of hydrogen at low energies: tests of a new ab initio vibrator potential. J. Chem. Phys. 73, 4152 (1980) United States
7506	A94 $H^+ + N_2O$; $He^+ + N_2O$; $O^+ + N_2O$ A97 $H^+ + N_2O$; $He^+ + N_2O$; $O^+ + N_2O$	E	1 MeV	Shah, A. V.; Pence, P. A.; Edwards, P. R.; Steuer, P. F.; Wood, P. P. Dissociative ionization of N_2O produced by 1 MeV H^+ , He^+ , O^+ projectiles. J. Chem. Phys. 73, 4174 (1980) United States
7507	A11 $He_2^+ + He$	E	25° K	Parker, J. W.; Anderson, L. W.; Hilsenrath, W. A.; Lin, C. C. $He_2^+(2^1(\text{out } u)^+)$ decay rate in a high-pressure helium afterglow. J. Chem. Phys. 72, 4175 (1980) United States
7508	A11 $Br^+ + H_2$	E	30° K	Resbitt, E. J.; Leone, S. R. $Br^+(^2P_{1/2}) + H_2(v = 0, j)$: laser studies of the competition between reactive pathways and inelastic energy transfer channels. J. Chem. Phys. 72, 4184 (1980) United States

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REF. NO.	REACTANTS	EXP OR THECP	ENERGY RANGE	REFERENCE
7521	A99 $Kr^+ + F^- + Ar$	T	300 K	Purser, W. L.; Whitten, D. L.; Barclay, J. B. Plasma shielding effects on ionic recombination. <i>Phys. Rev. Lett.</i> 45, 2021 (1980) United States
7521	K01 Review	E T	Under	Cooks, R. G. <i>Collision Spectroscopy</i> , Plenum Press, New York, 1978. United States
7522	A93 Review	E	1-1000 keV	Parh, J. T. Collisional excitation of simple systems. p.15 in <i>Collision Spectroscopy</i> , R. G. Cooks, Ed., Plenum Press, New York, 1978. United States
7523	A96 Review	E T	0.01-1000 keV	Johnson, R. E.; Doring, J. B. Charge transfer in atomic systems. p.91 in <i>Collision Spectroscopy</i> , R. G. Cooks, Ed., Plenum Press, New York, 1978. United States
7524	A93 Review A18 Review	E T	1-1000 keV	Kessel, G. C.; Follach, E.; Smith, B. W. Inelastic energy loss: newer experimental techniques and molecular orbital theory. p.147 in <i>Collision Spectroscopy</i> , R. G. Cooks, Ed., Plenum Press, New York, 1978. United States
7525	A96 $N^+ + Ne; N^+ + Ar; N^+ + Xe; N^+ + O_2; N^+ + N_2; N^+ + C_2H_2$	T	4 keV	Appell, J. Resonant electron transfer and related reactions. p.227 in <i>Collision Spectroscopy</i> , R. G. Cooks, Ed., Plenum Press, New York, 1978. France
7526	A94 Review	E T	2-20 keV	Lee, J.; Govers, T. R. Collision-induced dissociation of diatomic ions. p.289 in <i>Collision Spectroscopy</i> , R. G. Cooks, Ed., Plenum Press, New York, 1978. The Netherlands
7527	A94 Review	E T	Under	Cooks, R. G. Collision-induced dissociation of polyatomic ions. p.357 in <i>Collision Spectroscopy</i> , R. G. Cooks, Ed., Plenum Press, New York, 1978. United States
7528	M01 Review M02 Review M05 Review K03 Review	E T	Under	Berkowitz, J. Photoabsorption, photoionization, and photoelectron spectroscopy. Academic Press, New York, 1975. United States
7529	K07 Review	E T	Under	Bates, D. L.; Bederson, B. <i>Advances in Atomic and Molecular Physics</i> , Academic Press, New York, 1980. United Kingdom
7530	A17 Review	E T	Under	Duren, R. Experiments and model calculations to determine interatomic potentials. p.55 in <i>Advances in Atomic and Molecular Physics</i> , D. L. Bates and B. Bederson, Academic Press, New York, 1980. West Germany
7531	B07 Review	T	Under	Swain, S. Theory of atomic processes in strong resonant electromagnetic fields. p.189 in <i>Advances in Atomic and Molecular Physics</i> , D. L. Bates and B. Bederson, Academic Press, New York, 1980. United Kingdom
7532	A93 Review A96 Review E03 Review E95 Review	T	1-500 MeV	Molisevitch, E. L. Relativistic effects in atomic collisions theory. p.281 in <i>Advances in Atomic and Molecular Physics</i> , D. L. Bates and B. Bederson, Academic Press, New York, 1980. United Kingdom
7533	A12 $Tl + F_2$ A17 $Tl + F_2$	E	733 K	Lisicki, E.; Szudy, J.; Wolniewicz, J. Effects of deuterium pressure on the width and shift of atomic fluorescence of thallium iodide. <i>Acta Phys. Pol. A</i> 58, 165 (1980) Poland
7534	D02 $Ar^+ + Cu; Ar^+ + Ag; Ar^+ + Cu$ D12 $Ar^+ + Cu; Ar^+ + Ag; Ar^+ + Cu$	T	8 keV	Brodzinski-Marczak, B.; Gohla, L. Scattered-light-induced photon emission from metallic and semiconducting surfaces as a function of target temperature. <i>Acta Phys. Pol. A</i> 52, 241 (1980) Poland

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7535	D12 $Ar^+ + Se; Ar^+ + Pb$	E	5 keV	Dziurda, W.; Gattie, L.; Tuleto, P. Isobarment-induced photoemission from Se and Pb near the melting point. <i>Acta Phys. Pol. A</i> 58, 245 (1980) Poland
7536	E09 $e + CH_4; e + C_2H_6; e + C_3H_8; e + C_6H_6$	E	0-15 eV	Muthoski, J.; Frost, M.; Spangenberg, M.-J. Investigation of the inelastic interaction of slow convergent electrons with simple hydrocarbon molecules: I. Dependence of the electron attachment cross sections on electron energy and on molecular structure. <i>Ann. Phys. (Germany)</i> 17, 255 (1980) East Germany
7537	D13 $He + Ne; Ar + Ne; Kr + Ne$	E	400-1000 K	Bath, P. K.; Kagal, V. G.; Verma, S. L.; Phoskar, S. P. Entrapment of inert gas ions near silybdenes surface. <i>Appl. Phys. (Germany)</i> 23, 373 (1980) India
7538	A12 $Ba + Kr$	E	945-1100 K	Ueda, K.; Fujimoto, T.; Fukuda, F. Collision broadening of principal series lines of barium in the presence of krypton. <i>J. Phys. Soc., Jap.</i> 45, 2685 (1980) Japan
7539	A17 $Ne + H^+; Kr + H^+$	T	Undef	Hosous, P.; Reinach, L.-A. Calculation of molecular constants for the $^1\Sigma^+$ ground states of the HeH^+ and KrH^+ ions. <i>Z. Naturforsch. A</i> 35, 1666 (1980) West Germany
7540	A13 $C^+ + C_2H_6; C^+ + CH_3Cl; C^+ + SO_2;$ $C^{++} + C_2H_6; C^{++} + CH_3Cl; C^{++} +$ $SO_2; N^+ + C_2H_6; N^+ + CH_3Cl; N^+ +$ $SO_2; N^{++} + C_2H_6; N^{++} + CH_3Cl; N^{++} +$ SO_2	E	307 K	Bakshii, A. B. Reaction of the ground and metastable excited C^+ and N^+ ions with C_2H_6 , CH_3Cl and SO_2 gases at 306 K. <i>Z. Naturforsch. A</i> 35, 1218 (1980) West Germany
7541	A11 $Ne + Ca^+; Ne + Ca^0$	E	304 K	Hudecki, P. Cross sections for circularization of $6d_{3/2}$ cesium atoms induced in collision with noble gases from D_2 optical pumping. <i>Z. Naturforsch. A</i> 35, 1245 (1980) Poland
7542	A12 $TlI + Kr; TlI + Xe$ A17 $TlI + Kr; TlI + Xe$ M05 $Ar + TlI$	E	A12; A17 743 K M05 Undef	Lisicki, E.; Bielicki, A.; Szudy, J. Collision broadening and shift of the 532.6 nm Tl line accompanying the photodissociation of thallium iodide perturbed by noble gases: I. Effects due to Kr and Xe. <i>Z. Naturforsch. A</i> 35, 1245 (1980) Poland
7543	A03 $Pb + Se; Pb + U; Pb + Au; Pb + Hf;$ $Pb + Th; Pb + Yb; Pb + Pb; U + Se;$ $U + U; U + Au; U + Hf; U + Th; U +$ $Yb; U + Pb$ A19 $Pb + Se; Pb + U; Pb + Au; Pb + Hf;$ $Pb + Th; Pb + Yb; Pb + Pb; U + Se;$ $U + U; U + Au; U + Hf; U + Th; U +$ $Yb; U + Pb$	E	1.4-8.6 MeV/amu	Hagmann, S.; Arnbruster, P.; Behrcke, M.-W.; Liesen, D.; Nehler, P. P. Study of the $2p_{3/2}$ signal excitation probability in collision systems with $Z_1 + Z_2 > 150$ using line width analysis. <i>Z. Phys. A</i> 258, 1 (1980) West Germany
7544	A02 $K + O_2; Cs + O_2$ A07 $K + O_2; Cs + O_2$ A14 $K + O_2; Cs + O_2$	E	25-100 eV	Riegn, A. W.; Khramov, V. N.; Los, J. Vibrational effects in K, Cs + O_2 collisions. <i>Chem. Phys.</i> 52, 81 (1980) Holland
7545	A03 $K + O_2$	E	28-97 eV	Riegn, A. W.; Glasco, E. P.; Los, J. Vibrational excitation in K + O_2 collisions. <i>Chem. Phys.</i> 52, 81 (1980) Holland
7546	E03 $e + H_2$	T	20-2000 eV	Arrighini, G. P.; Biondi, F.; Guidetti, L.; Iangi, P.; Marinelli, F. Inelastic scattering of fast electrons from molecular systems: I. Hydrogen molecule. <i>Chem. Phys.</i> 52, 133 (1980) Italy
7547	A17 $NO + Ar; NO + Kr; Ne + Xe$	T	Undef	Thies, M.-W.; Stolte, S.; Paus, W.; von den Hoven, J. J. H.; van den Meijdenberg, C. J. H. Angle dependent interaction potentials for $Ar-NO$, $Ne-Kr$ and $Ne-Xe$ derived from various total collision cross section data. <i>Chem. Phys.</i> 52, 211 (1980) Holland

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
7548	AP3 LiH + HF; LiH + HCl; LiH + DCI; LiH + HBr; LiH + SO ₂ ; LiH + Ar	E	0.7-0.8 eV	Dagdigian, P. J. Collisional vibrational excitation of lithium hydride. <i>Chem. Phys.</i> 52, 779 (1980) United States
7549	A14 O + H ₂	F	254 K	Light, G. C.; Patsumoto, J. H. Experimental measurement of the rate of the reaction O(⁴ P) + H ₂ (v=0) + CH(v=0) + H at T = 250 K. <i>Int. J. Chem. Kinetics</i> 12, 411 (1980) United States
7550	A14 O + O ₂ + O ₂ ; O + O ₂ + H ₂ ; C + C ₂ + Ar	E	217-368 K	Kinly, O.; Anderson, P. C.; Burylo, P. J. A reinvestigation of the temperature dependence of the rate constant for the reaction C + C ₂ + H + C ₂ + H (for H=C ₂ , H ₂ , and Ar) by the flash photolysis resonance fluorescence technique. <i>Int. J. Chem. Kinetics</i> 12, 469 (1980) West Germany
7551	A11 O ₂ ⁺ + C ₂ ; C ₂ ⁺ + O; C ₂ ⁺ + Ar	E	337 K	Kenner, R. D.; Cgrzylo, L. A. Deactivation of O ₂ (A ¹ (sub v)*) by C ₂ , O, and Ar. <i>Int. J. Chem. Kinetics</i> 12, 501 (1980) Canada
7552	A14 CO + O ₃	E	75-160 °C	Toby, S.; Ullrich, E. Reaction of carbon monoxide with ozone: kinetics and chemiluminescence. <i>Int. J. Chem. Kinetics</i> 12, 525 (1980) United States
7553	A14 NO + O ₃	E	283-443 K	Lippmann, H. M.; Jesser, B.; Schirath, U. The rate constant of NO + O ₃ + NO ₂ + C ₂ in the temperature range 283-443 K. <i>Int. J. Chem. Kinetics</i> 12, 547 (1980) West Germany
7554	A14 Cl + HC ₂	E	274-338 K	Cox, S. A. Kinetics of the reaction Cl + HC ₂ = HCl + C ₂ , using molecular modulation spectrometry. <i>Int. J. Chem. Kinetics</i> 12, 649 (1980) United Kingdom
7555	A14 O ⁺ + CCS; SC + O ₂	E	254 K	Robertshaw, J. L.; Smith, I. W. P. Rate data for O + CCS + SC + CO and SC + O ₂ + SO ₂ + C ₂ by a new time-resolved technique. <i>Int. J. Chem. Kinetics</i> 12, 725 (1980) United Kingdom
7556	A14 NO + HC ₂	E	293 K	Hack, W.; Preuss, A. W.; Tespe, F.; Wegner, H. G.; Hoyerann, K. Direct determination of the rate constant of the reaction NO + HC ₂ + HC ₂ + CH with the LMR. <i>Int. J. Chem. Kinetics</i> 12, 451 (1980) West Germany
7557	A13 N ₂ ⁺ + H ₂ ; NO ⁺ + HC; O ₂ ⁺ + C ₂	E	307 K	Pakshil, A. B. Collisional quenching rate coefficients for the reactions of N ₂ ⁺ + H ₂ , NO ⁺ + NO and O ₂ ⁺ + C ₂ at 306 K. <i>Int. J. Mass Spectrom. Ion Phys.</i> 36, 31 (1980) West Germany
7558	A13 C ₂ ⁺ + PCN; C ₂ H ⁺ + HCN	E	299 K	Machay, G. I.; Vlachos, G. D.; Bhee, D. K.; Schiff, H. I. Studies of reactions involving C ₂ H(sub v) ions with PCN using a modified selected ion flow tube. <i>Int. J. Mass Spectrom. Ion Phys.</i> 36, 215 (1980) Canada
7559	A17 HNO	T	Undef	Komuro, O. Potential-energy surfaces of low-lying states of HNO. <i>Int. J. Quantum Chem.</i> 18, 143 (1980) Japan
7560	A17 NO ₂	T	Undef	Portis, K.; Zate, M.; Ishiguro, I. Ab initio LCAU PL SCF calculation of potential surface of the NO ₂ molecule. <i>Int. J. Quantum Chem.</i> 18, 151 (1980) Japan
7561	A14 H ₂ + H; D ₂ + D	T	250-1000 K	Christov, S. G. Collision theory of bimolecular and unimolecular reactions and its experimental test. <i>Int. J. Quantum Chem.</i> 18, 463 (1980) Bulgaria
7562	A04 C ⁺ + N ₂ ; C ⁺ + N ₂ ; C ⁺ + H ₂ ; C ⁺ + N ₂	E	Undef	Clement, R. R.; Davies, R. A.; Miles, M. I.; Matheson, S. R. Influence of charge transfer on energy measurements of ions expanding from laser-produced plasmas. <i>J. Phys. E</i> 13, 1643 (1980) United Kingdom
7563	G03 e + H ₂ ; e + N ₂ G05 e + H ₂ ; e + N ₂	F	2.5-462 E/N in Td	Roznerski, W.; Laja, K. The ratio of lateral diffusion coefficient to mobility for electrons in hydrogen and nitrogen at moderate E/N. <i>J. Phys. E</i> 13, L181 (1980) Poland

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7564	R06 Review	T	Under	McHenry, R.; Pickup, B. T. Quantum theory of molecular electronic structure. Reports Prog. Phys. 42, 1661 (1980) United Kingdom
7565	E02 $e + H_2; e + N_2; e + O_2; e + CO_2; e + CO; e + H_2O; e + H_2O; e + H_2O$ E03 $e + H_2; e + N_2; e + O_2; e + CO_2; e + CO; e + H_2O; e + H_2O; e + H_2O$ E02 $e + H_2; e + N_2; e + O_2; e + CO_2; e + CO; e + H_2O; e + H_2O; e + H_2O$	T	0-88 eV	Lane, N. F. The theory of electron-molecule collisions. Rev. Mod. Phys. 52, 25 (1980) United States
7566	D10 Review R04 Review	T	Under	Holmes, H. The physical interaction potential of gas atoms with single-crystal surfaces, determined from gas-surface diffraction experiments. Rev. Mod. Phys. 52, 923 (1980) West Germany
7567	C04 $Si^+ + GaAs; S^+ + GaAs; Se^+ + GaAs; Te^+ + GaAs$ C08 $Si^+ + GaAs; S^+ + GaAs; Se^+ + GaAs; Te^+ + GaAs$	E	150-300 keV	Wilson, R. G.; Lelone, V. F. Ion channeling in GaAs: Si, S, Se, and Te. Appl. Phys. Lett. 37, 793 (1980) United States
7568	E16 $e + [Ar + Kr + NF_3]$	E	1 MeV	Tittel, F. K.; Smayling, R.; Wilson, W. L.; Marowsky, G. Blue laser action by the rare-gas halide trimer Kr_3F . Appl. Phys. Lett. 37, 662 (1980) United States
7569	E16 $x + [HgBr_2 + Xe + Ne]$	E	Under	Josse, F.; Vetelino, J. F. Acoustic wave properties and device characterization of 55°-rotated y-cut quartz. Appl. Phys. Lett. 37, 1017 (1980) United States
7570	A03 $H^+ + S^{2+}$ E03 $e + S^{2+}$	T	2.0-6.0 Ry	Bhatia, A. K.; Coschek, G. A.; Feliciano, L. Atomic data for S IV and solar observations of the $3s^2 3p^2 3d^2$ multiplet. Astron. Astrophys. 86, 32 (1980) United States
7571	H02 $h\nu + Ni$ H04 $h\nu + Ni$	E	4094-1964 Å	Huber, R. C. E.; Sandeman, R. J. Oscillator strengths of ultraviolet Ni I lines from high-resolution absorption measurements in a furnace. Astron. Astrophys. 86, 55 (1980) United States
7572	E03 $e + H\text{-like Seq}; e + He\text{-like Seq}$	T	Threshold	Neue, R.; Schrijver, J.; Sylvester, J. Heliumlike ion line intensities: IV. Z-dependence of collision strengths for $n = 2 + n = 1$ transitions in helium- and hydrogenlike ions. Astron. Astrophys. 87, 55 (1980) The Netherlands
7573	E03 $e + Fe^+$	T	0.15-0.25 Ry	Nussbaumer, H.; Storey, P. J. Atomic data for Fe II. Astron. Astrophys. 89, 208 (1980) Switzerland
7574	A06 $Ne^{2+} + He$	T	Under	Dalgarno, A.; Butler, S. E.; Helli, T. G. Charge transfer of Ne^{2+} with helium. Astron. Astrophys. 85, 379 (1980) United States
7575	H04 $h\nu + Ti$	E	6377-3600 Å	Moly, A.; Fuhr, J. R. Absolute transition probabilities of neutral titanium lines. Astron. Astrophys. 90, 14 (1980) United States
7576	A03 $H^+ + C^{2+}; H^+ + O^{2+}; H^+ + Ne^{2+}$	T	10^4-10^7 K	Doyle, J. G.; Kingston, A. E.; Heie, R. H. G. Proton excitation rates for fine structure transitions in C III, C V, and Ne VII in the sun. Astron. Astrophys. 90, 97 (1980) United Kingdom
7577	H04 $h\nu + Ni^{2+}; h\nu + Ni^{2+}; h\nu + Ni^{2+}; h\nu + Ni^{2+}$	T	157-317 Å	Browage, G. E. Atomic structure calculations: energy levels and oscillator strengths for 3s-3p and 3p-3d transitions in nickel XII to XIV and vanadium VII to X spectra. Astron. Astrophys. Suppl. Ser. 41, 75 (1980) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7578	M85 $h\nu + \text{Cl}^+$	T	7.6-16.0 eV	Kirby, K.; Roberge, W. G.; Saxon, S. P.; Liu, B. Photodissociation cross sections and rates for CH^+ in interstellar clouds. <i>Astrophys. J., Part 1</i> 239, 868 (1980) United States
7579	E86 $e + \text{Ca}^0; e + \text{Ca}^{2+}; e + \text{Ca}^{3+}; e + \text{Ca}^{4+}; e + \text{Ca}^{5+}; e + \text{Ca}^{6+}; e + \text{Ca}^{7+}; e + \text{Ca}^{8+}; e + \text{Ca}^{9+}; e + \text{Ca}^{10+}; e + \text{Ni}^{10+}; e + \text{Ni}^{11+}; e + \text{Ni}^{12+}; e + \text{Ni}^{13+}; e + \text{Ni}^{14+}; e + \text{Ni}^{15+}; e + \text{Ni}^{16+}; e + \text{Ni}^{17+}; e + \text{Ni}^{18+}; e + \text{Ni}^{19+}; e + \text{Ni}^{20+}; e + \text{Ni}^{21+}; e + \text{Ni}^{22+}; e + \text{Ni}^{23+}; e + \text{Ni}^{24+}; e + \text{Ni}^{25+}; e + \text{Ni}^{26+}; e + \text{Ni}^{27+}$	T	13×10^6 K; $10^6 \times 10^6$ K	Jacobs, V. L.; Eavis, J.; Rogersen, J. E.; Elsha, R.; Cain, J.; Davis, M. Dielectronic recombination rates, ionization equilibrium, and radiative collision rates for calcium and nickel ions in low-density, high-temperature plasmas. <i>Astrophys. J., Part 1</i> 235, 1119 (1980) United States
7580	E83 $e + \text{Si}^{2+}$	T	1.3-6.0 Ry	Shadra, K.; Neery, R.J.W. Oscillator strengths and collision strengths for Si IV. <i>Astrophys. J., Part 1</i> 240, 260 (1980) United States
7581	A83 $\text{H}^+ + \text{F}^+; \text{H}^+ + \text{Ne}^{2+}; \text{H}^+ + \text{Ne}^{3+}; \text{H}^+ + \text{Mg}^{2+}; \text{H}^+ + \text{Al}^{3+}; \text{H}^+ + \text{Si}^{4+}; \text{H}^+ + \text{P}^{5+}; \text{H}^+ + \text{S}^{6+}; \text{H}^+ + \text{Cl}^+; \text{H}^+ + \text{Ar}^{2+}; \text{H}^+ + \text{K}^{3+}; \text{H}^+ + \text{Ca}^{4+}; \text{H}^+ + \text{Sc}^{3+}; \text{H}^+ + \text{Ti}^{4+}; \text{H}^+ + \text{V}^{5+}; \text{H}^+ + \text{Cr}^{3+}; \text{H}^+ + \text{Mn}^{2+}; \text{H}^+ + \text{Fe}^{2+}; \text{H}^+ + \text{Co}^{2+}; \text{H}^+ + \text{Ni}^{2+}$	T	0-2500 eV	London, D. A. Proton collisional excitation in the ground $3p$ terms of oxygen and sulfur isoelectronic ions. <i>Astrophys. J., Part 1</i> 240, 769 (1980) United States
7582	E86 $e + \text{C}^+$	T	Undef	Wattor, W. D.; Western, L. F.; Christensen, R. L. A new dielectronic-like recombination process for low temperatures and the radio recombination lines of carbon. <i>Astrophys. J., Part 1</i> 246, 556 (1980) United States
7583	A11 $\text{Sr}^0 + \text{Sr}; \text{Ba}^0 + \text{Ba}; \text{Mg}^0 + \text{Mg}; \text{Ca}^0 + \text{Ca}$	E	Thermal	Kelly, F. M.; Mathur, M. S. Hanle effect in the singlet excited states of the alkaline earths. <i>Can. J. Phys.</i> 58, 1416 (1980) Canada
7584	A11 $\text{Rb}^0 + \text{K}$	E T	Thermal	Shalinski, P.; Krause, L. Dielectrization and disalignment of $4^2P_{3/2}$ potassium atoms, induced in resonant collisions. <i>Can. J. Phys.</i> 58, 1800 (1980) Canada
7585	A83 $\text{Kr}^+ + \text{Kr}$	E	5-50 eV	Jones, E. G. Electronic excitation in asymmetric ion-atom collisions: $\text{Kr}^+ + \text{Kr}$. <i>Can. J. Phys.</i> 58, 1818 (1980) United States
7586	A82 $\text{Cs} + \text{He}; \text{Cs} + \text{Ne}; \text{Cs} + \text{Ar}; \text{Cs} + \text{Kr}; \text{Cs} + \text{Xe}; \text{Cs} + \text{H}_2; \text{Cs} + \text{N}_2$	E	Thermal	Bernabei, E.; Alvarez, J. M. Cross sections for elastic collisions in cesium-gas interactions. <i>Can. J. Phys.</i> 58, 1645 (1980) Spain
7587	C88 $\text{He}^+ + \text{Al-Cr}$ D15 $\text{He}^+ + \text{Al-Cr}$	E	1 MeV	Swanson, M. L.; Howe, L. M.; Quenneville, P. F.; Dimitrov, C. Channeling measurements of interstitial trapping in Al-0.07 at percent Cr crystals. <i>Can. J. Phys.</i> 58, 1838 (1980) Canada
7588	C84 $\text{Bi} + \text{Ge}; \text{Ar} + \text{Au}; \text{Au} + \text{Au}$	E T	1-100 eV	Letta, B. P. Monte Carlo study of the depth and lateral range of low-energy projectiles in solids. <i>Can. J. Phys.</i> 58, 1732 (1980) Canada
7589	E84 $e + \text{CH}_4$ E85 $e + \text{CH}_4$	E	25-40 eV	Locht, R.; Monigny, J. The proton formation from methane by dissociative ionization in the electron energy range of 25-40 eV. <i>Chem. Phys.</i> 49, 173 (1980) Belgium
7590	M84 $h\nu + \text{C}_2^+$	T	2-4.5 eV	van Dishoeck, E. F.; van der Hart, H. J.; van Hemert, F. At initial studies of the photodissociation processes in positive hydrocarbon ions: I. The methane ion. <i>Chem. Phys.</i> 50, 45 (1980) The Netherlands
7591	A86 $\text{H}_2^+ + \text{Ar}$	E	3.45-7.8 eV	Blotto, R. M.; Prauninger, F. M.; Furrer, J. M. Low energy crossed-beam study of the exothermic charge transfer reaction $\text{H}_2^+(\text{Ar}, \text{H}_2, \text{Ar}^+)$. <i>Chem. Phys. Lett.</i> 74, 91 (1980) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7592	A93 $Xe^+ + NH_3$; $Ie^+ + Xe$ H94 $He^+ + Xe^+$	E	91-300 K	Dunning, F. B.; Stebbings, R. F. Rydberg states of atoms. <i>Comments At. Mol. Phys.</i> 10, 5 (1980) United States
7593	A94 $CH_3^+ + H_2$; $CH_3^+ + He$; $CH_3^+ + Ne$; $CH_3^+ + H_2$; $CH_3^+ + CO$; $CH_3^+ + SC_2$; $CH_3^+ + CO_2$ A95 $Ar^+ + He$; $Ar^+ + Ar$; $Ar^+ + H_2$; Ar^+ $+ SF_6$; $CH_3^+ + SF_6$; $CH_3^+ + H_2S$; $CH_3^+ + C_2H_2$; $CH_3^+ + CH_4$; $CH_3^+ +$ O_2 ; $CH_3^+ + Ar$; $CH_3^+ + H_2$; $CH_3^+ +$ He A10 $Ar^+ + He$; $Ar^+ + Ar$; $Ar^+ + H_2$; Ar^+ $+ SF_6$; $CH_3^+ + SF_6$; $CH_3^+ + H_2S$; $CH_3^+ + C_2H_2$; $CH_3^+ + CH_4$; $CH_3^+ +$ O_2 ; $CH_3^+ + Ar$; $CH_3^+ + H_2$; $CH_3^+ +$ He	E	7.7 keV	Larimer, J. A.; Cameron, D.; Cohen, F. G. Collision-induced dissociation mass spectrometry: target gas effects upon scattering and charge exchange. <i>J. Am. Chem. Soc.</i> 103, 12 (1981) United States
7594	A94 $H_2^+ + H_2^+$	T	500-6000 K	Shenoy, V. M.; Margolin, A. D. Nonequilibrium dissociation of hydrogen molecules under shock wave conditions. <i>High Energy Chem.</i> 13, 447 (1975) Soviet Union
7595	E04 $e + H_2$ E05 $e + H_2$	E	30-75 eV	Johnson, J. P.; Franklin, J. L. Kinetic energies and angular distributions of H^+ ions produced by electron impact on H_2 . <i>Int. J. Mass Spectrom. Ion Phys.</i> 32, 393 (1980) United States
7596	D14 $He^+ +$ Fe alloy-T2M	E	71-350 keV	Daly, J. G.; Sirha, M. K. Blistering of molybdenum-base alloy T2M under relativistic ion bombardment. <i>J. Appl. Phys.</i> 51, 3158 (1980) United States
7597	C02 $e + Al$ C04 $e + Al$ C05 $e + Al$ D05 $e + Al$	E T	15-20 keV	Adesida, I.; Shimizu, F.; Everhart, T. L. A study of electron penetration in solids using a direct Monte Carlo approach. <i>J. Appl. Phys.</i> 51, 5962 (1980) United States
7599	C02 $Sb + Si$; $B + Si$ C04 $Ar + Si$; $P + Si$; $B + Si$	E T	10 ⁵ -400 keV	Christel, L. A.; Gibbons, J. F.; Mircic, I. An application of the Boltzmann transport equation to ion range and energy distributions in multilayered targets. <i>J. Appl. Phys.</i> 51, 4176 (1980) United States
7599	E03 $e + H_2$ E04 $e + H_2$	E	15-100 eV	Ortiz, M.; Campoe, J. Emission of the He and H β lines excited by electron impact on H_2 . <i>J. Chem. Phys.</i> 72, 5635 (1980) Spain
7600	D01 Review D02 Review	E	Under	McCracken, G. M. A review of the experimental evidence for arcing and sputtering in tokamaks. <i>J. Nucl. Mater.</i> 93-94, 3 (1980) United Kingdom
7601	D02 Review D07 Review D13 Review	E T	Under	Hove, M. C. Hydrogen recycle modeling and measurements in tokamaks. <i>J. Nucl. Mater.</i> 92-94, 17 (1980) United States
7602	D02 Review J04 Review	E	5-100 eV	Bohdansky, J. Important sputtering yield data for tokamaks: A comparison of measurements and estimates. <i>J. Nucl. Mater.</i> 93-94, 44 (1980) West Germany
7603	D02 $D^+ + Fe$	F	10 keV	Hints, E. Laser diagnostics for plasma surface interaction. <i>J. Nucl. Mater.</i> 92-94, 86 (1980) West Germany
7604	D01 Under	E	Under	Malinowski, M. E. Tritium-related surface effects in tokamaks. <i>J. Nucl. Mater.</i> 93-94, 56 (1980) United States

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7605	D16 $D^+ + C$	E	Undef	Cohen, S. A.; Bylle, M. F.; Wampler, W. R.; Rogers, C. W. Deuterium ion fluxes to probes in the PLT edge plasma. J. Nucl. Mater. 92-94, 115 (1980) United States
7606	D16 $D + C$	E	Undef	Ereeta, S. E.; Bolton, E. E.; McCracken, G. R.; Seifield, C. J.; Sheu, J. Time resolved and time integrated measurement of deuterium ion fluxes and energies in the DITE tokamak, using carbon probes. J. Nucl. Mater. 93-94, 119 (1980) United Kingdom
7607	D16 $D^+ + C$	E	Undef	Staudemeyer, G.; Stoll, P.; Pouchenrieder, H. Determination of ion temperatures in the edge plasma from ion flux transmission of apertures. J. Nucl. Mater. 93-94, 121 (1980) West Germany
7608	D13 $H^+ + H_2 + NI; H^+ + CO + NI$	E	Undef	Pasplenzsach, A.; Pagen, P.; Nortwig, M.; Lie, Y. T. Determination of low surface coverages of H_2 and CO by vacuum UV-resonance fluorescence spectroscopy of laser desorbed particles. J. Nucl. Mater. 93-94, 368 (1980) West Germany
7609	D07 $H^+ + Au; H^+ + SS; He^+ + Si$	T	0.1-9.0 keV	Jackman, B. P. Comparison of ion backscattering models. J. Nucl. Mater. 93-94, 567 (1980) Canada
7610	D08 $H + Cu; H + NI; H + Fe; D + Cu; D + NI; E + Fe; He + Cu; He + NI; He + Fe$	T	1-100 keV	Parillo, E. S.; Verleger, V. K. Energy spectra and charge states of light atoms scattered by solid surface. J. Nucl. Mater. 93-94, 112 (1980) Soviet Union
7611	D07 $H^+ + SS$	E	5 keV	Echstein, W.; Verbeek, M. Reflection of hydrogen from stainless steel for non-normal incidence. J. Nucl. Mater. 93-94, 118 (1980) West Germany
7612	D07 $H^+ + Re; H^+ + C; H^+ + Cu; D^+ + Nb; H^+ + Au; H^+ + SS$	E	1.8-15 keV	Thomas, E. W.; Young, R.; Harrison, J. E. Small angle scattering of hydrogen from surfaces. J. Nucl. Mater. 93-94, 520 (1980) United States
7613	D07 $H^+ + C$	E	200-3000 eV	Overbury, S. M.; Dittner, P. F.; Datz, G.; Thoe, M. E. Energy and angular distribution of low energy H^+ and D^+ backscattered from polycrystalline carbon. J. Nucl. Mater. 93-94, 529 (1980) United States
7614	D07 $H^+ + Cu; H^+ + NI; D^+ + Cu; D^+ + NI$ D08 $H^+ + Cu; H^+ + NI; D^+ + Cu; D^+ + NI$	T	50-600 eV	Niskau, J. R.; Schneider, P. J. A model for H^+ , D^+ production by hydrogen backscattering from alkali and alkali/transition-metal surfaces. J. Nucl. Mater. 93-94, 536 (1980) United States
7615	D16 $H^+ + TiC; H^+ + TiB_2; H^+ + VB_2; H^+ + B_4C; H^+ + B; H^+ + Si; H^+ + C; H^+ + SS; D^+ + TiC; D^+ + TiB_2; D^+ + VB_2; D^+ + B_4C; D^+ + B; D^+ + Si; D^+ + C; D^+ + SS$	E	1.5 keV	Doyle, B. L.; Wampler, W. R.; Erice, E. E.; Priceman, S. T. Saturation and isotopic replacement of deuterium in low-Z materials. J. Nucl. Mater. 93-94, 551 (1980) United States
7616	D11 $H + C$	E	2700 K	Huchs, P.; Fleckamp, K.; Vietzke, I. The trapping of thermal atomic hydrogen on pyrolytic graphite. J. Nucl. Mater. 93-94, 558 (1980) West Germany
7617	D02 $He^+ + [He + NI]; He^+ + [He + Be]$ D13 $He^+ + He + Be; He^+ + He + Ni$ D16 $H^+ + NI; H^+ + Be; He^+ + NI; He^+ + Be$	E	2-4 keV	Pontau, A. E.; Bauer, M.; Cenn, E. W. He sputtering in the presence of an H beam. J. Nucl. Mater. 93-94, 544 (1980) United States
7618	D16 $D_2^+ + Ti; D_2^+ + TiB_2$	E	10 keV	Wiemann, R. L.; Pontau, A. E. Extrinsic trapping and release in titanium-based coatings for TFR. J. Nucl. Mater. 93-94, 559 (1980) United States

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7619	D02 D ⁺ + [C + C] D13 D ⁺ + D + C D16 D ⁺ + C	E	18-25 keV	Underwood, R. C.; Erents, S. K.; Heston, L. S. Experimental measurements of hydrogen isotope exchange in carbon surfaces under ion bombardment. J. Nucl. Mater. 93-94, 575 (1980) United Kingdom
7620	D02 Ar ⁺ + [D + Si] D14 D ⁺ + Si D16 D ⁺ + Si	E	0.5-4.0 keV	Wittmann, K.; Staudenmayer, G. Volume expansion and oxygen incorporation in deuterium-bombarded silicon. J. Nucl. Mater. 93-94, 581 (1980) West Germany
7621	D16 H + V; H + Nb; H + Ta; H + Fe; H + U; H + Pd; H + Cu; H + Au; H + Al	E	9-18 keV	Gerasimov, A. E.; Zakharen, A. F.; Sharapov, V. R.; Alimov, V. L. Interaction of hydrogen with radiation defects in metals. J. Nucl. Mater. 93-94, 588 (1980) Soviet Union
7622	D16 D ₂ ⁺ + Si	E	6 keV	Bohdansky, J.; Wilson, A. L.; Fortau, A. L.; Haggmark, L. G.; Busch, R. I. Combined depth profiling and thermal desorption of implanted deuterium in 304L stainless steel. J. Nucl. Mater. 93-94, 594 (1980) West Germany
7623	D02 H ⁺ + [H + C]; Na ⁺ + [H + C]; H ⁺ + [H + C] D13 H ⁺ + [D + C]; Na ⁺ + [H + C]; H ⁺ + [H + C] D16 H ⁺ + C	E	D02; D13 400-1600 keV D16 1-8 keV	Roth, J.; Scherzer, B.H.U.; Blomer, S. S.; Brice, L. E.; Picraux, S. T.; Hempler, W. F. Trapping, detrapping and replacement of hot hydrogen implanted into graphite. J. Nucl. Mater. 93-94, 601 (1980) West Germany
7624	D02 D ⁺ + [Ne + Ne] D13 Na ⁺ + [D + Ne] D16 D ⁺ + Ne; Na ⁺ + Ne	E	4-16 keV	Schulz, R.; Behrlich, R.; Scherzer, B.H.U. Trapping and mutual release of D and He in polybenzene. J. Nucl. Mater. 93-94, 608 (1980) West Germany
7625	D15 Na ⁺ + Ni; Li + Ni; D ⁺ + Ni; Na ⁺ + Ni D16 D ⁺ + Ni	E	D15 50-150 keV D16 10 keV	Boschenko, F.; Bottiger, J.; Laurson, I.; Keller, L. Hydrogen trapping in ion-implanted nickel. J. Nucl. Mater. 93-94, 617 (1980) Denmark
7626	D02 PERT ⁺ + C; PERT ⁺ + Fe; PERT ⁺ + Si; PERT ⁺ + Ni; PERT ⁺ + Mo; PERT ⁺ + U J04 PERT ⁺ + C; PERT ⁺ + Fe; PERT ⁺ + Si; PERT ⁺ + Ni; PERT ⁺ + Mo; PERT ⁺ + U	E	0.5-100 keV	Anderson, M. H.; Bay, M. L. A survey of sputtering-yield data for planar-sputter interaction calculations. J. Nucl. Mater. 93-94, 628 (1980) Denmark
7627	D02 H + C D17 H + C	E	300 K	Vebb, A. P.; Brauer, R.; Stuenkel, M.; Veprek, S. Further results on the erosion of carbon materials by hydrogen plasma. J. Nucl. Mater. 93-94, 634 (1980) Switzerland
7628	D02 D ⁺ + TiB ₂	E	0.1-10 keV	Neilsen, G. C.; Borders, J. A. Surface composition and erosion yields for CVD TiB ₂ films subjected to low energy deuterium ion bombardment. J. Nucl. Mater. 93-94, 640 (1980) United States
7629	D02 D ⁺ + Fe; H ⁺ + Fe; Na ⁺ + Fe	E	2-6 keV	Behrlich, R.; Roth, J.; Bohdansky, J.; Martinelli, A. P.; Schwaer, B.; Rusbult, D.; Hintz, L. Dependence of light-ion sputtering yields of iron on ion fluence and oxygen partial pressure. J. Nucl. Mater. 93-94, 645 (1980) West Germany
7630	D02 H ⁺ + Fe; H ⁺ + Si; H ⁺ + Inconel; D ⁺ + Fe; D ⁺ + Si; D ⁺ + Inconel; Na ⁺ + Fe; Na ⁺ + Si; Na ⁺ + Inconel	E	0.1-10 keV	Hintz, L.; Rusbult, D.; Schwaer, B.; Bohdansky, J.; Roth, J.; Martinelli, A. P. The determination of the flux density of sputtered atoms by means of pulsed dye laser excited fluorescence. J. Nucl. Mater. 93-94, 646 (1980) West Germany
7631	D02 H ⁺ + Ni; H ⁺ + Mo; H ⁺ + Au; D ⁺ + Ni; D ⁺ + Mo; D ⁺ + Au; T ⁺ + Ni; T ⁺ + Mo; T ⁺ + Au	T	0.1-10 keV	Haggmark, L. G.; Picraux, J. P. Monte Carlo calculations of light-ion sputtering as a function of the incident angle. J. Nucl. Mater. 93-94, 644 (1980) United States

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7632	D02 n + Nb; H ⁺ + Nb	E T	1-16 MeV	Bocher, H.; Riccato, A.; Thacher, G. R.; May, J.; Blorzech, J. P. Experiments on sputtering of niobium by 14-16 MeV protons and Monte Carlo calculations for proton and neutron sputtering. J. Nucl. Mater. 93-94, 678 (1980) West Germany
7633	D02 Ar ⁺ + SS	E	2 keV	Matsumoto, K.; Maeda, S.; Yamashita, T.; Rothmann, P. G. Changes in roughness factors of 304 and 316 L + b stainless steels with ion bombardment and discharge cleaning. J. Nucl. Mater. 93-94, 675 (1980) Japan
7634	D02 He ⁺ + Fe	E	1 keV	Krauss, A. B.; Green, B. H. Suppression of sputter-induced erosion rate from sputter covered metal surfaces. J. Nucl. Mater. 93-94, 686 (1980) United States
7635	D03 He ⁺ + Si; He ⁺ + SiC; D ⁺ + Si; C ⁺ + SiC	E	10 keV	Mehri, M.; Kato, S.; Shinoda, I.; Matsumoto, K.; Yamashita, T. Analysis of secondary ion species sputtered from SiC surface during He ⁺ and C ⁺ ion irradiation. J. Nucl. Mater. 93-94, 652 (1980) Japan
7636	D02 H ⁺ + H; H ⁺ + D; H ₂ ⁺ + H; H ₂ ⁺ + D; H ₃ ⁺ + H; H ₃ ⁺ + D; D ₂ H ⁺ + H; D ₂ H ⁺ + D; D; D ₃ ⁺ + H; D ₃ ⁺ + D; He ⁺ + H; He ⁺ + D D03 H ⁺ + H; H ⁺ + D; H ₂ ⁺ + H; H ₂ ⁺ + D; H ₃ ⁺ + H; H ₃ ⁺ + D; D ₂ H ⁺ + H; D ₂ H ⁺ + D; D; D ₃ ⁺ + H; D ₃ ⁺ + D; He ⁺ + H; He ⁺ + D D04 H ⁺ + H; H ⁺ + D; H ₂ ⁺ + H; H ₂ ⁺ + D; H ₃ ⁺ + H; H ₃ ⁺ + D; D ₂ H ⁺ + H; D ₂ H ⁺ + D; D; D ₃ ⁺ + H; D ₃ ⁺ + D; He ⁺ + H; He ⁺ + D	E	1-10 keV	Bergmann, P.; Schou, J.; Sorensen, K. Ion-induced emission of charged particles from solid hydrogen and deuterium. J. Nucl. Mater. 93-94, 701 (1980) Denmark
7637	D14 He ⁺ + Fe; He ⁺ + Al; He ⁺ + V; He ⁺ + Cu; He ⁺ + Nb; He ⁺ + Inconel D16 He ⁺ + Fe; He ⁺ + Al; He ⁺ + V; He ⁺ + Cu; He ⁺ + Nb; He ⁺ + Inconel	E	1-100 keV	Torresani, B. When are blistering or flaking repetitive. J. Nucl. Mater. 93-94, 707 (1980) Canada
7638	D14 Undef	T	Undef	Welfer, W. G. The role of gas pressure and lateral stress on blistering. J. Nucl. Mater. 93-94, 713 (1980) United States
7639	D14 H ⁺ + Ti; H ⁺ + Cu; He ⁺ + Ti; He ⁺ + Cu	E	16-30 keV	Johnson, P. D.; Mazey, D. J. The gas-bubble superlattice and the development of surface structure in He ⁺ and H ⁺ irradiated metals at 300 K. J. Nucl. Mater. 93-94, 721 (1980) New Zealand
7640	D14 He ⁺ + SS	E	20-80 keV	Brown, M.; Eneath, B.; Whitten, J. L. Blistering and exfoliation of 304 stainless steel studied by SEM and RBS. J. Nucl. Mater. 93-94, 722 (1980) Sweden
7641	D14 D ⁺ + SS; He ⁺ + SS	E	20-40 keV	Vladimirov, B. G.; Guseva, M. I.; Ignova, E. S.; Mansurova, A. M.; Martynenko, Y. V.; Rjazanov, A. I. The blistering of stainless steel (0Cr18Ni9Nb) under simultaneous D ⁺ and He ⁺ ions irradiation. J. Nucl. Mater. 93-94, 734 (1980) Soviet Union
7642	D14 D ⁺ + Inconel; D ⁺ + SS D16 D ⁺ + Inconel; D ⁺ + SS	E	33-36 keV	Mavinech, B.; Peternel, M.; Zolner, A.; Eranto, I. K. Blistering and deuterium trapping induced by D ⁺ ion bombardment in metal alloys. J. Nucl. Mater. 93-94, 739 (1980) Yugoslavia
7643	D14 Undef	T	Undef	Evans, J. M. Blister lid thickness measurements - a discussion in terms of the interbubble fracture model of blister formation. J. Nucl. Mater. 93-94, 746 (1980) United Kingdom

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7644	D14 D ⁺ + Ni; D ⁺ + Pd; D ⁺ + Mo; D ⁺ + Ta D16 D ⁺ + Ni; D ⁺ + Pd; D ⁺ + Mo; D ⁺ + Ta	E	10 keV	Heller, V.; Rosenbocher, F.; Laurens, I. The correlation between ion retention and surface deformation in deuterium-implanted metals. J. Nucl. Mater. 93-94, 750 (1980) Denmark
7645	D14 He ⁺ + Ni; D ⁺ + Ni D15 He ⁺ + Ni; D ⁺ + Ni D16 He ⁺ + Ni; D ⁺ + Ni	E	250-2000 eV	Jager, V.; Roth, J. Microstructure of Ni and stainless steel after multiple energy He and D implantation. J. Nucl. Mater. 93-94, 756 (1980) West Germany
7646	D14 He ⁺ + Al	E	5 keV	Donnelly, S. E.; Rife, J. C.; Gilles, J. W.; Lucas, A. A. Optical measurements of the cavity of helium in small bubbles in aluminum films. J. Nucl. Mater. 93-94, 767 (1980) Belgium
7647	D17 H + Inconel	E	100-400 °C	Saggar, J. v.; Tschornich, K. G. Surface composition of high-nickel alloy after the implantation of atomic hydrogen at different temperatures. J. Nucl. Mater. 93-94, 806 (1980) West Germany
7648	D13 He ⁺ + C + Cu	E	500 eV	Tagliavini, E.; Holland, W. Ion-induced desorption of adsorption layers on annealed and prebombarded surfaces. J. Nucl. Mater. 93-94, 823 (1980) West Germany
7649	D13 H ⁺ + S + SS; H ₂ ⁺ + S + SS; H ₃ ⁺ + S + SS	E	0.25-1000 eV	Bastasz, R. Hydrogen ion impact desorption of sulfur from stainless steel. J. Nucl. Mater. 92-94, 836 (1980) United States
7650	D13 H ⁺ + CC + SS; D ⁺ + CO + SS; He ⁺ + CO + SS; He ⁺ + CO + SS; Ar ⁺ + CO + SS	E	75-1000 eV	Ferrall, G.; Eghavary, B. D. Bombardment-induced desorption of CO adsorbed on 304 stainless steel by low energy (75-1000 eV) light active and inert gas ions. J. Nucl. Mater. 93-94, 834 (1980) United Kingdom
7651	D17 H + Ti; H + SS	E	300 K	Uebelbroeck, F.; Dietz, K. J.; Wlenhald, P.; Winter, J.; Ali-Khan, I.; Parkens, H.; Bata, E. Investigation of adsorption and absorption processes of hydrogen in plasma devices with SS or Ti-coated walls. J. Nucl. Mater. 93-94, 839 (1980) West Germany
7652	D02 Ar ⁺ + Fe + He D13 He ⁺ + H + Ti; Ar ⁺ + H + Ti; He ⁺ + CO + Ti; Ar ⁺ + CO + Ti; He ⁺ + CO + He; Ar ⁺ + CO + He	E	D02 2 keV D13 1.5 keV	Sagara, A.; Akashihi, K.; Komada, K.; Miyahara, A. ISS observations of Ti film on He substrate. J. Nucl. Mater. 93-94, 847 (1980) Japan
7653	D01 D + D + SS	E	600 °C	Braun, M.; Enoeth, B.; Uebelbroeck, F.; Wlenhald, P. Determination of deuterium surface recombination rates on stainless steel. J. Nucl. Mater. 93-94, 861 (1980) Sweden
7654	D01 Undef	E	Undef	Wlenhald, P.; Profant, H.; Uebelbroeck, F.; Winter, J. Computer code PERI for the calculation of recycling, volume distribution, and permeation of hydrogen in first wall materials of tokamaks. J. Nucl. Mater. 93-94, 866 (1980) West Germany
7655	D14 He ⁺ + Zr; He ⁺ + Nb; He ⁺ + Au	E	35 keV	Alexander, T. K.; Ball, G. C.; Davies, W. G.; Mitchell, I. V. A measurement of the local density of ²¹⁰ Pb-implanted metal foil by the Rappier shift attenuation method. J. Nucl. Mater. 96, 81 (1981) Canada
7656	D14 He ⁺ + {Nb + Zr}	E	50-220 keV	Engin, R. Dispersions in He ⁺ ion implanted Nb-15 Zr alloy. J. Nucl. Mater. 96, 165 (1981) Turkey
7657	E06 o + Sr ⁺	T	Undef	Mikhlin, S. I.; Ostrovsky, V. A. The autoionization of high Rydberg atomic states with large orbital angular momentum. J. Phys. B 13, 1061 (1980) Soviet Union

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7658	H87 hv + He ⁻	E	1.77-2.75 eV	Coxton, R. M.; Alton, G. B.; Fagg, E. J. Photoelectron cross sections for He ⁻ (¹ P°). J. Phys. B 13, L651 (1980) United States
7659	A93 Rb ⁰ + He; Pb ⁰ + He; Rb ⁰ + Ar; Pb ⁰ + Kr; Sb ⁰ + Xe A97 Rb ⁰ + He; Pb ⁰ + He; Rb ⁰ + Ar; Pb ⁰ + Kr; Sb ⁰ + Xe A11 Rb ⁰ + He; Pb ⁰ + He; Rb ⁰ + Ar; Pb ⁰ + Kr; Sb ⁰ + Xe	T	52° K	Flannery, M. M. Thermal collisions of Rydberg atoms with neutrals. J. Phys. B 13, L67 (1980) United States
7660	A93 H ⁺ + He; H ⁺ + C; H ⁺ + Ar A96 H ⁺ + He; H ⁺ + C; H ⁺ + Ar	T	0.1-20 MeV	Kochbach, L. Impulse approximation calculations for capture of K-shell electrons by fast light nuclei. J. Phys. B 13, L665 (1980) West Germany
7661	E85 e + H E17 e + H	T	25° eV	Byron, F. W., Jr.; Joachain, C. J.; Pirau, R. Triple differential cross sections for the ionization of atomic hydrogen by fast electrons: a second Born treatment. J. Phys. B 13, L673 (1980) United States
7662	H83 hv + Si; hv + Ge H84 hv + Si; hv + Ge	T	Undef	Jensen, M. S. Atomic x-ray scattering factors for forward scattering beyond the dipole approximation. J. Phys. B 13, 4327 (1980) Denmark
7663	H86 hv + Xe	E	12-41 eV	Helbermann, U. Experimental determination of the phase differences of continuum wavefunctions describing the photoionization process of xenon atoms: I. Measurements of the spin polarizations of photoelectrons and their comparison with theoretical results. J. Phys. B 12, 4353 (1980) West Germany
7664	H86 hv + Xe	T	12-41 eV	Helbermann, U. Experimental determination of the phase differences of continuum wavefunctions describing the photoionization process of xenon atoms: II. Evaluation of the matrix elements and the phase differences and their comparison with data in the discrete spectral range in application of the multipole quantum defect theory. J. Phys. B 13, 4367 (1980) West Germany
7665	H86 Undef	T	Undef	Gentler, Y.; Trehin, M. Energetic electron generation by multiphoton absorption. J. Phys. E 12, 4383 (1980) France
7666	A17 Undef	T	Undef	Mahanty, J. Velocity dependence of the van der Waals force between molecules. J. Phys. E 12, 4391 (1980) India
7667	A13 H ⁺ + H A16 H ⁺ + H	T	0.01-0.64 eV	Bieniek, R. J. A source of errors in cross sections of curve-crossing processes. J. Phys. E 12, 4405 (1980) United States
7668	A16 H ⁺ + He	T	1-1000 eV	Gauyacq, J. P. Theoretical study of the detachment process in the zero-range potential approximation. H ⁺ -He collisions. J. Phys. B 12, 4417 (1980) France
7669	A93 Mg + He; Mg + Ne; Mg + Ar; Li + Na; K + Na	T	1-300 keV	Disgaard, P.; Andersen, T.; Andersen, B. V.; Nielsen, E. E.; Dehler, S. S. Collisional excitation in quasi two-electron systems: Mg-He, He, Ar and Li, K-Ne. J. Phys. B 13, 4441 (1980) Denmark
7670	E83 e + H	T	0.69-0.93 R _y	Hate, J.; Morgan, L. A.; McDowell, P. R. C. Electron impact induced transitions between the n = 1,2,3 levels of atomic hydrogen at low energies. J. Phys. E 12, 4453 (1980) United Kingdom
7671	F45 e + He F17 e + He	T	80-105 eV	Tweed, M. J. Triple differential cross sections for the ionization of helium by electron impact. J. Phys. B 13, 4467 (1980) West Germany

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7697	A96 $H^+ + C$	T	1.5 MeV	Tracy, P. B. S-matrix description of charge transfer to continuum atomic states. <i>J. Phys.</i> B 12, 4617 (1980); Australia
7698	E92 $e + C; e + N; e + O; e + F; e + Na; e + Ar$	T	Undef	Khare, S. P.; Raj, D. Critical points for elastic scattering of electrons by light atoms. <i>J. Phys.</i> B 13, 4627 (1980); India
7699	E97 $e + H$	T	33-609 eV	Kingston, A. E.; Walters, H.R.J. Electron scattering by atomic hydrogen: the distorted-wave second Born approximation. <i>J. Phys.</i> B 13, 4633 (1980); United Kingdom
7690	F93 $e + He$ E95 $e + He$	T	30-60 eV	van de Water, B.; Heideeman, B.C.M. The semiclassical and atom-atom models for fast-collision interaction. <i>J. Phys.</i> B 13, 4663 (1980); The Netherlands
7691	E93 $e + He^{++}$	T	$5 \times 10^{-3} - 10^4$ V	Batajs, R. L.; Burns, P. G.; Kingston, A. E. Electron impact excitation of semi-forbidden transitions in He V. <i>J. Phys.</i> B 13, 4675 (1980); United Kingdom
7692	E97 $e + Be$ E95 $e + Be$	E	20-500 eV	Bassi, D.; Boss, R. J. The ejected-electron spectrum of krypton vapour autoionizing and Rydberg levels excited by 20-500 eV electrons. <i>J. Phys.</i> B 13, 4683 (1980); United Kingdom
7693	E19 $e + N_2; e + N_2; e + NO$	E	10 ³ -1600 eV	Delbo, G.; Fornasini, P.; Grisenti, R.; Bortol, G.; Zecchi, A. Absolute total cross section measurements for intermediate energy electron scattering: II. N_2 , O, and NO. <i>J. Phys.</i> B 13, 4653 (1980); Italy
7694	E94 $e + CH_4$ E95 $e + CH_4$	E	1-20 eV	Patmer, D. Collisions of slow electrons with methane: ionization, fragmentation and resonances. <i>J. Phys.</i> B 13, 4703 (1980); United Kingdom
7695	B96 $He + H$	T		Clark, C. W.; Taylor, R. T. The quadratic Zeeman effect in hydrogen Rydberg series. <i>J. Phys.</i> B 13, L737 (1980); United Kingdom
7696	H96 $Ar + Fe; Ar + Pb$	E	22-35 eV	Hollard, D.P.F.; Codling, K. Scable photoelectron spectroscopy in Fe and Pb in the region of the 3d ionization. <i>J. Phys.</i> B 13, L745 (1980); United Kingdom
7697	F92 $e + H$	T	30 eV	Walters, H.R.J. Exact second Born exchange amplitude for elastic electron-hydrogen scattering. <i>J. Phys.</i> B 13, L749 (1980); United Kingdom
7698	F12 $e^+ + He; e^+ + Ar; e^+ + N_2; e^+ + CH_4$	E	2-32 eV	Charlton, P.; Griffiths, T. C.; Heyland, G. S.; Lines, R. S.; Wright, C. L. The energy dependence of positronium formation in gases. <i>J. Phys.</i> B 13, L753 (1980); United Kingdom
7699	H96 Undef	T	Undef	Armstrong, L. J.; Bener, P. C. <i>Adiabatic and near-adiabatic model of multiphoton ionization.</i> <i>J. Phys.</i> B 13, 4727 (1980); United States
7700	A97 $H^+ + He$ A15 $H^+ + He$	T	10 ³ -225 keV	Gatto, S.; Mandel, C. R.; Pukhraj, S. C. Differential cross sections for excitation of the helium atom by proton impact. <i>J. Phys.</i> B 12, 4751 (1980); India
7701	A96 $He^+ + H$ A97 $He^+ + H$ A18 $He^+ + H$	T	2-20 e.v.	Briggs, J. S.; Eay, R. M. The structure of the doubly differential cross section for electron loss to low-lying continuum states of the projectile in fast ion-atom collisions. <i>J. Phys.</i> B 12, 4757 (1980); United Kingdom

REF. NO.	REACTANTS	EXP. OP. METHOD	ENERGY RANGE	REFERENCE
7702	A06 He ⁺ + Fe; He ⁺ + H ₂ ; He ⁺ + Xe; He ²⁺ + He; He ²⁺ + H ₂ ; He ²⁺ + Xe; He ³⁺ + He; He ³⁺ + H ₂ ; He ³⁺ + Xe A07 He ⁺ + Fe; He ⁺ + H ₂ ; He ⁺ + Xe; He ²⁺ + He; He ²⁺ + H ₂ ; He ²⁺ + Xe; He ³⁺ + He; He ³⁺ + H ₂ ; He ³⁺ + Xe	E	1-10 keV	Porgerstern, S.; Niehaus, A.; Zimmermann, G. Autoionising states formed by electron capture in collisions of multiply charged helium ions with He, H ₂ , and Xe. <i>J. Phys. B</i> 13, 4611 (1980); The Netherlands
7703	A03 H ⁺ + C A06 H ⁺ + C A07 H ⁺ + C	E	0.5-2.5 MeV	Lucas, W. W.; Stachelaucher, W.; Neesh, J.; Fetter, J. E. Charge transfer to continuum and high Rydberg states in proton-carbon-foil collisions. <i>J. Phys. B</i> 13, 4633 (1980); United Kingdom
7704	E03 e + Ne	T	22-110 eV	Tully, J. A. Excitation of Ne(1S-2 ¹ S) by electron impact. <i>J. Phys. B</i> 13, 4645 (1980); France
7705	E02 e + K E03 e + K E17 e + K	E	7-100 eV	Vukobratovic, L.; Srivastava, S. K. Scattering of intermediate-energy electrons by potassium. <i>J. Phys. B</i> 13, 4649 (1980); United States
7706	E05 e + Cd	E	9-14 eV	Mashizume, A.; Masuda, N. Electron impact ionisation efficiency curve of cadmium. <i>J. Phys. B</i> 13, 4663 (1980); Japan
7707	E03 e + O ₂	E	150-500 eV	Newell, W. R.; Shahan, P. A.; Smith, A. C. H. Electron impact spectroscopy of O ₂ for energy losses in the range 6.5 to 10.5 eV. <i>J. Phys. B</i> 13, 4677 (1980); United Kingdom
7708	E02 e + CH ₄ E03 e + CH ₄ E17 e + CH ₄	E	0.2-10 eV	Fuhr, K. Crossed beam experiment for the scattering of low-energy electrons from methane. <i>J. Phys. B</i> 13, 4687 (1980); West Germany
7709	E12 e ⁺ + Ne	T	0-1 a.u.	Munro, J. B.; Cooper, R. J. The calculation of phase shifts for positron-helium scattering. <i>J. Phys. B</i> 13, 4687 (1980); United Kingdom
7710	H02 hv + Ne H04 hv + Na	E	190-160 Å	LeVillio, R. L.; Mahinan, G.; Solomon, L. E. Double electronic excitations in sodium above the 2s threshold. <i>J. Phys. B</i> 14, 11 (1981); United States
7711	H04 hv + Zr; hv + Zr ⁺	E	522-309 Å	Hannaford, P.; Lowe, R. W. Determination of atomic lifetimes using pulsed laser excitation of sputtered metal vapours. <i>J. Phys. B</i> 14, 15 (1981); Australia
7712	E03 e + Li; e + Ne; e + K; e + Rb; e + Cs	T	Undef	Peora, R. A.; Reid, J. D.; Hyde, W. L.; Liu, C. F. Core charge polarisation effects in the alkali atoms. <i>J. Phys. B</i> 14, 9 (1981); United States
7713	E03 e + Ca	T	Undef	Bliffenderfer, R. M.; Dagdigan, S. J.; Yarbony, E. S. Spin-forbidden radiative transitions in atomic calcium. <i>J. Phys. B</i> 14, 21 (1981); United States
7714	H02 hv + Ge; hv + In; hv + Tl	E	2300-1100 Å	Comnede, J. P.; Balg, P. A. On the sp ² configuration in the Ge I, In I and Tl I isoelectronic sequences. <i>J. Phys. B</i> 14, 29 (1981); France
7715	H08 Undef	T	Undef	Czab, J.; Flatek, J. Theory of resonant-resonance scattering of a laser beam on alkali atoms perturbed by a foreign gas. <i>J. Phys. B</i> 14, 29 (1981); Poland
7716	A03 H ⁺ + Ne; H ⁺ + Ar; H ⁺ + H ₂ ; H ⁺ + CO ₂ A11 H ⁺ + Ne; H ⁺ + Ar; H ⁺ + H ₂ ; H ⁺ + CO ₂	E	3-40 cm ⁻¹	Coxe, V.; Richard, A. Collision induced Lyman-alpha emission from metastable hydrogen. <i>J. Phys. B</i> 14, 12 (1981); West Germany

REF. NO.	REACTANTS	EXP CR TECH	ENERGY RANGE	REFERENCE
7717	A07 Kr ²⁰⁺ + Ti; Kr ²⁰⁺ + Mo; Kr ²⁰⁺ + Ni; Kr ²⁰⁺ + Cu; Kr ²⁰⁺ + Zr; Kr ²⁰⁺ + Ag C06 Kr ²⁰⁺ + Ti; Kr ²⁰⁺ + Mo; Kr ²⁰⁺ + Ni; Kr ²⁰⁺ + Cu; Kr ²⁰⁺ + Zr; Kr ²⁰⁺ + Ag	E	300 MeV	Bazot, J. P.; Chetoui, A. Non-invested L-shell equilibrium of fast heavy projectiles to solid targets: influence on X-ray yield variation with target thickness. <i>J. Phys. B</i> 14, 73 (1981) France
7718	E02 e + H E03 e + H	T	1-3 e.u.	Peet, R. A method of including continuum states in the close-coupling formulation. <i>J. Phys. B</i> 14, 91 (1981) United Kingdom
7719	E35 e + He ⁺	E	55-74 eV	Bafranca, P.; Brouillard, F.; Claeys, W.; van Lassenhove, G. Crossed beam measurement of atomic cross sections: an alternative method and its application to the electron impact ionization of He ⁺ . <i>J. Phys. B</i> 14, 103 (1981) Belgium
7720	E35 e + He ⁺	E	6.3-998 eV	Bafranca, P.; Claeys, W.; Cornet, P.; Poulaert, G. Electron impact ionization of metastable atomic hydrogen. <i>J. Phys. B</i> 14, 111 (1981) Belgium
7721	E03 e + He E05 e + He	E	41-52 eV	Spence, G. Autoionizing states of He in the energy range 41 to 52 eV derived from near-threshold scattered-electron spectra. <i>J. Phys. B</i> 14, 125 (1981) United States
7722	E03 e + HCl	T	3-7 eV	Donche, V.; Cederbaum, L. S. On the interpretation of low-energy electron-HCl scattering phenomena. <i>J. Phys. B</i> 14, 149 (1981) West Germany
7723	E04 e + H ₂ C; e + D ₂ C E09 e + H ₂ C; e + D ₂ O	E	6.5-11.8 eV	Belle, D. Z.; Lando, M.; Bell, S. I. Energy and angular dependence of H ⁺ (D ⁺) ions produced by dissociative electron attachment to H ₂ O(C ₂ H ₂). <i>J. Phys. B</i> 14, 175 (1981) West Germany
7724	E03 e + O ²⁺	T	Under	Saluja, K. L.; Coyne, J. G. Transition probabilities and line intensity ratios of transitions within the ground-state configuration of C III. <i>J. Phys. B</i> 14, 111 (1981) United Kingdom
7725	H06 He + He	T	45-60 eV	Aussio, N. V.; Ivanov, V. B.; Chervyshev, L. V. Facilitation of the photoionization cross section of the He atom. <i>J. Phys. B</i> 14, 115 (1981) Soviet Union
7726	H02 He + CH ₂ I	T	1130-1800 Å	Belg, M. A.; Cconrado, J. P.; Dagata, J.; McGlynn, S. F. Quasi-atomic Rydberg states of a complex molecule: CH ₂ I. <i>J. Phys. B</i> 14, 125 (1981) United Kingdom
7727	H06 2He + F	T	2-3.6 eV	Pindzola, M. S.; Chen, A.-B.; Stiefel, B. Two-photon ionization of the potassium atom. <i>J. Phys. B</i> 14, 265 (1981) United States
7728	H04 He + Sr H08 He + Sr	E	655-479 nm	Brachignac, C.; Cohuzac, P. Population inversion of the resonance line of strontium by using cascading superfluorescences in a three-level system. <i>J. Phys. B</i> 14, 221 (1981) France
7729	A07 He ⁺ + H A08 He ⁺ + H A18 He ⁺ + H	T	2-20 e.u.	Ray, N. H. Doubly differential cross section for electron ejection in the plane-wave Born approximation: a hydrogenic case study. <i>J. Phys. B</i> 14, 231 (1981) United Kingdom
7730	A03 Li ⁺ + He A04 Li ⁺ + He	E	3.45-4.2 eV	Tsurubuchi, S.; Iwai, T. Excitation of Li(2p) and He(2p) in collisions of Li ⁺ with He at energies below 4.2 eV. <i>J. Phys. B</i> 14, 243 (1981) Soviet Union
7731	A16 I ⁻ + He; I ⁻ + Ar; I ⁻ + Kr; I ⁻ + Xe	E	3-500 eV	Haywood, S. C.; Bowen, D. J.; Chappian, P. L.; Doverspike, L. E. Electron detachment in I ⁻ -rare-gas collisions. <i>J. Phys. B</i> 14, 261 (1981) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7732	A06 $\text{Ar}^{2+} + \text{Ne}; \text{Ar}^{2+} + \text{Xe}$	E	60-200 keV	Hird, B.; All, S. P. Electron transfer to Ar^{2+} from rare-gas atoms. <i>J. Phys. B</i> 14, 267 (1981) Canada
7733	A17 Undef	T	Undef	Jablonski, A. Approximation of atomic potentials by a screened Coulomb field. <i>J. Phys. E</i> 14, 281 (1981) Poland
7734	E03 $e + \text{C}^{2+}$	T	0.5-12 Ry	Burke, P. G.; Berrington, K. A.; Schauer, C. W. Electron-atom scattering at intermediate energies. <i>J. Phys. B</i> 14, 285 (1981) United Kingdom
7735	E02 $e + \text{Ne}$	T	5-200 eV	Fon, b. C.; Berrington, K. A.; Hibbert, A. The elastic scattering of electrons from inert gases: I. Helium. <i>J. Phys. B</i> 14, 307 (1981) United Kingdom
7736	E02 $e + \text{Ne}$	T	4-200 eV	Fon, b. C.; Berrington, K. A. The elastic scattering of electrons from inert gases: II. Neon. <i>J. Phys. E</i> 14, 313 (1981) United Kingdom
7737	E02 $e + \text{N}_2; e + \text{CO}_2; e + \text{N}_2$	T	0.07-0.5 Ry	Fabrikant, I. I. Partial-wave analysis of low-energy electron scattering by quadrupole molecules. <i>J. Phys. B</i> 14, 335 (1981) Soviet Union
7738	E02 $e + \text{Al}$	T	0.061-0.2 Ry	Fyfeikh, Y. I.; Fabrikant, I. I. Partial-wave analysis of low-energy electron scattering by aluminum atoms. <i>J. Phys. B</i> 14, 349 (1981) Soviet Union
7739	E03 $e + \text{Ar}$ E17 $e + \text{Ar}$	T	0-220 eV	Balashov, V. V.; Berezno, E. G.; Sazanchik, M. N.; Paganov, A. I. Excitation of resonance transitions in argon atoms by electron impact by the distorted-wave Born approximation: role of the imaginary part of the optical potential. <i>J. Phys. B</i> 14, 257 (1981) Soviet Union
7740	E04 $e + \text{O}_2$ E09 $e + \text{O}_2$	E	4-9 eV	Belic, D. S.; Moll, R. L. Dissociative electron attachment to metastable oxygen [$\text{O}^1\text{D}(\text{out g})$]. <i>J. Phys. B</i> 14, 365 (1981) France
7741	E04 $e + \text{Br}$ E05 $e + \text{Br}$ E09 $e + \text{Br}$	E	10-100 eV	Kurepa, M. V.; Rasic, D. S.; Belic, D. S. Electron-bromine-molecule total ionization and electron attachment cross sections. <i>J. Phys. B</i> 14, 275 (1981) Yugoslavia
7742	B03 H	T		Haycock, R.; Kingham, D. R. The axial dependence of the ionization rate of hydrogen in a uniform electric field. <i>J. Phys. B</i> 14, 385 (1981) United Kingdom
7743	D07 Undef	T	5-30 keV	James, M. R.; Williams, M. M. H. Energy reflection by back scattering and sputtering: total yields and angular distribution. <i>J. Phys. E</i> 13, 1165 (1980) United States
7744	D14 $\text{H}^+ + \text{Ne}$	E	20 keV; 20-300 eV	Onoda, S.; Imoto, S. Formation of large clusters on rolled Mo surface bombarded with hydrogen ions. <i>Jpn. J. Appl. Phys.</i> 19, 871 (1980) Japan
7745	D11 $\text{H}_2 + \text{Fe}$	E	300 K	Yoshida, K. Adsorption of H_2 on (110), (111) and stepped (111) iron single crystal surfaces. <i>Jpn. J. Appl. Phys.</i> 19, 1873 (1980) Japan
7746	D04 $\text{Ne} + \text{Cu}; \text{N}_2 + \text{Cu}$	E	1-5 keV	Ohya, K.; Aoki, I. Dependence of secondary electron yield on the incident angle and the energy of keV neutrals bombarding a metal surface. <i>Jpn. J. Appl. Phys.</i> 19, 2027 (1980) Japan
7747	D02 $\text{Ar}^+ + [\text{Cu} + \text{Ni}]$	E	3 keV	Shiozaki, M.; Ono, M.; Koyama, K.; Ishida, Y. Desorption effect of the preferential sputtering of copper-nickel alloys by argon ion at elevated temperatures. <i>Jpn. J. Appl. Phys.</i> 19, 1547 (1980) Japan

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7748	D07 Na + Ag; Ar + Ag; Kr + Ag; Xe + Ag	E	300-600 K	Asada, H. Scattering of rare gas atoms from the (111) plane of silver. Jpn. J. Appl. Phys. 19, 2055 (1980)
7749	D04 e + MgO; e + NaCl	E	1.5-7.0 keV	Grain, K. L.; Bastawros, A. M. Field enhanced secondary electron emission from MgO and NaCl. Jpn. J. Appl. Phys. 19, 2069 (1980)
7750	D11 H ₂ + [Fe + U]; N ₂ + U; M ₂ + [Fe + U]; M ₂ + U; NH ₃ + [Fe + U]; NH ₃ + U	E	270 K	Ustinov, Y. K.; Urazov, M. S. Adsorption of H ₂ , N ₂ , M ₂ -N ₂ mixtures, and NH ₃ on a U(100) surface spray coated with Fe. Kinet. Catal. (USSR) 20, 1250 (1979)
7751	A06 H ⁺ + H	T	Uninf	Varracchio, E. F. Unified treatment of direct and charge transfer processes in proton-hydrogen scattering. Lett. Nuova Cimnto 20, 225 (1980)
7752	A14 H + OH	E	33° K	Field, D.; Adams, M. G.; Smith, I. Molecular synthesis in interstellar clouds: the radiative association reaction H + CH + H ₂ O + hv. Mon. Not. R. Astron. Soc. 192, 1 (1980)
7753	H04 hv + O ₂ ⁺	T	4834-305 Å	Seraph, M. E.; Seaton, M. J. Oscillator strengths for C III and the Swan fluorescent mechanism. Proc. R. Soc. Astron. Soc. 193, 617 (1980)
7754	A06 H ⁺ + Li	T	20-200 keV	Ferrante, G.; Fiordilino, E. Frictional atom charge exchange in the channel approximation. Nuove Cimnto B 57, 1 (1980)
7755	C02 N ⁺⁺ + Be; N ⁺⁺ + C; N ⁺⁺ + Mg; N ⁺⁺ + V; N ⁺⁺ + Cu; N ⁺⁺ + Ni; N ⁺⁺ + Cd; N ⁺⁺ + Au; N ⁺⁺ + Be; N ⁺⁺ + C; N ⁺⁺ + Mg; N ⁺⁺ + V; N ⁺⁺ + Cu; N ⁺⁺ + Ni; N ⁺⁺ + Cd; N ⁺⁺ + Au; N ⁺⁺ + Be; N ⁺⁺ + C; N ⁺⁺ + Mg; N ⁺⁺ + V; N ⁺⁺ + Cu; N ⁺⁺ + Ni; N ⁺⁺ + Cd; N ⁺⁺ + Au C05 N ⁺⁺ + Be; N ⁺⁺ + C; N ⁺⁺ + Mg; N ⁺⁺ + V; N ⁺⁺ + Cu; N ⁺⁺ + Ni; N ⁺⁺ + Cd; N ⁺⁺ + Au; N ⁺⁺ + Be; N ⁺⁺ + C; N ⁺⁺ + Mg; N ⁺⁺ + V; N ⁺⁺ + Cu; N ⁺⁺ + Ni; N ⁺⁺ + Cd; N ⁺⁺ + Au; N ⁺⁺ + Be; N ⁺⁺ + C; N ⁺⁺ + Mg; N ⁺⁺ + V; N ⁺⁺ + Cu; N ⁺⁺ + Ni; N ⁺⁺ + Cd; N ⁺⁺ + Au	E	6-70 MeV	Belers, P.; Deltar, Y.; Gregoire, G. Multiple scattering and energy straggling of heavy ions in solid targets. Nucl. Instrum. Methods 175, 1 (1981)
7756	C02 He ⁺ + WO ₃ ; He ⁺ + BaF ₂ ; He ⁺ + BaCl ₂	E	1.2-2.6 MeV	Trehan, P. M.; Fraitege, B. M. The energy loss of He ions in solid compounds. Nucl. Instrum. Methods 175, 21 (1981)
7757	C01 H ₂ ⁺ + C	E	25-2400 keV	Fox, T. R. H ₂ ⁺ traversing ultra-thin carbon foils: measurement of recombination yields at 12.5 and 25 keV/amu. Nucl. Instrum. Methods 175, 487 (1981)
7758	B07 Ca + Ca; Cs + K	E		Motop, R.; Niemes, K.; Richter, J.; Weber, K.-H. Thermionic detection of the ionic fragments of continuum-state pair absorption systems. Opt. Commun. 36, 3E (1981)
7759	E03 e + He	E	30-100 eV	Bagdanova, I. P.; Chaika, M. P. Polarization of 687.6-nm helium radiation excited by electron impact. Opt. Spectrosc. 47, 22 (1979)
7760	E03 e + H ₂ ; e + D ₂	T	Uninf	Lavrov, B. P.; Petrovskii, V. A.; Letimov, V. I. Determination of the gas temperature of a low-pressure plasma from the intensities of the H ₂ and D ₂ molecular bands; rotational transitions under electron-impact excitation. Opt. Spectrosc. 47, 36 (1979)

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7761	A03 $\text{Na}^0 + \text{Fe}$	T	0.04 eV	Dashenakaya, E. I.; Reznikov, P. I. Quasiclassical scattering of atoms in orbital-degenerate states. <i>Cpt. Spectrosc.</i> 48, 355 (1980) Soviet Union
7762	A17 $\text{Na} + \text{He}; \text{Na} + \text{Ne}$	T	300 K	Ivanov, G. K. Dipole moments of alkali metal atoms induced by collisions with helium and neon atoms. <i>Cpt. Spectrosc.</i> 48, 364 (1980) Soviet Union
7763	A12 $\text{Na} + \text{He}; \text{Na} + \text{H}_2; \text{Na} + \text{Ar}; \text{Na} + \text{NO}; \text{Na} + \text{CO}; \text{Na} + \text{H}_2\text{O}$	E	585 K	Popov, K. G.; Rezov, V. P. Collisional broadening of the sodium D_2 line, ($\lambda=589.6$ nm). <i>Cpt. Spectrosc.</i> 48, 372 (1980) Soviet Union
7764	A07 $\text{Na}^0 + \text{Cs}$ A11 $\text{He}^0 + \text{Cs}$	E	Thermal	Tolmachev, Y. A.; Fogel, D. Measurement of the rate constant for Penning ionization of cesium atoms by $\text{He}(2^1\text{P}_1)$ atoms at thermal energies. <i>Cpt. Spectrosc.</i> 48, 451 (1980) Soviet Union
7765	A12 $\text{CO}_2 + \text{CO}_2; \text{CO}_2 + \text{H}_2; \text{CO}_2 + \text{O}_2; \text{CO}_2 + \text{H}_2; \text{CCl}_2 + \text{O}_2$	T	294-523 K	Balamin, M. D.; Bulychov, V. P.; Kizdos, E. B. Calculation of the broadening coefficients of vibration-rotation lines of CO_2 . <i>Cpt. Spectrosc.</i> 48, 486 (1980) Soviet Union
7766	E08 $e + \text{Cs}$	T	75 meV	Kaulaklis, S. P. Relation between the broadening of Rydberg levels and resonances in the scattering of slow electrons by atoms. <i>Cpt. Spectrosc.</i> 48, 574 (1980) Soviet Union
7767	H06 $h\nu + \text{A}_2^-$	T	Undef	Vetchinkin, S. I.; Poluyanov, V. A. Photoionization of the negative molecular ion A_2^- . <i>Cpt. Spectrosc.</i> 48, 581 (1980) Soviet Union
7768	A03 $\text{A}^0 + \text{B}^+$ A06 $\text{A}^0 + \text{B}^+$	T	Thermal	Lyapchev, A. V. Charge exchange of atoms in highly excited states on ions when accidental resonance is present. <i>Cpt. Spectrosc.</i> 48, 663 (1980) Soviet Union
7769	A06 $\text{Li}^{2+} + \text{H}$	E	9-42 keV	Salm, W.; Muller, A.; Salzman, E. Electron capture from atomic hydrogen by slow fully stripped lithium ions. <i>Phys. Lett.</i> 80A, 20 (1980) West Germany
7770	C08 $e + \text{Si}$	E	2-4.5 MeV	Cue, B.; Sonderup, E.; Persh, E. B.; Bakhu, M.; Benenson, R. E.; Weight, R.; Irglitz, E.; Hillness, C. D. Transitions between bound states for axially channelled MeV electrons. <i>Phys. Lett.</i> 80A, 26 (1980) United States
7771	G09 $e + \text{He}; e + \text{Ar}$	E T	0.195-3 eV	Golovanivsky, K. S.; Kabilan, A. P. A new approach to the problem of electron-atom collision cross section measurements in the low-energy range. <i>Phys. Lett.</i> 80A, 249 (1980) Soviet Union
7772	C08 $e + \text{Si}; e + \text{KCl}$	E	4.9 MeV	Adishchev, Y. N.; Kaplin, V. V.; Pechov, D. E.; Potylitsin, A. F.; Rozum, E. I.; Vercblev, S. A. Channeling radiation of 4.9 MeV electrons in crystals. <i>Phys. Lett.</i> 81A, 40 (1981) Soviet Union
7773	C04 $\text{H}^0 + \text{Si}; \text{H}^0 + \text{Al}$ C08 $\text{H}^0 + \text{Si}; \text{H}^0 + \text{Al}$	T	1.4-1.9 MeV	Oshiyama, Y.; Mennami, M. Diffusive models of dechanneling of energetic H^0 -ions in single crystals. <i>Phys. Lett.</i> 81A, 43 (1981) Japan
7774	A12 $\text{Na}^0 + \text{He}$	E	Thermal	Waber, E. W.; Jungmann, K. Influence of elastic and inelastic collisions on density shift and broadening. <i>Phys. Lett.</i> 81A, 223 (1981) East Germany
7775	B07 $h\nu + \text{Hydrogenic Atoms}$ H02 $h\nu + \text{Hydrogenic Atoms}$ H06 $h\nu + \text{Hydrogenic Atoms}$	T	H02; H06 50-250 eV	Farrante, G.; Fiordilino, E.; Lo Cascio, L. Multiphoton emissions in laser-assisted soft x-ray absorption. <i>Phys. Lett.</i> 81A, 261 (1981) Italy

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7776	A06 He ⁺ + Cs; He ⁺ + Rb; He ⁺ + K; He ⁺ + Na	E	0.4-5 keV	Nagata, T.; Ohsura, Y.; Katoh, E.; Nakayama, Y. Single-electron-capture cross sections for 0.4-5.0 keV He ⁺ ions incident on alkali-vapor targets. <i>Phys. Lett.</i> 81A, 265 (1981) Japan
7777	A92 C + C A18 C + C	E	23.4-58.4 MeV	Drake, D. H.; Cates, M.; Clidre, M.; Pecaric, D.; Melub, E. Cross structure and resonant behavior of ¹² C + ¹² C elastic scattering. <i>Phys. Lett.</i> 52E, 36 (1981) United States
7778	H06 H ⁺ + Be ⁺	E	4300-5535 Å	Safinje, K. A.; Delpech, J. F.; Gallagher, T. F. Effects of electric fields on doubly excited autoionizing Rydberg states of beryllium. <i>Phys. Rev. A</i> 22, 1862 (1980) France
7779	A17 H + He; H + Ne; H ⁺ + He; H ⁺ + Ne	T	Undef	Dixon, R. E.; Liu, B. Interactions of H and H ⁺ with He and Ne. <i>Phys. Rev. A</i> 22, 1385 (1980) United States
7780	A03 N ²⁺ + F; C ³⁺ + H; Ne ²⁺ + H A06 N ²⁺ + F; C ³⁺ + H; Ne ²⁺ + H	T	Undef	Butler, S. E. Radial couplings for charge transfer. <i>Phys. Rev. A</i> 22, 1 (1981) United States
7781	D12 H ⁺ + Be; H ⁺ + C; H ⁺ + Al	E	6-40 MeV	Tomadera, A.; Ishii, K.; Saito, K.; Sebata, R.; Morita, S. Quasifree-electron bremsstrahlung induced by the projectile field. <i>Phys. Rev. A</i> 22, 24 (1981) Japan
7782	A15 H + O ₂ ; H + NO	E	300 K	Anderle, M.; Bessi, D.; Iannotta, I.; Rarabetti, S.; Scoles, G. Measurement of the spin-exchange cross section in the collision of H atoms with O ₂ and NO by means of stored atomic-beam spectroscopy. <i>Phys. Rev. A</i> 23, 34 (1981) Italy
7783	H06 H ⁺ + HF	T	10-130 eV	Jaegri, K., Jr.; Kelly, H. F. Calculated cross section for photoionization from the 1 p ₁ and 3 s _{1/2} orbitals of hydrogen fluoride. <i>Phys. Rev. A</i> 23, 82 (1981) United States
7784	H07 H ⁺ + He ⁺	E	0.12-4.0 eV	Hodges, R. V.; Coggins, M. J.; Peterson, J. R. Photodetachment cross sections for He ⁺ P. <i>Phys. Rev. A</i> 23, 55 (1981) United States
7785	C04 H ⁺ + Al; H ⁺ + Cu; H ⁺ + Pb C05 H ⁺ + Al; H ⁺ + Cu; H ⁺ + Pb	T	10 ⁻² -10 ³ MeV	Littmark, U.; Ziegler, J. F. Scoring of energetic ions in matter. <i>Phys. Rev. A</i> 23, 64 (1981) United States
7786	C02 Ne ⁺ + Al; He ⁺ + CO ₂ ; Ne ⁺ + Ar; Ne ⁺ + Pb; He ⁺ + Cu; He ⁺ + Al; Ar ⁺ + Al; Ar ⁺ + CO ₂ ; Ar ⁺ + Ar; Ar ⁺ + Pb; Ar ⁺ + Cu; Ar ⁺ + Al; Fe ⁺ + Al; Fe ⁺ + CO ₂ ; Fe ⁺ + Ar; Fe ⁺ + Pb; Fe ⁺ + Cu; Fe ⁺ + Al	E	600 MeV/amu	Selamen, R. M.; Ahlen, S. F.; Taria, G.; Crobbin, K. C. Measurement of higher-order corrections to stopping power for relativistic Ne, Ar, and Fe beams. <i>Phys. Rev. A</i> 23, 73 (1981) United States
7787	H03 H ⁺ + Ar	E	Undef	Varekneya, D.; Shirron, S. F.; Litcbits, T. A.; Zoppi, M.; Barocchi, F. Collision-induced light scattering: Integrated intensity of argon. <i>Phys. Rev. A</i> 23, 77 (1981) United States
7788	A03 Ne ⁺ + He; Ne ⁺ + Ne; Ne ⁺ + Ar; He ⁺ + N ₂ ; Ne ⁺ + CH ₄ ; Rb ⁺ + He; Rn ⁺ + Ar; Rn ⁺ + Xe; Xe ⁺ + CO ₂	T	330-520 K	H'kman, A. P. Approximate scaling formula for collisional angular-momentum mixing of Rydberg atoms. <i>Phys. Rev. A</i> 23, 87 (1981) United States
7789	C02 H ⁺ Seq + PFRT C05 H ⁺ Seq + PFRT E03 e + PEFT E05 e + PEFT	T	Undef	Inakuti, M.; Dehaer, J. L.; Baer, T.; Hansen, J. D. Oscillator-strength moments, stopping powers, and total inelastic-scattering cross sections of all atoms through strontium. <i>Phys. Rev. A</i> 23, 98 (1981) United States

REF. NO.	REACTANTS	EXP OR INFOR	ENERGY RANGE	REFERENCE
7790	A06 $H^+ + Li; H^+ + Na; H^+ + K; H^+ + Rb;$ $H^+ + Cs$ A17 $H^+ + Li; H^+ + Na; H^+ + K; H^+ + Rb;$ $H^+ + Cs$	T	0.2-5.0 keV	Kuback, C.; Sidis, V. Theoretical study of near-resonant charge-exchange collisions of H^+ with alkali atoms. <i>Phys. Rev. A</i> 23, 118 (1981) France
7791	A03 $He^+ + Ca; He^+ + Rb; He^+ + K; He^+ + Na$ A06 $He^+ + Ca; He^+ + Rb; He^+ + K; He^+ + Na$ A17 $He^+ + Ca; He^+ + Rb; He^+ + K; He^+ + Na$	T	50-100 eV	Sidis, V.; Kuback, C.; Pommer, J. Systematic theoretical investigation of charge exchange in He^+ -alkali-atom collisions. <i>Phys. Rev. A</i> 23, 119 (1981) France
7792	E02 $e + H_2; e + H_2; e + CO; e + LiH; e + HCl; e + LiF$	T	0.01-1.8 Ry	Morrison, M. A.; Collins, L. A. Exchange in low-energy electron-molecule scattering: orthogonalization and free-electron-gas approximations for collisions with polar and nonpolar molecules. <i>Phys. Rev. A</i> 23, 127 (1981) United States
7793	A03 $Li + Na; Mg^+ + Na; Mg^+ + Ar$ A10 $Li + Na; Mg^+ + Na; Mg^+ + Ar$	T	7-15 keV	Russak, A.; Kishell, D. B., Jr.; Cavagnere, M. J. Angular-momentum effects in atom-atom scattering. <i>Phys. Rev. A</i> 22, 139 (1981) United States
7794	E02 $e + N$ E17 $e + N$	T	100 eV	McCarthy, I. E.; Saha, B. C.; Stelkevics, A. T. Explicit optical model for the e - N entrance channel. <i>Phys. Rev. A</i> 22, 145 (1981) Australia
7795	E15 $e + Na; e + Mg; e + Al$	E	6 keV	Aberg, T.; Reimhjelmen, K.; Keshi-Fokhonen, C. Two-electron rearrangement K x-ray transitions in Na, Mg, and Al metals. <i>Phys. Rev. A</i> 23, 183 (1981) Finland
7796	H06 $2hv + Na; 2hv + Na^+; 2hv + Li; 2hv + Na; 2hv + K; 2hv + Ca; 2hv + Rb;$ $3hv + Na; 3hv + Na^+; 3hv + Li; 3hv + Na; 3hv + K; 3hv + Ca; 3hv + Rb$	T	9600-3100 Å	McGuire, E. J. Green's-function approach to nonresonance multiphoton absorption in the alkali-metal atoms. <i>Phys. Rev. A</i> 23, 186 (1981) United States
7797	H06 $hv + Xe^+$	T	2-15 eV	Pindzola, R. S. Photoionization of excited-state xenon. <i>Phys. Rev. A</i> 23, 201 (1981) United States
7798	H06 $hv + H_2$	E	63 nm	Rothschild, M.; Egger, M.; Pauline, F. T.; Bokor, J.; Pummer, M.; Rhodes, C. K. high-resolution spectroscopy of molecular hydrogen in the extreme ultraviolet region. <i>Phys. Rev. A</i> 23, 206 (1981) United States
7799	H04 $hv + CC_2$ H06 $hv + CC_2$	T	10-575 eV	Pedial, N.; Cernak, G.; McKay, B. V.; Langhoff, P. h. Photoexcitation and ionization in carbon dioxide: theoretical studies in the separated-channel static-exchange approximation. <i>Phys. Rev. A</i> 23, 216 (1981) Brazil
7800	H01 Undef	T	Undef	Narozhny, N. B.; Sanchez-Mondragon, J. J.; Eberly, J. M. Coherence versus incoherence: collapse and revival in a simple quantum model. <i>Phys. Rev. A</i> 22, 236 (1981) United States
7801	G05 $e + He$	T	Undef	Cleveland, C. L.; Gerach, M. A. Second stability edge for excess electrons in dense helium gas. <i>Phys. Rev. A</i> 23, 261 (1981) United States
7802	G01 $e + H_2; e + CH_4$ G03 $e + H_2; e + CH_4$ G05 $e + H_2; e + CH_4$	T	0-0.71 eV	Pitchford, L. C.; O'Neill, B. V.; Swetler, J. R., Jr. Extended Boltzmann analysis of electron swarm experiments. <i>Phys. Rev. A</i> 23, 294 (1981) United States
7803	A06 $He_2^+ + Cu$ G02 $Cu^+ + He$	E	300 K	Ernie, D. V.; Deeks, M. J. Energy-transfer processes in decaying helium-copper gas-phase systems. <i>Phys. Rev. A</i> 23, 326 (1981) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7804	A06 C1 ⁰⁺ + C; C1 ⁰⁺ + Cu; C1 ⁰⁺ + C; C1 ⁰⁺ + Cu; C1 ⁰⁺ + C; C1 ⁰⁺ + Cu C06 C1 ⁰⁺ + C; C1 ⁰⁺ + Cu; C1 ⁰⁺ + C; C1 ⁰⁺ + Cu; C1 ⁰⁺ + C; C1 ⁰⁺ + Cu	E	20-80 MeV	Tanis, J. A.; Shafroth, S. P.; Willis, J. E.; Hewat, J. B. Radiative electron capture by Cl ions incident on C and Cu foils. <i>Phys. Rev. A</i> 23, 366 (1981) United States
7805	A07 H ⁰⁺ + Ti; H ⁰⁺ + Fe; H ⁰⁺ + Ni; H ⁰⁺ + Zn	T	Undef	Mukoyama, T.; Sarkadi, L. Electronic relativistic effects on K-shell ionization by low-energy protons. <i>Phys. Rev. A</i> 22, 375 (1981) Japan
7806	E02 e + He E05 e + He	T	57-84 eV	Behnke, P.; Berry, R. S. Mechanism of atomic autoionization. <i>Phys. Rev. A</i> 23, 416 (1981) United States
7807	A17 Ni + H; Pd + H	T	Undef	Bugno, P. S.; Bjorkman, C. Electronic structure of transition-metal hydrides: NiH and PdH. <i>Phys. Rev. A</i> 23, 461 (1981) United States
7808	C07 C ³⁺ + C; N ³⁺ + C; O ³⁺ + C; F ³⁺ + C	E	2.5-9.0 MeV	Andersen, B.; Beane, B.; Ekberg, J. C.; Engstrom, L.; Hald, S.; Martinson, I.; Vojta, E. Relative level populations in beam-foil-excited C IV, N V, O VI, and F VII. <i>Phys. Rev. A</i> 23, 475 (1981) Denmark
7809	A03 He ²⁺ + Li A06 He ²⁺ + Li	E	0.5-7.0 keV	Barrett, J. L.; Levanthal, J. J. Selective formation of He ²⁺ (n=3) in He ²⁺ -Li collisions. <i>Phys. Rev. A</i> 23, 485 (1981) United States
7810	H01 h _ν + Na H02 h _ν + Na H03 h _ν + Na H04 h _ν + Na	E	5690 Å	Bjorkheim, J. E.; Freeman, R. S.; Ierssen, G. B. Efficient transverse deflection of neutral atomic beams using spontaneous resonance-radiative pressure. <i>Phys. Rev. A</i> 23, 491 (1981) United States
7811	A03 H ⁰⁺ + H A06 H ⁰⁺ Seq + H; He ²⁺ + H; H ⁰⁺ + H; He ²⁺ + H ⁰⁺ ; H ⁰⁺ + H ⁰⁺	T	1-100 keV	Eichler, J.K.P. Eikonal theory of charge exchange between arbitrary hydrogenic states of target and projectile. <i>Phys. Rev. A</i> 23, 458 (1981) West Germany
7812	A06 H ⁰⁺ + Ne; He ²⁺ + Ne; Li ³⁺ + Ne; H ⁰⁺ + C A07 H ⁰⁺ + Ne; He ²⁺ + Ne; Li ³⁺ + Ne; H ⁰⁺ + C	T	0.2-24 MeV	Ford, A. L.; Reading, J. F.; Becker, R. L. Inner-shell capture and ionization in colliders of H ⁰⁺ , He ²⁺ , and Li ³⁺ projectiles with neon and carbon. <i>Phys. Rev. A</i> 23, 510 (1981) United States
7813	A06 C ⁰⁺ + H	T	3.5-360 keV	Green, T. A.; Shipsey, E. J.; Brune, J. C. Modified method of perturbed stationary states: III. Charge-exchange cross-sections for C ⁰⁺ -H. <i>Phys. Rev. A</i> 23, 246 (1981) United States
7814	A03 Pb + Cr A07 Pb + Cr	T	Undef	Meitz, U.; Grahn, W.; Puller, I. Electron-transfer effects in heavy-ion scattering. <i>Phys. Rev. A</i> 22, 562 (1981) United States
7815	A06 Au ⁷⁹⁺ + He; Au ⁷⁸⁺ + He; Au ⁷⁷⁺ + He; Au ⁷⁶⁺ + He; Au ⁷⁵⁺ + He; Au ⁷⁴⁺ + He; Au ⁷³⁺ + He; Au ⁷²⁺ + He; Au ⁷¹⁺ + He; Au ⁷⁰⁺ + He; Au ⁶⁹⁺ + He; Au ⁶⁸⁺ + He; Au ⁶⁷⁺ + He; Au ⁶⁶⁺ + He; Au ⁶⁵⁺ + He; Au ⁶⁴⁺ + He; Au ⁶³⁺ + He; Au ⁶²⁺ + He; Au ⁶¹⁺ + He; Au ⁶⁰⁺ + He; Au ⁵⁹⁺ + He; Au ⁵⁸⁺ + He; Au ⁵⁷⁺ + He; Au ⁵⁶⁺ + He; Au ⁵⁵⁺ + He; Au ⁵⁴⁺ + He; Au ⁵³⁺ + He; Au ⁵²⁺ + He; Au ⁵¹⁺ + He; Au ⁵⁰⁺ + He; Au ⁴⁹⁺ + He; Au ⁴⁸⁺ + He; Au ⁴⁷⁺ + He; Au ⁴⁶⁺ + He; Au ⁴⁵⁺ + He; Au ⁴⁴⁺ + He; Au ⁴³⁺ + He; Au ⁴²⁺ + He; Au ⁴¹⁺ + He; Au ⁴⁰⁺ + He; Au ³⁹⁺ + He; Au ³⁸⁺ + He; Au ³⁷⁺ + He; Au ³⁶⁺ + He; Au ³⁵⁺ + He; Au ³⁴⁺ + He; Au ³³⁺ + He; Au ³²⁺ + He; Au ³¹⁺ + He; Au ³⁰⁺ + He; Au ²⁹⁺ + He; Au ²⁸⁺ + He; Au ²⁷⁺ + He; Au ²⁶⁺ + He; Au ²⁵⁺ + He; Au ²⁴⁺ + He; Au ²³⁺ + He; Au ²²⁺ + He; Au ²¹⁺ + He; Au ²⁰⁺ + He; Au ¹⁹⁺ + He; Au ¹⁸⁺ + He; Au ¹⁷⁺ + He; Au ¹⁶⁺ + He; Au ¹⁵⁺ + He; Au ¹⁴⁺ + He; Au ¹³⁺ + He; Au ¹²⁺ + He; Au ¹¹⁺ + He; Au ¹⁰⁺ + He; Au ⁹⁺ + He; Au ⁸⁺ + He; Au ⁷⁺ + He; Au ⁶⁺ + He; Au ⁵⁺ + He; Au ⁴⁺ + He; Au ³⁺ + He; Au ²⁺ + He; Au ¹⁺ + He J01 PERT ⁰⁺ + H; PERT ⁰⁺ + He; PERT ⁰⁺ + Ar; PERT ⁰⁺ + Kr	E	2.0-20 MeV	Knudsen, N.; Naugen, M. K.; Nveigland, P. Single-electron-capture cross section for cesium- and high-velocity, highly charged ions colliding with atoms. <i>Phys. Rev. A</i> 23, 557 (1981) Denmark
7816	A06 HCl ⁰⁺ + Xe	E	0.1-870 eV	Heynator, B. M.; Tang, S. Y. Charge transfer of HCl ⁰⁺ in Xe. <i>Phys. Rev. A</i> 23, 611 (1981) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7817	E03 e + He; e + Be ²⁺ ; e + C ³⁺ ; e + O ⁴⁺ ; e + Ne ⁹⁺ ; e + Si ¹⁴⁺ ; e + Ca ¹⁹⁺ ; e + Fe ²⁴⁺ ; e + Se ²⁸⁺ ; e + Mo ⁴³⁺	T	8.7-50 Ry	Pradhan, A. K.; Aorcross, D. W.; Hammer, E. G. Cross sections and excitation rates for electron collisions with heliumlike ions. <i>Phys. Rev. A</i> 23, 615 (1981); United States
7818	E02 e + LiF E03 e + LiF G09 e + LiF	T	1-20 eV	Siegely, J.; Dehser, J. L.; Eili, D. Hybrid calculation of electron-polar-molecular scattering: integrated and momentum-transfer cross sections for LiF. <i>Phys. Rev. A</i> 23, 622 (1981); United States
7819	E02 e + H ₂ E17 e + H ₂	T	30-200 eV	Karasiohan, V. L.; Ramachandran, A. S.; Varke, C. S. Exchange correction to electron-hydrogen-molecule scattering cross section in the Glauber approximation. <i>Phys. Rev. A</i> 22, 641 (1981); India
7820	E03 e + He E17 e + He	T	40-200 eV	Stewart, R.; Madisch, E. M. Effect of polarization and absorption on differential cross sections and angular correlation parameters for electron excitation of helium. <i>Phys. Rev. A</i> 23, 647 (1981); United States
7821	C06 H ⁺ + C C07 H ⁺ + C	E	0.3-1.9 MeV	Boudinet-Rebillet, Y.; Gernir, P. P.; Dumont, P. L.; Renier, B. Relative excitation functions for beam-fil targets in H II, H III, and H IV. <i>Phys. Rev. A</i> 23, 655 (1981); Belgium
7822	E02 e + Be E03 e + Be H06 hv + Be; hv + Mg; hv + Na	T	0-3.8 Ry	Greene, C. H. Doubly excited states of the shallow-earth atoms. <i>Phys. Rev. A</i> 23, 661 (1981); United States
7823	C06 Ar ⁺ + C	E	2-20 MeV	Kyriakatos, E. J.; Jomphe, P. Equilibrium charge-state distributions for 2-20-MeV argon ions in carbon. <i>Phys. Rev. A</i> 23, 675 (1981); Canada
7824	E01 Undef	T	Undef	Rosendorff, S. Unitary optical approximation including second-order phase function for particle-atom collisions. <i>Phys. Rev. A</i> 23, 683 (1981); Israel
7825	A07 Undef	T	Undef	Soff, G.; Reinhardt, J.; Greiner, W. Spin polarization of electrons induced by strong collisional magnetic fields. <i>Phys. Rev. A</i> 23, 701 (1981); West Germany
7826	A03 H ⁺ + H E03 e + H E17 e + H	T	A03 10-500 keV E03; E17 10-500 eV	Sur, E. K.; Sii, M. C. Glauber cross sections for arbitrary excitation of ground-state hydrogen by electron and proton impact. <i>Phys. Rev. A</i> 23, 715 (1981); India
7827	E02 e + H E17 e + H	T	0.136-13.6 eV	Dashhan, M.; Khan, P.; Ghosh, A. S.; Falcun, C. Low-energy e-H scattering including adiabatic and nonadiabatic polarization potentials. <i>Phys. Rev. A</i> 23, 728 (1981); India
7828	E02 e + He E17 e + He	T	10 ⁴ -500 eV	Das, J. N.; Bera, R. K.; Patra, S. Elastic scattering of electrons by helium at intermediate and high energies. <i>Phys. Rev. A</i> 22, 722 (1981); India
7829	E12 e ⁺ + Li	T	0.5-10 eV	Guha, S.; Ghosh, A. S. Positron-lithium-atom collisions using the two-state approximation. <i>Phys. Rev. A</i> 23, 742 (1981); India
7830	E07 e + He ⁺	E	300 K	Catherinot, A.; Duhreuil, B. Quenching and excitation-transfer processes in the n=4 helium sublevels in a low-pressure glow discharge. <i>Phys. Rev. A</i> 23, 763 (1981); France
7831	C07 H ⁺ + C; H ₂ ⁺ + C; H ₂ ⁺ + C	E	20-1000 keV	Gabrielson, G. Measurement of the r=2 density operator for hydrogen atoms produced by passing protons through thin carbon targets. <i>Phys. Rev. A</i> 23, 770 (1981); United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7832	He6 hv + Li; hv + Na; hv + K; hv + Rb; hv + Cs	T	Undef	Measures, R. M.; Cardinal, F. G. Laser-ionization based on resonance saturation—a single model description. <i>Phys. Rev. A</i> 23, 804 (1981) Canada
7833	He2 hv + Al; hv + Mg He6 hv + Al; hv + Mg	E	1.55–1.75 keV	Mellozzi, P. J.; Schwerzel, R. E.; Light, R. R.; Campbell, B. E. Fast extended-x-ray-absorption-fine-structure spectroscopy with a laser-produced x-ray pulse. <i>Phys. Rev. A</i> 23, 824 (1981) United States
7834	He6 e + He+	E	Undef	Kuen, I.; Bowerke, F.; Stori, T. Population of excited He states (J less than or equal to 4 less than or equal to 8) by dielectronic He ⁺ recombination in a dc hollow-cathode discharge. <i>Phys. Rev. A</i> 23, 825 (1981) Australia
7835	He4 Undef	T	Undef	Kus, P.; Modkiewicz, K. Two-atom resonance fluorescence. <i>Phys. Rev. A</i> 23, 825 (1981) Poland
7836	Be7 e + H	T	Undef	Brandi, M. S.; Kollmer, B.; Lima de Barros, M.G.P. *Erratum: Electron-hydrogen-atom collisions in the presence of a laser field: Born-Copenhagen approximation [<i>Phys. Rev. A</i> 19, 1028 (1975)]. <i>Phys. Rev. A</i> 23, 975 (1981) Brazil
7837	Ar6 Undef	T	Undef	Lapich, G.; McDaniel, F. D. *Erratum: Electron capture from K shells by fully stripped ions [<i>Phys. Rev. A</i> 22, 1856 (1980)]. <i>Phys. Rev. A</i> 23, 975 (1981) United States
7838	Ar7 He + Ne; Ar + Ar; Kr + Kr; Xe + Xe; Rn + Rn	T	Undef	Kasasbon, R. N.; Varshni, Y. F. Improved variational solution of the Thomas-Fermi equation for atoms. <i>Phys. Rev. A</i> 23, 991 (1981) Canada
7839	Ar3 He+ + H Ar6 He+ + H	E	15–100 keV	Aldag, J. E.; Peachar, J. L.; Partin, P. J.; Sutcliffe, V.; George, J.; Redd, E.; Kvale, T. J.; Elshenship, D. M.; Park, J. T. Angular differential and total cross sections for the excitation of atomic hydrogen to its n=2 state by helium ions. <i>Phys. Rev. A</i> 23, 1062 (1981) United States
7840	Ar8 Fe ¹⁶⁺ + He; Fe ¹⁶⁺ + Ne; Fe ¹⁶⁺ + Ar; Fe ¹⁶⁺ + Kr; Fe ¹⁶⁺ + Xe; Fe ¹⁶⁺ + N ₂ ; Fe ¹⁶⁺ + N ₂ ; Fe ¹⁶⁺ + O ₂ ; Fe ¹⁶⁺ + CH ₄ ; Fe ¹⁶⁺ + CO ₂ ; Fe ¹⁶⁺ + CHF ₃ ; Fe ¹⁶⁺ + CF ₄ ; Fe ¹⁶⁺ + SF ₆	E	20 MeV	Alton, G. D.; Bridwell, L. B.; Lucas, R.; Maak, C. D.; Miller, P. D.; Jones, C. M.; Kessel, G. C.; Antor, A. A.; Brown, M. D. Single- and multiple-electron-loss-cross-section measurements from 20-MeV Fe ¹⁶⁺ on thin gaseous targets. <i>Phys. Rev. A</i> 23, 1073 (1981) United States
7841	Er3 e + He	T	20 eV	Chung, K. Y. 1s2s2p ² P resonance of He ⁺ . <i>Phys. Rev. A</i> 23, 1079 (1981) United States
7842	Ar8 H ₂ ⁺ + Ar; H ₂ ⁺ + Ne; H ₂ ⁺ + Kr; He ⁺ + Kr Ar6 H ⁺ + Kr	E	0.5–4.0 MeV	Duncan, M. N.; Renandez, M. G. Ionization and differences in collisional electron loss of H ⁺ , H ₂ ⁺ , and He ⁺ . <i>Phys. Rev. A</i> 23, 1085 (1981) United States
7843	Er3 e + N ₂	T	1–5.0 eV	Maxi, A. U.; Rescigno, T. N.; Aurilio, R. Cross sections for resonant vibrational excitation of N ₂ by electron impact. <i>Phys. Rev. A</i> 23, 1089 (1981) United States
7844	Ar6 N ⁷⁺ + P; C ³⁺ + H Ar7 N ⁷⁺ + P; C ³⁺ + H	T	5x10 ² –5x10 ³ K	Hall, T. G.; Butler, S. E.; Delgrosso, A. Charge transfer of multiply charged ions at thermal energies. <i>Phys. Rev. A</i> 23, 1100 (1981) United States
7845	Ar12 K ⁺ + Ar	E	300 K	Mehlert, J. P. Collision broadening and shift of the potassium 4P-72 and 4P-5D lines by argon. <i>Phys. Rev. A</i> 23, 1110 (1981) United States
7846	Be7 Undef	T		Jung, C.; Taylor, H. S. Possibility of experimental separation of resonances and escape from background in electron scattering. <i>Phys. Rev. A</i> 23, 1115 (1981) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7847	A03 Na ⁺ + Xe	E	300 K	Kellert, F. G.; Jays, T. M.; McMillan, G. B.; Saltz, R. A.; Dunning, F. B.; Stobbs, F. F. Study of Rydberg-atom l-changing collisions using selective field ionization. <i>Phys. Rev. A</i> 23, 1127 (1981) United States
7848	E01 Undef	T	Undef	Ben-El-Mechaie, T. B.; Orel, A. E. Generalization of the separable approximation to scattering in the presence of long-range forces. <i>Phys. Rev. A</i> 23, 1134 (1981) United States
7849	E05 e + Na ⁺ ; e + Mg ²⁺ ; e + Al ³⁺ ; e + Ar ¹⁸⁺ ; e + Ne Seq	T	23-700 eV	Younger, S. W. Distorted-wave electron-impact-ionization cross sections for highly ionized neonlike atoms. <i>Phys. Rev. A</i> 23, 1138 (1981) United States
7850	M06 hv + Fe; hv + Ni; hv + Cu; hv + Zn; hv + As; hv + Se; hv + Br; hv + Zr; hv + Nb; hv + Mo; hv + Ag; hv + Ir; hv + Sn; hv + I	E	59.5 keV	Arora, S. K.; Aliwanadi, K. L.; Iord, E. S. K-shell photoelectric cross-section measurements. <i>Phys. Rev. A</i> 23, 1147 (1981) India
7851	C02 e + C	T	1-1000 keV	Johannes, A.C.A. Modified energy-capacitance model, for the computation of the stopping-power ratio for small cavity sizes. <i>Phys. Rev. A</i> 23, 1164 (1981) Belgium
7852	A19 H ⁺ + Mg; He ⁺ + Mg; C ²⁺ + Mg; Ne ¹⁰⁺ + Mg; S ¹⁶⁺ + Mg	E	2.75-64 MeV	Langenberg, A.; Watson, E. L. Study of Mg K α x-ray multiplet structure observed in ion-atom collisions. <i>Phys. Rev. A</i> 23, 1177 (1981) United States
7853	E01 Undef	T	Undef	Francis, V. Scattering by a Coulomb plus spin-orbit interaction in the Glauber approximation. <i>Phys. Rev. A</i> 23, 1188 (1981) United States
7854	A01 Undef	T	Undef	Nielsen, S. E.; Dahler, J. S. Classical-trajectory theory of high-energy collisions between one-electron projectiles and two-electron targets. <i>Phys. Rev. A</i> 23, 1193 (1981) United States
7855	E12 e ⁺ + Be; e ⁺ + Al; e ⁺ + Cu; e ⁺ + Ag; e ⁺ + Pb E16 e + Be; e + Al; e + Cu; e + Ag; e + Pb	E	0.32-0.54 MeV	Ram, K.; Sundara Rao, I. S.; Mehta, M. K. Relative transmission of 0.324- and 0.544-MeV positrons and electrons in Be, Al, Cu, Ag, and Pb. <i>Phys. Rev. A</i> 23, 1202 (1981) India
7856	M06 hv + C	E	1100-305 Å	Cantu, A. M.; Mazzoni, M.; Pettini, P.; Tozzi, G. F. Photoionization spectrum of the ¹² C ground state of neutral carbon. <i>Phys. Rev. A</i> 23, 1223 (1981) Italy
7857	C07 Mo ⁴²⁺ + C	E	5-25 MeV	Donna, B.; Poulsen, O. Radiative lifetimes of the 4p ² P _{3/2} and ² P _{1/2} levels in the Mo 41+. <i>Phys. Rev. A</i> 23, 1229 (1981) Denmark
7858	B01 H	E		Caristo, F.; Sanctuary, B. C. Spin transitions in time-dependent magnetic fields. <i>Phys. Rev. A</i> 23, 1234 (1981) Canada
7859	M01 Undef	T	Undef	Cook, R. J. Photon number statistics in resonance fluorescence. <i>Phys. Rev. A</i> 23, 1242 (1981) United States
7860	A13 Kr ⁺ + F ⁻ + Kr; Kr ⁺ + F ⁻ + Kr; Ar ⁺ + Kr; Kr ⁺ + F ⁻ + Ar; Ar ⁺ + Kr; Kr; ArKr ⁺ + F ⁻ + Ar A14 ArF ⁺ + Ar + Ar; ArF ⁺ + F ₂ ; ArF ⁺ + Ar; KrF ⁺ + Kr + Kr; KrF ⁺ + Ar + Ar; KrF ⁺ + F ₂ ; ArF ⁺ + F ₂ ; ArF ⁺ + Kr; KrF ⁺ + Kr + Ar; ArKrF ⁺ + Kr E03 e + F ₂ E16 e + [Ar + F ₂]; e + [Kr + F ₂]; e + [Ar + Kr + F ₂]	E	A13; A14 300 K E03 4-100 eV E16 80 keV	Morgan, W. L.; Szoke, A. Kinetic processes in Ar-Ar-F ₂ laser mixtures. <i>Phys. Rev. A</i> 23, 1286 (1981) United States

REF. NO.	REACTANTS	EXP. GP. TECH.	ENERGY RANGE	REFERENCE
7876	E02 Undef E03 Undef	T	Undef	Garrett, W. R. Scattering by a dipolar system: divergence of cross sections at the critical angle for a point dipole scatter. <i>Phys. Rev. A</i> 23, 1737 (1981); United States
7877	D04 He ⁺ + C C07 He ⁺ + C	E	35-1300 keV	Gay, T. J.; Berry, M. G.; DeSeric, K.; Gornik, R. F.; Schectman, R.; Schaffel, A.; Hight, S. D.; Burns, L. J. Energy dependence of alignment in full collision-excited n=3 states of He I. <i>Phys. Rev. A</i> 23, 1745 (1981); United States
7878	C07 He ⁺ + C; HeH ⁺ + C	E	125-650 keV	Gay, T. J.; Berry, M. G.; DeSeric, K. Molecular effects in beam-foil collision-induced alignment of He I. <i>Phys. Rev. A</i> 23, 1761 (1981); United States
7879	A03 He ⁺ + C	T	35-4000 keV	Latte, S.; Roy, K.; Mukherjee, S. C. Cross sections for the excitation of the projectile He ⁺ ions in collision with hydrogen atoms. <i>Phys. Rev. A</i> 23, 1775 (1981); India
7880	A03 H ⁺ + H A16 H ⁺ + H	T	25-150 keV	Latte, S.; Mukherjee, S. C. Differential cross sections for excitation of atomic hydrogen by proton impact. <i>Phys. Rev. A</i> 23, 1780 (1981); India
7881	E01 Undef E02 Undef	T	Undef	Winkler, P.; Yaris, R.; Lovett, F. Solution of Dyncer's equation employing Siegert boundary conditions. <i>Phys. Rev. A</i> 23, 1787 (1981); West Germany
7882	E02 e + Be	T	Undef	Palmquist, R.; Altich, P. L.; Richter, J.; Winkler, P.; Yaris, R. Energies and widths of electronic scattering, and Auger resonances of atomic beryllium. <i>Phys. Rev. A</i> 23, 1795 (1981); United States
7883	E03 e + Li	T	15-1000 eV	Tripathi, A. N. Generalized oscillator strengths and inelastic scattering cross sections for aligned and nonaligned transitions in lithium atoms. <i>Phys. Rev. A</i> 23, 1801 (1981); India
7884	A03 H ⁺ + H ₂ A06 H ⁺ + H ₂ A17 H ⁺ + H ₂	T	50-5000 keV	Ray, F. P.; Saha, B. C. Charge transfer in proton-hydrogen-molecule collisions. <i>Phys. Rev. A</i> 23, 1807 (1981); India
7885	H06 hv + Ca	T	18500-21500 cm ⁻¹	Declercq, A.; Bachman, A.; Jochen, P.; Laplanche, G. Two-photon ionization of alkali-metal atoms in the framework of infinite summations and spin-orbit coupling. <i>Phys. Rev. A</i> 23, 1822 (1981); France
7886	H06 hv + Sr; hv + Ta; hv + Au; hv + Pb; hv + Th	E	889-1332 keV	Ranganathalak, C.; Gouda, K.; Sarjesevalah, B. Atomic K-shell photoionization cross sections for ⁸⁸ Sr and ⁹⁰ Y rays. <i>Phys. Rev. A</i> 23, 1841 (1981); India
7887	H12 hv + e	E	122 MeV	Edgitcher, J. A.; Kimura, M. D.; Sartelli, M. H.; Plestrup, P. A.; Wang, D. Y. Observation of inverse Compton interaction between free electrons and laser light. <i>Phys. Rev. A</i> 23, 1848 (1981); United States
7888	B01 Undef H01 Undef	T	H01 Undef	Yoshida, M.; Nakayama, T.; Ikuhi, I.; Akita, T.; Tanihara, K. Effects of interference between different-order transition processes. <i>Phys. Rev. A</i> 23, 1855 (1981); Japan
7889	H01 Undef	T	Undef	Kyrola, E.; Selamaa, R. Probe spectroscopy in an inhomogeneously broadened three-level system saturated by an intense standing wave. <i>Phys. Rev. A</i> 23, 1874 (1981); Finland
7890	C02 He ²⁺ + e; He ²⁺ + Plasma C05 He ²⁺ + e; He ²⁺ + Plasma	T	3.5 MeV	Aristo, M. R.; Brandt, W. Energy loss and straggling of charged particles in plasmas of all degeneracies. <i>Phys. Rev. A</i> 23, 1858 (1981); West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7891	A07 $H^+ + Ti; H^+ + Fe; H^+ + Ni; H^+ + Zn$	T	63-150 keV	Lapich, G.; Zoller, A. R. Universal cross sections for K-shell ionization by low-velocity protons: Importance of relativistic and energy-loss effects. <i>Phys. Rev. A</i> 22, 2072 (1981) United States
7892	C03 $e + Ar$	T	10^{-1} -5000 eV	Prasad, M.; Umashankar, K. Statistical distribution of ionization yields in gases from electron irradiation. <i>Phys. Rev. A</i> 23, 1882 (1981) India
7893	M06 Under	T	Under	Ishihara, T.; Mizuno, J.; Matsuda, T. Stratum Conjugate shake-up process of resonant K-shell photoionization [<i>Phys. Rev. A</i> 22, 1552 (1980)]. <i>Phys. Rev. A</i> 23, 2088 (1981) Japan
7894	D04 $e + Ni; e + [Ni + Ni]$	E	10^1 eV	Kato, M.; Ishizuka, Y.; Ishijima, P.; Cachi, R. Electron-energy-loss and secondary-electron emission spectroscopies of clean and hydrogen-covered Ni (100) surfaces. <i>Phys. Rev. B</i> 22, 1705 (1980) Japan
7895	C02 $He^+ + Fe; He^+ + C; He^+ + Al; He^+ + Cu; D^+ + Au; D^+ + C; D^+ + Al; E^+ + Cs$	E	45-240 keV	Kraussner, S.; Vossler, C.; Bracht, H. Target dependence of effective projectile charge in stopping powers. <i>Phys. Rev. B</i> 22, 82 (1981) West Germany
7896	D02 $Ar^+ + Si; Ar^+ + SiO_2; XeF_2 + Si; XeF_2 + SiCl_2$	E	0-5000 eV	Tu, Y.-Y.; Chuang, T. J.; Winters, P. F. Chemical sputtering of fluorinated silicon. <i>Phys. Rev. B</i> 22, 623 (1981) United States
7897	D07 $H_2^+ + Cu; H_2^+ + Pb; H_2^+ + K; H_2^+ + Na; H_2^+ + Li; H_2^+ + Ca; H_2^+ + Zn; H_2^+ + Rb; H_2^+ + Cs; D_2^+ + Cu; D_2^+ + Pb; D_2^+ + K; D_2^+ + Na; D_2^+ + Li; D_2^+ + Ca; D_2^+ + Zn; D_2^+ + Rb; D_2^+ + Cs; K; D_2^+ + Na; D_2^+ + Li$ D08 $H_2^+ + Cu; H_2^+ + Pb; H_2^+ + K; H_2^+ + Na; H_2^+ + Li; H_2^+ + Ca; H_2^+ + Zn; H_2^+ + Rb; H_2^+ + Cs; D_2^+ + Cu; D_2^+ + Pb; D_2^+ + K; D_2^+ + Na; D_2^+ + Li; D_2^+ + Ca; D_2^+ + Zn; D_2^+ + Rb; D_2^+ + Cs; K; D_2^+ + Na; D_2^+ + Li$	E	0.3-4 keV	Schneider, P. J.; Bernner, R. P.; Graham, B. G.; Pyle, R. V.; Stearns, J. W. H^- and D^- production by backscattering from alkali-metal targets. <i>Phys. Rev. B</i> 23, 941 (1981) United States
7898	D07 $H^+ + Cu; H^+ + Pb; H^+ + K; H^+ + Na; H^+ + Li; D^+ + Cu; D^+ + Pb; D^+ + K; D^+ + Na; D^+ + Li$ D08 $H^+ + Cu; H^+ + Pb; H^+ + K; H^+ + Na; H^+ + Li; D^+ + Cu; D^+ + Pb; D^+ + K; D^+ + Na; D^+ + Li$	T	0.3-4.0 keV	Hiscox, J. R.; Schneider, P. J. Formation of H^- and D^- ions by hydrogen and deuterium particle backscattering from alkali-metal surfaces. <i>Phys. Rev. B</i> 22, 549 (1981) United States
7899	C02 $F^{9+} + Si; F^{7+} + Si; F^{5+} + Si; F^{3+} + Si; F^{1+} + Si; Pd^{9+} + Si; Mg^{9+} + Si; Mg^{7+} + Si; Mg^{5+} + Si; Mg^{3+} + Si; Mg^{1+} + Si; Si^{10+} + Si; Si^{8+} + Si; Si^{6+} + Si; Si^{4+} + Si; Si^{2+} + Si; Si^{0+} + Si; Si^{10+} + Si; Si^{8+} + Si; Si^{6+} + Si; Si^{4+} + Si; Si^{2+} + Si; Si^{0+} + Si; Cl^{10+} + Si; Cl^{8+} + Si; Cl^{6+} + Si; Cl^{4+} + Si; Cl^{2+} + Si; Cl^{0+} + Si; Cl^{10+} + Si; Cl^{8+} + Si; Cl^{6+} + Si; Cl^{4+} + Si; Cl^{2+} + Si; Cl^{0+} + Si$ C06 $F^{9+} + Si; F^{7+} + Si; F^{5+} + Si; F^{3+} + Si; F^{1+} + Si; Pd^{9+} + Si; Mg^{9+} + Si; Mg^{7+} + Si; Mg^{5+} + Si; Mg^{3+} + Si; Mg^{1+} + Si; Si^{10+} + Si; Si^{8+} + Si; Si^{6+} + Si; Si^{4+} + Si; Si^{2+} + Si; Si^{0+} + Si; Si^{10+} + Si; Si^{8+} + Si; Si^{6+} + Si; Si^{4+} + Si; Si^{2+} + Si; Si^{0+} + Si; Cl^{10+} + Si; Cl^{8+} + Si; Cl^{6+} + Si; Cl^{4+} + Si; Cl^{2+} + Si; Cl^{0+} + Si; Cl^{10+} + Si; Cl^{8+} + Si; Cl^{6+} + Si; Cl^{4+} + Si; Cl^{2+} + Si; Cl^{0+} + Si$	E	62-105 MeV	Golovchenko, J. A.; Goland, A. M.; Scener, J. S.; Thorn, C. E.; Wagner, M. L.; Kraussner, M.; Noth, C. L. Charge state dependence of chartered ion energy loss. <i>Phys. Rev. B</i> 23, 957 (1981) United States
7900	D05 $h\nu + Si$	T	2.3-3.66 eV	Bensoussan, M.; Molson, J. P.; Stora, B.; Sotenna, C. Photoemission yield under two-quantum excitation in Si. <i>Phys. Rev. B</i> 22, 992 (1981) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7901	D42 Undef	T	Undef	Sroubek, Z.; Zdeneky, K.; Zavadil, J. Ionization of atomic particles spotted from solids. Phys. Rev. Lett. 42, 508 (1980) Czechoslovakia
7902	A47 Undef	T	Undef	Bang, J.; Banstern, J. W. Considerations on a scaling law related to ionization and pair-production phenomena in ion-atom collisions. Phys. Scr. 22, 665 (1980) Denmark
7903	E02 e + He; e + Ar; e + Kr; e + Xe E17 e + He; e + Ar; e + Kr; e + Xe	T	0.8-3.8 keV	Reiter, A. Potential and Glauber scattering of electrons by complex atoms. Phys. Scr. 22, 615 (1980) Norway
7904	C07 Zn ⁺ + C	E	50-700 keV	Multberg, S.; Liljeby, L.; Lindgren, A.; Pannervik, S.; Vojta, E. Experimental and simulated beam-fil decay curves for some transitions in Zn II. Phys. Scr. 22, 623 (1980) Sweden
7905	C04 H ⁺ + Si; D ⁺ + Si; He ⁺ + Si; H ⁺ + Si; H ⁺ + Si; P ⁺ + Si	E	0.1-7 MeV	Bulgakov, V. V.; Koicarskaya, T. I.; Anzretsov, N. V.; Yatsenko, L. A. Measurement of average projectile ranges of ions with energies of hundreds and thousands of eV in silicon using the resistance technique. Phys. Status Solidi A 62, 439 (1980) Soviet Union
7906	E02 e + H ₂	T	1000-2000 eV	Jhanwar, B. L.; Khare, S. P.; Sharma, N. K. Elastic scattering of electrons by hydrogen molecules. Pramana 14, 281 (1980) India
7907	E05 e + H	T	13-500 eV	Sakimura, T. Ionization of atomic hydrogen by electron impact in the orbital approximation with exchange. Prog. Theor. Phys. 64, 28 (1980) Japan
7908	D07 H ⁺ + Ni; H ⁺ + Cu; H ⁺ + Al; H ⁺ + He; H ⁺ + Ag; H ⁺ + Ta; H ⁺ + Au; H ⁺ + Zr; H ⁺ + Ti; H ⁺ + Pb; H ⁺ + Bi; H ⁺ + Po; H ⁺ + At; H ⁺ + Fr; H ⁺ + Ra; H ⁺ + Ac; H ⁺ + Th; H ⁺ + Pa; H ⁺ + U; H ⁺ + Np; H ⁺ + Pu; H ⁺ + Am; H ⁺ + Cm; H ⁺ + Bk; H ⁺ + Cf; H ⁺ + Es; H ⁺ + Fm; H ⁺ + Md; H ⁺ + No; H ⁺ + Lr; H ⁺ + Yb; H ⁺ + Lu; H ⁺ + Hf; H ⁺ + Ta; H ⁺ + W; H ⁺ + Re; H ⁺ + Os; H ⁺ + Ir; H ⁺ + Pt; H ⁺ + Au; H ⁺ + Hg; H ⁺ + Tl; H ⁺ + Pb; H ⁺ + Bi; H ⁺ + Po; H ⁺ + At; H ⁺ + Fr; H ⁺ + Ra; H ⁺ + Ac; H ⁺ + Th; H ⁺ + Pa; H ⁺ + U; H ⁺ + Np; H ⁺ + Pu; H ⁺ + Am; H ⁺ + Cm; H ⁺ + Bk; H ⁺ + Cf; H ⁺ + Es; H ⁺ + Fm; H ⁺ + Md; H ⁺ + No; H ⁺ + Lr; H ⁺ + Yb; H ⁺ + Lu; H ⁺ + Hf; H ⁺ + Ta; H ⁺ + W; H ⁺ + Re; H ⁺ + Os; H ⁺ + Ir; H ⁺ + Pt; H ⁺ + Au; H ⁺ + Hg; H ⁺ + Tl; H ⁺ + Pb; H ⁺ + Bi; H ⁺ + Po; H ⁺ + At; H ⁺ + Fr; H ⁺ + Ra; H ⁺ + Ac; H ⁺ + Th; H ⁺ + Pa; H ⁺ + U; H ⁺ + Np; H ⁺ + Pu; H ⁺ + Am; H ⁺ + Cm; H ⁺ + Bk; H ⁺ + Cf; H ⁺ + Es; H ⁺ + Fm; H ⁺ + Md; H ⁺ + No; H ⁺ + Lr; H ⁺ + Yb; H ⁺ + Lu; H ⁺ + Hf; H ⁺ + Ta; H ⁺ + W; H ⁺ + Re; H ⁺ + Os; H ⁺ + Ir; H ⁺ + Pt; H ⁺ + Au; H ⁺ + Hg; H ⁺ + Tl; H ⁺ + Pb; H ⁺ + Bi; H ⁺ + Po; H ⁺ + At; H ⁺ + Fr; H ⁺ + Ra; H ⁺ + Ac; H ⁺ + Th; H ⁺ + Pa; H ⁺ + U; H ⁺ + Np; H ⁺ + Pu; H ⁺ + Am; H ⁺ + Cm; H ⁺ + Bk; H ⁺ + Cf; H ⁺ + Es; H ⁺ + Fm; H ⁺ + Md; H ⁺ + No; H ⁺ + Lr; H ⁺ + Yb; H ⁺ + Lu; H ⁺ + Hf; H ⁺ + Ta; H ⁺ + W; H ⁺ + Re; H ⁺ + Os; H ⁺ + Ir; H ⁺ + Pt; H ⁺ + Au; H ⁺ + Hg; H ⁺ + Tl; H ⁺ + Pb; H ⁺ + Bi; H ⁺ + Po; H ⁺ + At; H ⁺ + Fr; H ⁺ + Ra; H ⁺ + Ac; H ⁺ + Th; H ⁺ + Pa; H ⁺ + U; H ⁺ + Np; H ⁺ + Pu; H ⁺ + Am; H ⁺ + Cm; H ⁺ + Bk; H ⁺ + Cf; H ⁺ + Es; H ⁺ + Fm; H ⁺ + Md; H ⁺ + No; H ⁺ + Lr; H ⁺ + Yb; H ⁺ + Lu; H ⁺ + Hf; H ⁺ + Ta; H ⁺ + W; H ⁺ + Re; H ⁺ + Os; H ⁺ + Ir; H ⁺ + Pt; H ⁺ + Au; H ⁺ + Hg; H ⁺ + Tl; H ⁺ + Pb; H ⁺ + Bi; H ⁺ + Po; H ⁺ + At; H ⁺ + Fr; H ⁺ + Ra; H ⁺ + Ac; H ⁺ + Th; H ⁺ + Pa; H ⁺ + U; H ⁺ + Np; H ⁺ + Pu; H ⁺ + Am; H ⁺ + Cm; H ⁺ + Bk; H ⁺ + Cf; H ⁺ + Es; H ⁺ + Fm; H ⁺ + Md; H ⁺ + No; H ⁺ + Lr; H ⁺ + Yb; H ⁺ + Lu; H ⁺ + Hf; H ⁺ + Ta; H ⁺ + W; H ⁺ + Re; H ⁺ + Os; H ⁺ + Ir; H ⁺ + Pt; H ⁺ + Au; H ⁺ + Hg; H ⁺ + Tl; H ⁺ + Pb; H ⁺ + Bi; H ⁺ + Po; H ⁺ + At; H ⁺ + Fr; H ⁺ + Ra; H ⁺ + Ac; H ⁺ + Th; H ⁺ + Pa; H ⁺ + U; H ⁺ + Np; H ⁺ + Pu; H ⁺ + Am; H ⁺ + Cm; H ⁺ + Bk; H ⁺ + Cf; H ⁺ + Es; H ⁺ + Fm; H ⁺ + Md; H ⁺ + No; H ⁺ + Lr; H ⁺ + Yb; H ⁺ + Lu; H ⁺ + Hf; H ⁺ + Ta; H ⁺ + W; H ⁺ + Re; H ⁺ + Os; H ⁺ + Ir; H ⁺ + Pt; H ⁺ + Au; H ⁺ + Hg; H ⁺ + Tl; H ⁺ + Pb; H ⁺ + Bi; H ⁺ + Po; H ⁺ + At; H ⁺ + Fr; H ⁺ + Ra; H ⁺ + Ac; H ⁺ + Th; H ⁺ + Pa; H ⁺ + U; H ⁺ + Np; H ⁺ + Pu; H ⁺ + Am; H ⁺ + Cm; H ⁺ + Bk; H ⁺ + Cf; H ⁺ + Es; H ⁺ + Fm; H ⁺ + Md; H ⁺ + No; H ⁺ + Lr; H ⁺ + Yb; H ⁺ + Lu; H ⁺ + Hf; H ⁺ + Ta; H ⁺ + W; H ⁺ + Re; H ⁺ + Os; H ⁺ + Ir; H ⁺ + Pt; H ⁺ + Au; H ⁺ + Hg; H ⁺ + Tl; H ⁺ + Pb; H ⁺ + Bi; H ⁺ + Po; H ⁺ + At; H ⁺ + Fr; H ⁺ + Ra; H ⁺ + Ac; H ⁺ + Th; H ⁺ + Pa; H ⁺ + U; H ⁺ + Np; H ⁺ + Pu; H ⁺ + Am; H ⁺ + Cm; H ⁺ + Bk; H ⁺ + Cf; H ⁺ + Es; H ⁺ + Fm; H ⁺ + Md; H ⁺ + No; H ⁺ + Lr; H ⁺ + Yb; H ⁺ + Lu; H ⁺ + Hf; H ⁺ + Ta; H ⁺ + W; H ⁺ + Re; H ⁺ + Os; H ⁺ + Ir; H ⁺ + Pt; H ⁺ + Au; H ⁺ + Hg; H ⁺ + Tl; H ⁺ + Pb; H ⁺ + Bi; H ⁺ + Po; H ⁺ + At; H ⁺ + Fr; H			

REF. NO.	REACTANTS	EXP OP THEOR	ENERGY RANGE	REFERENCE
7913	A93 $H_2^+ + H_2$	E	0.1-10 keV	Lavrov, V. M.; Cockletshvili, P. R.; Annadine, V. P.; Ziklan, B. I. Role of intermediate states in the vibrational excitation of the H_2^+ ion in collisions of ions with H_2 molecules. Sov. Phys.-Tech. Phys. 22, 400 (1986) Soviet Union
7914	A86 Undef	T	10^{-2} to 10^6 keV/nucleon	Fuller, A.; Shovel'ko, V. P. Dependence of charge exchange cross sections on the charge of the incident ion. Sov. Phys.-Tech. Phys. 21, 252 (1986) Soviet Union
7915	A17 $CO + He$; $CC + He$; $CC + Ar$; $CC + Kr$; $CC + Xe$	T	3-12 e.u.	Caldeirao, V. L.; Chienova, G. V. Potential of the interaction of CC molecules with ions of inert gases. Sov. Phys.-Tech. Phys. 25, 77 (1988) Soviet Union
7916	D13 $h\nu + (CC + Cu/Ni)$; $h\nu + (CC + H_2 + Cu/Ni)$	E	21.2-40.4 eV	Ling, D. T.; Spicer, W. E. UPS and IES studies of the absorption of CC and H_2 on Cu/Ni. Surf. Sci. 104, 403 (1981) United States
7917	D11 $C_2 + Cu + Fe$; $H_2O + Cu + Fe$	E	300 K	Shi, S.-K.; Lee, H.-I.; White, J. P. Chemisorption of C_2 and H_2O on Cu/Ru (001). Surf. Sci. 102, 26 (1981) United States
7918	D13 $e + CO + Pt$	E	1700 eV	Craig, J. H., Jr.; Hoch, J. L. ESE study of CO adsorbed on platinum. Surf. Sci. 102, 85 (1981) United States
7919	D17 $CO + Pt$; $C_2 + Pt$; $H_2 + Pt$	E	300-635 K	Bartean, M. A.; Fo, E. I.; Radin, S. J. The absorption of CO , O_2 , and H_2 on Pt(100)-(1 x 16). Surf. Sci. 102, 55 (1981) United States
7920	D13 $CO + Ni$	E	300 K	Campanaro, J. C.; Das, R.; Greenler, E. G. The sticking probability, dipole moment, and absolute coverage of CO on Ni(111). Surf. Sci. 102, 172 (1981) United States
7921	D09 Undef	T	Undef	Felberman, P. J. Re-neutralization bottleneck in Auger initiated desorption. Surf. Sci. 102, 121 (1981) United States
7922	D04 $He + W$; $He^+ + W$ D07 $He + W$; $He^+ + W$	E	Undef	Titley, D. J.; Delcher, T. A.; Johnson, P. D. The interaction of metastable helium atoms with metal surfaces. Surf. Sci. 102, 155 (1981) United Kingdom
7923	D04 $He + Mc$ D07 $He + Mc$	E	Undef	Folizau, C.; Rucchielli, F.; Lucicno, R.; Heynaud, C.; Poussel, J. Interaction of metastable helium beam with surfaces; beam characterization - results discussion; response to the comments of D. J. Titley, T. A. Delcher, and P. D. Johnson. Surf. Sci. 102, 142 (1981) France
7924	D01 $Ar^+ + Ti$; $Ar^+ + TiO_2$	E	55 keV	Lozier, C. R.; MacDonald, K. J.; Legler, E. A comparison of measurements of the energy of atoms sputtered in excited states. Surf. Sci. 102, 176 (1981) Australia
7925	D11 $O_2 + TiC$	E	350 K	Gutina, C.; Aono, M.; Tanaka, T.; Kawai, S.; Zaima, I.; Shibata, Y. Clean TiC(011) surface and oxygen chemisorption studied by work function measurement, angle-resolved x-ray photoelectron spectroscopy, ultraviolet photoelectron spectroscopy, and ion scattering spectroscopy. Surf. Sci. 102, 212 (1981) Japan
7926	D03 $Ar^+ + B_2O_3$; $Ar^+ + B$	E	12-40 keV	Rally, R.; Driete, S.; Tok, M. P.; Lully, J. L. Atomic, molecular, and continuum radiation free ion-beam-irradiated B and B_2O_3 . Surf. Sci. 102, 460 (1981) Canada
7927	D13 $h\nu + H_2O + ReH$; $h\nu + H_2O + Al_2C_3$ $h\nu + H_2C + TiO_2$	E	50-400 eV	Kostek, M. L.; Jones, W. D.; Kohn, V. Photon-stimulated desorption by core level excitation: density of states and extended fine structures. Surf. Sci. 102, 566 (1981) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
7935	E03 e + Be Seq	T	3-3.25 Z ² Ry	Clark, R.E.H.; Sampson, D. L.; Parke, A. E. Intermediate coupling collision strengths for $4n + C$ transitions produced by electron impact on highly charged ions: III. Transitions within the $1s^2 2s 2p$ and $1s^2 2p^2$ configurations and between the $1s^2 2s^2$ and $1s^2 2p^2$ configurations in beryllium-like ions. <i>Astrophys. J. Suppl. Ser.</i> 44, 215 (1980) United States
7936	E09 e + n ⁺ H ⁺ h ν + H ⁻	T	E09 1 ⁺ -10 ⁺ K H ⁺ 0.092-0.25 Ry	Jacobs, V. L.; Ehatia, A. K.; Tonks, A. Photodetachment and radiative attachment involving the $2p^2$ (sup e) state of H ⁻ . <i>Astrophys. J.</i> , Part 1 242, 1276 (1980) United States
7937	C02 Review F01 Review	E T	10 ⁺ -10 ⁺ MeV	Chu, S.-K. Energy loss of high-velocity ions in matter. p.27, in <i>Meth. of Exp. Phys.</i> Vol. 17, <i>Atomic Phys. -- Accel.</i> , P. Richard, ed. Academic Press, New York, (1980) United States
7938	A06 Review A07 Review A08 Review C06 Review C07 Review K01 Review	E T	1-10 ⁺ MeV	Betz, P. D. Charge equilibration of high-velocity ions in matter. p.72 in <i>Meth. of Exp. Phys.</i> Vol. 17, <i>Atomic Phys. -- Accel.</i> , P. Richard, ed. Academic Press, New York, (1980) West Germany
7939	A07 Review A09 Review K01 Review	E T	1-1000 keV	Fastrup, B. Inelastic energy-loss measurements in single collisions. p.149 in <i>Meth. of Exp. Phys.</i> Vol. 17, <i>Atomic Phys. -- Accel.</i> , P. Richard, ed. Academic Press, New York, (1980) Denmark
7940	A07 Review A19 Review K01 Review L01 Review	E T	3.3-24 MeV	Gray, T. J. Target ionization and x-ray production for ions incident upon solid targets. p.193 in <i>Meth. of Exp. Phys.</i> Vol. 17, <i>Atomic Phys. -- Accel.</i> , P. Richard, ed. Academic Press, New York, (1980) United States
7941	A07 Review A19 Review K01 Review	E T	1-40 MeV	Macquardt, J. R. Charge dependence of atomic inner-shell cross sections. p.275 in <i>Meth. of Exp. Phys.</i> Vol. 17, <i>Atomic Phys. -- Accel.</i> , P. Richard, ed. Academic Press, New York, (1980) United States
7942	A03 Review A06 Review A07 Review K01 Review L01 Review	F T	3.3-138 MeV	Cocks, C. L. Coincidence experiments for studying impact-parameter-dependent and charge-changing processes. p.303 in <i>Meth. of Exp. Phys.</i> Vol. 17, <i>Atomic Phys. -- Accel.</i> , P. Richard, ed. Academic Press, New York, (1980) United States
7943	A03 Review A07 Review K01 Review	F T	3.5-50 MeV	Hopkins, F. Ion-induced x-ray spectroscopy. p.355 in <i>Meth. of Exp. Phys.</i> Vol. 17, <i>Atomic Phys. -- Accel.</i> , P. Richard, ed. Academic Press, New York, (1980) United States
7944	A03 Review A07 Review K01 Review	F T	0.5-200 MeV	Matthews, D. L. Ion-induced Auger electron spectroscopy. p.433 in <i>Meth. of Exp. Phys.</i> Vol. 17, <i>Atomic Phys. -- Accel.</i> , P. Richard, ed. Academic Press, New York, (1980) United States

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7945	C06 Review C07 Review K01 Review	E T	2-70 MeV	Pegg, D. J. Radiative and Auger beam-foil measurements. p.529 in <i>Publ. of Exp. Phys.</i> Vol. 17, Atomic Phys. -- Accel., P. Richard, ed. Academic Press, New York, (1980) United States
7946	D05 Review K03 Review	E T	Undef	Williams, R. H.; Srivastava, G. P.; McGovern, I. T. Photoelectron spectroscopy of solids and their surfaces. <i>Rep. Prog. Phys.</i> 42, 1227 (1980) United Kingdom
7947	H02 $h\nu + \text{Pt}$; $h\nu + \text{Sr}$	T	45-285 eV	Partersson, H.; Johansson, E. Analysis of the atomic photoabsorption spectra of Pt and Sr based on the 2 + 1 approximation. <i>J. Phys. B</i> 14, 137 (1981) Switzerland
7948	B05 H	T		Ruder, H.; Wunner, G.; Herold, H.; Felnecke, R. On the validity of perturbation calculations of energy levels and transitions of hydrogen atoms in strong magnetic fields. <i>J. Phys. B</i> 14, L45 (1981) West Germany
7949	B05 H	T		Janssen, G.C.A.P.; Jayakumar, R.; Granneman, L.H.A. The influence of static fields on the dynamic Stern spectra of hydrogen Balmer lines. <i>J. Phys. E</i> 14, L61 (1981) The Netherlands
7950	A07 $\text{Hg}^+ + \text{He}$ A18 $\text{Hg}^+ + \text{He}$	E	0.7-5 keV	Chutjian, A. Spectra and cross sections for electron autoionisation in low-energy $\text{Hg}^+\text{-He}$ collisions. <i>J. Phys. B</i> 14, L57 (1981) United States
7951	H06 $h\nu + \text{Ca}$; $h\nu + \text{Sr}$	E	59.4 nm	Lee, E.-P.-f.; Pot, A. W. He II photoelectron spectra of the valence p shell of Ca and Sr. <i>J. Phys. B</i> 14, L61 (1981) United Kingdom
7952	H02 $h\nu + \text{C}_6\text{H}_6$; $h\nu + \text{CH}_3\text{Br}$; $h\nu + \text{H}_2\text{C}$ H06 $h\nu + \text{C}_6\text{H}_6$; $h\nu + \text{CH}_3\text{Br}$; $h\nu + \text{H}_2\text{C}$	E	133-96 nm	Connerade, J. P.; Haig, P. A.; McGlynn, S. F. Autoionisation in polyatomic molecules. <i>J. Phys. B</i> 14, L67 (1981) United Kingdom
7953	H06 Undef	T	Undef	Cherephov, M. A. Angular distribution of molecular photoelectrons with defined spin orientation. <i>J. Phys. B</i> 14, L73 (1981) West Germany
7954	H06 $h\nu + \text{CH}_3\text{Br}$	E	174-58.4 nm	Heinzmann, U.; Osterheld, B.; Sraifers, E.; Schenck, G. Spin-polarised photoelectrons produced from CH_3Br molecules by unpolarised and circularly polarised VUV radiation. <i>J. Phys. B</i> 14, L75 (1981) West Germany
7955	A12 $\text{Na}^+ + \text{He}$	E	0 K	Zimmermann, P.; Miles, R. B. Low-temperature He-He collision rate measurements. <i>J. Phys. E</i> 14, L85 (1981) United States
7956	A02 $\text{Rb}^+ + \text{He}$; $\text{He}^+ + \text{Ar}$ E02 $e + \text{He}$; $e + \text{Ar}$	T	520 K	Sasano, K.; Matsuzawa, M. Feasibility of using a high-Feynberg atom in a collision experiment as a probe to scattering of an extremely slow electron by a rare-gas atom. <i>J. Phys. B</i> 14, L51 (1981) Japan
7957	E18 $e + \text{CO}_2$	E	3.17-4.5 eV	Ferch, J.; Masche, C.; Keith, B. Total cross-section measurement for $e\text{-CO}_2$ scattering down to 0.07 eV. <i>J. Phys. B</i> 14, L67 (1981) West Germany
7958	E02 $e + \text{H}_2$; $e + \text{N}_2$; $e + \text{LiH}$; $e + \text{CCl}_4$	T	Undef	Schneider, B. I.; Collins, L. A. A linear-algebraic approach to electron-molecule collisions. <i>J. Phys. E</i> 14, L101 (1981) United States
7959	F18 $e + \text{HF}$	E	12.4-16 eV	Spence, D. On resonances in HF. <i>J. Phys. E</i> 14, L107 (1981) United States
7960	A09 Undef	T	Undef	Pates, D. B. Ionic recombination at high ion densities. <i>J. Phys. B</i> 14, L115 (1981) United Kingdom

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7961	H08 He + Na + Pr	E	Undef	Behrman, W.; Kroop, V. Far wing depolarisation of collision-induced fluorescence. J. Phys. E 14, 427 (1981) West Germany
7962	H04 He + Xe H36 He + Xe	E	485-607 nm	Grandin, J.-F.; Husson, A. Even-parity Rydberg and autoionising states in xenon. J. Phys. E 14, 433 (1981) France
7963	A03 Ar* + Ar + Kr; Ar* + Ar + Xe A13 Ar* + Ar + Kr; Ar* + Ar + Xe	E	Undef	Millet, P.; Barrie, A. M.; Birct, P.; Brunet, M.; Dijols, M.; Gail, J.; Salmeron, Y. Kinetic study of (ArKr)* and (ArXe)* heteronuclear ion emissions. J. Phys. B 14, 455 (1981) France
7964	A73 He* + H ₂ A07 He* + H ₂ A11 He* + H ₂	E	2040-8000 Å	Jolly, J.; Touzeau, M.; Ricard, F. Interrelation of non-Boltzmann vibrational level populations of excited nitrogen using the Penning ionisation technique. J. Phys. B 14, 472 (1981) France
7965	A03 H* + C; H* + Na; H* + Ar A07 H* + C; H* + Na; H* + Ar	T	3.1-5 MeV	Aashaver, A.; Asundsen, F. A. Wavefunction effects in inner-shell ionisation of light atoms by protons. J. Phys. B 14, 482 (1981) Norway
7966	A07 H* + Na; H* + Ar; H* + Kr	T	15-1000 keV	Kumer, A.; Roy, B. M. Proton impact double ionisation of noble-gas atoms. J. Phys. E 14, 501 (1981) India
7967	A03 He* + Cd A07 He* + Cd A11 He* + Cd	E	Undef	Inaba, S.; Goto, T.; Hattori, S. Spontaneous excitation cross sections for the individual Cd II states by He(2 ³ S) metastable atoms. J. Phys. E 14, 507 (1981) Japan
7968	A07 Kr ²⁺ + Kr; Kr ²⁺ + Kr; Kr ²⁺ + Kr; Kr ²⁺ + Kr A18 Kr ²⁺ + Kr; Kr ²⁺ + Kr; Kr ²⁺ + Kr; Kr ²⁺ + Kr	E	80-1400 eV	Gordeev, Y. S.; Moerles, P. M.; de Haard, M.; Seris, F. W. The production of continuous electron spectra in collisions of heavy ions and atoms. 4. Molecular autoionisation. J. Phys. B 14, 512 (1981) The Netherlands
7969	A07 Ne* + Ne; Ne ²⁺ + Ne; Ne ²⁺ + Ne; Ne ²⁺ + Ne; Kr ²⁺ + Kr; Kr ²⁺ + Kr; Kr ²⁺ + Kr; Kr ²⁺ + Kr A19 Ne* + Ne; Ar ²⁺ + Ne; Ne ²⁺ + Ne; Ne ²⁺ + Ne; Ne ²⁺ + Ne; Kr ²⁺ + Kr; Kr ²⁺ + Kr; Kr ²⁺ + Kr; Kr ²⁺ + Kr	F	25-800 keV	Moerles, P. M.; Gordrev, Y. S.; de Haard, M.; Seris, F. W. The production of continuous electron spectra in collisions of heavy ions and atoms. 5. Direct coupling with the continuum. J. Phys. E 14, 527 (1981) The Netherlands
7970	A72 H + Cs A76 H + Cs A19 H + Cs	E	47-528 eV	Fredel, P.; El Peddersi, M.; Valence, A. Angular distribution for H ⁻ formation and H(1s) elastic scattering from interaction of H(1s) with caesium. J. Phys. B 14, 541 (1981) France
7971	F02 e + Hg	T	1.1-25 eV	Sim Fai Lee, L. T.; Baylis, W. E. Relativistic effects in electron scattering by atoms: II. Comparison between treatments based on the Schrödinger non-relativistic and the Dirac relativistic equations. J. Phys. B 14, 559 (1981) Australia
7972	H02 He + Pb H04 He + Pt H06 He + Pt	F	41-51 nm	Connerade, J. P. Evidence for two-step autoionisation in the 5d spectrum of Pb I. J. Phys. B 14, 114 (1981) United Kingdom
7973	H02 He + HBr; He + HBr	F	11 ⁴ -120 nm	Beig, M. A.; Holmes, J.; Connerade, J. P.; Carlton, W. W. S. Rotational analysis of a new electronic transition of HBr and DBr. J. Phys. B 14, 1167 (1981) West Germany

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7974	A07 Undef	T	Undef	Amundsen, P. A.; Aashamar, R. Structures in the K-shell small delta-electron spectrum near threshold for ionisation by fast charged particles. <i>J. Phys. E</i> 14, L153 (1981); Norway
7975	E12 $e^+ + Ne; e^+ + Ar$	T	2-20 eV	Caspeanu, R. I. On the theoretical and experimental cross sections for low-energy electron-rare-gas scattering. <i>J. Phys. B</i> 14, L157 (1981); Romania
7976	H06 $h\nu + O_2$	E	60-57 nm	Codling, K.; Parr, A. C.; Ederer, L. L.; Stechbauer, F.; West, J. E.; Cole, E. E.; Setzer, J. L. The effects of autoionisation on vibrational branching ratios and photoelectron angular distributions in molecular photoionisation: the creation of the ground state of O_2^+ between 374 and 600 Å. <i>J. Phys. E</i> 14, 657 (1981); United Kingdom
7977	A03 $Li^+ + H_2$	E	50-400 eV	Itoh, Y.; Kobayashi, A.; Kurehko, Y. Rotational excitation of H_2 molecules by Li^+ impact in the energy range from 50-400 eV. <i>J. Phys. E</i> 14, 675 (1981); Japan
7978	A06 $S^{2+} + Kr; S^{2+} + Xe; S^{2+} + Kr; S^{2+} + Xe; S^{2+} + Kr; S^{2+} + Xe$	E	32-48 MeV	Reor, D.; Rosner, E.; Maron, M.; Schmidt-Ecking, T.; Schuch, R. Inner-shell effect on the sulphur projectile charge state after single close collisions with rare gases. <i>J. Phys. E</i> 14, 652 (1981); Israel
7979	A03 $Nb + Nb; Kr + Kr; Ni + Ni; Ba + Ba$	T	1 MeV amu ⁻¹	Jäger, H. U.; Gippner, P.; Heirig, K. H.; Richter, T.; Trushka, A. F.; Wolltjenek, H. 2p (small signal) and 1s (small signal) NO radiation and their high-energy tails in heavy-ion collisions. <i>J. Phys. E</i> 14, 701 (1981); West Germany
7980	A03 $He^{2+} + He$ A06 $He^{2+} + He$ E03 $e + He$	E	A03; A06 200 keV E03 200 eV	Bloemen, E. W. P.; Winter, H.; Merk, J. D.; Dijkkamp, L.; Barnds, D.; de Heer, F. J. Absolute elastic cross sections at 30.4 nm for e-He collisions and at 20.0 nm for He ²⁺ -He collisions. <i>J. Phys. E</i> 14, 717 (1981); The Netherlands
7981	E02 $e + H_2$ E03 $e + H_2$ E17 $e + H_2$	T	0.01-1.0 Ry	Gibson, T. L.; Morrison, M. A. Computer model exchange potentials for low-energy e-H ₂ collisions with and without polarisation effects. <i>J. Phys. E</i> 14, 727 (1981); United States
7982	E05 $e + Xe$	E	6-14 keV	Aydinli, M. L-subshell ionisation cross sections for xenon by electron impact near threshold region. <i>J. Phys. E</i> 14, 741 (1981); United Kingdom
7983	E03 $e + N_2^+; e + O_2^+; e + H_2C^+; e + D_2O^+$ E04 $e + N_2^+; e + O_2^+; e + H_2O^+; e + D_2O^+$ E06 $e + N_2^+; e + O_2^+; e + H_2O^+; e + D_2O^+$	T	Undef	Cunningham, A. J.; C'Malley, T. F.; Fobser, H. P. On the role of vibrational excitation in dissociative recombination. <i>J. Phys. B</i> 14, 772 (1981); United States
7984	A05 $Sr^+ + Ar$ A12 $Sr^+ + Ar$	E	Undef	Lewis, E. L.; Salter, J. M.; Harris, M. The polarisation of collisionally redistributed fluorescence resulting from line wing excitation. <i>J. Phys. B</i> 14, L173 (1981); United Kingdom
7985	H08 $h\nu + Rb$	E	Undef	Crubellier, A.; Liberman, S.; Fillet, P.; Schwaighofer, M. G. Experimental study of quantum fluctuations of polarisation in superradiance. <i>J. Phys. E</i> 14, L177 (1981); France
7986	H04 $h\nu + Hg; h\nu + Cd$ H06 $h\nu + Hg; h\nu + Cd$	E	2-26 eV	Schönhausen, G. Photoelectron angular distribution for mercury 5d and cadmium 4d. <i>J. Phys. B</i> 14, L187 (1981); West Germany

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7997	H02 $h\nu + I_2$ H04 $h\nu + I_2$	E	12500-7000 cm^{-1}	Gerstenhorn, S.; Luc, P.; Verges, J. On the ground vibrational level of the $A^1\pi_g(\text{sub } u)$ state of the I_2 molecule. <i>J. Phys. B</i> 14, L192 (1981) France
7998	A96 $H^+ + H$	T	1.1-10 MeV	Miraglia, J. E.; Piacentini, P. C.; Fivercia, R. D.; Salin, A. Discussion of electron capture theories for ion-atom collisions at high energies. <i>J. Phys. B</i> 14, L157 (1981) Argentina
7999	E12 Undef	T	Undef	Erubarev, E. G. On the forward dispersion relation for positron-atom scattering for the case of an anomalous threshold. <i>J. Phys. B</i> 14, L263 (1981) Soviet Union
7990	H04 $h\nu + H_2C$ H06 $h\nu + H_2C$	T	13-38 eV	Dolaney, J. J.; Saunders, V. P.; Miller, I. h. Stieltjes-Tchebyscheff calculations in the static-exchange approximation of photo-excitation and ionization in water. <i>J. Phys. B</i> 14, E15 (1981) United Kingdom
7991	A11 $Cs^+ + Cs$	E	Undef	Nakayama, S.; Kelly, F. P.; Series, G. h. Hyperfine structures, lifetimes and collisional cross sections of some Rydberg ℓ states of ^{133}Cs . <i>J. Phys. B</i> 14, 835 (1981) United Kingdom
7992	H06 $h\nu + Ba$; $h\nu + Yb$	E	27-35 eV	Holland, D.M.P.; Codling, A.; Chesterlain, A. h. Double ionization in the region of the $5p$ thresholds of Ba and Yb. <i>J. Phys. B</i> 14, 835 (1981) United Kingdom
7993	A96 $C^{2+} + Al$; $C^{3+} + Al$; $C^{4+} + Al$; $C^{5+} + Al$ C06 $C^{2+} + Al$; $C^{3+} + Al$; $C^{4+} + Al$; $C^{5+} + Al$	E	12 MeV	Laubert, R.; Muldt, S.; Bräunig, M.; Liljet, L.; Elston, S.; Thon, R. S.; Seiler, I. h. Charge electrons from solids in coincidence with emergent projectile charge state. <i>J. Phys. B</i> 14, 855 (1981) United States
7994	A96 $H^+ + H$ A18 $H^+ + H$	T	2-5 a.u.	Garibotti, C. R.; Miraglia, J. E. Asymmetry of the CTC peak in the forward cross section for ionization of a H atom by a fast stripped ion. <i>.. Phys. B</i> 14, 863 (1981) Argentina
7995	A06 $C^{2+} + H$; $H^{2+} + H$; $O^{2+} + H$ A07 $C^{2+} + H$; $H^{2+} + H$; $O^{2+} + H$	T	$2-3 \times 10^7$ eV	Shipsey, E. J.; Browne, J. C.; Gleck, R. E. Electron capture and ionization in C^{2+} , H^{2+} , $O^{2+} + H$ collisions. <i>J. Phys. B</i> 14, 869 (1981) United States
7996	A06 $Ne^+ + He$; $Ne^{2+} + He$; $Ne^{3+} + He$ $Ne^{2+} + He$; $Ar^+ + Ar$; $Ar^{2+} + Ar$ $Ar^{2+} + Ar$; $Ar^{3+} + Ar$	E	2-16 keV	Kaneh, Y.; Iwaki, T.; Uehara, S.; Kikuchi, F.; Kikuchi, M.; Tsurubuchi, S.; Kimura, M.; Tawara, h. Symmetric resonance multiple charge transfer of $he(\text{sup } q)^+$ and $Ar(\text{sup } q)^+$ (q is less than or equal to 4). <i>J. Phys. B</i> 14, 881 (1981) Japan
7997	E02 $e + H_2$ E14 $e + H_2$	T	77 K	Chang, E. S. Modified effective-range theory for electron scattering from molecules. <i>J. Phys. B</i> 14, 893 (1981) United States
7998	E09 $e + Li$ Seq; $e + Be$ Seq; $e + B$ Seq E05 $e + Li$ Seq; $e + Be$ Seq; $e + B$ Seq	T	1-20 Threshold	Sawyer, D. M.; Golden, L. E. Ionization cross sections with the inclusion of excitation-autoionization contributions for ions with five or fewer bound electrons. <i>J. Phys. B</i> 14, 903 (1981) United States
7999	A03 Undef	T	Undef	Flannery, M. P. Ion-ion recombination in $(X^+ + Y^- + Z)$ systems at low gas densities: II. Elastic ion-neutral collisions. <i>J. Phys. B</i> 14, 915 (1981) United States
8000	H06 $h\nu + CCl_4$	T	1 ⁺ -50 eV	Swanson, J. R.; Dill, D.; Dehmer, J. L. Vibrational effects in the shape-resonant photoionization of CCl_4 . <i>J. Phys. B</i> 14, L207 (1981) United States
8001	B07 Undef	T		Donato, P.; Ferrante, G.; Fucina, S. Particle scattering in the presence of a spatially inhomogeneous laser field. <i>J. Phys. B</i> 14, L213 (1981) Italy

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0002	E03 $e + H_2$ E04 $e + H_2$	E	30-200 eV	McCarthy, J. W.; Dassen, H. W.; Paschall, J. C. Repulsive-state symmetry determination using threshold polarisation measurements. <i>J. Phys. E</i> 14, L222 (1981); Canada
0003	E12 $e^+ + H_2$	E	0-4 Td	Bose, N.; Paul, D.A.L.; Tsai, J.-S. Positron drift in molecular hydrogen. <i>J. Phys. E</i> 14, L227 (1981); Canada
0004	N06 $2h\nu + Ca$	T	Undef	Cocles, A.; Jacque, M.; Bachman, P.; Lepinche, G. Differential electron spin polarisation effects in the two-photon ionisation of atomic calcium. <i>J. Phys. E</i> 14, 965 (1981); France
0005	All $Rb^+ + He$; $Rb^+ + Ne$; $Rb^+ + Ar$; $Rb^+ + Kr$; $Rb^+ + Xe$	T	Thermal	Mahn, V. Thermal collisions of high Rydberg atoms with neutral particles: I. General theory and modified impulse approximation. <i>J. Phys. B</i> 14, 585 (1981); France
0005	A03 $Ar^+ + Ar$; $Ar^{2+} + Ar$ A07 $Ar^+ + Ar$; $Ar^{2+} + Ar$ A10 $Ar^+ + Ar$; $Ar^{2+} + Ar$	T	10^{-4} -700 keV	Shanker, R.; Bille, R.; Hippler, R.; Bille, G.; Lutz, M. O. Impact parameter dependence of Ar L-shell excitation in slow Ar-Ar collisions. <i>J. Phys. E</i> 14, 557 (1981); West Germany
0007	A10 $Ca^+ + He$; $Ca^+ + Ne$; $Ca^+ + Ar$; $Ca^+ + Kr$; $Ca^+ + Xe$; $Rb^+ + He$; $Rb^+ + Ne$; $Rb^+ + Ar$; $Rb^+ + Kr$; $Rb^+ + Xe$	E	320-341 K	Munster, P.; Marek, J. Determination of cross sections of excitation transfer between the fine-structure components of $Ca(7^2P)$, $Rb(5^2P)$ and $Kr(7^2F)$ induced by collisions with rare-gas atoms. <i>J. Phys. E</i> 14, 1005 (1981); West Germany
0008	A03 $He^+ + Ar$; $He^{2+} + Ar$ A06 $He^+ + Ar$; $He^{2+} + Ar$ A10 $He^+ + Ar$; $He^{2+} + Ar$	T	0-24 MeV	Burgdörfer, J. Angular momentum coherences in the differential capture amplitude of hydrogen. <i>J. Phys. E</i> 14, 1019 (1981); West Germany
0009	A06 $H^+ Seq + H$	T	137 keV	Crothers, E.S.F. Continuum distorted waves: capture into the n th shell. <i>J. Phys. E</i> 14, 1035 (1981); United Kingdom
0010	E02 $e + H$ E17 $e + H$	T	12-50 eV	Fon, B. C.; Barrington, R. A.; Hurpe, P. G.; Kingston, A. E. Elastic scattering of electrons by atomic hydrogen at intermediate energies. <i>J. Phys. B</i> 14, 1041 (1981); United Kingdom
0011	E02 $e + H_2$ E17 $e + H_2$	T	10 ⁻⁴ -2000 eV	Lee, M.-T.; Freitas, L.C.G. Incoherent renormalised multicentre potential model for elastic scattering of electrons by linear molecules at intermediate and high energies. <i>J. Phys. B</i> 14, 1052 (1981); Brazil
0012	E02 $e + He$ E03 $e + He$ E05 $e + He$	E, T	52-63 eV	van de Water, W.; Haideman, H.G.P. The effect of resonances and angular momentum exchanges in post-collision interaction. <i>J. Phys. B</i> 14, 1065 (1981); The Netherlands
0013	E03 $e + Gd$; $e + Ta$; $e + Te$; $e + Au$; $e + Pb$; $e + Bi$; $e + Th$ E05 $e + Gd$; $e + Ta$; $e + Te$; $e + Au$; $e + Pb$; $e + Bi$; $e + Th$	E	10-22 MeV	Johnston, P. W.; Spicer, M. W.; Teistoe, F. L-shell ionisation by relativistic electrons. <i>J. Phys. B</i> 14, 1077 (1981); Australia
0014	D02 Review	T	Undef	Sigmund, P. Sputtering: historical comments. p.1 in Symposium on Sputtering, P. Varga, G. Betz, and F. F. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Canada
0015	D02 $Ar^+ + Cu$	T	0-20 keV	Harrison, D. F., Jr. Full lattice simulation of atom ejection mechanisms and sputtering. p.38 in Symposium on Sputtering, P. Varga, G. Betz, and F. F. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). United States

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8016	D02 Review	E T	1-1000 keV	Thompson, D. A. Non-linear effects in sputtering. p.62 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Canada
8017	D02 Be ⁺ + Au; K ⁺ + Au; Ba ⁺ + Au; Ar ⁺ + Au; Ca ⁺ + Au; Na ⁺ + Au; Xe ⁺ + Au; Er ⁺ + Au; Au ⁺ + Au	T	0-2 keV	Now, P. The influence of induced surface point defects on sputtering from metals. p.101 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Belgium
8018	D02 Undef	T	Undef	Blarsock, J. P. Sputtering predictions by the Monte-Carlo program TRIM-SP. p.112 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). West Germany
8019	D02 Sb ⁺ + Ag; Sb ₂ ⁺ + Ag; Sb ₃ ⁺ + Ag	T	1-300 keV	Nørhøj, K. L.; Jørgen, W. Spike erosion mechanisms. p.113 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Denmark
8020	D02 Ar ⁺ + Ag; Ar ⁺ + Ti; Ar ⁺ + Zr	E	157-900 keV	Kruger, W.; Schermann, A.; Alfridi, F.; Bräuer, G. The influence of the inelastic stopping power on the sputtering yield. p.125 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). West Germany
8021	D02 Review	E T	0.1-20 keV	Yurasova, V. E.; Eltekhov, V. A. Models of single crystal sputtering. p.124 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Soviet Union
8022	D02 Ar ⁺ + Cu	T	1-5 keV	Eltekhov, V. A.; Mazvina, L. P.; Fosch, L. A.; Yurasova, V. E. Computer simulation of single crystal sputtering by dynamic models of small area blocks. p.203 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Soviet Union
8023	D02 Ar ⁺ + Al	E	27 keV	Scheerschildt, G.; Shelyshin, L. E.; Mazvina, L. P.; Popova, E. E.; Yurasova, V. E. Temperature dependence of the differential sputtering yield of nichel. p.216 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Soviet Union
8024	D02 Ar ⁺ + Cu; Kr ⁺ + Cu; Xe ⁺ + Cu	E T	0.75-5 keV	van Veen, A.; de Wit, A.G.J.; Fliet, J. P. Surface ejection of random and focused metal recoils from ion bombarded single crystals. p.226 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). The Netherlands
8025	D02 Ne ⁺ + Au; Ne ⁺ + Au; Ar ⁺ + Au; Kr ⁺ + Au; Xe ⁺ + Au	E	1-15 keV	Szyoczak, W.; Wittmann, K. Anisotropic emission in sputtering of a (111) gold single crystal. p.236 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). West Germany
8026	D02 Ar ⁺ + [B + Al]	E	3.4 keV	Lebuncu, V. A.; Borisenko, V. E. Influence of impurities in monocrystalline silicon on temperature dependence of sputtering. p.247 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Soviet Union
8027	D02 Ar ⁺ + Cu	F	30 keV	Belashova, L. L.; Borisov, A. R.; Isdenov, A. I.; Meshkova, E. S.; Polchenov, V. A. Directional effects for fast ionized recoils. p.255 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Soviet Union

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
8028	D02 Xe ⁺ + AgBr + Au; Xe ⁺ + Mg + Au; Xe ⁺ + Cu + Au; Xe ⁺ + H ⁺ + Au; Xe ⁺ + He ⁺ + Au; Xe ⁺ + Ar ⁺ + Au; Ar ⁺ + [Ni + U]; Ar ⁺ + CoAu; He ⁺ + NaI; Ar ⁺ + NaI; Kr ⁺ + NaI; Xe ⁺ + NaI; Xe ⁺ + CdI ₂ ; Xe ⁺ + RbCl; Xe ⁺ + RbBr; Xe ⁺ + RbI; Xe ⁺ + NaI; Xe ⁺ + AgBr; Xe ⁺ + AgF; Xe ⁺ + PbI ₂	E	2.5-30 keV	de Vries, A. E. Energy distributions of sputtered neutral particles by ion bombardment. p.226 in Symposium on Sputtering, P. Varga, G. Betz, and F. F. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). The Netherlands
8029	D02 Ar ⁺ + Au	E	20 keV	Raid, I.; Formery, B. W.; Thompson, P. W. Assisted focusing in the (100) ejection of atoms from sputtering Au crystals. p.280 in Symposium on Sputtering, P. Varga, G. Betz, and F. F. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). United Kingdom
8030	D03 H ⁺ + Si; H ₂ ⁺ + Si	E	2-6 keV	Shawdon, R. J.; Taglawer, E.; Pelland, W. Two-body ionization recombination with diabatic curve crossing: a new mechanism for sputtered molecule production. p.254 in Symposium on Sputtering, P. Varga, G. Betz, and F. F. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). West Germany
8031	D02 H ⁺ + Cu; Ar ⁺ + Cu; He ⁺ + Cu; He ⁺ + Cu; He ⁺ + Cu; Xe ⁺ + Cu	T	0.25-20 keV	Roosendaal, M. E.; Sanders, J. B. Anisotropy effects in the energy and angular distribution of sputtered particles. p.302 in Symposium on Sputtering, P. Varga, G. Betz, and F. F. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). West Germany
8032	D02 H ⁺ + SF ₆ ; H ₂ ⁺ + SF ₆ ; He ⁺ + SF ₆ ; Ar ⁺ + SF ₆ D03 H ⁺ + SF ₆ ; H ₂ ⁺ + SF ₆ ; He ⁺ + SF ₆ ; Ar ⁺ + SF ₆	E	6 keV	Szymanski, P.; Feschke, U.; Fedrys, R.; Haring, A.; Haring, R. A.; Roosendaal, M. E.; Saris, F. W.; de Vries, A. E. The energy distribution of molecules sputtered from frozen SF ₆ . p.216 in Symposium on Sputtering, P. Varga, G. Betz, and F. F. Viehbock, eds. Institut für Allgemeine Physik, (1980). The Netherlands
8033	D02 He ⁺ + LiI; He ⁺ + RbI; Ar ⁺ + LiI; Ar ⁺ + RbI; Kr ⁺ + LiI; Kr ⁺ + RbI; Xe ⁺ + LiI; Xe ⁺ + RbI	E	3-7 keV	Szymanski, M.; de Vries, A. E. Beam induced decomposition and sputtering of LiI and RbI. p.226 in Symposium on Sputtering, P. Varga, G. Betz, and F. F. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Poland
8034	D02 Undef	T	Undef	Szaferz, J. J.; Auvakin, N. V.; Lushkov, P. V. The shape of surface potential barrier for Cu and Ni. p.327 in Symposium on Sputtering, P. Varga, G. Betz, and F. F. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Poland
8035	D02 Ar ⁺ + Si; Ar ⁺ + XeF ₂ + Si D11 XeF ₂ + Si	E	D02 0.5-5 keV D11 30° K	Tu, Y. Y.; Chuang, T. J.; Winters, H. F. The chemical sputtering of fluorinated silicon. p.337 in Symposium on Sputtering, P. Varga, G. Betz, and F. F. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). United States
8036	D02 Review D17 Review	E	Undef	Kelly, R. On the possible role of surface segregation in bombardment-induced compositional changes with alloys. p.398 in Symposium on Sputtering, P. Varga, G. Betz, and F. F. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). United States
8037	D17 He ⁺ + Ta ₂ O ₅ ; He ⁺ + TeC; He ⁺ + WC; He ⁺ + Al ₂ O ₃ ; He ⁺ + BeO	E	0.3-4 keV	Taglawer, E.; Melland, W. Changes of the surface composition of compounds due to light ion bombardment. p.423 in Symposium on Sputtering, P. Varga, G. Betz, and F. F. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). West Germany
8038	D02 Ar ⁺ + [Au + Cu]; H ₂ ⁺ + [Au + Cu]	E	1 keV	Besten, R.; Bohdanek, J. Preferential sputtering in copper-gold alloys by low energy hydrogen ions. p.430 in Symposium on Sputtering, P. Varga, G. Betz, and F. F. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). United States

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8939	D82 Ar ⁺ + Cu ₂ Au; Ar ⁺ + AgAu; Xe ⁺ + Cu ₂ Au; Xe ⁺ + AgAu	E	15-200 keV	Anderson, M. K.; Basenbacher, F.; Goodkoop, P. Transients in the composition of the sputtered flux from Cu, Au and AgAu. p.446 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Denmark
8940	D82 He ⁺ + [Pt + Rh]; He ⁺ + [Pt + Rh] D17 He ⁺ + [Pt + Rh]; He ⁺ + [Pt + Rh]	E	0.5-5.0 keV	Neilsen, G. C. Sputter yield determination for binary alloys. p.457 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). United States
8941	D82 Ar ⁺ + VC	E	5 keV	Morita, K.; Nakamura, M.; Itoh, K.; Miyagawa, S. Sputtering yield of vanadium atoms from vanadium carbide thin films. p.469 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Japan
8942	D82 Ar ⁺ + Cr D17 Ar ⁺ + Cr	E	3 keV	Klaus, M. The composition of thin chromium films deposited under UHV-conditions before and after exposure to atmospheric oxygen. p.477 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Austria
8943	D83 He ⁺ + Co; He ⁺ + R	E	1 keV	Krauss, A. R.; Cruen, E. M. Sputtering and secondary ion emission properties of alkali metal films and adsorbed monolayers. p.484 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). United States
8944	D13 H ⁺ + [C + Fe]; H ⁺ + [O + Fe]	E	30-100 keV	Whaley, R.; Legg, R. O.; Thomas, L. S. Sputtering of adsorbed oxygen. p.505 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). United States
8945	D81 Undef D17 Undef	T	Undef	Gross-Mertl, A.; Sigmond, P. Distortion of depth profiles during ion bombardment: II. Rising mechanisms. p.512 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Denmark
8946	D81 Undef	T	Undef	Littmark, U. Recoil mixing in amorphous solids. p.541 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Denmark
8947	D82 Ar ⁺ + Cu	E	45 keV	Whitton, J. L.; Carter, C. The development of surface topography by heavy ion sputtering. p.552 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Denmark
8948	D82 Undef	E	50 eV	Vehner, G. K.; Yurista, P. The role of whisker growth in core formation on sputter targets. p.573 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). United States
8949	D82 Undef	T	Undef	Beeson, J.; Wilson, I. M. Equations for redeposition of sputtered flux on to surface asperities. p.574 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). United Kingdom
8950	D82 Ga ⁺ + Cd	E	30-300 keV	Wilson, I. M. Self-ion bombardment of germanium. p.584 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). United Kingdom
8951	D82 Kr ⁺ + Cu	T	12 keV	Auciello, O.; Kelly, P. The evolution of pyramidal structures on surfaces bombarded at 60°. p.594 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980). Canada

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0052	D02 Ar ⁺ + Si	E	8 keV	Carter, G.; Hobbs, M. J.; Lewis, G. W.; Whittton, J. L. Combined sputtering yield and surface topography development studies on Si. p.604 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980) United Kingdom
0053	D02 Ar ⁺ + Inconel	E	8 keV	Navinsch, B.; Paternei, M.; Zathar, A. Surface erosion of nickel-base alloys by low energy argon ion bombardment. p.614 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980) Yugoslavia
0054	D02 Ar ⁺ + Fe	E	13 keV	Alexander, V.; Lippold, M. J.; Niesrig, W. Relations between the orientation of ion bombarded (111)-oriented single crystals, faceted cones and sputtering spot patterns. p.E22 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980) West Germany
0055	D02 Ar ⁺ + Cu	E	40 keV	Emoth, B.; Mac-Ming, C.; Whittton, J. L.; Kraus, M.; Littmark, U.; Refer, W. U. The influence of surface structures on sputtering: angular distribution from pyramid-covered single crystal copper. p.E22 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980) Sweden
0056	D03 Review D04 Review	T	Under	Krebs, K. H. Common phenomena in the different ion-induced emission from solid surfaces. p.642 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980) East Germany
0057	D02 Review D04 Review D09 Review	T	Under	Parilla, E. S. Electron emission and sputtering under multiple charged ion bombardment of solid surfaces. p.644 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980) Soviet Union
0058	D04 He ⁺ + Ni	E	5 keV	Soszka, M.; Soszka, W. Ion-electron emission from nickel surface in presence of gas environment. p.682 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980) Poland
0059	D07 H ⁺ + Cu; H ⁺ + Ni; H ₂ ⁺ + Cu; H ₂ ⁺ + Ni; H ₂ ⁺ + Cu; H ₂ ⁺ + Ni; D ₂ ⁺ + Au	T	0.2-10 keV	Bitensky, I. F.; Parilla, E. S. Scattering of swift molecules and knocking-out of high energy cluster at correlated collisions on solid surface. p.688 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980) Soviet Union
0060	D02 Ar ⁺ + Al; Ar ⁺ + Si; Ar ⁺ + Cu	E	8 keV	Giber, J.; Hofer, W. G. A post-ionization experiment with sputtered neutral clusters. p.657 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980) West Germany
0061	D13 hv + Ag; hv + Al; hv + C	E	Under	Furstenau, H.; Hillenkamp, F. Laser-induced cluster ions from foils of metals and semiconductors and thermodynamic properties of the phase transition. p.707 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980) West Germany
0062	D03 Under D13 Under	T	Under	Krueger, F. R. Diabatic electric surface field phenomena in sputtering and desorption processes. p.717 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980) West Germany
0063	D03 Xe ⁺ + Pb; Xe ⁺ + Ga; Xe ⁺ + Ti	E	10-100 keV	Andersen, L.; Andrasen, E.; Vejse, E. Atomic excitation in sputtering processes. p.726 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut für Allgemeine Physik, Austria, (1980) Denmark

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8064	D01 Undef	E	Undef	Pranevicius, L. J.; Ragaughan, A. L. Investigation of formation dynamics of the semiconductor surface recombination states during the process of ion sputtering. p.736 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut fur Allgemeine Physik, Austria, (1980) Soviet Union
8065	D14 $\text{H}^+ + \text{Al}$; $\text{H}^+ + \text{LiNbO}_3$; $\text{He}^+ + \text{Al}$; $\text{He}^+ + \text{LiNbO}_3$; $\text{Ne}^+ + \text{Al}$; $\text{Ne}^+ + \text{LiNbO}_3$; $\text{Ar}^+ + \text{Al}$; $\text{Ar}^+ + \text{LiNbO}_3$	E	100 keV	Domarkeas, V. J.; Jonellunas, S. P.; Pranevicius, L. J.; Valatka, R. J. Investigation of blister kinetics by measuring a surface acoustic wave velocity variation. p.746 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut fur Allgemeine Physik, Austria, (1980) Soviet Union
8066	D02 Undef	E	Undef	Preislinger, A.; Buhl, R. Ejection processes from surfaces stimulated by electrons and photons. p.756 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut fur Allgemeine Physik, Austria, (1980) Austria
8067	D02 Review	E T	Undef	Townsend, P. F. Electron sputtering of alkali halides. p.757 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut fur Allgemeine Physik, Austria, (1980) United Kingdom
8068	D02 $e + \text{FbBr}$; $e + \text{CsBr}$; $e + \text{RbI}$	E	500 eV	Szymorshi, M. The electron sputtering process in alkali halides. p.761 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut fur Allgemeine Physik, (1980) Poland
8069	D02 $\text{H}^+ + \text{PERT}$; $\text{D}^+ + \text{PERT}$; $\text{He}^+ + \text{PERT}$ J04 Review R04 Review	E T	0.1-10 keV	Roth, J. Sputtering with light ions. p.773 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut fur Allgemeine Physik, Austria, (1980) West Germany
8070	D02 $\text{D}_3^+ + \text{F}_2$; $\text{D}_3^+ + \text{H}_2$; $\text{H}_3^+ + \text{F}_2$; $\text{H}_3^+ + \text{H}_2$	E	8 keV	Borjesen, F.; Schou, J.; Sorensen, P. Erosion of thin films of D_2 by keV light ions. p.722 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut fur Allgemeine Physik, Austria, (1980) Denmark
8071	D02 Undef	E	0.1-2.2 MeV	Besantacher, F.; Bottiger, J.; Hansen, J. L. Erosion of frozen gas films by swift protons and helium ions. p.832 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut fur Allgemeine Physik, Austria, (1980) Denmark
8072	D02 Undef	E	Undef	Bay, P. L.; Bohdansky, J.; Hofer, V. C.; Roth, J. Sputtering-yield mechanisms for light-ion sputtering at normal and oblique angle of incidence. p.832 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut fur Allgemeine Physik, Austria, (1980) West Germany
8073	D02 $n + \text{Nb}$; $\text{H}^+ + \text{Nb}$	E T	10-16 MeV	Bierbeck, J. P.; Riccato, A.; Uecker, M. Sputtering by high energy protons and neutrons. p.833 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut fur Allgemeine Physik, Austria, (1980) West Germany
8074	D02 $\text{He}^+ + \text{Ta}$; $\text{He}^+ + \text{U}$; $\text{Ne}^+ + \text{Ta}$; $\text{Ne}^+ + \text{U}$; $\text{Ar}^+ + \text{Ta}$; $\text{Ar}^+ + \text{U}$; $\text{Kr}^+ + \text{Ta}$; $\text{Kr}^+ + \text{U}$	E	3.15-3.6 keV	Mechtl, E.; Mondensky, J.; Roth, J. Sputtering yield dependence on ion mass at low energy for Ta and U. p.834 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut fur Allgemeine Physik, Austria, (1980) West Germany
8075	D02 $n + \text{V}$	E	Undef	Matsuura, T.; Sengui, Y.; Hishizawa, R.; Morita, Y.; Shinagawa, M. Sputtering of vanadium and some other metals by neutron impact. p.876 in Symposium on Sputtering, P. Varga, G. Betz, and F. P. Viehbock, eds. Institut fur Allgemeine Physik, Austria, (1980) Japan

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8076	D03 hv + H H06 hv + H	T	HC5 1.701-3000 R ₁	Scholtz, W.; Herold, H.; Muer, F.; Bunner, C. The photoionization of the hydrogen atom in strong magnetic fields. <i>Astron. Astrophys.</i> 54, 154 (1981); West Germany
8077	H04 hv + H ¹⁸⁺	T	Undef	Raassen, A.J.J.; Hansen, J. L. Forbidden lines of four and five times ionized iron and nickel in the spectra of PR telescopes and alpha crinoids. <i>Astrophys. J.</i> , Part 1, 242, 217 (1981) The Netherlands
8078	D06 e + C; e + Si; e + SS; e + Ge; e + Mo; e + V; e + Au	E	1.7-3.0 keV	Gergely, G.; Crozza, B.; Meyhard, M. Backscattering spectra of medium energy electrons. <i>Acta Phys. Acad. Sci. Hung.</i> 48, 337 (1980) Hungary
8079	A05 H ⁺ + PERT; He ²⁺ + PERT; N + PERT; O + PERT A07 H ⁺ + PERT; He ²⁺ + PERT; N + PERT; O + PERT	E	(-100 MeV	Paul, H. X-rays induced by light ions. <i>Acta Phys. Acad. Sci. Hung.</i> 49, 39 (1980) Austria
8080	D02 Xe ⁺ + Ag; Kr ⁺ + Ag; Ar ⁺ + Ag; Ne ⁺ + Ag; Ar ⁺ + Si; Ar ⁺ + Ge; Ar ⁺ + Cu; Ar ⁺ + Au	T	0.1-1000 keV	Stelanko, J. Yudin's approximation of nuclear stopping power in the scattering of ions. <i>Acta Phys. Pol. A</i> 50, 827 (1980) Poland
8081	C08 H ⁺ + Si; He ⁺ + Si	E	1.5-2.0 MeV	Mannes, M.; Kikura, K.; Kuchino, A.; Matsushita, P.; Matsuki, H. Effects of dislocation on planar channelling of energetic H ⁺ and He ⁺ ions. <i>J. Phys. Soc. Jpn.</i> 49, 2319 (1980) Japan
8082	A06 He + H ₂ ; He + He; He + N ₂ ; He + O ₂ ; He + CO ₂ ; He + CH ₄ ; He + C ₂ H ₆ ; He + C ₃ H ₈ A08 He + H ₂ ; He + He; He + N ₂ ; He + O ₂ ; He + CO ₂ ; He + CH ₄ ; He + C ₂ H ₆ ; He + C ₃ H ₈ C06 He + H ₂ ; He + He; He + N ₂ ; He + O ₂ ; He + CO ₂ ; He + CH ₄ ; He + C ₂ H ₆ ; He + C ₃ H ₈	E	0.7-2.0 MeV	Itoh, A.; Fukuzawa, T. Equilibrium charge distributions of helium atoms in various gases. <i>J. Phys. Soc. Jpn.</i> 57, 632 (1980) Japan
8083	C02 e + Si	T	10-30 keV	Merli, P. G.; Rose, P. Influence of the electron incidence angle on "quasi-adiabatic" heating of silicon. <i>Cptik</i> 58, 201 (1981) Italy
8084	A12 Cs + Kr A17 Cs + Kr	T	371 °C	Czuchaj, E. Study of collision-induced absorption in dipole electronic transitions of alkali-rare gas atom pairs. <i>Z. Phys. A</i> 294, 237 (1980) Poland
8085	E05 e + PERT	T	Undef	Campbell, R. I.; Inch, S. Semiempirical description of the PBA scaled electron ionization cross sections for atoms. <i>Z. Phys. A</i> 299, 95 (1981) Romania
8086	A19 Xe + Au; Xe + Pb; Xe + Th; Pb + Cu; Pb + U; Pb + Pb	T	3.6-8.5 MeV/amu	Goff, G.; Muller, B.; Greiner, W. Systematics of inner-shell ionization in super-heavy molecules. <i>Z. Phys. A</i> 299, 149 (1981) West Germany
8087	C07 He ⁺ + C; B ²⁺ + C; B ³⁺ + C; C ³⁺ + C; N ²⁺ + C; N ³⁺ + C; O ²⁺ + C	E	1-18 MeV	Mitsche, W.; Meckmann, P. H.; Trebert, E.; von Buttlar, H. Beam-foil excitation studies of hydrogen-like ions. <i>Z. Phys. A</i> 299, 301 (1981) West Germany
8088	A06 Ar ²⁰⁺ + H; Ar ²⁰⁺ + H; Ar ²⁰⁺ + H; Ar ²⁰⁺ + H; Ar ²⁰⁺ + H; Ne ²⁰⁺ + H; Ne ²⁰⁺ + H; Ne ²⁰⁺ + H; Ne ²⁰⁺ + H	E	1.7-15.0 keV	Muher, B. A. Electron capture by slow multiply charged Ar and Ne ions from atomic hydrogen. <i>Z. Phys. A</i> 255, 307 (1981) West Germany
8089	D14 He ⁺ + Fe	E	3-10 keV	Okuda, S.; Kuwahara, H. Backscattering method for the study of blistering with energy-distributed He particles. <i>Appl. Phys. Lett.</i> 31, 23 (1981) Japan

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9090	A04 $O_2^+ + I_2$ A16 $O_2^+ + I_2$	E	320 K	Heller, J. F.; Young, P. H.; McVester, P. L.; Wieserfeld, J. F. Direct observations of I_2 collisional dissociation by O_2^+ [$1^1(\text{sub } g)^+$]. Appl. Phys. Lett. 28, 494 (1981) United States
9091	D02 $O_2^+ + [Al + Ni]; O_2^+ + [Cr + Ni];$ $O_2^+ + [Fe + Ni]; O_2^+ + [Pd + Ni];$ $O_2^+ + [Cu + Ni]; O_2^+ + [Ag + Pd]$ D17 $O_2^+ + [Al + Ni]; O_2^+ + [Cr + Ni];$ $O_2^+ + [Fe + Ni]; O_2^+ + [Pd + Ni];$ $O_2^+ + [Cu + Ni]; O_2^+ + [Ag + Pd]$	E	15 keV	Yu, M. .; Fester, W. Surface compositional modifications during O_2^+ bombardment of binary alloys. Appl. Phys. Lett. 38, 525 (1981) United States
9092	D14 $He^+ + Al$	E	150 keV	Gragg, J.; Choyke, W. J.; Tzeng, C. F.; Chamberlain, C. L.; Doyle, A. J.; Petrucci, D. P. Multiple layer spalling in single-crystal Al during He ion implantation. Appl. Phys. Lett. 38, 528 (1981) United States
9093	D02 $Ar^+ + Si_3N_4; He^+ + Si_3N_4$ D17 $Ar^+ + Si_3N_4; He^+ + Si_3N_4$	E	0.5-2.0 keV	Bhattacharya, R. S.; Holcombe, P. F. Preferential sputtering of Si_3N_4 . Appl. Phys. Lett. 38, 545 (1981) United States
9094	D17 $e + Si; O_2^+ + Si; Ar^+ + Si$	E	2-15 keV	Seuter, W.; Wittmann, K. An AES-SIPS study of silicon oxidation induced by ion or electron bombardment. Appl. Surf. Sci. 5, 221 (1980) West Germany
9095	D07 $He^+ + NaF; He^+ + MgF_2; He^+ + AlF_3$	E	0.5-4.0 keV	McCune, R. C. $^4He^+$ ion scattering spectroscopy of AlF_3, MgF_2, NaF and $NaCl$ below 5.0 keV. Appl. Surf. Sci. 5, 275 (1980) United States
9096	D11 $O_2 + Ru$	E	320-900 K	Pralline, G.; Koel, B. E.; Lee, H.-I.; White, J. M. Incorporation of oxygen chemisorbed on Ru(001). Appl. Surf. Sci. 5, 256 (1980) United States
9097	D04 $e + MgC$	E	0-28 eV	Thomas, R. E.; Gibson, J. W.; Pass, G. A. Low energy, electron reflection (LEER) and electron affinity of MgC . Appl. Surf. Sci. 5, 258 (1980) United States
9098	D13 $Ar^+ + [CF_4 + SS]; Ar^+ + [H_2 + SS];$ $Ar^+ + [CH_4 + SS]; Ar^+ + [CCl_4 + SS]$	E	520 eV	Erlandsson, E. Ion induced desorption from stainless steel studied with isotope techniques. Appl. Surf. Sci. 6, 473 (1980) Switzerland
9099	A03 $Pb^+ + Rb$ A10 $Pb^+ + Rb$	E	195 K	Gloag, M.; Atkinson, J. A.; Krause, L. $^{208}Pb^{+}$ going to or coming from $^{208}Pb^{+}$ excitation transfer in rubidium in collisions with ground-state Rb atoms. Can. J. Phys. 59, 545 (1981) Canada
9100	A06 $Li^+ + He; He^+ + Li; Rb^+ + He; Ca^+ + Rb$	E T	$5 \times 10^4 - 5 \times 10^7$ cm/s	Hird, B.; Ali, S. P. On the validity of the approximations used in asymmetric charge transfer collision calculations. Can. J. Phys. 59, 576 (1981) Canada
9101	A13 $O^- + CO$ A17 $CO_2^-; CO_2$	T	Underf	Hopper, D. G. Analytic representation of the ground state potential surfaces for CO_2^- and CO_2 . Implications for the $O^- + CO \rightarrow CO_2^+ \rightarrow e$ chemiluminescent reaction and other related processes. Chem. Phys. 52, 81 (1980) United States
9102	A11 $CO^+ + H_2$	E	77-293 K	Brechignac, P.; Picard-Bersellini, P.; Charneau, M.; Leunay, J. P. Rotational relaxation of CO by collisions with H_2 molecules: a comparison between theory and experiment. Chem. Phys. 53, 165 (1981) France
9103	A17 HeN_2	T	Underf	Habitz, P. Potential curves for the ground and excited states of the HeN_2 system. Chem. Phys. 54, 131 (1980) West Germany
9104	G04 Underf G06 Underf	T	Underf	Viehland, L. A.; Lin, S. L.; Meach, E. A. Kinetic theory of drift-tube experiments with polyatomic species. Chem. Phys. 54, 341 (1981) United States

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8105	A17 H_2O	T	Undef	Fedmer, M. J.; Schatz, G. C. An analytical fit to an accurate ab initio ($^{14}A_1$) potential surface of H_2O . Chem. Phys. 54, 365 (1981) United States
8106	A05 $NO + O_2$	E	3.35 eV	van den Ende, E.; Stolte, S. Reactive scattering with a state selected beam; the influence of the internal state and orientation of NO upon the chemiluminescent reactivity with O_2 . Chem. Phys. Lett. 76, 13 (1980) United Kingdom
8107	H08 $hw + NC_2$	E	532 nm	Dulcey, C. S.; McGee, T. J.; McIlrath, T. J. Laser induced fluorescence in NC_2 : absolute fluorescence cross sections and quantum yields. Chem. Phys. Lett. 76, 80 (1980) United States
8108	A06 $MX^+ + H_2; Ar^+ + H_2$	E	Undef	Church, D. A.; Holzschelter, M. P. Charge transfer from H_2 to doubly charged ions. Chem. Phys. Lett. 76, 109 (1980) United States
8109	A11 $N_2^+ + H_2$	T	75-4000 K	Billing, G. D. Semiclassical calculation of the rate constant for the process $N_2(v=1) + H_2(v=0) \rightarrow 2N_2(v=0) + 2330.7 \text{ cm}^{-1}$ at low temperatures. Chem. Phys. Lett. 76, 178 (1980) Denmark
8110	A14 $SO + [SO]_2; SO + SO + M$	E	258 K	Herron, J. T.; Hule, M. E. Rate constants at 258 K for the reactions $SC + SC + M \rightarrow (SC)_2 + M$ and $SL + (SO)_2 \rightarrow SO_2 + S_2O$. Chem. Phys. Lett. 76, 222 (1980) United States
8111	A17 Undef	T	Undef	Galatry, L. The dipole moment induced in a couple of two atoms at a very great distance. Compt. Rend. 291B, 113 (1980) France
8112	A12 $HF^+ + Ar; HF^+ + CO_2$	E, T	Undef	Moynault, J.-M.; Bachet, G.; Uccelli, R.; Coulon, P. Experimental measurements of the shape and the parameters of the spectral line $\lambda = 0-1$ of H^+ perturbed by argon and CO_2 . Compt. Rend. 291B, 215 (1980) France
8113	K03 Review	E	Undef	Carroll, P. R.; Kennedy, E. T. Laser-produced plasmas. Contemp. Phys. 22, 61 (1981) United Kingdom
8114	E03 $e + He$	T	20-5000 eV	Genas, P. S. Excitation of helium by electron impact. J. Appl. Phys. 52, 19 (1981) United States
8115	D12 $e + Al; e + Be; e + Mylar$	E	90 MeV	Chu, P. N.; Plestrup, M. A.; Pantell, R. M.; Kuzairy, F. R. Soft x-ray production free transition radiation using thin foils. J. Appl. Phys. 52, 22 (1981) United States
8116	D00 $e + Ir; e + [Ir + Cs]; e + [Ir + Cs + O]$	E	1-7.5 eV	Danielson, L. R. Coadsorption of cesium and oxygen on iridium and lanthanum hexaboride. J. Appl. Phys. 52, 306 (1981) United States
8117	C08 $As^+ + Po$ D16 $As^+ + Po$	E	50-150 keV	Kudo, U.; Murac, Y.; Koyayashi, K. Channeling of implanted $^{76}As^+$ through Mo films. J. Appl. Phys. 52, 486 (1981) Japan
8118	C02 $He^+ + H_2S; He^+ + CS_2; He^+ + S$	E	0.1-2.0 MeV	Olson, H. G.; Powers, D. Measurement of molecular stopping cross sections of vaporous sulfur compounds and calculation of the atomic stopping cross section of sulfur. J. Appl. Phys. 52, 524 (1981) United States
8119	D62 $Sb^+ + Ag; Sb_2^+ + Ag; Sb_3^+ + Ag$	T	1.0-300 keV	Sigurd, P.; Claussen, C. Sputtering from elastic-collision spikes in heavy-ion-bombarded metals. J. Appl. Phys. 52, 992 (1981) Denmark
8120	D04 $e + [U_3O_8 - F_2O_8]$	E	100-5000 eV	Salehi, M.; Fliem, L. A. Dependence of secondary-electron emission from amorphous materials on primary angle of incidence. J. Appl. Phys. 52, 994 (1981) United Kingdom

REF. NO.	REACTANTS	EXP OF THEOR	ENERGY RANGE	REFERENCE
8121	C62 e + Au C64 e + Au C65 e + Au C66 e + Au	T	1-10 keV	Kotera, A.; Murata, K.; Nagami, S. Monte Carlo simulation of 1-10-keV electron scattering in a gold target. <i>J. Appl. Phys.</i> 52, 957 (1981) Japan
8122	A65 Kr + Xe + Cl; Kr + Xe + Br; Kr + Xe + I; Ar + Kr + F; Ar + Kr + Cl	E	300 K	Brashears, H. C., Jr.; Setser, D. L.; Yu, Y.-C. Emission spectra of KrArCl ⁺ , KrXeBr ⁺ , KrXeI ⁺ , ArKrI ⁺ , and ArKrCl ⁺ . <i>J. Chem. Phys.</i> 74, 10 (1981) United States
8123	A10 Kr + Xe A11 Kr + Xe	E	30° K	Salamero, Y.; Biot, A.; Brunet, M.; Dujols, M.; Gels, J.; Pillet, P.; Montagne, J. P. Energy transfer kinetics of the VUV emissions for Kr-Xe mixtures. <i>J. Chem. Phys.</i> 74, 288 (1981) France
8124	A13 O ₂ ⁺ + He; C ₂ ⁺ + O ₂ ; C ₂ ⁺ + N ₂ ; C ₂ ⁺ + C ₂	E	32° K	Jonsson, R.; Biedl, F. A. Reactions of ground-state and metastable C ₂ ⁺ ions with He, O ₂ , N ₂ , and C ₂ at thermal energies. <i>J. Chem. Phys.</i> 74, 305 (1981) United States
8125	A26 H + H ₂ ; H + He A27 H + H ₂ ; H + He A28 H + H ₂ ; H + He	E	0.1-3000 eV	van Zyl, B.; Le, T. G.; Anne, F. C. Charged-particle production in low-energy H + H ₂ and H + He collisions. <i>J. Chem. Phys.</i> 74, 314 (1981) United States
8126	H65 hv + O ₃ ⁺	E	7525-4579 Å	Mossley, J. T.; Uzenne, J.-B.; Cosby, P. C. Photofragment spectroscopy of O ₃ ⁺ . <i>J. Chem. Phys.</i> 74, 337 (1981) United States
8127	A07 K + H A11 K + H A17 K + H	T	0.12-2.9 eV	Garrett, B. C.; Redmon, P. J.; Trueter, E. G.; Hellus, C. F. Ab initio treatment of electronically inelastic K + H collisions using a direct integrative method for the solution of the coupled-channel scattering equations in electronically adiabatic representations. <i>J. Chem. Phys.</i> 74, 412 (1981) United States
8128	A95 Hg ⁺ + Fe; Hg ⁺ + Mo; Hg ⁺ + Al; Hg ⁺ + Ti; Hg ⁺ + Ta; Hg ⁺ + C; Xe ⁺ + Fe; Xe ⁺ + Pd; Xe ⁺ + Al; Xe ⁺ + Ti; Xe ⁺ + Ta; Xe ⁺ + C; Cs ⁺ + Fe; Cs ⁺ + Mo; Cs ⁺ + Al; Cs ⁺ + Ti; Cs ⁺ + Ta; Cs ⁺ + C	E	1-5000 eV	Rutherford, J. A.; Vroom, D. A. Charge transfer cross sections for Hg ⁺ , Xe ⁺ , and Cs ⁺ in collision with various metals and carbon. <i>J. Chem. Phys.</i> 74, 434 (1981) United States
8129	E09 e + O ₂ ; e + O ₂ + N ₂ ; e + O ₂ + CO	E	74-330 K	Shiobara, H.; Fessenden, R. W. Thermal electron attachment to oxygen and van der Waals molecules containing oxygen. <i>J. Chem. Phys.</i> 74, 452 (1981) United States
8130	A10 Na ₂ ⁺ + Xe	E	0-1 eV	Smith, N.; Brunner, T. A.; Fritchard, D. E. Velocity dependence of rates for rotationally inelastic collisions in Na ₂ -Xe using velocity selection by Doppler shift. <i>J. Chem. Phys.</i> 74, 467 (1981) United States
8131	H3A hv + Ar; hv + Kr; hv + Xe H3A hv + Ar; hv + Kr; hv + Xe	E	217-400 K	Wiese, W.; Lenaerts, J. Excimer formation in argon, krypton, and xenon discharge afterglows between 200 and 400 K. <i>J. Chem. Phys.</i> 74, 482 (1981) Belgium
8132	A97 Na + Na + hv B97 Na + Na + hv	E	A ² 0.14 eV	Wainer, J.; Polak-Dingels, F. Penning and associative ionization in crossed-beam Na/Na collisions assisted by strong resonant laser fields. <i>J. Chem. Phys.</i> 74, 160 (1981) United States
8133	A11 Se ⁺ + Se F67 e + Se ⁺ H65 hv + OCS ⁺ H64 hv + Se	E	A11: F67 30° K H65: H66 1/2 nm	Trott, W. P.; Kise, J. K.; Woodworth, J. R. Xe laser photolysis of ECSe at 172 nm: Se(1S) production and quenching. <i>J. Chem. Phys.</i> 74, 810 (1981) United States

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8134	A63 ND + D ₂ A10 ND + D ₂	E	42-51 meV	Duch, U.; Nulken, F.; Schleusener, J.; Schaefer, J. State resolved rotational excitations in ND + D ₂ collisions: I. Angular dependence of C - 1 transitions. <i>J. Chem. Phys.</i> 74, 535 (1981) West Germany
8135	A17 O ₂	T	Undef	Wilson, C. W., Jr.; Happer, B. G. Theoretical studies of the ozone molecule: I. Ab initio MCSCF/CI potential energy surfaces for the ¹ A ₁ and a ³ E _g states. <i>J. Chem. Phys.</i> 74, 595 (1981) United States
8136	A17 Xe ₂ H2 hv + Xe ₂	E	Undef	Castex, M.-C. Experimental determination of the lowest excited Xe ₂ molecular states from hν absorption spectra. <i>J. Chem. Phys.</i> 74, 755 (1981) France
8137	A65 B ⁺ + H ₂ A15 B ⁺ + H ₂	E	1-10 eV	Ottinger, C.; Reichmuth, J. Chemiluminescent ion-molecule reactions B ⁺ + H ₂ . <i>J. Chem. Phys.</i> 74, 528 (1981) West Germany
8138	A14 O ₂ + HC	T	20 kcal/mol	Chapman, S. A theoretical study of the effects of vibration on the reaction O ₂ + HD + E ₂ + H ₂ . <i>J. Chem. Phys.</i> 74, 1061 (1981) United States
8139	A14 H + H ₂	T	0.75-2.2 eV	Larg, G.-B.; Payne, M. B.; Tennyson, J. P. Quasiclassical trajectory studies of the H + H ₂ reaction on an accurate potential energy surface: II. Effect of initial vibration and rotation on reactivity. <i>J. Chem. Phys.</i> 74, 1017 (1981) West Germany
8140	A14 Cl + H ₂	T	245-445 K	Garrett, B. C.; Truhlar, D. G.; Pagnano, A. W. Variational transition state theory and vibrationally adiabatic transmission coefficients for kinetic isotope effects in the Cl-H-H reaction system. <i>J. Chem. Phys.</i> 74, 1629 (1981) United States
8141	A10 Zn ⁰ + Ca	E	400 K	Coombs, R. D.; Bodurcay, F. J.; McRae, E. K. Energy transfer between electronically excited zinc and calcium atoms. <i>J. Chem. Phys.</i> 74, 1844 (1981) United States
8142	A17 He ⁰ + Ar; He ⁰ + Kr; He ⁰ + Xe A18 He ⁰ + Pr; He ⁰ + Kr; He ⁰ + Xe	E	0.6-1.5 kcal/mol	Gregor, R. W.; Ziska, P. E. Differential elastic scattering of He(³ S ₁) by Ar, Kr, and Xe: optical potentials and their orbital interpretation. <i>J. Chem. Phys.</i> 74, 1078 (1981) United States
8143	H06 hv + CC H06 hv + CC	E	565-90 Å	Nasuno, T.; Samson, J.A.R. Dissociative and double photoionization of CO from threshold to 56 Å. <i>J. Chem. Phys.</i> 74, 1093 (1981) United States
8144	A14 OH + H ₂	T	0.02-1.0 eV	Schetz, G. C. A quasiclassical trajectory study of reagent vibrational excitation effects in the CH ⁺ + H ₂ O + H reaction. <i>J. Chem. Phys.</i> 74, 1122 (1981) United States
8145	A17 H ₂ + Ar; H ₂ + Kr; H ₂ + Xe	T	Undef	Torj, K. T.; Tennyson, J. P. A simple theoretical model for the van der Waals potential at intermediate distances: III. Anisotropic potentials of Pr-F ₂ , Kr-F ₂ , and Xe-H ₂ . <i>J. Chem. Phys.</i> 74, 1148 (1981) West Germany
8146	A17 Ti ₂ ; Ti ₂ ⁺	T	Undef	Christiansen, P. A.; Pitzer, K. S. Electronic structure and dissociation curves for the ground states of Ti ₂ and Ti ₂ ⁺ from relativistic effective potential calculations. <i>J. Chem. Phys.</i> 74, 1162 (1981) United States
8147	A17 CO	T	Undef	Cooper, D. M.; Longhoff, S. S. A theoretical study of selected singlet and triplet states of the CO molecule. <i>J. Chem. Phys.</i> 74, 1200 (1981) United States
8148	H07 hv + B ⁻ ; hv + Al ⁻ ; hv + Bi ⁻ ; hv + Pb ⁻	E	460-488 nm	Felgarie, C. S.; Corderman, R. H.; Linberger, W. C. Electron affinities of B, Al, Bi, and Pb. <i>J. Chem. Phys.</i> 74, 1612 (1981) United States

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0149	HF $\text{H} + \text{Ti}; \text{H} + \text{V}; \text{H} + \text{Cr}; \text{H} + \text{Zr}; \text{H} + \text{Nb}; \text{H} + \text{Mo}; \text{H} + \text{Pd}; \text{H} + \text{Ta}; \text{H} + \text{W}; \text{H} + \text{Ir}$	E	484 me	Folgerie, C. S.; Corderman, R. P.; Kotschev, S. V.; Lineberger, W. C. Binding energies and structure of transition metal negative ion. <i>J. Chem. Phys.</i> 74, 1500 (1981) United States
0150	A11 $\text{O}_2^+ + \text{F}_2\text{O}; \text{O}_2^+ + \text{D}_2\text{O}$	E	255-473 K	Vlahopoulos, Y.; Gordon, R. J. Vibrational relaxation of O_2 by H_2O and D_2O . <i>J. Chem. Phys.</i> 74, 1622 (1981) United States
0151	E09 $\text{e} + \text{NCl}; \text{e} + \text{BCl}; \text{e} + \text{HF}$	E	0-4 eV	Allen, M.; Wong, S. F. Dissociative attachment from vibrationally and rotationally excited NCl and HF. <i>J. Chem. Phys.</i> 74, 1687 (1981) United States
0152	A11 $\text{O}^+ + \text{N}_2; \text{O}^+ + \text{D}_2$ A14 $\text{N} + \text{O}_2$	E	33° K	Force, A. P.; Wiesenfeld, J. B. Laser photolysis of C_2/N_2 mixtures: the yield of the $\text{N} + \text{O}_2 + \text{N}_2 + \text{C}$ reaction. <i>J. Chem. Phys.</i> 74, 1718 (1981) United States
0153	A13 $\text{Ar}^+ + \text{Ar}; \text{Kr}^+ + \text{Kr}; \text{Xe}^+ + \text{Xe}$	E	30° K	Grossel, M.; Lungenwalter, M.; Hahn, M.; Park, T. B. Molecular ion formation in decaying plasmas produced by pure argon and krypton. <i>J. Chem. Phys.</i> 74, 1728 (1981) Australia
0154	A03 $\text{F}_2 + \text{Ga}; \text{F}_2 + \text{In}$	E	36°-250 cm ⁻¹	Schwarz, R. V.; Geiger, L. C.; Parson, J. R. Beam-gas study of chemiluminescence from single collisions of Group IIIa metals with F_2 . <i>J. Chem. Phys.</i> 74, 1726 (1981) United States
0155	A14 $\text{Li} + \text{FP}$	T	0.5-1.6 eV	Walker, R. B.; Zetzi, Y.; Shapiro, M. A quantum mechanical study of the collinear $\text{Li} + \text{FH}$ reaction. <i>J. Chem. Phys.</i> 74, 1763 (1981) United States
0156	A03 $\text{K} + \text{O}_2$ A07 $\text{K} + \text{O}_2$ A10 $\text{K} + \text{O}_2$	E	16-38 eV	Young, C. E.; Sholeen, C. M.; Wagner, A. J.; Proctor, A. E.; Pohl, L. C.; Wexler, E. Hyperthermal molecular beam scattering: $\text{K}-\text{O}_2$ ion/neutral product angular, energy, and branching ratio analysis. <i>J. Chem. Phys.</i> 74, 1770 (1981) United States
0157	A17 $\text{H}_2; \text{H}_2$	T	Undef	Esher, C. W.; Allard, L. P. Generalized diatomic-in-molecules potential energy surfaces for H_2 and H_2^+ . <i>J. Chem. Phys.</i> 74, 1821 (1981) United States
0158	GM $\text{N}^+ + \text{Ne}; \text{N}^+ + \text{Ar}$	E	Undef	Fabry, D. W.; Fehsenfeld, F. C.; Albritton, D. L. Mobilities of N^+ ions in helium and argon. <i>J. Chem. Phys.</i> 74, 2080 (1981) United States
0159	A17 H_2	T	Undef	McConville, G. T. A consistent spherical potential function for para-hydrogen. <i>J. Chem. Phys.</i> 74, 2201 (1981) United States
0160	A03 $\text{CO}_2 + \text{Ne}; \text{CO}_2 + \text{Ne}; \text{CO}_2 + \text{Ar}$	T	0-1 eV	Jolicard, G.; Curand, G.; Chapuisat, R. A quantum-mechanical study of the collinear oscillator $\text{CO}_2 + \text{X} (\text{X} = \text{Ne}, \text{Ar})$. <i>J. Chem. Phys.</i> 74, 2206 (1981) France
0161	A06 $\text{Ar}^+ + \text{H}_2$	E	1 eV	Wolfschetter, H. R.; Church, D. F. Near thermal charge transfer between Ar^+ and H_2 . <i>J. Chem. Phys.</i> 74, 2213 (1981) United States
0162	A11 $\text{O}_2^+ + \text{C}_2$	T	0.5-8 eV	Roran, T. F.; McCann, K. J.; Cobb, P.; Berne, R. F.; Flannery, P. R. Vibrational deactivation of oxygen ions in low velocity $\text{O}_2^+[\text{K}^+(\text{sub } g), v=1] + \text{C}_2[\text{K}^+(\text{sub } g), v=0]$ collisions. <i>J. Chem. Phys.</i> 74, 2226 (1981) United States
0163	A11 $\text{Ne}^+ + \text{Hg}; \text{Ar}^+ + \text{Hg}; \text{Kr}^+ + \text{Hg}$	E	30° K	Wren, D. J.; Setser, D. W. Quenching rate constants of metastable states of neon, argon, and krypton by mercury atoms. <i>J. Chem. Phys.</i> 74, 2331 (1981) United States
0164	A07 $\text{Ar}^+ + \text{CC}$	E	071-2100 eV/sec	Diolelli, L.; Bitter, R. Ionizing reaction cross sections in the collision of argon atoms in high Rydberg states with various molecules. <i>J. Chem. Phys.</i> 74, 2346 (1981) France

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
0165	A17 LiH	T	Under	Partridge, H.; Langhoff, S. S. Theoretical treatment of the $X^1\Sigma^+$, $A^1\Pi$, and $B^1\Sigma^+$ states of LiH. <i>J. Chem. Phys.</i> 74, 2361 (1981) United States
0166	A11 $BF^+ + H_2$; $BF^+ + D_2$; $BF^+ + H_2$; $BF^+ + HF$	E	200 K	Bett, J. F. Vibrational relaxation of $BF(v=1 \text{ and } 2)$ in H_2 , D_2 , and HF at 200 K. <i>J. Chem. Phys.</i> 74, 2827 (1981) United States
0167	A11 $ArH^+ + Ar$ A13 $Ar^+ + H_2$; $Ar^+ + Ar + Ar$; $Ar^+ + H_2O$; $ArH^+ + H_2$; $ArH^+ + Ar + Ar$; $ArH^+ + H_2O$; $H_2^+ + Ar + Ar$; $ArH^+ + H_2C^+ + H_2$; $ArH^+ + H_2$	E	300 K	W. Lahit, A. B.; Bernsch, P. A drift chamber study of the reaction $ArH^+ + H_2 + H_2^+ + Ar$ and related reactions. <i>J. Chem. Phys.</i> 74, 2012 (1981) West Germany
0168	A11 $H_2^+ + H_2$	E	79-8000 K	Shin, H. K. Temperature dependence of the vibrational relaxation rate coefficient of $H_2(1; + H_2(6))$. <i>J. Chem. Phys.</i> 74, 2866 (1981) United States
0169	E03 $4 + H_2, 4 + H_2, 4 + H_2, 4 + CO$	E	16 eV	Tarr, S. M.; Schlawone, J. A.; Froust, B. S. Complicated high-energy collisions: Scattered by electron impact: H_2 , D_2 , H_2 , and CO . <i>J. Chem. Phys.</i> 74, 2865 (1981) United States
0170	A11 $H_2^+ + C_2$	E	300 K	Piper, L. G.; Caledonia, G. E.; Bernsch, J. P. Rate constants for deactivation of $H_2(1; + H_2(6))$ by C_2 . <i>J. Chem. Phys.</i> 74, 2828 (1981) United States
0171	A17 $H_2^+ + H_2$	T	Under	Bornman, R. F.; Cobb, M. SCF and CI potential energy curves for $H_2-H_2^+$ interactions. <i>J. Chem. Phys.</i> 74, 2928 (1981) United States
0172	A14 $H + O_2$ A17 $H + O_2$	T	Under	Chan, M.-N.-L.; Wetmore, R. W.; Schaefer, H. F., III Mechanism of the $H + O_2$ reaction. <i>J. Chem. Phys.</i> 74, 2938 (1981) United States
0173	A17 $K^+ + Ar$; $K^+ + Kr$; $K^+ + Xe$ C06 $K^+ + Ar$; $K^+ + Kr$; $K^+ + Xe$	E	Under	Lamp, D. R.; Thackston, P. G.; Eisold, F. L.; Ellis, H. W.; Tolst, J. R.; Pope, W. P.; Getland, I. R.; McDaniel, E. W. Mobilities and interaction potentials for K^+-Ar , K^+-Kr , and K^+-Xe . <i>J. Chem. Phys.</i> 74, 3642 (1981) United States
0174	E06 $o + O_2^+$	E	256 K	Zipf, E. C. A laboratory study on the dissociative recombination of vibrationally excited C_2^+ ions. <i>J. Geophys. Res.</i> 85, 4232 (1980) United States
0175	D14 $n + Al$; $n + Ag$; $n + Au$; $n + Co$; $n + Cr$; $n + Cu$; $n + Fe$; $n + Pb$; $n + Mo$; $n + Ni$; $n + Ni$; $n + Pt$; $n + Ta$; $n + Ti$; $n + V$; $n + W$; $n + Zr$	T	Under	Madji-Nirzai, P.; Russell, R. C. Prediction of void formation susceptibility in irradiated metals. <i>J. Nucl. Mater.</i> 92, 229 (1980) United States
0176	D14 $D^+ + Si$	E	6 MeV	Khoro, S. K.; Schuegger, C.; Ullsperger, W. The influence of stress on the early stages of void formation in a model stainless steel. <i>J. Nucl. Mater.</i> 92, 259 (1980) West Germany
0177	D09 $H + H + Al$; $H + H + Fe$; $H + H + Ni$; $H + H + Zr$	T	140-500 K	Bashas, M. I. A calculation of the surface recombination rate constant for hydrogen isotopes on metals. <i>J. Nucl. Mater.</i> 92, 311 (1980) United States
0178	D14 $H^+ + (Fe + Ni) + P + B$	E	250 keV	Yadava, R. D. S.; Singh, M. I.; Aggar, A. K.; Singh, V. Proton irradiation effects in Fe, Ni, P, and B metallic glass: blistering. <i>J. Nucl. Mater.</i> 92, 266 (1980) India
0179	D14 $H^+ + Cu$	E	325 keV	Yadava, R. D. S.; Singh, M. I.; Aggar, A. K. Experimental evidence for stress-induced blister formation. <i>J. Nucl. Mater.</i> 92, 371 (1980) India

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
0100	D14 $\text{Ni}^+ + \text{Ni}; \text{Ni}^+ + [\text{Ni} + \text{Al}]; \text{Ni}^+ + [\text{Ni} + \text{Ti}]; \text{Ni}^+ + [\text{Ni} + \text{Fe}]; \text{Ni}^+ + [\text{Ni} + \text{Si}]$	E	2.8 MeV	Beatty, K. B.; Sprague, J. A.; Johnson, E. A.; Smith, J. A., Jr. Effect on Ni^{2+} bombardment on nickel and binary nickel alloys. J. Nucl. Mater. 57, 67 (1961) United States
0101	D14 $\text{Ni}^+ + \text{H}_2$	E	3.7 MeV	Locals, B. A.; Carber, S. B. Stellar dependence on dilute O concentration of acid formation in ion-irradiated H_2 and some properties of unirradiated H_2 . J. Nucl. Mater. 97, 117 (1961) United States
0102	D02 $\text{Na}^+ + \text{Fe}$	E	0.3-6.0 keV	Saiki, K.; Tanaka, N.; Tanaka, S.; Kano, K. Sputtering of noble gases by low energy Na^+ bombardment. J. Nucl. Mater. 97, 172 (1961) Japan
0103	D05 $\text{h}\nu + \text{Na}_2\text{S}_2$	E	3C-150 eV	McGovern, T. T.; Childs, K. B.; Clearfield, R. W.; Williams, R. E. Atomic effects in the photochemical cross sections of the valence states of Na_2S_2 . J. Phys. C 14, L243 (1961) United States
0104	G01 $e + \text{N}_2$ G05 $e + \text{N}_2$	E	5C-500 Te	Fletcher, J.; Reid, I. D. The transport parameters of an electron swarm in nitrogen at elevated E/h. J. Phys. B 13, 2275 (1960) Australia
0105	A11 $\text{H}_2^+ + \text{H}_2; \text{H}_2^+ + \text{HCl}; \text{H}_2^+ + \text{HBr}; \text{H}_2^+ + \text{HI}; \text{H}_2^+ + \text{HCN}; \text{H}_2^+ + \text{H}_2\text{O}; \text{H}_2^+ + \text{F}_2\text{H}; \text{H}_2^+ + \text{C}_2\text{H}_2; \text{H}_2^+ + \text{HC}; \text{H}_2^+ + \text{CO}; \text{H}_2^+ + \text{I}_2; \text{H}_2^+ + \text{CO}_2; \text{H}_2^+ + \text{CNS}; \text{H}_2^+ + \text{CS}_2; \text{H}_2^+ + \text{SO}_2; \text{H}_2^+ + \text{H}_2\text{O}; \text{H}_2^+ + \text{H}_2$	E	300 K	Clark, W. G.; Setser, B. V. Energy transfer reactions of $\text{H}_2^+(\text{A}^2\Sigma, \text{and } a^2\Pi)$: S. Quenching by hydrogen halides, methyl halides, and other molecules. J. Phys. Chem. 74, 2245 (1960) United States
0106	A14 $\text{OH} + \text{CS}_2$	E	251-363 K	Wine, P. H.; Zhou, R. C.; Ravishankar, A. K. Rate of reaction of OH with CS_2 . J. Phys. Chem. 84, 2450 (1960) United States
0107	A14 $\text{ClO} + \text{NO}_2 + \text{H}$	E	298 K	Molina, P. J.; Polino, L. T.; Ishiwata, T. Kinetics of the $\text{ClO} + \text{NO}_2 + \text{H}$ reaction. J. Phys. Chem. 84, 3166 (1960) United States
0108	A05 $\text{OH} + \text{H}_2; \text{OH} + \text{CH}_4$ A14 $\text{OH} + \text{H}_2; \text{OH} + \text{CH}_4$	E	298-1020 K	Tully, F. P.; Ravishankar, A. K. Flash photolysis-resonance fluorescence kinetic study of the reactions $\text{CH} + \text{H}_2 + \text{H}_2\text{O} + \text{H}$ and $\text{OH} + \text{CH}_4 + \text{H}_2\text{C} + \text{CH}_3$ from 250 to 1020 K. J. Phys. Chem. 84, 2126 (1960) United States
0109	A14 $\text{O} + \text{H}_2\text{C}$	E	298 K	Zellner, R.; Wagner, G.; Himm, E. H_2 formation in the reaction of $\text{O}(\text{I}^2\Pi)$ with H_2O . J. Phys. Chem. 84, 3156 (1960) West Germany
0110	D13 $\text{Na} + \text{CCl}_4 + \text{V}_2\text{O}_5$	E	6500-2800 Å	van Nieu, A.; Lichtman, D. Bandgap radiation induced photoadsorption from V_2O_5 powder and vanadium oxide surfaces. J. Vac. Sci. Technol. 18, 49 (1961) United States
0111	A17 H_2^+	T	Undef	Zaitsevskii, A. V.; Nemubin, P. V. EIP potential energy surfaces for excited states of H_2^+ . Mol. Phys. 41, 377 (1960) Soviet Union
0112	A17 $\text{LiFH}; \text{F}_2\text{F}$	T	Undef	Carter, S.; Murrell, J. A. Analytical potentials for triatomic molecules: VII. Application to repulsive surfaces. Mol. Phys. 41, 287 (1966) United Kingdom
0113	A14 $\text{O} + \text{H}_2$	T	4-50 kJ/mol	Clary, D. C.; Connor, J. H. L. The $\text{O}(\text{I}^2\Pi) + \text{H}_2(\text{v} \text{ less than or equal to } 2, j, m_j) + \text{CH}(\text{v} \text{ less than or equal to } 2, j, \text{prime}, m_j) + \text{H}$ reaction. A vibrationally adiabatic distorted wave study using a LIF and fitted adiabatic potential energy surface. Mol. Phys. 41, 605 (1960) United Kingdom
0114	A17 $\text{He} + \text{He}$	T	Undef	Gerratt, J.; Papatopoulos, P. Direct calculation of intermolecular potential energy surfaces. Mol. Phys. 41, 1671 (1960) United Kingdom

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0195	A17 Ar + HCl	T	Undef	Motour, J. P.; Howard, B. J. Spectroscopic properties and potential surfaces for atom-diatom van der Waals molecules. <i>Rev. Phys.</i> 41, 1123 (1980) United Kingdom
0196	CR2 Na ⁺ + Al; Na ⁺ + Si; Na ⁺ + Ni; Na ⁺ + Co; Na ⁺ + Se; Na ⁺ + Y; Na ⁺ + Ag; Na ⁺ + Au	T	Undef	Porter, L. E.; Bryan, S. B. Projectile- x^2 and $-x^2$ corrections to basic Bethe-Bloch stopping power theory and atom excitation energies of Al, Si, Ni, Co, Se, Y, Ag, and Au. <i>Nucl. Instrum. Methods</i> 170, 227 (1980) United States
0197	A05 Na ⁺ + Ar	E	5-3 MeV	Corvalan, R. J.; Klein, G. Alpha-particle induced excitation in dense gaseous argon: emission spectra and temporal behaviour of its ionic component. <i>Nucl. Instrum. Methods</i> 170, 465 (1980) France
0198	CR4 I ⁺ + Si; Na ⁺ + Si; Co ⁺ + Si; Ba ⁺ + Si; Lu ⁺ + Si; Co ⁺ + Si; Pr ⁺ + Si; Na ⁺ + Si; Na ⁺ + Si; Ta ⁺ + Si; Na ⁺ + Si; Ta ⁺ + Si; Lu ⁺ + Si; Ta ⁺ + Si; Si; Na ⁺ + Si; I ⁺ + Si; Au ⁺ + Si; Ti ⁺ + Si; Pb ⁺ + Si; Bi ⁺ + Si; U ⁺ + Si CR5 I ⁺ + Si; Na ⁺ + Si; Co ⁺ + Si; Ba ⁺ + Si; Si; Lu ⁺ + Si; Co ⁺ + Si; Pr ⁺ + Si; Na ⁺ + Si; Lu ⁺ + Si; Ta ⁺ + Si; Na ⁺ + Si; Ta ⁺ + Si; Lu ⁺ + Si; Ta ⁺ + Si; Si; Na ⁺ + Si; I ⁺ + Si; Au ⁺ + Si; Ti ⁺ + Si; Pb ⁺ + Si; Bi ⁺ + Si; U ⁺ + Si	E	45-153 keV	O'Connor, B. J.; Faraway, D. W.; Chivers, L.; Theoguch, N. B. Z ₁ excitations in low energy heavy ion range. <i>Nucl. Instrum. Methods</i> 170, 517 (1980) United Kingdom
0199	CR2 Na ⁺ + He; Na ⁺ + C; Na ⁺ + Al; Na ⁺ + Si	E	207-2000 keV	Santry, D. C.; Warner, N. E. Stopping power values of He, C, Al and Si for Na ions. <i>Nucl. Instrum. Methods</i> 170, 523 (1980) Canada
0200	CR2 Na ⁺ + Ti; Na ⁺ + Ni; Na ⁺ + Ag; Na ⁺ + Au	E	209-2000 keV	Santry, D. C.; Warner, N. E. Stopping power values of Ti, Ni, Ag and Au for Na ions. <i>Nucl. Instrum. Methods</i> 170, 531 (1980) Canada
0201	CR5 H ⁺ + CaO; C ⁺ + CaO; I ⁺ + CaO	T	Undef	Eastham, D. A. Multiple scattering of ions in polyatomic materials. <i>Nucl. Instrum. Methods</i> 170, 525 (1980) United Kingdom
0202	CR6 B ⁺ + C; C ⁺ + C; H ⁺ + C; O ⁺ + C; F ⁺ + C; Na ⁺ + C; Na ⁺ + C; Na ⁺ + C; Na ⁺ + C; Al ⁺ + C; Si ⁺ + C; P ⁺ + C; S ⁺ + C; Cl ⁺ + C; Ar ⁺ + C; K ⁺ + C; Ca ⁺ + C; Sc ⁺ + C; V ⁺ + C; Cr ⁺ + C; Mn ⁺ + C; Fe ⁺ + C	E	167-1437 keV	Lennard, W. H.; Phillips, D.; Bolger, D. A. L. Equilibrium charge distributions of ion beams exiting carbon foils. <i>Nucl. Instrum. Methods</i> 170, 413 (1980) Canada
0203	CR8 Na ⁺ + O ₂	E	2-3 MeV	Sharma, R. P.; Suray, N. B.; Prasad, K. G.; Phattacharn, P. V. Comparison of channeling dips for backscattering and X-ray yields in O ₂ single crystal. <i>Nucl. Instrum. Methods</i> 170, 421 (1981) India
0204	A07 H ⁺ + Cu; H ⁺ + Ag; H ⁺ + Au; H ⁺ + Fe; H ⁺ + Sn; Na ⁺ + Cu; Na ⁺ + Ag; Na ⁺ + Fe; Na ⁺ + Fe; Na ⁺ + Fe	E, T	0.2-4.5 MeV	Mohaymo, T.; Serhadil, L. K-shell ionization by protons and alpha particles. <i>Nucl. Instrum. Methods</i> 170, 473 (1981) Japan
0205	A06 K ⁺ + He ⁺	E	157-200 eV	Alliegiani, M.; Biondi, P.; Gossini, S.; Iovino, P. Observation of fluorescence from high-lying states of potassium in a sodium-potassium mixture upon resonant laser excitation. <i>Opt. Commun.</i> 36, 445 (1981) Italy
0206	B06 D ⁺ + He	E		Jopson, R. M.; Larson, D. J. Optically probed microwave resonances in negative ions. <i>Opt. Lett.</i> 5, 631 (1980) United States
0207	H04 3He + D ₂	E	20 eV	Green, M. B.; Lukash, J. Vacuum-ultraviolet emissions from laser-excited D ₂ ⁺ (not u ⁺) state of molecular nitrogen. <i>Opt. Lett.</i> 5, 827 (1980) France

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0200	He Undef	T	Undef	Metcalf, W.; Phillips, W. Time-resolved subnatural-width spectroscopy. Opt. Lett. 5, 240 (1980); United States
0205	He He + He	E	569 nm	Grischousky, E. Doppler-free backward-fluorescence spectroscopy in vapors. Opt. Lett. 5, 224 (1980); United States
0213	He He + O	E	532 nm	Kauch, C. J.; Bechtel, J. M. Spontaneous beam scattering by ground-state oxygen atoms. Opt. Lett. 5, 26 (1981); United States
0211	He He + O	E	625-630 nm	Harris, S. J.; Palmer, A. M. Detection of atomic oxygen by intracavity spectroscopy. Opt. Lett. 6, 142 (1981); United States
0212	He He + He	E	625 nm	Yoon, S. S.; Nelson, R. High-efficiency four-wave sum and difference mixing in He vapor. Opt. Lett. 6, 179 (1981); United States
0213	He He + He	E	285-294 nm	Baker, J.; Freeman, M. B.; Sanchez, F. L.; White, J. C. Generation of high-brightness coherent radiation in the vacuum ultraviolet by four-wave parametric oscillation in mercury vapor. Opt. Lett. 6, 122 (1981); United States
0214	He He + Ti + He	E	1470-1700 Å	White, J. C. Observation of multiphoton-laser-induced collisions. Opt. Lett. 6, 242 (1981); United States
0215	He He + D ₂ O	E	10.6 μ	Err, E. J.; Nash, J. G. Selective infrared excitation in D ₂ O: rotational assignments and the role of collisions. Opt. Lett. 6, 236 (1981); Australia
0216	He He + Ca	E	444-2800 nm	Belgar, J.; Byrde, J. J. Atomic Rydberg-state spectroscopy of Ca using pulsed color-center lasers. Opt. Lett. 6, 295 (1981); United States
0217	He He + He	E	2570 Å	Ernst, A. V.; Grishovskii, A. A.; Babich, I. M. Mechanism of the excitation of sodium in vibrationally nonequilibrium nitrogen. Opt. Spectrosc. 45, 5 (1980); Soviet Union
0218	He He + C	T	5.1-22 eV	Hutchison, J. S. Effect of inelastic scattering on the resonance line shapes in He-graphite. Phys. Rev. B 22, 5671 (1980); United States
0219	He He + O + Cu	E	10.6 Å	Lepjuzide, J.; Le Gruer, Y.; Lefert, R.; Lejay, Y.; Faure, E. Diffraction of helium ions on ordered adsorbed layer: oxygen on copper (111). Phys. Rev. B 22, 5740 (1980); France
0221	He Undef	T	Undef	Harvir, A. M. Birchhoff approximation and closed-form expressions for atom-surface scattering. Phys. Rev. B 22, 3759 (1980); Italy
0221	He He + O + He	E	45-300 eV	Wang, S.-L. Electron-stimulated desorption studies of C on W(110): discussion on the excitation mechanism and the binding sites of the O ⁺ -yielding species. Phys. Rev. B 23, 1655 (1981); United States
0222	He He + He; He + He He + He	E	50-400 keV	Anttila, A.; Hirvonen, J.; Kautala, R. Trapping of nitrogen in He due to defects generated by 50-400-keV He and He ⁺ ions. Phys. Rev. B 23, 1202 (1981); Finland
0223	He He + C + He	E	17-570 eV	Jonger, R.; Stohr, J.; Feldhaus, J.; Brennan, S.; Penzel, D. Photon-stimulated desorption following deep core-level excitation: O on W(100). Phys. Rev. B 23, 2162 (1981); United States

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8224	D87 Na + C	E	43 meV	Cantini, P.; Totarch, R. Selective-adsorption structures in the inelastic scattering of He-graphite(0001). Phys. Rev. B 22, 3838 (1981) Italy
8225	D13 e + CO + U	E	45-270 eV	Wang, S.-L. Adsorption of CO on U(110) as studied using electron-stimulated desorption and thermal desorption. Phys. Rev. E 23, 3788 (1981) United States
8226	D17 Xe ⁺ + [Al + Sb]	E	45 ⁺ keV	Belafout, J.; Picraux, S. T.; Neppf, J. P. Low-temperature ion beam mixing of Al-Sb. Appl. Phys. Lett. 38, 227 (1981) United States
8227	D82 Cl ₂ ⁺ + InP	E	0.3-1.5 keV	Bauch, M. A.; Caldwell, L. P.; Good, E. Reactive ion beam etching of InP with Cl ₂ . Appl. Phys. Lett. 28, 264 (1981) United States
8228	A87 Undef J81 Undef	T	Undef	Johnson, B. E.; Busban, G.; McDaniel, F. E. Nonrelativistic plane-wave Born-approximation calculations of direct Coulomb M-shell ionization by charged particles. At. Data Nucl. Data Tables 24, 1 (1979) United States
8229	A87 Undef J81 Undef	E T	Undef	Paul, M. K-shell ionization by light ions: a graphical comparison of cross sections. At. Data Nucl. Data Tables 24, 262 (1979) Austria
8230	A87 Undef J81 Undef	F	Undef	Gardner, R. K.; Gray, T. J. Erratum: Cross sections for K-shell ionization, x-ray production, or Auger-electron production by ion impact [At. Data Nucl. Data Tables 21, 515 (1978)]. At. Data Nucl. Data Tables 24, 281 (1979) United States
8231	M86 Undef J83 Undef	T	0-50 eV	Hofmann, B. Photoionization cross sections calculated by the scaled Thomas-Fermi method (to less than or equal to 50 eV). At. Data Nucl. Data Tables 24, 281 (1979) West Germany
8232	D11 N ₂ + Ti D13 N ₂ + Ti	E	770-970 K	Hofmann, F.; Auer, W. Kinetic investigations on the hydrogen absorption in α-titanium. Ber. Bunsenges. Phys. Chem. 84, 1168 (1980) West Germany
8233	D11 CO + Fe ₂ O ₃ ; C ₂ + Fe ₂ O ₃ D13 CO + Fe ₂ O ₃ ; O ₂ + Fe ₂ O ₃	E	350-770 K	Berg, J.V.L.; Eilen, A.J.V.; Eisel, C.F.v.; Goto, M. v.; Oostveen, P. C. Characterization of carbonaceous and oxygen on α-iron(III) oxide. Ber. Bunsenges. Phys. Chem. 84, 1174 (1980) The Netherlands
8234	A81 Ca ⁺ + Ar; Sr ⁺ + Ar; Ba ⁺ + Ar	E	2700-4000 K	Nichol, K. B.; Joss, V.; Neusser, R.; Stehrvandel, J. Deactivation cross sections of metastable levels of alkaline earth atoms at thermal collisions with argon. Ber. Bunsenges. Phys. Chem. 84, 1211 (1980) West Germany
8235	A14 NH ₃ + C ₂	E	250-350 K	Koch, U.; Morle, O.; Wagner, M. G. The rate of the reaction of NH ₃ with O ₂ . Ber. Bunsenges. Phys. Chem. 85, 72 (1981) West Germany
8236	A14 H + CH ₃ CH	E	500-600 K	Hoyermann, K.; Sievert, K.; Wagner, P. G. Mechanism of the reaction of H atoms with methanol. Ber. Bunsenges. Phys. Chem. 85, 149 (1981) West Germany
8237	A14 O + C ₂ H ₂	E	1500-2750 K	Löhr, K.; Roth, P. Shock tube measurements of the reaction behavior of acetylene with O-atoms. Ber. Bunsenges. Phys. Chem. 85, 182 (1981) West Germany
8238	M10 Review K83 Review	E	10-100 eV	Loach, M. A European workshop: molecular spectroscopy and dynamics with synchrotron radiation. Ber. Bunsenges. Phys. Chem. 85, 166 (1981) West Germany
8239	D11 H + TiC ₂ ; C ₂ + TiO ₂ D13 H + TiC ₂ ; C ₂ + TiO ₂	E	350-475 K	Serviche, E.; Schindler, R. A.; Schwenker, W. An ESR study of TiO ₂ treated with atomic hydrogen. Ber. Bunsenges. Phys. Chem. 85, 182 (1981) West Germany

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B240	H82 $\text{hv} + \text{Hg}; \text{hv} + \text{Hg} + \text{Xe}$	E	1-6 eV	Chesnovsky, C.-; Egan, W.; Jortner, J.; Hersel, F. Electronic structure and transport in engased mercury and in mercury-xenon mixtures. Ber. Bunsenges. Phys. Chem. 85, 195 (1981); Israel
B241	B89 $\text{CO} + \text{N}_2 + \text{Fe}$	F	373-573 K	Ladler, G.; Kerner, M. Decomposition of carbon monoxide and its reaction with hydrogen on iron films under static conditions at pressures between 2 and 25 mbar and at temperatures between 373 and 573 K. Ber. Bunsenges. Phys. Chem. 85, 282 (1981) West Germany
B242	D89 $\text{CO} + \text{Fe}; \text{CO} + \text{CC}; \text{CC} + [\text{Fe} + \text{Co}]$ $\text{N}_2 + \text{Fe}; \text{N}_2 + \text{CO}; \text{N}_2 + [\text{Fe} + \text{Co}]$ D11 $\text{CO} + \text{Fe}; \text{CC} + \text{CO}; \text{CC} + [\text{Fe} + \text{Co}]$ $\text{H}_2 + \text{Fe}; \text{H}_2 + \text{CO}; \text{H}_2 + [\text{Fe} + \text{Co}]$ D13 $\text{CO} + \text{Fe}; \text{CC} + \text{CO}; \text{CC} + [\text{Fe} + \text{Co}]$ $\text{N}_2 + \text{Fe}; \text{N}_2 + \text{CO}; \text{N}_2 + [\text{Fe} + \text{Co}]$	E	303-650 K	Eltrich, L.; Buschmann, R. W.; Meintsch, H. Interaction of carbon monoxide and hydrogen with metal films of Fe, Co, Ni, and Ni-Co-alloy. Ber. Bunsenges. Phys. Chem. 85, 289 (1981) West Germany
B243	N18 Underf	T	Underf	Couch, M. Master equations for photochemistry with intense infrared light: IV. A unified treatment of case B and case C including nonlinear effects. Ber. Bunsenges. Phys. Chem. 85, 318 (1981) West Germany
B244	A16 $\text{O} + \text{N}_2; \text{C} + \text{H}_2\text{O}; \text{O} + \text{H}_2\text{O}; \text{C} + \text{N}_2$ $\text{O} + \text{CO}_2; \text{C} + \text{O}_2$	E	33° K	Vine, F. N.; Ravishankara, A. S. Kinetics of $\text{C}(^1\text{D})$, interactions with the atmospheric gases N_2 , H_2O , H_2C , N_2 , Cl_2 and O_2 . Chem. Phys. Lett. 77, 182 (1981) United States
B245	A17 $\text{H} + \text{N}_2$	T	Underf	Varandas, A.J.C.; Tennyson, J. On the isotropic and leading anisotropic terms of the H-N_2 potential energy surface. Chem. Phys. Lett. 77, 181 (1981) Portugal
B246	A17 $\text{Hg}_2; \text{Ca}_2; \text{Ba}_2; \text{Sr}_2$	T	Underf	Goble, J. H.; Wine, J. S. Analytic potential functions for weakly bound molecules, coding in the alkaline earth diatomics. Chem. Phys. Lett. 77, 186 (1981) United States
B247	A11 $\text{Sn}^+ + \text{F}_2; \text{Sn}^+ + \text{O}_2; \text{Sn}^+ + \text{I}_2; \text{Sn}^+$ $+ \text{Ar}; \text{Sn}^+ + \text{Ne}$	E	33° K	Gelbwachs, J. A.; Nesbitt, S. J.; Truhcz, W. F. Collisional energy transfer in tin by diatomics and inert gases. Chem. Phys. Lett. 77, 222 (1981) United States
B249	A17 $\text{HCN}; \text{HNC}$	T	Underf	Vazquez, G. J.; Gouyat, J.-P. 3CF Li potential energy surfaces for the HCN going to or coming from HNC isomerization reaction. Chem. Phys. Lett. 77, 233 (1981) France
B249	M86 $\text{hv} + \text{Ar}_2$	E	860-820 Å	Dahmer, P. H.; Pollakoff, E. D. Photochemicalization of the Ar_2 dimer. Chem. Phys. Lett. 77, 226 (1981) United States
B250	A16 $\text{F} + \text{N}_2$	T	0.3 eV	Such, S. M. A SWBA study of angular distributions for the state-to-state reactive scattering process of $\text{F} + \text{N}_2 + \text{FF} + \text{N}$. Chem. Phys. Lett. 77, 356 (1981) United States
B251	A16 $\text{Br} + \text{HC}_2; \text{Br} + \text{H}_2\text{O}_2$	E	33° K	Posey, Jr.; Sherwell, J.; Kaufman, P. Kinetics of the reactions of atomic bromine with HC_2 and H_2O_2 . Chem. Phys. Lett. 77, 476 (1981) United States
B252	A13 $\text{OH}^\bullet + \text{I}_2; \text{CH}^\bullet + \text{O}_2; \text{CH}^\bullet + \text{IC}; \text{CH}^\bullet$ $+ \text{N}_2\text{O}; \text{CH}^\bullet + \text{Xe}; \text{OH}^\bullet + \text{CO}; \text{CH}^\bullet +$ $\text{CO}_2; \text{OH}^\bullet + \text{H}_2\text{S}; \text{OH}^\bullet + \text{N}_2; \text{H}_2\text{O}^\bullet +$ $\text{H}_2; \text{H}_2\text{C}^\bullet + \text{O}_2; \text{H}_2\text{O}^\bullet + \text{NO}; \text{H}_2\text{O}^\bullet +$ $\text{N}_2\text{O}; \text{H}_2\text{O}^\bullet + \text{Xe}; \text{H}_2\text{C}^\bullet + \text{CN}; \text{H}_2\text{C}^\bullet +$ $\text{CP}_2; \text{H}_2\text{C}^\bullet + \text{N}_2\text{S}; \text{H}_2\text{C}^\bullet + \text{N}_2$	E	33° K	Jones, J.D.C.; Birkinshaw, R.; Thicke, A. B. Rate coefficients and product ion distributions for the reactions of $\text{CH}^\bullet$ and $\text{H}_2\text{C}^\bullet$ with H_2 , O_2 , AL , H_2C , Xe , CL , CO_2 , H_2S and N_2 at 30° K. Chem. Phys. Lett. 77, 484 (1981) United Kingdom
B253	A14 $\text{I} + \text{HI}$	T	0-1.6 eV	Kaye, J. A.; Kuppermann, A. Collinear quantum mechanical probabilities for the $\text{I} + \text{HI} \rightarrow \text{I}_2 + \text{I}$ reaction using hyperpherical coordinates. Chem. Phys. Lett. 77, 872 (1981) United States

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8254	E83 $e + H_2$	T	5-40 eV	Cacciatore, N.; Capitelli, P. Cross sections and rate coefficients for electronic excitation of the triplet states of the hydrogen molecule in different vibrational levels. <i>Chem. Phys.</i> 11, 67 (1981) Italy
8255	A17 $HeH^+; HeH^+$	T	Under	Polak, R.; Vojtik, J.; Palcarova, I.; Schneider, F. Atom-in-molecule calculations on diatomic fragments of polyatomic systems. <i>HeH</i> and HeH^+ . <i>Chem. Phys.</i> 11, 183 (1981) Czechoslovakia
8256	A82 $He + CC; He + H_2; He + He$ A83 $He + CC; He + H_2; He + He$	T	6C-1520 cm ⁻¹	Fitz, D. E.; Khare, V.; Kouri, D. -- CS(1 (sub uv)); and CC computational study of degeneracy averaged differential cross sections and in-integral cross sections: $He-CC$, $He-H_2$, $He-He$. <i>Chem. Phys.</i> 56, 267 (1981) United States
8257	A17 H^+	T	Under	Segal, G. A.; Wolf, E. Theoretical calculation of the potential curves of the states of H^+ below 14 eV. <i>Chem. Phys.</i> 56, 321 (1981) United States
8258	A14 $Hg^+ + H_2$ A17 HgH_2	T	of	Adams, N.; Breckenridge, W. M.; Slocum, J. A theoretical study of the reaction of $Hg(3s2p^2P)$ with H_2 . <i>Chem. Phys.</i> 56, 327 (1981) United States
8259	H88 $Ar + Hg + H_2$	E	2537 Å	Collier, A. B.; Kendall, D. R. Luminescence from mixtures of mercury vapour and nitrogen following pulsed excitation via resonance radiation. <i>Chem. Phys.</i> 57, 65 (1981) United Kingdom
8260	A84 $Na^+ + CS; Na^+ + CS$ A87 $Na^+ + CS; Na^+ + CS$	E	300 K	Chase, M.; Tsuchi, M.; Hishikawa, Y. Energy transfer processes between $Na(2P^2S)$ and $Na(2P^2S)$ metastable atoms and CS radicals. <i>Chem. Phys.</i> 57, 65 (1981) Japan
8261	A17 $NO; LiC$	T	Under	Honahlin, A. V.; Almlöf, J.; Helberg, A. Potential curves of NO and LiO calculated with the complete active space ICF (CASSCF) method. <i>Chem. Phys.</i> 57, 197 (1981) Norway
8262	A17 $ON + H_2$	T	Under	Koch, J.; Flower, D. F. Ab initio calculations of the $ON-H_2$ potential energy surface. <i>Chem. Phys.</i> 57, 217 (1981) France
8263	H86 $hv + H_2; hv + H_2; hv + O_2; hv + CO; hv + CO_2$	T	21-41 eV	Thiel, W. A cooperative theoretical study of photoionization cross sections and angular distributions. <i>Chem. Phys.</i> 57, 257 (1981) West Germany
8264	A86 $Na^+ + H_2$	E	0-170 eV	Yu, R.-L.-C.; Happer, D. G. Determination of absolute cross sections and rate coefficients for state-to-state reactions $Na^+(X^2S) + H_2(X^1\Sigma^+g) \rightarrow Na(1s^2) + H_2(X^1\Sigma^+g)$ in ion beam experiments. <i>Chem. Phys.</i> 57, 385 (1981) United States
8265	H86 $hv + H_2$	T	15-70 eV	Williams, G.R.J.; Langhoff, P. V. Extended-basis-set SPAC calculations of molecular photoionization cross sections: theoretical studies of $V(\text{sub } \pi) - V(\text{sub } \sigma)$ interaction in molecular nitrogen. <i>Chem. Phys. Lett.</i> 78, 21 (1981) United States
8266	H86 $hv + HC$	T	24-40 eV	Costafraon, T.; Lavinen, V. J. State resonances in diatomic molecules: HC . <i>Chem. Phys. Lett.</i> 78, 28 (1981) United States
8267	A83 $Na_2 + Ar; Na_2 + Ar$ A18 $Na_2 + Ar; Na_2 + Ar$	F	175 meV	Bergmann, K.; Hafter, U.; Pettersen, A.; Hilt, J. Resolution of angular rotational vibrations in $Na_2 + Ar$ collisions. <i>Chem. Phys. Lett.</i> 78, 61 (1981) West Germany
8268	A13 $CC_2^{2+} + He; CO_2^{2+} + He; CO_2^{2+} + Ar; CO_2^{2+} + Kr; CO_2^{2+} + Xe; CO_2^{2+} + H_2; CO_2^{2+} + CO; CO_2^{2+} + NO; CO_2^{2+} + H_2; CO_2^{2+} + O_2; CO_2^{2+} + CH_4; CO_2^{2+} + CH_4$	E	295 K	Jones, J.D.C.; Knopf, A.S.M.; Lister, D. G.; Birkinshaw, K.; Twiddy, R. D. Reactions of CO_2^{2+} at room temperature. <i>Chem. Phys. Lett.</i> 78, 76 (1981) United Kingdom

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8269	A18 $\text{CO} + \text{N}_2$ A11 $\text{CO} + \text{N}_2$	E	55-299 K	Chandler, E. T.; Gruger, E. A.; Stedon, B. N.; Siegem, C.J.S.M. Vibrational energy exchange between $\text{CO}(v=1)$ and $^{13}\text{N}_2$ and $\text{CO}(v=1)$ and $^{15}\text{N}_2$, measured to 68 K in the gas phase. <i>Chem. Phys. Lett.</i> 70, 236 (1981); United Kingdom
8270	A97 $\text{He}^+ + \text{Pr}$	E	2-239 meV	Burrows, S.; Feltgen, R.; Lichterfeld, F.; Fally, B. Total and ionization cross sections for $\text{He}^+(2^3S)-\text{Ar}$ and $\text{He}^+(2^3S)-\text{Ar}$ in the thermal energy range. <i>Chem. Phys. Lett.</i> 70, 296 (1981); West Germany
8271	A14 $\text{H} + \text{HBr}; \text{OH} + \text{HBr}$	E	33° K	Jordain, J. L.; le Gros, G.; Camburien, J. LPH determination of absolute rate constants for the reactions of H and OH radicals with hydrogen bromide. <i>Chem. Phys. Lett.</i> 78, 483 (1981); France
8272	A17 $\text{CH}; \text{CH}^+$	T	Undef	Sun, P.; Freed, K. F. Ab initio effective valence shell Hamiltonian calculation of the valence state potential curves for CH and CH^+ . <i>Chem. Phys. Lett.</i> 78, 531 (1981); United States
8273	A17 $\text{Cl}_2; \text{Br}_2$	T	Undef	Eis, G. Pseudo-potential evaluation of the ground-state potential curves for the Cl_2 and Br_2 molecules. <i>Chem. Phys. Lett.</i> 76, 285 (1981); United States
8274	A17 $\text{K} + \text{Ar}$	E, T	Undef	Doran, R.; Fischer, N. Experimental determination of the $\text{K}(4^2P_{3/2})-\text{Ar}$ potential. <i>Chem. Phys. Lett.</i> 75, 481 (1981); West Germany
8275	A17 N_2	T	Undef	Price, S. L. Anisotropic intermolecular potentials for nitrogen determined from second virial and shear viscosity coefficient data. <i>Chem. Phys. Lett.</i> 79, 253 (1981); United Kingdom
8276	A13 $\text{N}_2^+ + \text{H}_2; \text{C}^+ + \text{H}_2; \text{C}^+ + \text{D}_2$	E	81-520 K	Adams, M. G.; Smith, D. The rate coefficients for several ternary association reactions at thermal energies. <i>Chem. Phys. Lett.</i> 75, 262 (1981); United Kingdom
8277	A96 $\text{CO}^+ + \text{CCl}_2; \text{SO}^+ + \text{SO}_2; \text{C}^+ + \text{NC};$ $\text{Cl}_2^+ + \text{Cl}_2\text{CO}; \text{O}^+ + \text{H}_2\text{O}$ A13 $\text{CO}^+ + \text{CCl}_2; \text{SO}^+ + \text{SO}_2; \text{O}^+ + \text{NC};$ $\text{Cl}_2^+ + \text{Cl}_2\text{CO}; \text{O}^+ + \text{H}_2\text{O}$	E	304 K	Dolan, L.; Karpas, Z.; Klein, F. S. Elucidation of mechanisms of ion-molecule reactions by ICB. <i>Int. J. Mass Spectrom. Ion Phys.</i> 37, 77 (1981); Israel
8278	A96 $\text{N}_2^+ + \text{Ar}; \text{C}_2^+ + \text{Ne}; \text{C}_2^+ + \text{Ar}; \text{N}_2^+ + \text{Ar};$ $\text{N}_2^+ + \text{Ne}; \text{N}_2^+ + \text{Ar}; \text{CN}^+ + \text{Ar}; \text{CO}^+ + \text{Ne}; \text{CO}^+ + \text{Ar}$	E	Undef	Hondo, Y.; Morozzi, J. L. Potentials of $\text{C}_2^+, \text{N}_2^+$ and CO^+ in Ar, Ne and Kr. <i>Int. J. Mass Spectrom. Ion Phys.</i> 38, 1 (1981); United Kingdom
8279	D92 $\text{Ar}^+ + \text{Si}; \text{C}_2^+ + \text{Si}$	E	5.5-14.5 keV	Richter, C.-E.; Trapp, M. Atomic and cluster ion emission from silicon in secondary-ion mass spectrometry: I. $\text{Si}(\text{sub } n)$ and $\text{Si}(\text{sub } n)(\text{sub } r)$ ions. <i>Int. J. Mass Spectrom. Ion Phys.</i> 36, 21 (1981); West Germany
8280	A11 $\text{HF}^+ + \text{HF}$	T	103-4099 K	Gianfranco, F. P.; Lomanno, G. T.; Battaglia, F. Vibrationally inelastic scattering and relaxation times in gaseous HF. <i>Int. J. Quant. Chem.</i> 15, 217 (1981); West Germany
8281	A17 $\text{CO} + \text{O}$	T	Undef	Amore Bonaparte, A.; Basso, M.; Lopiccolo, A. Potential energy surface of the system $\text{CO} + \text{O}$: an ab initio study on the O-CO bond formation. <i>Int. J. Quantum Chem.</i> 19, 1139 (1981); Italy
8282	A12 $\text{Mg}^+ + \text{Ne}$	T	35°-417 K	Bobeev, V. S.; Zhiglavskii, A. G.; Izraeliev, A. M.; Kuchinskii, V. V.; Pafurina, E. A. Simultaneous spectroscopic determination of several intrinsic profile parameters of a complex spectral line. <i>J. Appl. Spectrosc.</i> 32, 442 (1980); Soviet Union

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8283	A14 C + C hv + C ₂	E	2500-3000 E; 516 nm	L'vov, B. V.; Revutsky, I.; Fellewa, L. A. Determination of the heat of formation of C ₂ molecules from the Swan absorption and emission bands in a graphite furnace. <i>J. Appl. Spectrosc.</i> 32, 552 (1960) Soviet Union
8284	A12 H ₂ O + CO ₂ ; H ₂ O + h ₂ ; H ₂ C + C ₂ ; H ₂ O + Ar; H ₂ O + Na; H ₂ O + Air; O ₂ + h ₂ ; C ₂ + Ar; O ₂ + C ₂	E	305 K	Lopacev, V. P.; Luk'yanshik, S. F. Pressure broadening of the 4-5 μ line of H ₂ O and the 4(25) line of O ₂ studied with an intracavity Ruby laser spectrometer. <i>J. Appl. Spectrosc.</i> 33, 895 (1960) Soviet Union
8285	H04 Undef	T	Undef	Peremchov, G. K.; Savva, V. A. Quasiresonance excitation of satellite systems by semiconducting radiation. <i>J. Appl. Spectrosc.</i> 32, 704 (1960) Soviet Union
8286	H02 hv + H ₂ ⁺	E T	Undef	Golubavskii, Y. B.; Florke, A. V. Feasibility of measuring the concentration of metastable ²¹ N(sub u) nitrogen molecules from self-absorption. <i>J. Appl. Spectrosc.</i> 32, 710 (1960) Soviet Union
8287	A12 Rb ⁺ + Na; Sb ⁺ + Na; Rb ⁺ + Ar; Rb ⁺ + Xe	E	300-310 K	Kulagin, E. V.; Ermino, M. N.; Fikhtelov, A. I.; Sapozhnikov, Y. P. Dependence of optical density of rubidium vapor on buffer gas pressure. <i>J. Appl. Spectrosc.</i> 33, 772 (1960) Soviet Union
8288	L60 a + H	T	Undef	Parzenovich, L. E.; Ginzburg, M. I. Effects of the influence of strong collisions of plasma electrons with hydrogen atoms on the broadening of its spectral lines. <i>J. Appl. Spectrosc.</i> 32, 816 (1960) Soviet Union
8289	H02 hv + CC ₂ plasma	E	400-1200 nm	Azhernakh, V. V.; Gubhevich, V. P.; Chubrik, N. I.; Shinnovich, V. B. Spectral absorption coefficients of a CO ₂ plasma at the pressure p = 5 atm. <i>J. Appl. Spectrosc.</i> 32, 815 (1960) Soviet Union
8290	H04 hv + C ⁺	T	Undef	Dutyrkaya, L. V.; Yazycheva, S. P. Calculation of Franck-Condon factors for high vibrational states of diatomic molecules. <i>J. Appl. Spectrosc.</i> 33, 856 (1960) Soviet Union
8291	E02 a + Li E17 a + Li	T	20-1000 eV	Glen, Y. T. Glauber exchange effect in e ⁻ -Li elastic collision. <i>J. Chem. Phys.</i> 74, 3241 (1961) Canada
8292	A11 Ar ⁺ + h ₂ ; Ar ⁺ + H ₂ ; Ar ⁺ + C ₂	E	298 K	Loeb, B. W.; Chan, W.; Firsirotu, F. F. Bimolecular and "three-body" quenching of positive argon atoms by H ₂ , H ₂ , and O ₂ and effects of H ₂ on the yield of the first triplet argon excimer. <i>J. Chem. Phys.</i> 74, 3270 (1961) United States
8293	A14 B + O ₂ ; B + SO ₂ ; E + CO ₂ ; E + H ₂ O	E	360 K	Bigliacoppo, Y. G.; Davidovits, P. Ion-molecule reactions: II. Rate constants with C ₂ , M ₂ , C ₂ , and H ₂ O. <i>J. Chem. Phys.</i> 74, 3287 (1961) United States
8294	H03 CO ₂ + Fe	T	0.01-1.0 eV	Agrawal, P. N.; Hoff, L. W. Consideration of the self thermal velocity effect upon inelastic cross sections computed by the infinite-order sudden approximation. <i>J. Chem. Phys.</i> 74, 3292 (1961) United States
8295	H05 hv + NaI; hv + KI; hv + CsI; hv + PbI	E	347 nm	Anderson, W. R.; Wilson, B. H.; Crooks, R. C.; Ross, T. L. Photodissociation of the alkali iodides at 347.1 nm: experimental angular distributions and specific model for their interpretation. <i>J. Chem. Phys.</i> 74, 3298 (1961) United States
8296	A11 C ⁺ + H ₂ ; C ⁺ + D ₂ ; C ⁺ + H ₂ ; C ⁺ + CO; C ⁺ + CO ₂ ; C ⁺ + NO	E	360 K	Brackenhridge, W. M.; Melvin, D. E. State-to-state studies of the collisional quenching of electronically excited Cd(¹ P ₁) atoms. <i>J. Chem. Phys.</i> 74, 3307 (1961) United States

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8297	A13 $H^+ + HC$	E	0.4-2.5 eV	Fabry, B. V.; Deton, I.; Fehsefeldt, F. C.; Albritton, L. L.; Viehland, L. A. Energy dependence of the rate constant of the reaction $H^+ + HCl$ at collision energies 0.84 to 2.5 eV. <i>J. Chem. Phys.</i> 74, 2320 (1981) United States
8298	A16 $Na_2^+ + He; Na_2^+ + Ne; Na_2^+ + Ar;$ $Na_2^+ + Kr; Na_2^+ + Xe; Na_2^+ + N_2;$ $Na_2^+ + H_2; Na_2^+ + CH_4$	E	300 K	Brunner, T. A.; Smith, D.; Borg, A. W.; Pritchard, L. E. Rotational energy transfer in $Na_2^+(^2\Sigma^+)$ colliding with He, Kr, Ar, Ne, Na, H_2 , CH_4 , and H_2 : experiment and fitting laws. <i>J. Chem. Phys.</i> 74, 3224 (1981) United States
8299	A14 $HCl + He; HF + He$	E	300 K	Bortozek, F. E.; Blackwell, B. P.; Felanyi, J. C.; Sica, J. J. Effect of changing reagent energy on reaction dynamics: XI. Dependence of reaction rate on vibrational excitation in endothermic reaction $HCl(v) + He + H + HCl$ is identical with F, Cl . <i>J. Chem. Phys.</i> 74, 3480 (1981) Canada
8300	A14 $Be + HF$ A17 $Be + HF$	T	Undef	Kuntz, P. J.; Rauh, A. C. A diatomic-ir-molecule case study on the system $Be + HF + BeF + H$: I. Escalier models and the use of valence bond information. <i>J. Chem. Phys.</i> 74, 3420 (1981) West Germany
8301	A14 $Be + HF$ A17 $Be + HF$	T	Undef	Rauh, A. C.; Kuntz, P. J. A diatomic-ir-molecule case study on the system $Be + HF + BeF + H$: II. The sensitivity of the potential surfaces to the diatomic input. <i>J. Chem. Phys.</i> 74, 3425 (1981) West Germany
8302	A17 $O_2 + H$	T	Undef	Dunning, T. H., Jr.; Baich, S. P.; Gedeon, R. H. Theoretical characterization of the potential energy curve for hydrogen atom addition to molecular oxygen. <i>J. Chem. Phys.</i> 74, 3482 (1981) United States
8303	N02 $hv + N_2C$	E	150-500 K; 197-172 nm	Selwyn, G. S.; Johnston, H. S. Ultraviolet absorption spectrum of nitrous oxide as a function of temperature and isotopic substitution. <i>J. Chem. Phys.</i> 74, 2751 (1981) United States
8304	N02 $hv + SC_2$	E	760-175 Å	Wu, C.-Y.H.; Jodges, D. L. Study of sulfur-containing molecules in the EUV region: I. Photoabsorption cross section of SO_2 . <i>J. Chem. Phys.</i> 74, 3806 (1981) United States
8305	A17 $NeXe^{2+}; ArXe^{2+}$	T	Undef	Helm, H.; Stephan, K.; Marx, T. G.; Kuentzle, D. L. Double ionization of van der Waals diatoms: NeXe and ArXe. <i>J. Chem. Phys.</i> 74, 2844 (1981) Austria
8306	A14 $CH + N; CN + N$	E	294 K	Hassler, I.; Filsch, S. V.; Sedewitz, C. R.; Carrington, T. Absolute rate constants for the reactions of CH with C and N atoms. <i>J. Chem. Phys.</i> 74, 3674 (1981) Canada
8307	A02 $He + Na_2$ A03 $He + Na_2$ A17 $He + Na_2$ A18 $He + Na_2$	E T	0.45-1.25 eV	Schinke, R.; Müller, W.; Peyer, W.; McGuire, J. Theoretical investigation of rotational rainbow structures in $X-Na_2$ collisions using CI potential surfaces: I. Rigid-rotor $X + He$ scattering and comparison with state-to-state experiments. <i>J. Chem. Phys.</i> 74, 3916 (1981) West Germany
8308	A13 $F + H_2$	T	400-1000 cm ⁻¹	Fitz, D. E.; Kouri, E. J. Coupled states study of nonreactive $F(^2P) + H_2(^1\Sigma_g^+)$ collisions. <i>J. Chem. Phys.</i> 74, 3933 (1981) United States
8309	A14 $Br + Br + Ar$	T	1500-6000 K	Kutz, M. D.; Burns, G. Trajectory study of dissociation reactions. The single-ensemble method: II. <i>J. Chem. Phys.</i> 74, 3947 (1981) Canada
8310	A17 $LiH; LiH^-; NaH; NaH^-; KH; KH^-;$ $RbH; RbH^-; CsH; CsH^-$	T	Undef	Stevens, W. J.; Koro, A. R.; Hieber, J. R. MCSCF pseudopotential calculations for the alkali hydrides and their anions. <i>J. Chem. Phys.</i> 74, 3989 (1981) United States

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8311	A06 $\text{NO}_2^- + \text{O}_2; \text{NO}_2^- + \text{O}_2; \text{CO}_2^- + \text{O}_2;$ $\text{CO}_2^- + \text{C}_2; \text{O}_2^+ + \text{O}_2$	E	271-573 K	Parkins, W. B.; Eiselo, F. L.; McDaniel, F. B. Temperature dependent mobilities: NO_2^- , CO_2^- , CO_2^- , and O_2^+ in O_2 . J. Chem. Phys. 74, 4286 (1981) United States
8312	A17 $\text{OCS}; \text{OCS}^+$	E	Undef	Delviche, J.; Rubin-Franklin, P.-J.; Gaycy, P.-H.; Menner, I. Autoionization of OCS by threshold photoelectron spectroscopy. J. Chem. Phys. 74, 4215 (1981) France
8313	A05 $\text{Xe} + \text{I}_2; \text{Xe} + \text{HI}; \text{Xe} + \text{ICl}; \text{Xe} +$ $\text{IBr}; \text{Xe} + \text{Br}_2; \text{Xe} + \text{NBr}$ A11 $\text{Xe}^+ + \text{I}_2; \text{Xe}^+ + \text{HI}; \text{Xe}^+ + \text{ICl}; \text{Xe}^+$ $+ \text{IBr}; \text{Xe}^+ + \text{Br}_2; \text{Xe}^+ + \text{NBr}$	E	300 K	Yasagake, K.; Zetser, D. W.; Kelso, J. M. Interpretations of XeI and XeBr beam-free emission spectra and reactive quenching of $\text{Xe}(\text{P}_2)$ atoms by bromine and iodine containing molecules. J. Chem. Phys. 74, 4286 (1981) United States
8314	A05 $\text{Ar}^+ + \text{Ca}$ A07 $\text{Ar}^+ + \text{Ca}$	E	300 K	Hartman, D. C.; Wynn, J. S. Chemiluminescent chemi-ionization: $\text{Ar}^+ + \text{Ca}$ and the CaAr^+ emission spectrum. J. Chem. Phys. 74, 4226 (1981) United States
8315	C16 $\text{O} + [\text{O}_2 + \text{Ar}]$	E	300 K	Keto, J. W. Electron beam excited mixtures of C_2 in argon: II. Electron distributions and excitation rates. J. Chem. Phys. 74, 4445 (1981) United States
8316	A05 $\text{Ar}_2^+ + \text{C}_2; \text{Ar}_2^+ + \text{O}_2$ A10 $\text{Ar}_2^+ + \text{O}_2; \text{Ar}_2^+ + \text{O}_2$	E	300 K	Keto, J. W.; Hart, C. F.; Kuo, C.-Y. Electron beam excited mixtures of O_2 in argon: III. Energy transfer to O_2 and O_2 . J. Chem. Phys. 74, 4450 (1981) United States
8317	A10 $\text{NF}^+ + \text{VF}$	E	300 K	Jernich, G. M.; Crim, F. F. Vibrational relaxation of $\text{NF}(v = 3, 4, 5)$. J. Chem. Phys. 74, 4455 (1981) United States
8318	A17 $\text{LiH}; \text{Li}_2; \text{F}_2$	T	Undef	Jonsson, B.; Lööf, B. O.; Taylor, F. R.; Siegbahn, E. M. MCSCF-CI calculations of the ground state potential curves of LiH , Li_2 , and F_2 . J. Chem. Phys. 74, 4566 (1981) Sweden
8319	H04 $\text{hv} + \text{O}_2$ H05 $\text{hv} + \text{O}_2$	T	10-580 eV	Padial, N.; Csanah, G.; McKoy, D. V.; Langhoff, P. B. Photoexcitation and ionization in ozone: Stieltjes-Tchebycheff studies in the separated-channel static-exchange approximation. J. Chem. Phys. 74, 4581 (1981) Brazil
8320	A17 C_2^+	T	Undef	Petrungolo, C.; Bruna, P. J.; Peyerimhoff, S. D.; Bunker, R. J. Theoretical prediction of the potential curves for the lowest-lying states of the C_2^+ molecular ion. J. Chem. Phys. 74, 4594 (1981) West Germany
8321	A17 $\text{CSi}^+; \text{Si}_2^+$	T	Undef	Bruna, P. J.; Petrungolo, C.; Bunker, R. J.; Peyerimhoff, S. D. Theoretical prediction of the potential curves for the lowest-lying states of the CSi^+ and Si_2^+ molecular ions. J. Chem. Phys. 74, 4611 (1981) West Germany
8322	A17 CuH	T	Undef	Lashowski, B.; Stolicop, J. R. Ab initio calculation of the $X^1\Sigma^+$ and $A^1\Sigma^+$ states of CuH . J. Chem. Phys. 74, 4683 (1981) United States
8323	H08 $\text{hv} + \text{S}_2$	E	315-280 nm	Quick, C. R., Jr.; Weston, R. L., Jr. Fluorescence excitation spectra, lifetimes, and quenching of $\text{S}_2[\text{X}(^3\Sigma_g^-)]$ in the wavelength region 280-315 nm. J. Chem. Phys. 74, 4981 (1981) United States
8324	A14 $\text{O} + \text{H}_2$ A17 $\text{O} + \text{H}_2$	T	300-2000 K	Schatz, G. C.; Wagner, A. F.; Walz, S. P.; Bowman, J. H. A comparative study of the reaction dynamics of several potential energy surfaces of $\text{O}(\text{H}) + \text{H}_2 + \text{H} + \text{H}$. J. Chem. Phys. 74, 4584 (1981) United States
8325	A02 $\text{H} + \text{D}; \text{He} + \text{H}; \text{T} + \text{T}$	T	0-1 eV	Lim, T. K.; Larson, S. V. The Ramsauer-Townsend effect in molecular systems of electron-spin-polarized hydrogen and helium and their isotopes. J. Chem. Phys. 74, 4597 (1981) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
8326	A14 T + HD	T	10 ¹⁰ -2400 K	Agrawal, P. N.; Buff, L. N. Calculation of reaction probabilities and rate coefficients for collinear three-body exchange reactions using time-dependent wave packet methods. <i>J. Chem. Phys.</i> 74, 887c (1981) United States
8327	E ²⁵ e + F ₂ ; e + Cl ₂	E	12-100 eV	Stevie, F. A.; Vassilev, N. J. Electron impact ionization cross sections of F ₂ and Cl ₂ . <i>J. Chem. Phys.</i> 74, 5186 (1981) United States
8328	A ²⁵ Na ₂ + Ar A10 Na ₂ + Ar A18 Na ₂ + Ar	E	0.3 eV	Serri, J. A.; Becker, C. H.; Elbel, K. R.; Kinsey, J. L.; Knecht, L. P.; Pritchard, B. E. Level to level differential cross sections for vibrationally-rotationally inelastic collisions of Na ₂ with Ar. <i>J. Chem. Phys.</i> 74, 1116 (1981) United States
8329	A14 H + O ₂	T	30° K	Miller, J. A. Collision dynamics and the thermal rate coefficient for the reaction H + O ₂ → OH + O. <i>J. Chem. Phys.</i> 74, 5120 (1981) United States
8330	H ²⁵ hv + HgBr ₂ ; hv + HgI ₂	E	130 nm	McGarvey, J. A., Jr.; Cheung, T.-M.; Eriksen, A. C.; Coal, T. A. Vibrational distributions of HgBr(Δ ² Σ ⁺) and HgI(Δ ² Σ ⁺) molecules formed by photodissociation of HgBr ₂ and HgI ₂ . <i>J. Chem. Phys.</i> 74, 5132 (1981) United States
8331	A14 H + O ₂	E	30° K	Fabree, A.; Gibson, J. J. Rate constants for formation of HO in vibrational levels v = 2 through 7 from the reaction H(Δ ² Σ ⁺) + O ₂ → HO + O. <i>J. Chem. Phys.</i> 74, 1143 (1981) United States
8332	A17 H ₂	T	Undef	Longfield, B. P., III; Phillips, L. H.; Ichig, J. C. Half-projected Hartree-Fock calculations on several small molecules. <i>J. Chem. Phys.</i> 74, 5174 (1981) United States
8333	D13 Xe + Pt	T	10 ¹ -2000 K	Griemsmann, E. A.; Tully, J. C.; Telford, E. Molecular dynamics of infrequent events: thermal desorption of xenon from a platinum surface. <i>J. Chem. Phys.</i> 74, 5300 (1981) United States
8334	A13 Ar ⁺ + F ₂ ; Ar ⁺ + D ₂	E	0.15-0.5 eV	Tanaka, K.; Burup, J.; Aoto, T.; Koyano, I. State selected ion-molecule reactions by a TESS technique. II. Separation of the reactant spin-orbit states in the reaction Ar ⁺ (² P _{3/2} , ² P _{1/2}) + H ₂ (Δ _g) → ArH ⁺ (ArD ⁺) + H(D). <i>J. Chem. Phys.</i> 74, 5861 (1981) Japan
8335	A ²⁵ Ti + O ₂ ; V + O ₂	E	3.9-13.3 kcal/mol	Farnon, J. R.; Colgar, L. C.; Corway, T. J. Crossed-beam chemiluminescent reactions of titanium and vanadium with O ₂ . <i>J. Chem. Phys.</i> 74, 5858 (1981) United States
8336	A17 Na + H ₂	E	Undef	Hauvel, L.; Meier, J.; Pauly, H. Determination of the Na-H ₂ repulsive potential between 0.5 and 2 eV from the inversion of differential cross section data. <i>J. Chem. Phys.</i> 74, 5613 (1981) West Germany
8337	A1 ² O ₂ + C ₂ ; O ₂ + I	E	259-353 K	Heldner, R. F., III; Gardner, C. E.; El-Sayed, T. P.; Segal, G. I.; Kasper, J. V. L. Temperature dependence of C ₂ (Δ _g) + O ₂ (Δ _g) and I(² P _{3/2}) + C ₂ (Δ _g) energy pooling. <i>J. Chem. Phys.</i> 74, 8118 (1981) United States
8338	A10 Ca ⁺ + Ar	E	324 K	Fence, W. H.; Leone, S. R. Laser studies of electronic excitation transfer in atomic calcium: Ca(4s ² ¹ P ₁) + Ar going to or coming from Ca(4s ² ² F _{5/2} , ² F _{3/2}) + Ar. <i>J. Chem. Phys.</i> 74, 5707 (1981) United States
8339	A17 LiF	T	Undef	Werner, H.-J.; Payer, W. MCSCF study of the avoided curve crossing of the two lowest ¹ Σ ⁺ states of LiF. <i>J. Chem. Phys.</i> 74, 5802 (1981) West Germany
8340	H ²⁴ hv + U H ²⁴ hv + U	E	5515 Å	Chen, H.-L.; Barzilai, G. Laser induced fluorescence studies of U II produced by photoionization of uranium. <i>J. Chem. Phys.</i> 74, 6863 (1981) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
8341	E63 $e + O_2$ E17 $e + O_2$	E	209-400 eV	Dillon, M. A.; Spence, D. A new, optically forbidden Rydberg series in O_2 converging to the C_2^+ c 2I (not c) limit. J. Chem. Phys. 74, 6878 (1981) United States
8342	A04 $H + H_2$ A14 $H + H_2$	E	0-10 eV	Miller, W. M.; Grot, A. E. Classical trajectory model for electronically nonadiabatic collision processes: a classical valence bond model for electronic degrees of freedom. J. Chem. Phys. 74, 4875 (1981) United States
8343	M05 $h\nu + O_2^-$	E	650-300 nm	Miller, J. F.; Vestel, M. L. Laser photodissociation of O_2^- by triple quadrupole mass spectrometry. J. Chem. Phys. 74, 6996 (1981) United States
8344	A14 $O + H_2C$	E	300 K	Goriche, K.-H.; Comen, F. J.; Lavie, R. L. Energy partitioning in the reaction $^{16}O(A) + H_2 \rightarrow ^{16}O + ^{16}OH + ^{16}OH$: II. The distribution of ^{16}OH and ^{16}OH . J. Chem. Phys. 74, 6166 (1981) West Germany
8345	A15 $Co + H_2O$	E	300 K	Irvin, J. A.; Bagdikian, P. J. A study of the reactions $Co(^5S, ^7P, \text{and } ^9D) + H_2O$ under single-collision conditions and at higher pressures: chemiluminescence cross sections, photon yields, and collisional energy transfer in CoO^+ by H_2O . J. Chem. Phys. 74, 6178 (1981) United States
8346	A10 $LiH^+ + Li$	E	300 K	Idha, K. G.; Gira, P. M.; Chung, K. J.; Reiten, L. P. Resonance energy transfer in $LiH(A^1\Sigma)$. J. Chem. Phys. 74, 6212 (1981) United States
8347	E63 $e + H_2$	E	10-300 eV	McConkey, J. W. Use of polarization measurements in evaluating cascade contributions to optical excitation functions. J. Chem. Phys. 74, 6254 (1981) Canada
8348	A14 $H + HBr; H + DBr; D + HBr; D + DBr$	E	1-7 kcal/mol	Hopburn, J. W.; Klinck, C.; Liu, K.; Paddenfeld, K. G.; Northrup, T. J.; Polanyi, J. C. Reactive cross section as a function of reagent energy: II. $H(E) + HBr(DBr) + H_2(ND, D_2) + Br$. J. Chem. Phys. 74, 6226 (1981) Canada
8349	A05 $F + I_2F$	E	300 K	Trickl, T.; Wanner, J. If $(A + B, E + X)$ chemiluminescence from the $F + I_2F$ reaction. J. Chem. Phys. 74, 6568 (1981) West Germany
8350	M05 $h\nu + HCAr$	E	44200-44700 cm^{-1}	Langridge-Smith, P. R. R.; Corraquellie, M.; Levy, L. M. The direct photodissociation of the van der Waals molecule $HCAr$. J. Chem. Phys. 74, 6513 (1981) United States
8351	A04 $Ar + H_2$	T	4500 K	Blais, M. C.; Truhlar, D. G. Monte Carlo trajectory calculations of the energy activation for collision-induced dissociation of H_2 by Ar as a function of rotational energy. J. Chem. Phys. 74, 6769 (1981) United States
8352	A02 $O + O_2; O + N_2; O_2 + O_2; O_2 + N_2$ A17 $O_2 + O_2$	E	300 K	Brunetti, D.; Liuti, G.; Luzzetti, E.; Pirelli, F.; Vecchiocattivi, F. Study of the interactions of atomic and molecular oxygen with O_2 and N_2 by scattering data. J. Chem. Phys. 74, 6724 (1981) Italy
8353	A10 $Na^+ + NO; Na^+ + CO_2$	E	1350 m/sec	Mertel, I. V.; Pelland, W. Electronic to vibrational rotational energy transfer in collisions of $Na(^2P)$ with NO and small organic molecules. J. Chem. Phys. 74, 6767 (1981) West Germany
8354	E05 $e + NO$	E	10-100 eV	Kim, Y. B.; Stephan, K.; Mark, E.; Park, I. D. Single and double ionization of nitric oxide by electron impact from threshold up to 100 eV. J. Chem. Phys. 74, 6771 (1981) Austria
8355	E04 $e + SO_2; e + SO_2$ E05 $e + SO_2; e + SO_2$	E	10-40 eV	Smith, O. I.; Stevenson, J. S. Interrelation of cross sections for formation of parent and fragment ions by electron impact from SO_2 and SC_2 . J. Chem. Phys. 74, 6777 (1981) United States

REF. NO.	REACTANTS	EXP. CR. TECH.	ENERGY RANGE	REFERENCE
8356	N10 hv + Xe + Cl ₂	E	193 nm	Wicsek, D. E.; Burnham, R. Resonant collision-induced absorption in Xe/Cl ₂ mixtures. J. Chem. Phys. 74, 6704 (1981) United States
8357	H05 hv + N ₂ C H10 hv + N ₂ C	E	193 nm	Zavelicich, J.; Moinschid, M.; Cornib, B.; Shaden, C. R. VUV fluorescence following photoionization of h ₂ at 192 nm. J. Chem. Phys. 74, 6767 (1981) United States
8358	E*2 e + CO ₂ E17 e + CO ₂ C09 e + CO ₂	E	10 eV	Thirumalai, D.; Cude, K.; Truhler, E. G. Electron scattering by CO ₂ : elastic scattering, rotational excitation, and excitation of the asymmetric stretch at 10 eV impact energy. J. Chem. Phys. 74, 6752 (1981) United States
8359	A*2 Na + Ar; Na + Kr; Na + Xe A17 Na + Ar; Na + Kr; Na + Xe A18 Na + Ar; Na + Kr; Na + Xe	E	33x10 ⁻¹⁰ erg	Euren, R.; Grager, U.; Henselbrink, E.; Liedtke, R. Differential scattering cross sections and the A ² potentials for the systems NaAr, NaKr, and NaXe. J. Chem. Phys. 74, 6896 (1981) West Germany
8360	A14 H + H ₂	T	0.6 eV	Clary, D. C.; Connor, J. H. L. Vibrationally adiabatic distorted wave calculation for the rotationally excited reaction H + H ₂ (v = 0, j) → H ₂ (v = 0, j) + H. J. Chem. Phys. 74, 6591 (1981) United Kingdom
8361	A*2 Na + Ar A18 Na + Ar	E	24x10 ⁻¹⁰ erg	Euren, R.; Liedtke, R. Scattering of Na 2P _{3/2} from Ar. J. Chem. Phys. 74, 6955 (1981) West Germany
8362	A10 CS ₂ + CS ₂ ; CS ₂ + Ar; CS ₂ + CC ₂ CS ₂ + CC ₂ ; CS ₂ + Ar; CO ₂ + Ar	E	30°-2500 K	Asplund, H. H. A.; Quinton, A. H.; Simons, J. F. Energy transfer from state-selected photofragments. J. Chem. Soc. Faraday Trans. II 76, 512 (1980) United Kingdom
8363	A11 O ₂ * + C ₂	E	1000-1050 K	Borrell, P. P.; Borrell, P.; Gort, R. V. Vibrational relaxation of excited oxygen, [O ₂ *(v=0, j)], studied with a discharge-flow-shock-tube technique. J. Chem. Soc. Faraday Trans. II 76, 525 (1980) United Kingdom
8364	H*2 hv + Br ₂	E	637-570 nm	Clyne, M. A. A.; Heaven, M. C.; Lable, S. J. Laser-excitation studies of Br ₂ . J. Chem. Soc. Faraday Trans. II 76, 561 (1980) United Kingdom
8365	A17 CO ₂ * + H ₂ ; CO ₂ * + SO ₂ ; CO ₂ * + O ₂ CO ₂ * + CH ₄ ; CO ₂ * + C ₂ H ₂ ; CO ₂ * + C ₂ H ₄ NO ₂ ; CO ₂ * + NO ₂ ; CO ₂ * + CH ₃ ; CO ₂ * + C ₂ H ₆ C ₂ H ₂ ; CO ₂ * + C ₂ H ₂ ; CO ₂ * + H ₂ (CO ₂) ₂ * + H ₂ ; (CO ₂) ₂ * + SO ₂ (CO ₂) ₂ * + C ₂ ; (CO ₂) ₂ * + CCl ₄ (CO ₂) ₂ * + C ₂ H ₂ ; (CO ₂) ₂ * + H ₂ (CO ₂) ₂ * + NO ₂ ; (CO ₂) ₂ * + CH ₃ (CO ₂) ₂ * + C ₂ H ₂ ; (CO ₂) ₂ * + C ₂ H ₄ (CO ₂) ₂ * + NH ₃ ; H ₂ C* + H ₂ ; H ₂ O* + SO ₂ ; H ₂ O* + O ₂ ; H ₂ C* + CCl ₄ ; H ₂ C* + C ₂ H ₂ C ₂ H ₂ * + NO ₂ ; H ₂ C* + NC; H ₂ O* + CH ₃ ; H ₂ C* + C ₂ H ₂ ; H ₂ O* + C ₂ H ₄ H ₂ O* + NH ₃	E	300 K	Pakshil, A. B.; Vernech, P. Reactions of CO ₂ *, CO ₂ CCl ₂ * and H ₂ O* ions with various neutral molecules. J. Chem. Soc. Faraday Trans. II 76, 1019 (1980) West Germany
8366	A18 Cl ₂ * + Cl ₂ ; Cl ₂ * + Ar; Cl ₂ * + N ₂ Cl ₂ * + C ₂	F	260 K	Clyne, M. A. A.; Portinari, L. Laser-induced fluorescence studies: the 8-3 transition of Cl ₂ ; v. Relative lifetimes of the 8 state. J. Chem. Soc. Faraday Trans. II 76, 1276 (1980) United Kingdom
8367	A10 CO* + C ₂ ; H ₂ * + O ₂ ; CN* + C ₂ H ₂ N* + C ₂ ; OCS* + O ₂	F	295 K	Roberts, J. L.; Smith, I. W. P. Vibrational energy transfer from CO(v = 1), h ₂ (v = 1), C ₂ (v = 1), h ₂ (v = 1), and OCS(v = 1) to O ₂ . J. Chem. Soc. Faraday Trans. II 76, 1334 (1980) United Kingdom
8368	A14 H + NO; H + NF ₂ ; H + NF ₃	E	290 K	Chen, C. T.; Clyne, M. A. A. Reactions forming electronically-excited free radicals: II. Formation of h ₂ , h ₂ *, and h ₂ *P atoms in the H + NF ₂ reaction, and h ₂ atom reactions. J. Chem. Soc. Faraday Trans. II 76, 1842 (1980) United Kingdom

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
8369	A11 BrF ₃ + C ₂ ; BrF ₃ + Cl ₂ ; BrF ₃ + Ar; BrF ₃ + HCl	E	293 K	Clyne, H.A.A.; Liddy, J. F. Quantum-resolved dynamics of excited states. VI. Pulsative lifetime and collisional deactivation rates in Ar (2). J. Chem. Soc. Faraday Trans. II 76, 1569 (1980) United Kingdom
8370	M06 hv + C; hv + C; hv + Al; hv + Si; hv + S; hv + Ni; hv + Cu; hv + Co; hv + Ge; hv + As; hv + Se; hv + In; hv + Sb; hv + Cd; hv + Ba; hv + Ce; hv + Te; hv + U; hv + Pt; hv + Au; hv + Pb	T	20-1500 eV	Goldberg, S. P.; Fadley, C. S.; Perc, S. Photoionization cross-sections for atomic orbitals with random and fixed spatial orientations. J. Electron. Spectrosc. Relat. Phenom. 21, 265 (1981) United States
8371	A17 O + O ⁺ M06 hv + O ₂	E	736-504 Å	Kemer, V.; Krishnakumar, E. Anticoincidence of O ₂ by photoelectron spectroscopy. J. Electron. Spectrosc. Relat. Phenom. 22, 105 (1981) India
8372	M06 hv + CH ₄ ; hv + NH ₃ ; hv + H ₂ C	E	58.4 nm	Achiba, Y.; Yamazaki, T.; Kikura, P. Re-measurements of partial photoionization cross-sections of CH ₄ , NH ₃ , and H ₂ O at 58.4 nm by He(I) photoelectron spectroscopy. J. Electron. Spectrosc. Relat. Phenom. 22, 187 (1981) Japan
8373	A17 I ₂	E	Undef	Ashby, R. A.; Johnson, C. W. The vibrational numbering and improved constants of A ² Π _g (alt u) state of I ₂ . J. Mol. Spectrosc. 84, 41 (1980) Australia
8374	A17 N ₂	E	Undef	Matsuura, K.; Kawaguchi, K.; Kagai, K.; Tanaka, C.; Hirota, E. Infrared diode laser spectroscopy of the A ² Σ ⁺ radical. J. Mol. Spectrosc. 84, 66 (1980) Japan
8375	A17 SeO	E	Undef	Reddy, S. P.; Verma, R. K. The a- ² electronic band system of selenium monoxide at 1.8 μm. J. Mol. Spectrosc. 84, 85 (1980) Canada
8376	M06 hv + SC ₂	E	4 μ	Pine, A. S.; Berg-Mhu, M. Spectral intensities of the 4-μm v ₁ + v ₂ combination band of SO ₂ . J. Mol. Spectrosc. 84, 132 (1980) United States
8377	M06 hv + O ₂	E	5.6 μ	Secroun, C.; Berbe, A.; Jouve, P.; Arcas, P.; Arle, I. Intensity of the v ₂ band of ozone from a study of its anomalous dispersion at 10 μm. J. Mol. Spectrosc. 85, 8 (1981) France
8378	A17 Na + Na M06 hv + Na ₂	E	Undef	Verma, R. K.; Vu, T. H.; Stuelley, W. C. New observations and analysis of the laser excited fluorescence of the A ² Σ ⁺ (alt u) - X ² Σ ⁺ (alt g) bands of the Na ₂ molecule. J. Mol. Spectrosc. 85, 121 (1981) United States
8379	M04 hv + Na ₂	T	11000-16000 cm ⁻¹	Zonke, W. T.; Verma, R. K.; Vu, T. H.; Stuelley, W. C. An investigation of radiative transition probabilities for the A ² Σ ⁺ (alt u) - X ² Σ ⁺ (alt g) bands of Na ₂ . J. Mol. Spectrosc. 85, 150 (1981) United States
8380	A12 H ₂ O + D ₂ C M02 hv + H ₂ C	E	A12 300 K M02 2 μ	Lecours, M.; Levy, A. Line strengths and self-broadened linewidths of H ₂ C in the 2-μm region. 2400-3000 and 3100-3600 transitions. J. Mol. Spectrosc. 85, 205 (1981) France
8381	A17 Si + S	T	Undef	Robbe, J. R.; Lefebvre-Brien, P.; Gellene, R. P. Theoretical electronic structure and perturbations in SiS. J. Mol. Spectrosc. 85, 218 (1981) France
8382	A12 IBr ⁺ + IBr ⁻	E	283 K	Knochel, H.; Tienmann, E.; Ziegler, E. Line broadening by predissociation in the spectrum of IBr. J. Mol. Spectrosc. 85, 226 (1981) West Germany
8383	A17 CO	E T	Undef	Telle, H.; Telle, U. A single numerical treatment of the RR potential integrals and its application to H ₂ CO (X ¹ Σ ⁺). J. Mol. Spectrosc. 85, 248 (1981) France

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8384	H02 hv + HCl ₂	E	64 ^a cm ⁻¹	Kohn, B. J.; James, L. R. The vibrational transition moment for the v ₂ bands of ³⁵ Cl ₂ and ³⁷ Cl ₂ . J. Mol. Spectrosc. 86, 16 (1981) United States
8385	H02 hv + HBr ₂	E	931-954 cm ⁻¹	Baldacchini, G.; Marchetti, S.; Portolatici, V. Diode laser measurements of HBr ₂ absorption lines in the range 931-954 cm ⁻¹ . J. Mol. Spectrosc. 86, 115 (1981) Italy
8386	H02 hv + CF ₄	E	3.3 μ	Munt, B. H.; Ercum, L. R.; Teth, R. P.; Brouil, J. G. Line assignments and intensities for the v ₂ + v ₃ - v ₄ band of ¹² CF ₄ . J. Mol. Spectrosc. 86, 170 (1981) United States
8387	H02 hv + CH ₄	E	2638-3100 cm ⁻¹	Gherisai, S.; Henry, A.; Leste, P.; Valentia, A. Transition moment and line strengths of the v ₂ band of ¹² CH ₄ . J. Mol. Spectrosc. 86, 244 (1981) France
8388	A17 H ₂	I	Undef	Kolon, V. Adiabatic corrections for the E (double prime) ¹ Σ _g ⁺ state of the hydrogen molecule. J. Mol. Spectrosc. 86, 420 (1981) Poland
8389	A17 H ₂ ; HD; D ₂	T	Undef	Dressler, K.; Wciniewicz, L. The 1s 2p bar ¹ Σ _g ⁺ state of hydrogen: adiabatic calculation of vibratic states in H ₂ , HD, and D ₂ . J. Mol. Spectrosc. 86, 524 (1981) Switzerland
8390	H06 hv + Ar	T	788-780 Å	Taylor, K. T.; Scott, N. S. Photoionization of argon in a pair-coupling scheme. J. Phys. 14, L277 (1981) United Kingdom
8391	A06 H ₂ ⁺ + H A10 H ₂ ⁺ + H	E	111 eV	McAfee, K. B., Jr.; Szmanda, C. F.; Pozach, R. S. Vibrational energy transfer during charge exchange in H ₂ ⁺ or H ₂ collisions. J. Phys. 14, L242 (1981) United States
8392	A06 H ⁺ + He A18 H ⁺ + He	T	509 keV	Nordal-Pedersen, E. On the two-state approximation for capture. J. Phys. B 14, L249 (1981) Denmark
8393	A07 H ⁺ + Au; He ⁺ + Au; C ⁺ + Au; N ⁺ + Au; O ⁺ + Au	I	0.4-3.4 MeV	Sarkadi, L.; Ruhogano, T. Possible rearrangement processes in L-shell ionization of atoms by heavy ions. J. Phys. B 14, L255 (1981) West Germany
8394	E02 e + Na ⁺ E03 e + Na ⁺	I	2.5-3.0 Ry	Horrington, P. R.; Grant, I. P. Electron scattering from Na II using the relativistic <i>f</i> -matrix method. J. Phys. B 14, L261 (1981) United Kingdom
8395	A03 Undef A10 Undef	I	Undef	Gutrovsky, V. A.; Ustinov, V. L. The corrections between the rotational transition cross sections in diatomic molecules. J. Phys. B 14, 1135 (1981) Soviet Union
8396	A03 H ⁺ + Au A07 H ⁺ + Au	E	0.25-0.60 MeV	Polinhos, J.; Schlenk, B.; Veich, P. The Coulomb reflection effect on the L ₂ -subshell alignment in low-velocity proton impact ionization. J. Phys. B 14, 1157 (1981) Hungary
8397	A03 Ar ¹⁸⁺ + Na; Ar ¹⁸⁺ + H ₂ ; Kr ¹⁸⁺ + Na; Kr ¹⁸⁺ + H ₂ ; Xe ¹⁸⁺ + Na; Xe ¹⁸⁺ + H ₂ ; Pb ¹⁸⁺ + Na; Pb ¹⁸⁺ + H ₂ A06 Na ¹⁰⁺ + He; Na ¹⁰⁺ + Ar; Na ¹⁰⁺ + H ₂ ; Na ¹⁰⁺ + CH ₄ ; Na ¹⁰⁺ + He; Na ¹⁰⁺ + Ar; Na ¹⁰⁺ + H ₂ ; Na ¹⁰⁺ + CH ₄ ; Na ¹⁰⁺ + Na; Na ¹⁰⁺ + Ar; Na ¹⁰⁺ + H ₂ ; Na ¹⁰⁺ + CH ₄ ; Na ¹⁰⁺ + CM ₄ ; Na ¹⁰⁺ + NH ₃ A07 Ar ¹⁸⁺ + Na; Ar ¹⁸⁺ + H ₂ ; Kr ¹⁸⁺ + Na; Kr ¹⁸⁺ + H ₂ ; Xe ¹⁸⁺ + Na; Xe ¹⁸⁺ + H ₂ ; Pb ¹⁸⁺ + Na; Pb ¹⁸⁺ + H ₂	E	A03; A07 1.4 MeV/amu ⁻¹ A06 10 eV	Fann, R.; Falkmann, F.; Boyer, H. J. Selective electron capture into highly stripped He and H target atoms after heavy-ion impact. J. Phys. B 14, 1161 (1981) West Germany

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
0421	A03 Undef	T	Undef	Richards, B. A sudden approximation for heavy-particle collisions. <i>J. Phys. B</i> 14, 1405 (1981) West Germany
0422	E03 $e + \text{Ne}$ E05 $e + \text{Ne}$	T	0.1-10 e.v.	Larkins, F. P. The (e, 2e) satellite spectrum of helium. <i>J. Phys. B</i> 14, 1477 (1981) Australia
0423	C03 $e + \text{Ne}; e + \text{Ne}; e + \text{Ar}; e + \text{Kr}; e + \text{Xe}$ 007 $e + \text{Ne}; e + \text{Ne}; e + \text{Ar}; e + \text{Kr}; e + \text{Xe}$	T	100-25000 E	Ballin, P.; Chang, J.-S.; Claude, J.; Hubson, R. N.; Ogden, G. L.; Yeo, A. W. Effective collision frequency of electrons in noble gases. <i>J. Phys. E</i> 14, 1405 (1981) Canada
0424	E03 $e + \text{Zn}$ E05 $e + \text{Zn}$	E	16-300 eV	Bach, C. G.; White, R. B.; Pejcev, V.; Rees, R. J. The ejected electron spectrum of zinc vapour autoionizing levels excited by low-energy electron impact. <i>J. Phys. B</i> 14, 1497 (1981) United Kingdom
0425	E03 $e + \text{H}_2$ E04 $e + \text{H}_2$ E06 $e + \text{H}_2$	E	23-29 eV	Landau, M.; Mail, H. I.; Pichou, F. Proton production from H_2 by electron impact excitation of autoionizing states near threshold. <i>J. Phys. B</i> 14, 1805 (1981) France
0426	N06 Undef N11 Undef	T	Undef	By, M. B.; van Wageningen, M. The calculation of radial integrals for bound-free and free-free transitions. <i>J. Phys. B</i> 14, 1323 (1981) France
0427	N02 Undef N04 Undef	T	Undef	Pegg, B. T. Doppler-insensitive differential excitation of isotopic atoms. <i>J. Phys. E</i> 14, L342 (1981) United Kingdom
0428	E06 $e + \text{H}$ E17 $e + \text{H}$	T	Undef	Bottcher, C. Numerical solution of the Peterkop-Watth Tomlin-Mahn model of electron impact. <i>J. Phys. E</i> 14, L349 (1981) United States
0429	N06 $\text{He} + \text{Rh}$	E	Undef	Markovich, D.; Eudich, B. Fluorescence yields for the rhodium L shell. <i>J. Phys. E</i> 14, 1443 (1981) United States
0430	D07 Undef	T		Ferrante, G.; Rizzo, B.; Zaccaro, P. Charged-particle scattering in the presence of a magnetic and a laser field and multiphoton emissions. <i>J. Phys. E</i> 14, 1445 (1981) Italy
0431	A03 Undef A07 Undef	T	Undef	Montenegro, L. C.; de Pinho, A. G.; Barros Leite, C. V. Low-energy total K-shell ionization cross sections in the plane-wave Born approximation: an analytical result. <i>J. Phys. B</i> 14, 1561 (1981) Brazil
0432	A03 Undef	T	Undef	Montenegro, L. C.; de Pinho, A. G.; Baptista, G. B. The K-shell excitation function in the plane-wave Born approximation: transitions to the continuum and discrete (Nates) states. <i>J. Phys. E</i> 14, 1607 (1981) Brazil
0433	A03 $\text{H}^+ + \text{Hg}; \text{He}^+ + \text{Hg}; \text{Li}^+ + \text{Hg}$ A07 $\text{H}^+ + \text{Hg}; \text{He}^+ + \text{Hg}; \text{Li}^+ + \text{Hg}$ E03 $e + \text{Hg}$ E06 $e + \text{Hg}$	E	0.1-7 Threshold	DuBois, R. B.; Portenson, L.; Keldys, N. Collisionally induced alignment produced by electron and light-ion impact: Auger electron emission following 2p ionization and excitation. <i>J. Phys. B</i> 14, 1413 (1981) Denmark
0434	A03 $\text{Fe}^+ + \text{Ti}; \text{Fe}^+ + \text{Ni}; \text{Fe}^+ + \text{Al}; \text{Fe}^+ + \text{Cu}; \text{Fe}^+ + \text{Zr}; \text{Fe}^+ + \text{Ag}; \text{Kr}^+ + \text{Ti}; \text{Kr}^+ + \text{Ni}; \text{Kr}^+ + \text{Al}; \text{Kr}^+ + \text{Cu}; \text{Kr}^+ + \text{Zr}; \text{Kr}^+ + \text{Ag}$ A07 $\text{Fe}^+ + \text{Ti}; \text{Fe}^+ + \text{Ni}; \text{Fe}^+ + \text{Al}; \text{Fe}^+ + \text{Cu}; \text{Fe}^+ + \text{Zr}; \text{Fe}^+ + \text{Ag}; \text{Kr}^+ + \text{Ti}; \text{Kr}^+ + \text{Ni}; \text{Kr}^+ + \text{Al}; \text{Kr}^+ + \text{Cu}; \text{Kr}^+ + \text{Zr}; \text{Kr}^+ + \text{Ag}$	E	200-300 MeV	Chatoui, A.; Rozet, J. P.; Briard, J. P.; Stephan, C. K excitation and K-K transfer cross sections for intermediate-velocity nearly symmetric collisions. <i>J. Phys. B</i> 14, 1625 (1981) France

REF. NO.	REACTANTS	EXP. OR THEOR.	ENERGY RANGE	REFERENCE
0435	A07 $H^+ + H; Ca^+ + Ca; Rb^+ + Pb; K^+ + K$ A11 $H^+ + H; Ca^+ + Ca; Rb^+ + Rb; K^+ + K$	T	500-1000 K	Nikajlov, A. A.; Janov, B. L. Ionization in atom-hydrogen atom collisions: ejected electron energy spectra and reaction rate coefficients. <i>J. Phys. B</i> 14, 1639 (1981); Yugoslavia
0436	A06 $Ca^+ + Ca^+$ A07 $Ca^+ + Ca^+$	E	13-79 keV	Peart, B.; Forrest, M. A.; Balcar, S. Measurements of inelastic collisions between Ca^+ ions. <i>J. Phys. B</i> 14, 1655 (1981); United Kingdom
0437	E05 $e + He$ E17 $e + He$	T	80 eV	Diettrijovic, P. S.; Gragic, P. Electron-helium double ionization near the threshold: numerical investigations. <i>J. Phys. B</i> 14, 1662 (1981); Yugoslavia
0438	E03 $e + LiF; e + CuF; e + KI$ E17 $e + LiF; e + CuF; e + KI$	T	6.25-9 eV	Allen, R. J.; Dickinson, A. S. A semiclassical approximation for sudden S-matrix elements in rotational excitation and simple methods for electron scattering by strongly polar molecules. <i>J. Phys. E</i> 14, 1675 (1981); United Kingdom
0439	G04 $Ar^+ + Ar; Ar^{2+} + Ar$	E	250 K	Varney, R. B.; Helm, M.; Aige, E.; Stori, B.; Lindinger, W. Transverse diffusion of Ar^+ and Ar^{2+} in Ar at 250 K. <i>J. Phys. B</i> 14, 1655 (1981); Austria
0440	H05 $hv + Se; hv + Eu; hv + Tm$	E	21-35 eV	Holland, D.P.P.; Codling, R. Vacua photoionization in Se, Eu and Tm in the region of subshell by ionization (20-35 eV). <i>J. Phys. B</i> 14, 1251 (1981); United Kingdom
0441	A03 $He^+ + He$ A10 $He^+ + He$	E	71-120 eV	Grosser, J.; Heitzhe, H.-P. Scattering amplitudes into magnetic substates for the process $He^+ + He + He^+ + He(1s2p)^1P$ at low energy. <i>J. Phys. E</i> 14, 1371 (1981); West Germany
0442	A07 $He^{2+} + He; He^{2+} + He$ A06 $He^{2+} + He; He^{2+} + He$	E	1 eV	Beyer, H. F.; Henn, R.; Folbner, I. High-charge-low-velocity electron capture studied by x-ray line quenching. <i>J. Phys. E</i> 14, 1277 (1981); West Germany
0443	A06 $Ca^+ + Ca^+$	E	25-68 keV	Peart, B.; Forrest, M. A.; Lister, R. Measurements of cross sections for charge transfer between Ca^+ ions. <i>J. Phys. B</i> 14, 1703 (1981); United Kingdom
0444	B03 $hv + H$ H05 $hv + H$	T	H γ 1-8 keV	Kara, S. M.; McIowell, P.H.C. The photoionization of atomic hydrogen and hydrogenic ions in intense magnetic fields. <i>J. Phys. B</i> 14, 1715 (1981); United Kingdom
0445	H08 Undef	T	Undef	Yeh, S.; Stehle, P. Multiphoton scattering processes. <i>J. Phys. B</i> 14, 1741 (1981); United States
0446	H02 $hv + HCl; hv + Cl_2$	E	194-241 eV	Ninomiya, A.; Ishiguro, T.; Iwata, Z.; Mibuchi, P.; Sasaki, T. Chlorine L absorber cross sections of gaseous HCl and Cl_2 . <i>J. Phys. E</i> 14, 1777 (1981); Japan
0447	H04 $hv + H_2$ H05 $hv + H_2$	E	737-650 Å	West, J. B.; Ccolling, R.; Farr, P. C.; Idder, E. L.; Cole, E. L.; Stockbauer, N.; Vanders, J. L. Branching ratios and photoelectron angular distributions through the Hapfield bands in H_2 between 620 and 746 Å. <i>J. Phys. B</i> 14, 1751 (1981); United States
0448	H04 $nh\nu + IF_6$	T	967-949 cm $^{-1}$	Mogkenson, D. F.; Taylor, A. J.; Fatiello, A. G. Multiphoton excitation of vibration-rotation states in the ν_2 mode of IF_6 . <i>J. Phys. E</i> 14, 1663 (1981); United Kingdom
0449	A03 $LiF^+ + H; LiF^+ + H$ A06 $LiF^+ + H; LiF^+ + H$	T	0.5 a.u.	van den, J.; Toubjurg, R. Adiabatic transition factors in slow ion-atom collisions. <i>J. Phys. B</i> 14, 1815 (1981); Denmark
0450	A07 $Na^+ + Na$ A10 $Na^+ + Na$	E	3.135-0.17 eV	Pennell, A.; Runge, B.; Savin, E.; Heiffer, H.; Metel, O. Velocity dependence of the cross section for associative ionization of Na atoms by laser-excited $Na(3P)$ atoms. <i>J. Phys. B</i> 14, 1827 (1981); West Germany

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0466	D04 $h\nu + \text{Ba}$	E		Belser, C.; Keller, J.-C.; Kattancjian, V. P. Investigation of the dynamic Stark effect of a $J = 6$ going to or coming from $J = 1$ optical transition. <i>J. Phys. (Paris)</i> 42, 529 (1981) France
0467	A05 $\text{Hg}^0 + \text{BaO}$ A14 $\text{Hg}^0 + \text{BaO}$	E	Undef	Taleb, G. Laser induced fluorescence of HgO . <i>J. Phys. (Paris)</i> 42, 527 (1981) France
0468	E08 $e + \text{Al}^{100+}; e + \text{Al}^{100+}; e + \text{Al}^{100+}$	E	0.00 eV	Jongle, P.; Carillon, A.; Japelot, C.; Wobbenkel, C. Space-dependent shift of spectral lines in laser-produced plasmas. <i>J. Phys. (Paris) Lett.</i> 40, L551 (1975) France
0469	H02 $h\nu + \text{H}_2\text{C}$	E	644-593 nm	Cany-Feyret, C.; Flaud, J.-M.; Hillaire, J.-F. The $4\sigma_2$ band of H_2^{13}C . <i>J. Phys. (Paris) Lett.</i> 41, L23 (1980) France
0470	A17 $\text{Hg}^0 + \text{Hg}$	E	Undef	Lebaucher, E.; Boe, R. Versus de voir der heale intercoment dans le potentiel de couple $\text{Hg}^{25}\text{S}_0\text{-Hg}^{25}\text{F}_1$. <i>J. Phys. (Paris) Lett.</i> 41, L57 (1981) France
0471	A07 $\text{He}^0 + \text{F}_2$	E	500 K	Tuffin, F.; Le Coz, G.; Poreau, J. Ionization Penning du F_2 moléculaire par He^{25}S et 2^5S . <i>J. Phys. (Paris) Lett.</i> 41, L109 (1980) France
0472	D05 $h\nu + \text{Al} + \text{Cu}$	E	1.5-4 eV	Mincelin, G.; Septier, A. Influence of surface plasma waves on the surface and volume photoemission yields from Al thin films in the photon energy domain 1.5 to 4 eV. <i>J. Phys. (Paris) Lett.</i> 41, L157 (1980) France
0473	D02 $\text{O}_2^+ + \text{glass}$	E	5.5 keV	Navette, A.; Sicilian, G. Patris effects in secondary ion emission: quantitative analysis of silicates. <i>J. Phys. (Paris) Lett.</i> 41, L247 (1980) France
0474	A10 $\text{He}^0 + \text{He}$	E	Undef	Corlissi, P.; Fauriol, A.; Imbert, P. Study of velocity-changing collisions by time resolved saturated absorption. <i>J. Phys. (Paris) Lett.</i> 41, L278 (1980) France
0475	D01 Undef	T		Bouchiat, R. A.; Guene, J.; Fattier, L. Can a strong static electric field induce parity violation in Stark experiments on forbidden H transitions. <i>J. Phys. (Paris) Lett.</i> 41, L295 (1980) France
0476	D07 $\text{Cu} + \text{H}_2 + h\nu$ H10 $h\nu + \text{Cu} + \text{F}_2$	E	H10 459-456 nm	Picque, J. L.; Vargas, J.; Vetter, F. Resonant character of laser-induced formation of particles in a Cu-H_2 vapour. <i>J. Phys. (Paris) Lett.</i> 41, L305 (1980) France
0477	E14 $e + \text{He}; e + \text{NH}_3$	E	25 keV	Bugnot, A.; Lehmann-Dannoni, A.; Falcourt, P. Experimental electron capture profile beyond the impulse approximation. Comparison of results on He and He . <i>J. Phys. (Paris) Lett.</i> 41, L328 (1980) France
0478	C02 $e + \text{Au} + \text{Si}$	E	100 eV	Salvan, F.; Croo, A.; Barrien, J. Electron energy loss measurements on the Si-Au interface. <i>J. Phys. (Paris) Lett.</i> 41, L337 (1980) France
0479	H06 $h\nu + \text{He}$	E	69-190 eV	Wulfenier, F.; Adam, M. Y.; Jorrdre, M.; Scheldt, V. Photoionization of helium above the $n = 2$ photoionization threshold. <i>J. Phys. (Paris) Lett.</i> 41, L373 (1980) France
0480	H04 $h\nu + \text{Cd}$	F	222-358 nm	Chantepie, M.; Cojon, J.-L.; Lencois, J.; Lantegon, S. Energie de vie des niveaux $n = 5$ et $n = 6$ du cadmium. <i>J. Phys. (Paris) Lett.</i> 41, L423 (1980) France
0481	A12 Undef H02 Undef	F T	Undef	Cocelli, P.; Bachet, G.; Reynolds, J. M. Determination of the parameters of a spectral absorption line subjected to pressure effects. <i>J. Phys. (Paris) Lett.</i> 41, L127 (1980) France

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0482	A07 $\text{Ne}^+ + \text{CO}_2; \text{Ne}^+ + \text{CO}_2$	E	Under	Tuffin, F.; Le Cor, G.; Fereusse, J. Etude du spectre en energie des electrons ejectes de la molecule de gaz carbonique par impact d'atomes d'hélium dans les états 2^1S et 2^3S et du neon dans les états 2^1F_2 et 2^1F_0 . J. Phys. (Paris) Lett. 42, L25 (1981) France
1483	C06 $\text{Li}^+ + \text{C}$ C07 $\text{Li}^+ + \text{C}$	E	140 keV	Baula, A.; Bessiquolles, J. Observation of optical emission from beam-foil excited Li^+ . J. Phys. (Paris) Lett. 42, L59 (1981) France
0484	A15 $\text{H} + \text{H}; \text{H}_2 + \text{H}$ B07 $\text{H} + \text{H}; \text{H}_2 + \text{H}$	T	A15 0-1 K	Stwalley, W. C.; Wang, Y. H.; Ferrante, B. F.; Hebel, R. W. Theoretical issues concerning the stability of electron spin-polarized hydrogen. J. Phys. (Paris) Colloq. 41, C7-27 (1980) United States
0485	A15 $\text{H} + \text{H}$	T	0.02-10 K	Wang, Y. H.; Stwalley, W. C. Effective range theory and many-body perturbation theory applied to electron spin-polarized atomic hydrogen. J. Phys. (Paris) Colloq. 41, C7-23 (1980) United States
0486	A15 $\text{H} + \text{H}$	T	Under	Yoon, J. N.; Liu, T. K. Stability of spin-polarized atomic hydrogen against recombination reactions. J. Phys. (Paris) Colloq. 41, C7-25 (1980) United States
0487	A14 $\text{H} + \text{H} + \text{He}$ A15 $\text{H} + \text{H}$ G02 $\text{H} + \text{He}$	T	A14 1-300 K A15 0-4 K G02 0-2.5 K	Berilinsky, A. J. Elementary scattering processes in a low temperature atomic hydrogen gas. J. Phys. (Paris) Colloq. 41, C7-43 (1980) Canada
0488	A14 $\text{H} + \text{H} + \text{He}$ A15 $\text{H} + \text{H}$ G02 $\text{H} + \text{He}$	E	1 K	Hardy, W. H.; Morrow, R.; Jochenauer, E.; Stott, B. H.; Rubin, P. R.; Harnelins, R. N.; Berilinsky, A. J.; Landmann, A. Magnetic resonance studies of atomic hydrogen gas at low temperatures. J. Phys. (Paris) Colloq. 41, C7-157 (1980) Canada
0489	A10 $\text{Ar}^+ + \text{Ar}; \text{Ar}^+ + \text{Xe}$	E	Under	Galy, J.; Biret, A.; Brunet, M.; Djalel, M.; Millet, P.; Solomero, Y. Kinetics of the energy transfer in Ar ⁺ clusters. J. Phys. (Paris) Colloq. 41, C5-281 (1980) France
0490	Z08 $e + \text{O}^+; e + \text{O}^{2+}$	T	2 eV	Wey, J. D.; Bregar, P. Calculated Stark widths of oxygen ion lines. J. Quant. Spectrosc. Radiat. Transfer 24, 249 (1980) South Africa
0491	M02 $\text{hv} + \text{O}_2$	E	256-176 nm	Lewis, D. B.; Carver, J. N.; McEbs, I. I.; McCoy, E. G.; Gies, R. P. F. Rotational variation of predissociation line widths for the Schumann-Runge bands of molecular oxygen. J. Quant. Spectrosc. Radiat. Transfer 24, 365 (1980) Australia
0492	A12 $\text{NCl}^+ + \text{NCl}$	E	297 K	Zugheib, M.; Gelfand, J.; Rabitz, M.; LePrêtre, A. L. Pressure broadening in the 0-4 through 0-7 overtone bands of N^{35}Cl and N^{37}Cl . J. Quant. Spectrosc. Radiat. Transfer 24, 371 (1980) United States
0493	A12 $\text{Na}^+ + \text{Ar}; \text{Na}^+ + \text{N}_2; \text{Na}^+ + \text{H}_2$	E	1400-2300 K	Jongebloed, H. J.; van Jorjen, A. F. E.; Helleander, T.; Alkemade, C. T. J. An experimental study of the collisional broadening of the Na-D lines by Ar, N_2 , and H_2 perturbers in flames and vapor cells: I. The live cells. J. Quant. Spectrosc. Radiat. Transfer 26, 1 (1981) The Netherlands
0494	A12 $\text{NO}^+ + \text{H}_2\text{O}$	E	360-470 K	Sell, J. A. Infrared diode laser spectroscopy of nitric oxide. J. Quant. Spectrosc. Radiat. Transfer 26, 15 (1981) United States
0495	M02 $\text{hv} + \text{SCl}_2$	E	20-136 cm ⁻¹	Larkin, R. J.; Lovejoy, R. W.; Silvaggio, F. R.; Meece, R. B. Intensity of the sulfur dioxide rotational spectrum. J. Quant. Spectrosc. Radiat. Transfer 26, 25 (1981) United States

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8496	A12 $H^+ + H^+$	T	12200 K	Pang, L. G.; Voslamber, E. Ion bremsstrahlung on the wings of Lyman- α . J. Quant. Spectrosc. Radiat. Transfer 25, 25 (1981) France
8497	A12 $He^+ + Fe^+$	T	10 ⁴ K	Voslamber, E.; Segre, E.F.A. Ion dynamic correction to the profile of the forbidden 2 ² P-4 ² F transition of He(I). J. Quant. Spectrosc. Radiat. Transfer 25, 42 (1981) France
8498	H72 $h\nu + H_2C; h\nu + HC$	E	4-5 μ ; 226 nm	Salzman, R.G.P.; Kline, J. P.; Farnes, S. S. Update: empirical determinations of the effective absorption coefficients for the HC γ -bands at 2250 Å and the γ_2 -fundamental of H_2C at 4.52 μ . J. Quant. Spectrosc. Radiat. Transfer 25, 42 (1981) United States
8499	H72 $h\nu + O_2$	T	366-382 nm	Goldman, A.; Gillis, J. E. Spectral line parameters for the 421 - 374(0.5) band of O_2 for atmospheric arc high temperatures. J. Quant. Spectrosc. Radiat. Transfer 25, 111 (1981) United States
8500	H71 Undef	T	Undef	Peier, R. B. A study of partial frequency redistribution of monochromatic source radiation. J. Quant. Spectrosc. Radiat. Transfer 25, 127 (1981) United States
8501	H72 Undef	T	Undef	Cohen, C.; Megie, G. A spectral limitation of the range resolved differential absorption laser technique. J. Quant. Spectrosc. Radiat. Transfer 25, 151 (1981) France
8502	H74 $h\nu + Cr; h\nu + Cr^+$	E	484-422 nm	Wujec, T.; Beniger, S. Transition probabilities of Cr(I) and Cr(II) lines lying between 422 and 485 nm, using emission measurements in a well stabilized arc. J. Quant. Spectrosc. Radiat. Transfer 25, 167 (1981) France
8503	A12 $CO^+ + H_2$ H72 $h\nu + CC$	E	A12 300-800 K H72 Undef	Varanasi, P. Comment on the intensity and the temperature dependence of the nitrogen-broadened half-width of the P(6) line in the CC fundamental. J. Quant. Spectrosc. Radiat. Transfer 25, 187 (1981) United States
8504	E78 $e + He$	E	10000-20000 K	Kellster, E. E. Stark broadening of visible neutral helium lines in a plasma. J. Quant. Spectrosc. Radiat. Transfer 25, 191 (1981) United States
8505	H86 $h\nu + H_2$	T	300-400 Å	Chiu, L.Y.C.; Samanta, S. N. Photoionization and photoelectron angular distribution for H_2 . J. Quant. Spectrosc. Radiat. Transfer 25, 212 (1981) United States
8506	F75 $e + O; e + O^+; e + C^{2+}; e + C^{3+}; e + O^{++}$	T	10 ⁴ -5000 eV	Genes, P. S.; Green, A.E.S. Secondary electron distributions, ionization cross sections and loss functions for O(I)-O(V). J. Quant. Spectrosc. Radiat. Transfer 25, 265 (1981) United States
8507	H72 $h\nu + CH_4$	E	6000 cm ⁻¹	Varanasi, P. Intensity measurements in the 2 ν_2 -band of CH_4 at low temperatures. J. Quant. Spectrosc. Radiat. Transfer 25, 315 (1981) United States
8508	A12 $SC_2^+ + SO_2$	E	300-600 K	Kunitomo, T.; Asuzaki, H.; Ueda, S. Experimental studies of the radiative properties of sulfur monoxide. J. Quant. Spectrosc. Radiat. Transfer 25, 245 (1981) Japan
8509	H72 $h\nu + V^+$	E	217-220 nm	Goly, A.; Beniger, S. Oscillator strengths of ultraviolet V(II) lines (2150-2220 Å) from emission measurements in a stabilized arc. J. Quant. Spectrosc. Radiat. Transfer 25, 381 (1981) France
8510	F78 $e + N; e + N^+; e + N^{2+}$	E	10000-50000 K	Dimitrijevic, P. S.; Konjevic, N. On the Stark broadening of ionized nitrogen lines. J. Quant. Spectrosc. Radiat. Transfer 25, 317 (1981) Yugoslavia

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8511	E03 $e + H^+; e + He^+; e + H_2^+$	E	10000-60000 K	Kallne, E.; Jones, L. A. Reply to the preceding note on the Stark broadening of ionized nitrogen lines. J. Quant. Spectrosc. Radiat. Transfer 22, 352 (1981) United States
8512	H02 $h\nu + He; h\nu + Ar; h\nu + Kr; h\nu + Xe$	E	254-140 nm	Bidenko-Nekus, A.; Guern, Y.; Abjean, F.; Johannin-Gilles, A. Measurement of refractive indices of neon, argon, krypton, and xenon in the 253.7-146.4 nm wavelength range. Dispersion relations and estimated oscillator strengths of the resonance lines. J. Quant. Spectrosc. Radiat. Transfer 22, 355 (1981) France
8513	A05 Undef H10 $h\nu + HC$	E	A05 Undef H10 230-190 nm	Sharp, W. E.; Busch, D. W. Chemiluminescence of nitric oxide: the $NO(C^2\Sigma^- \rightarrow P^2\Sigma^+)$ rate constant. J. Quant. Spectrosc. Radiat. Transfer 22, 412 (1981) United States
8514	D01 Li	T		Valogous, J. C.; Margault, F. Determination of perturbations in the near-degenerate $4f + 4p + 2p$ $Li(I)$ line emitted by an electrolytic plasma. J. Quant. Spectrosc. Radiat. Transfer 22, 471 (1981) France
8515	H01 Undef	T	Undef	Helzel, P. Non-coherent scattering in suboxide lines: a unified approach to redistribution functions. J. Quant. Spectrosc. Radiat. Transfer 22, 483 (1981) Czechoslovakia
8516	A12 $Cs^+ + He; Cs^+ + Ar; Cs^+ + Xe$ H02 $h\nu + Cs; h\nu + Xe$	E	A12 450-525 K H02 Undef	Gilbert, D. E.; Ch'ao, S. Y. Experimental determination of the total integrated intensity of various doublets of Cs absorption series under various pressures of foreign gases. J. Quant. Spectrosc. Radiat. Transfer 22, 501 (1981) United States
8517	H02 $h\nu + CC$	E T	4.3 μ	Fothman, L. S.; Young, L.D.G. Infrared energy levels and intensities of carbon dioxide: II. J. Quant. Spectrosc. Radiat. Transfer 22, 565 (1981) United States
8518	A05 $Ti^+ + C_2 + C_2H_2 + Ar; Ga^+ + O_2 + C_2H_2 + Ar$ A10 $Ti^+ + C_2 + C_2H_2 + Ar; Ga^+ + O_2 + C_2H_2 + Ar$	E T	2590 K	Zizak, G.; Horvath, J. J.; van Dijk, C. A.; Winfriedner, J. D. Collisional redistribution of radiatively-excited levels of Ti and Lu atoms in an O_2 -acetylene-Ar flame. J. Quant. Spectrosc. Radiat. Transfer 22, 525 (1981) United States
8519	H02 $h\nu + Na$	E	589 nm	Cardinal, P. G.; Wizinowich, P. L.; Reasures, R. M. Anomalous laser energy absorber associated with resonance saturation. J. Quant. Spectrosc. Radiat. Transfer 22, 527 (1981) Canada
8520	H13 $h\nu + h\nu$	T	Undef	Gupta, R. F. Effective photon theory and photon-photon scattering. J. Quant. Spectrosc. Radiat. Transfer 22, 571 (1981) Canada
8521	H13 $h\nu + h\nu$	T	Undef	Fierl, D. Effective photon theory and photon-photon scattering. J. Quant. Spectrosc. Radiat. Transfer 22, 573 (1981) United States
8522	D01 Undef	T	Undef	Gras-Portli, A.; Sigmund, P. Distortion of depth profiles during ion bombardment: II. Fining mechanisms. Nucl. Instrum. Methods 180, 211 (1981) Germany
8523	A07 $H^+ + H; H + H; H + C$ A08 $H + C; H^- + C$ A10 $H^- + C; H^- + H; H + C; H + H$	T	0-500 MeV	Kaninsky, A. K.; Meshcherov, R. I.; Popova, R. I.; Sazhin, V. D. Angular and energy distributions of electrons generated by ion accelerator beams. Nucl. Instrum. Methods 180, 231 (1981) Soviet Union
8524	D04 $H^+ + Al; H^+ + Cu; H^+ + Ag; H^+ + V;$ $H^+ + Au; H_2^+ + Al; H_2^+ + Cu; H_2^+ + Ag;$ $H_2^+ + Au; H_2^+ + V; H_2^+ + Au; H_2^+ + Al;$ $H_2^+ + Cu; H_2^+ + Ag; H_2^+ + V; H_2^+ + Au;$ $He^+ + Al; He^+ + Cu; He^+ + Ag;$ $He^+ + V; He^+ + Au; He^+ + Al; He^+ + Cu;$ $He^+ + Ag; He^+ + V; He^+ + Au;$ $Ar^+ + Al; Ar^+ + Cu; Ar^+ + Ag; Ar^+ + V;$ $Ar^+ + Au$	E	0(-100) eV	Messelkamp, D.; Lang, K. G.; Schersmann, A.; Stiller, H. Ion induced electron emission from metal surfaces. Nucl. Instrum. Methods 180, 246 (1981) West Germany

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
8525	C02 e + Be; e + Al; e + Cu; e + Li; e + C C05 e + Be; e + Al; e + Cu; e + Li; e + C	T	15-150 MeV	Matthews, J. L.; Findlay, B.J.S.; Lenn, S. G. The distribution of electron energy losses in thin absorbers. Nucl. Instrum. Methods 129, 272 (1961); United States
8526	C02 Kr* + Ni; Kr* + Ti; Kr* + Al C05 Kr* + Ni; Kr* + Ti; Kr* + Al	E	7.3 MeV/cm	Hahn, R. L.; Tott, K. S.; Ferguson, S. L.; Plesil, V. Energy loss and straggling of 7.3 MeV/nucleon ⁸⁶ Kr ions in Ni, Al, and Ti. Nucl. Instrum. Methods 100, 561 (1961); United States
8527	A03 D* + P; D* + S; D* + Cl; D* + K; D* + Ni; D* + Cu; D* + Ge; H* + P; H* + S; H* + Cl; H* + K; H* + Al; H* + Cu; H* + Ge A07 D* + P; D* + S; D* + Cl; D* + K; D* + Ni; D* + Cu; D* + Ge; H* + P; H* + S; H* + Cl; H* + K; H* + Al; H* + Cu; H* + Ge	E	1.6-4.0 MeV	Szohelalvi-Nagy, Z.; Dörmeyer, L. X-ray production cross-sections induced by 1.6-4.0 MeV deuterons. Nucl. Instrum. Methods 101, 1 (1961); Hungary
8528	A03 H* + Te; H* + Dy; H* + Au A37 H* + Te; H* + Dy; H* + Au	E	1.6-4.0 MeV	Sakhi, R. E.; Crompton, E. Thin target measurements of proton induced L-shell x-ray cross-sections. Nucl. Instrum. Methods 101, 5 (1961); United Kingdom
8529	H02 H* + PEST	T	5-100 keV	Garward, L. Analytical approximations for x-ray attenuation coefficients. Nucl. Instrum. Methods 161, 11 (1961); Denmark
8530	E05 e + Al G02 Al + H	E	E25 10° K G02 30° K	Peng, H. C.; Kunze, M.-J. Investigation of the diffusion of impurity ions in plasmas by laser fluorescence. Phys. Fluids 22, 1682 (1975); West Germany
8531	E09 e + Al ¹¹⁺	E	Under	Ott, R. U.; Gries, M. F. Electron density measurement using the Stark profiles of Al III lines. Phys. Fluids 22, 1415 (1975); United States
8532	B01 H	E		Shofar, R. E.; Behrf, G. Stark broadening, induced by the intense electric field of a pulsed relativistic magnetron. Phys. Fluids 22, 1064 (1975); United States
8533	E11 Under	T	Under	Jones, R. B.; Pytte, A. Bremsstrahlung in a magnetized plasma. Phys. Fluids 22, 2232 (1979); United States
8534	H11 Under	T	Under	Petrovich, E. Effect of density plateau on inverse bremsstrahlung. Phys. Fluids 22, 280 (1979); United States
8535	A19 H* + U ⁹²⁺ ; H* + Fe ²⁶⁺	T	20-120 keV	Andrews, P. L.; Goldston, R. J. Scattering of suprathermal ions by partially ionized impurities. Phys. Fluids 22, 287 (1979); United States
8536	G04 He* + Fe	T	30° K	Weinert, U. Thermal diffusion of ions drifting in an electric field through a neutral gas. Phys. Fluids 23, 1818 (1980); West Germany
8537	H11 Under	T	Under	Lai, P. M. Particle acceleration by an intense solitary electromagnetic pulse. Phys. Fluids 23, 2273 (1980); United States
8538	A17 N ₂ + Ar	E	100-1000 K	Koura, K. Rotational distribution of N ₂ in Ar free jet. Phys. Fluids 24, 401 (1981); Japan
8539	A10 N ₂ + He	E	10-500 K	Koura, K. Rotational distribution of para-N ₂ in He shock wave. Phys. Fluids 24, 823 (1981); Japan
8540	E03 Review J02 Under	T	Under	Henry, R.J.W. Excitation of atomic positive ions by electron impact. Phys. Rep. 68, 1 (1981); United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
8541	E04 Under	E T	Under	Thompson, N. L. Physical mechanisms of scattering. Phys. Rep. 68, 335 (1981) United Kingdom
8542	A06 Review E01 Under	E T	Under	Janov, R. N.; Frenshahov, L. P. Collisional processes of multiply charged ions with atoms. Phys. Rep. 70, 1 (1981) Yugoslavia
8543	E02 Under E03 Under	T	Under	Jackman, D. F.; Hawkes, E. J. X-ray attenuation coefficients of elements and mixtures. Phys. Rep. 70, 169 (1981) United Kingdom
8544	E03 e + NH ₃ E04 e + NH ₃	T	5-39 eV	Sivovskii, B. I.; Urban, A. B. Cross section for the dissociation of ammonia by electron impact. High Energy Chem. 12, 400 (1975) Soviet Union
8545	A13 O ₂ ⁺ + B ₂ ; H ⁺ + O ₂ ; CH ₃ ⁺ + CH ₄	E	0.3-15 eV	Karachavtsev, G. V.; Morozkin, A. I.; Vol'roze, V. L. Stud. of slow ion-molecule exchange reactions. High Energy Chem. 12, 407 (1975) Soviet Union
8546	E03 e + H Zeq	T	Under	Drahe, G.-W.F.; Goldman, S. P. Application of discrete-basis-set methods to the LiHe equation. Phys. Rev. A 22, 2092 (1981) Canada
8547	E02 e + He	T	0.284-0.297 Ry	Ho, Y. K. Coupled-coordinate calculations for doubly excited states of two-electron atoms. Phys. Rev. A 23, 2137 (1981) United States
8548	E02 e + Ar; e + Kr E17 e + Ar; e + Kr G09 e + Ar; e + Kr	E	3-100 eV	Srivastava, S. K.; Tanaka, H.; Chutjian, A.; Trajmar, S. Elastic scattering of intermediate-energy electrons by Ar and Kr. Phys. Rev. A 22, 2156 (1981) United States
8549	E03 e + Kr E17 e + Kr G09 e + Kr	E	15-100 eV	Trajmar, S.; Srivastava, S. K.; Tanaka, H.; Ichimura, H.; Cartwright, B. C. Excitation cross sections for krypton by electrons in the 15-100-eV impact-energy range. Phys. Rev. A 23, 2167 (1981) United States
8550	E03 e + Ar E17 e + Ar G09 e + Ar	E	16-100 eV	Chutjian, A.; Cartwright, B. C. Electron-impact excitation of electronic states in argon at incident energies between 16 and 100 eV. Phys. Rev. A 23, 2178 (1981) United States
8551	E03 e + Ar E17 e + Ar G09 e + Ar	T	16-80 eV	Padial, M. T.; Nenesen, G. U.; de Tolosa, F. J.; Coanah, G.; Cartwright, B. C. Electron-impact excitation of the lowest four excited states of argon. Phys. Rev. A 22, 2194 (1981) Brazil
8552	E03 e + H E06 e + H	T	0.6-5 Ry	Coulter, P. U.; Garrett, V. R. Total inelastic-scattering cross sections by optical-potential methods. Phys. Rev. A 23, 2213 (1981) United States
8553	A07 U ⁹⁺ + Li; U ⁹⁺ + Li ²⁺ ; U ⁹⁺ + Li ³⁺ ; U ⁹⁺ + Li ⁴⁺ ; U ⁹⁺ + Li ⁵⁺ ; U ⁹⁺ + Li ⁶⁺ ; U ⁹⁺ + Li ⁷⁺ ; U ⁹⁺ + Li ⁸⁺ ; U ⁹⁺ + Li ⁹⁺ ; U ⁹⁺ + Li ¹⁰⁺ ; U ⁹⁺ + Li ¹¹⁺ ; U ⁹⁺ + Li ¹²⁺ ; U ⁹⁺ + Li ¹³⁺ ; U ⁹⁺ + Li ¹⁴⁺ ; U ⁹⁺ + Li ¹⁵⁺ ; U ⁹⁺ + Li ¹⁶⁺ ; U ⁹⁺ + Li ¹⁷⁺ ; U ⁹⁺ + Li ¹⁸⁺ ; U ⁹⁺ + Li ¹⁹⁺ ; U ⁹⁺ + Li ²⁰⁺ A08 U ⁹⁺ + Li; U ⁹⁺ + Li ²⁺ ; U ⁹⁺ + Li ³⁺ ; U ⁹⁺ + Li ⁴⁺ ; U ⁹⁺ + Li ⁵⁺ ; U ⁹⁺ + Li ⁶⁺ ; U ⁹⁺ + Li ⁷⁺ ; U ⁹⁺ + Li ⁸⁺ ; U ⁹⁺ + Li ⁹⁺ ; U ⁹⁺ + Li ¹⁰⁺ ; U ⁹⁺ + Li ¹¹⁺ ; U ⁹⁺ + Li ¹²⁺ ; U ⁹⁺ + Li ¹³⁺ ; U ⁹⁺ + Li ¹⁴⁺ ; U ⁹⁺ + Li ¹⁵⁺ ; U ⁹⁺ + Li ¹⁶⁺ ; U ⁹⁺ + Li ¹⁷⁺ ; U ⁹⁺ + Li ¹⁸⁺ ; U ⁹⁺ + Li ¹⁹⁺ ; U ⁹⁺ + Li ²⁰⁺ G09 U ⁹⁺ + Li; U ⁹⁺ + Li ²⁺ ; U ⁹⁺ + Li ³⁺ ; U ⁹⁺ + Li ⁴⁺ ; U ⁹⁺ + Li ⁵⁺ ; U ⁹⁺ + Li ⁶⁺ ; U ⁹⁺ + Li ⁷⁺ ; U ⁹⁺ + Li ⁸⁺ ; U ⁹⁺ + Li ⁹⁺ ; U ⁹⁺ + Li ¹⁰⁺ ; U ⁹⁺ + Li ¹¹⁺ ; U ⁹⁺ + Li ¹²⁺ ; U ⁹⁺ + Li ¹³⁺ ; U ⁹⁺ + Li ¹⁴⁺ ; U ⁹⁺ + Li ¹⁵⁺ ; U ⁹⁺ + Li ¹⁶⁺ ; U ⁹⁺ + Li ¹⁷⁺ ; U ⁹⁺ + Li ¹⁸⁺ ; U ⁹⁺ + Li ¹⁹⁺ ; U ⁹⁺ + Li ²⁰⁺	T	10-100 MeV/amu	Gillespie, G. M.; Janda, H. S. Total cross sections for fast, low-charge-state uranium ions colliding with lithium atoms and ions. Phys. Rev. A 23, 2220 (1981) United States

REF. NO.	REACTANTS	EXP. CF. THEOR.	ENERGY RANGE	REFERENCE
8554	Er3 e + H ₂ ; e + F ₂ ; e + N ₂	T	14-169 eV	Bozi, A. U. Impact-parameter method for electronic excitation of molecules by electron impact. Phys. Rev. A 23, 2232 (1981) United States
8555	Er5 e + Rb ⁺	E	50-3000 eV	Rugby, B. L.; Fessenden, R. E. Absolute experimental cross sections for the electron-impact multiple ionization of singly charged rubidium ions. Phys. Rev. A 23, 2241 (1981) United States
8556	A93 Cu ⁰ + He; Cu ⁷⁺ + He; Cu ⁷⁺ + Kr; Cu ⁷⁺ + Zn; Cu ⁸⁺ + He; Cu ⁸⁺ + He; Cu ⁸⁺ + Kr; Cu ⁸⁺ + Zn; Cu ⁹⁺ + He; Cu ⁹⁺ + He; Cu ⁹⁺ + Kr; Cu ⁹⁺ + Zn; Cu ¹⁰⁺ + He; Cu ¹⁰⁺ + He; Cu ¹⁰⁺ + Kr; Kr; Cu ¹⁰⁺ + Zn; Cu ¹¹⁺ + He; Cu ¹¹⁺ + He; Cu ¹¹⁺ + Kr; Cu ¹¹⁺ + Zn; Cu ¹²⁺ + He; Cu ¹²⁺ + He; Cu ¹²⁺ + Kr; Cu ¹²⁺ + Zn; Cu ¹³⁺ + He; Cu ¹³⁺ + He; Cu ¹³⁺ + Kr; Cu ¹³⁺ + Zn; Cu ¹⁴⁺ + He; Cu ¹⁴⁺ + He; Cu ¹⁴⁺ + Kr; Cu ¹⁴⁺ + Zn; Cu ¹⁵⁺ + He; Cu ¹⁵⁺ + He; Cu ¹⁵⁺ + Kr; Cu ¹⁵⁺ + Zn; Cu ¹⁶⁺ + He; Cu ¹⁶⁺ + He; Cu ¹⁶⁺ + Kr; Kr; Cu ¹⁶⁺ + Zn; Cu ¹⁷⁺ + He; Cu ¹⁷⁺ + He; Cu ¹⁷⁺ + Kr; Cu ¹⁷⁺ + Zn; Cu ¹⁸⁺ + He; Cu ¹⁸⁺ + He; Cu ¹⁸⁺ + Kr; Cu ¹⁸⁺ + Zn; Cu ¹⁹⁺ + He; Cu ¹⁹⁺ + He; Cu ¹⁹⁺ + Kr; Kr; Cu ¹⁹⁺ + Zn; Cu ²⁰⁺ + He; Cu ²⁰⁺ + He; Cu ²⁰⁺ + Kr; Cu ²⁰⁺ + Zn; Cu ²¹⁺ + He; Cu ²¹⁺ + He; Cu ²¹⁺ + Kr; Cu ²¹⁺ + Zn; Kr; Cu ²¹⁺ + Zn; Cu ²²⁺ + He; Cu ²²⁺ + He; Cu ²²⁺ + Kr; Cu ²²⁺ + Zn; Cu ²³⁺ + He; Cu ²³⁺ + He; Cu ²³⁺ + Kr; Cu ²³⁺ + Zn; Kr; Cu ²³⁺ + Zn; Br ³⁶⁺ + Kr; Br ³⁶⁺ + Kr; Br ³⁶⁺ + Kr; Br ³⁶⁺ + Kr; Br ³⁷⁺ + Kr; Br ³⁷⁺ + Kr; Br ³⁷⁺ + Kr; Br ³⁷⁺ + Kr; Br ³⁸⁺ + Kr; Br ³⁸⁺ + Kr; Br ³⁸⁺ + Kr; Br ³⁸⁺ + Kr; Br ³⁹⁺ + Kr; Br ³⁹⁺ + Kr; Br ⁴⁰⁺ + Kr; Br ⁴⁰⁺ + Kr; Br ⁴⁰⁺ + Kr; Kr; Br ⁴⁰⁺ + Kr; Br ⁴¹⁺ + Kr; Br ⁴¹⁺ + Kr; Kr; Br ⁴¹⁺ + Kr	E	0.07-1.40 MeV/amu	Lennard, W. H.; Mitchell, L. V.; Bell, G. C.; Reikler, P. M. Charge-state dependence of characteristic X-ray emission in near-symmetric arc asymmetric collisions. Phys. Rev. A 23, 2266 (1981) Canada
	A97 Cu ⁰ + He; Cu ⁷⁺ + He; Cu ⁷⁺ + Kr; Cu ⁷⁺ + Zn; Cu ⁸⁺ + He; Cu ⁸⁺ + He; Cu ⁸⁺ + Kr; Cu ⁸⁺ + Zn; Cu ⁹⁺ + He; Cu ⁹⁺ + He; Cu ⁹⁺ + Kr; Cu ⁹⁺ + Zn; Cu ¹⁰⁺ + He; Cu ¹⁰⁺ + He; Cu ¹⁰⁺ + Kr; Kr; Cu ¹⁰⁺ + Zn; Cu ¹¹⁺ + He; Cu ¹¹⁺ + He; Cu ¹¹⁺ + Kr; Cu ¹¹⁺ + Zn; Cu ¹²⁺ + He; Cu ¹²⁺ + He; Cu ¹²⁺ + Kr; Cu ¹²⁺ + Zn; Cu ¹³⁺ + He; Cu ¹³⁺ + He; Cu ¹³⁺ + Kr; Cu ¹³⁺ + Zn; Cu ¹⁴⁺ + He; Cu ¹⁴⁺ + He; Cu ¹⁴⁺ + Kr; Cu ¹⁴⁺ + Zn; Cu ¹⁵⁺ + He; Cu ¹⁵⁺ + He; Cu ¹⁵⁺ + Kr; Cu ¹⁵⁺ + Zn; Cu ¹⁶⁺ + He; Cu ¹⁶⁺ + He; Cu ¹⁶⁺ + Kr; Kr; Cu ¹⁶⁺ + Zn; Cu ¹⁷⁺ + He; Cu ¹⁷⁺ + He; Cu ¹⁷⁺ + Kr; Cu ¹⁷⁺ + Zn; Cu ¹⁸⁺ + He; Cu ¹⁸⁺ + He; Cu ¹⁸⁺ + Kr; Cu ¹⁸⁺ + Zn; Cu ¹⁹⁺ + He; Cu ¹⁹⁺ + He; Cu ¹⁹⁺ + Kr; Kr; Cu ¹⁹⁺ + Zn; Cu ²⁰⁺ + He; Cu ²⁰⁺ + He; Cu ²⁰⁺ + Kr; Cu ²⁰⁺ + Zn; Cu ²¹⁺ + He; Cu ²¹⁺ + He; Cu ²¹⁺ + Kr; Cu ²¹⁺ + Zn; Kr; Cu ²¹⁺ + Zn; Cu ²²⁺ + He; Cu ²²⁺ + He; Cu ²²⁺ + Kr; Cu ²²⁺ + Zn; Cu ²³⁺ + He; Cu ²³⁺ + He; Cu ²³⁺ + Kr; Cu ²³⁺ + Zn; Kr; Cu ²³⁺ + Zn; Br ³⁶⁺ + Kr; Br ³⁶⁺ + Kr; Br ³⁶⁺ + Kr; Br ³⁶⁺ + Kr; Br ³⁷⁺ + Kr; Br ³⁷⁺ + Kr; Br ³⁷⁺ + Kr; Br ³⁷⁺ + Kr; Br ³⁸⁺ + Kr; Br ³⁸⁺ + Kr; Br ³⁸⁺ + Kr; Br ³⁸⁺ + Kr; Br ³⁹⁺ + Kr; Br ³⁹⁺ + Kr; Br ⁴⁰⁺ + Kr; Br ⁴⁰⁺ + Kr; Br ⁴⁰⁺ + Kr; Kr; Br ⁴⁰⁺ + Kr; Br ⁴¹⁺ + Kr; Br ⁴¹⁺ + Kr; Kr; Br ⁴¹⁺ + Kr	T	0.1-2.5 e.v.	Offeller, S. J.; Garcia, J. L. Two-level model for inner-shell excitation: effect of translation factors. Phys. Rev. A 23, 2267 (1981) United States
8557	A93 Ne + Cl; Ne + O A97 Ne + Cl; Ne + O			

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
8558	B07 e + Ar G05 e + Ar G08 e + Ar	T	625; G08 10 ⁻²¹ Vcm ²	Hitchie, E. Effect of laser radiation on the utility of electrons in gases. <i>Phys. Rev. A</i> 23, 2278 (1981) United States
8559	B07 Undef	T		Felsenberg, L. Intermediate-and strong-coupling approximations for scattering in a laser field. <i>Phys. Rev. A</i> 23, 2282 (1981) United States
8560	C02 B ⁺ + Al; B ⁺ + Cu; B ⁺ + Pb	T	10-1000 GeV	Bustgl, P. L.; Byss, R.; Turner, J. E. Contribution of the structure to the stopping power of matter for cations at extreme relativistic energies. <i>Phys. Rev. A</i> 23, 2293 (1981) United States
8561	A01 Undef	T	Undef	Belas, J. E. Theory of near-adiabatic collisions: III. Coupled equations arising from expansions involving single-center states. <i>Phys. Rev. A</i> 23, 2301 (1981) The Netherlands
8562	A06 Ar ⁺ + N ₂ ; N ₂ ⁺ + Ar	E	0.43-6.0 eV	Lindinger, W.; Koworka, F.; Lubac, F.; Ruhn, S.; Villinger, N.; Pige, E.; Baniar, M. Charge transfer of Ar ⁺ + N ₂ going to or coming from N ₂ ⁺ + Ar at near thermal energies. <i>Phys. Rev. A</i> 23, 2315 (1981) Austria
8563	A06 Ar ⁺ + N ₂ ; N ₂ ⁺ + Ar	E	300 K	Smith, D.; Adams, N. G. Charge-transfer reaction Ar ⁺ + N ₂ going to or coming from N ₂ ⁺ + Ar at thermal energies. <i>Phys. Rev. A</i> 23, 2327 (1981) United Kingdom
8564	A07 Nb ²⁺ + Ar; Nb ³⁺ + Ar; Nb ⁴⁺ + Ar; Pb ²⁺ + Ar; Pb ³⁺ + Xe; C ²⁺ + He; C ³⁺ + He; C ⁴⁺ + Ar; C ⁵⁺ + He; C ⁶⁺ + He; C ⁷⁺ + Ar; C ⁸⁺ + He; C ⁹⁺ + He; C ¹⁰⁺ + Ar; Fe ²⁺ + Ar; Fe ³⁺ + Ar	E	310-4750 keV/cm	Schlichter, A. J.; Bernier, K. W.; Graham, W. C.; Pyle, R. V.; Schneider, P. J.; Stelder, P. S.; Stearns, J. W.; Tonia, J. A.; Olson, D. E. Ionization of rare-gas targets by collisions of fast highly charged projectiles. <i>Phys. Rev. A</i> 23, 2321 (1981) United States
8565	A04 H ₂ ⁺ + He A18 H ₂ ⁺ + He	E	0.5-3.0 keV	Alvarez, I.; Clements, C.; Russell, A. Angular distributions of dissociation fragments from low-kiloelectron-voltage collisions of H ₂ ⁺ on He. <i>Phys. Rev. A</i> 23, 2340 (1981) Mexico
8566	A11 He ²⁺ + N ₂ ; He ³⁺ + N ₂ ; He ⁴⁺ + O ₂ ; He ⁵⁺ + CO ₂	T	1x10 ⁻⁵ -5x10 ⁻⁵ cm/sec	Gupta, G. P.; Mathur, K. C. Quenching of metastable He ²⁺ ions by molecules. <i>Phys. Rev. A</i> 22, 2247 (1981) India
8567	A01 Undef E01 Undef	T	Undef	Tahatsuka, K.; McKay, V. Variational scattering theory using a functional of fractional form: I. General theory. <i>Phys. Rev. A</i> 23, 2352 (1981) United States
8568	A01 Undef E01 Undef	T	Undef	Tahatsuka, K.; McKay, V. Variational scattering theory using a functional of fractional form: II. An L ² approach. <i>Phys. Rev. A</i> 22, 2355 (1981) United States

REF. NO.	REACTANTS	EXP. OF THEOR.	ENERGY RANGE	REFERENCE
8549	NO2 hv + LiOH; hv + MgO; hv + NaF; hv + NaNO ₂ ; hv + KCl; hv + NaCl; hv + CuO; hv + TiO ₂ ; hv + NaNO ₂ ; hv + NaNO ₃ ; hv + Na ₂ O ₂ ; hv + CuCl; hv + CrO ₂ ; hv + Al ₂ O ₃ ; hv + Na ₂ CO ₃ ; hv + KBr; hv + NaCl; hv + ZnCl ₂ ; hv + SrF ₂ ; hv + K ₂ PO ₄ ; hv + Na ₂ SO ₄ ; hv + AgCl; hv + BaO; hv + KI; hv + CdI ₂ ; hv + H ₂ ; hv + Li; hv + C; hv + H; hv + C; hv + F; hv + Na; hv + Mg; hv + Al; hv + P; hv + S; hv + Cl; hv + K; hv + Ti; hv + Cr; hv + Na; hv + Ni; hv + Cu; hv + Br; hv + Pb; hv + Sr; hv + Zr; hv + Ag; hv + Cd; hv + I; hv + Ba NO3 hv + H; hv + Li; hv + C; hv + H; hv + C; hv + F; hv + Na; hv + Mg; hv + Al; hv + P; hv + S; hv + Cl; hv + K; hv + Ti; hv + Cr; hv + Na; hv + Ni; hv + Cu; hv + Br; hv + Pb; hv + Sr; hv + Zr; hv + Ag; hv + Cd; hv + I; hv + Ba	E	279-1115 keV	Loesh, T. R.; Sanganathiah, C.; Gode, B.; Pattanayak, R. S.; Sanjeeviah, B. Incoherent-scattering cross sections in low-and medium-Z elements derived from the measured total attenuation cross sections in compounds. Phys. Rev. A 22, 2365 (1981) India
8576	E93 e + K E95 e + K E15 e + K	E	3 keV	Ahsola, S.; Kalliohampo, M.; Ahsola, R.; Vayrynen, J. L _{2,3} M _{2,3} N _{2,3} and L _{2,3} M _{2,3} N _{2,3} Auger spectra of free potassium atoms. Phys. Rev. A 23, 2374 (1981) Finland
8571	B67 Under E11 Under N63 Under	T	E11; N63 Under	Bauer, L. What is left free stimulated electromagnetic shock radiation. A quantum approach. Phys. Rev. A 22, 2381 (1981) West Germany
8572	N66 hv + He	T	40-250 eV	Chang, T. H.; Eisen, T. Relative and absolute partial photoionization cross sections of the 2s and 2p subshells of neon. Phys. Rev. A 22, 2394 (1981) United States
8573	B61 H; He; Li; Na; K; Rb; Cs B65 H; He; Li; Na; K; Rb; Cs N14 hv + H; hv + He; hv + Li; hv + Na; hv + K; hv + Rb; hv + Cs	T	N14 30-7 K	Farley, J. B.; Bing, W. M. Accurate calculation of dynamic Stark shifts and depopulation rates of Rydberg energy levels induced by blackbody radiation. Hydrogen, helium, and alkali-metal atoms. Phys. Rev. A 23, 2297 (1981) United States
8574	E92 e + He	E	19.37 eV	Kennerly, R. E.; van Brunt, R. J.; Gallagher, A. C. High-resolution measurement of the helium ls2s ² 2S resonance profile. Phys. Rev. A 22, 2426 (1981) United States
8575	A19 C ⁺ + CC; C ⁺ + N ₂ ; C ⁺ + O ₂ ; C ⁺ + Na; N ⁺ + CC; N ⁺ + N ₂ ; N ⁺ + C ₂ ; N ⁺ + He; C ⁺ + CO; C ⁺ + N ₂ ; C ⁺ + C ₂ ; O ⁺ + He	E	1.75-1.9 MeV	Reust, J. P. Production of x rays beyond the K-series limit in gaseous and solid targets. Phys. Rev. A 22, 2442 (1981) United States
A 76	B67 hv + Ba; hv + Na N62 hv + Ba; hv + Na	E	N62 43000-41700 cm ⁻¹	Sandner, W.; Safinya, R. A.; Gallagher, T. F. Photoabsorption of Ba and Na in an electric field: Penetration of strong-field-dressing resonances. Phys. Rev. A 23, 2448 (1981) United States
8577	N61 hv + I ₂	T	Under	Tai, C. Resonant wave mixing in I ₂ with nonsynchronous pulses. Phys. Rev. A 22, 2462 (1981) United States

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REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
0600	A02 Ba ⁺ + H ₂ ; Ba ⁺ + D ₂ ; Ba + H ₂ ; Ba + D ₂ ; Ba ⁺ + H ₂ ; Ba ⁺ + D ₂ A03 Ba ⁺ + H ₂ ; Ba ⁺ + D ₂ ; Ba + H ₂ ; Ba + D ₂ ; Ba ⁺ + H ₂ ; Ba ⁺ + D ₂ A10 Ba ⁺ + F ₂ ; Ba ⁺ + D ₂ ; Ba + H ₂ ; Ba + D ₂ ; Ba ⁺ + H ₂ ; Ba ⁺ + D ₂	E	2-3 keV	Vedder, M.; Hayden, M.; Folioch, E. Study of the E ⁺ + H ₂ collision in the small-angle, 100-keV energy range. Phys. Rev. A 22, 2933 (1981) United States
0601	A03 Ba ⁺ + H A06 Ba ⁺ + H	T	0.5-30 keV	Paclos, A.; Riera, A.; Yanez, P. Molecular treatment of Ba ⁺ + H collisions. Phys. Rev. A 23, 2541 (1981) Spain
0602	H04 Under H06 Under	T	Under	Bennett, R. A. Calculation of total inelastic-x-ray-scattering cross sections (d small sigma/dQ) inelastic. Phys. Rev. A 23, 2558 (1981) United States
0603	E02 e + Li ⁺ H06 hv + Li	T	59-64 eV	Chung, K. T. Saddle-point technique for autoionizing states of the lithium atom: 1. 2s ² resonances in the elastic scattering region. Phys. Rev. A 23, 2557 (1981) United States
0604	B06 Ba	E		Gallagher, T. F.; Sandner, B.; Seftings, K. A. Fitting configuration interaction of the Ba 5d7s ³ D ₂ state using radio-frequency spectroscopy and lifetime measurements. Phys. Rev. A 23, 2565 (1981) United States
0605	H04 hv + Xe ⁺ H06 hv + Xe ⁺	E	179-300 K	Hildbrandt, G. F.; Bailling, E. J.; Higgin, C.; Hatten, G. J.; Smith, B. A.; Dunning, F. B.; Stebbings, R. F. Interaction of blackbody radiation with xenon Rydberg atoms. Phys. Rev. A 23, 2578 (1981) United States
0606	A03 H ⁺ + H ₂ ; He ⁺ + H ₂ ; He ⁺ + H ₂ ; Ar ⁺ + H ₂ ; Kr ⁺ + H ₂ ; Xe ⁺ + H ₂ A06 H ⁺ + H ₂ ; He ⁺ + H ₂ ; He ⁺ + H ₂ ; Ar ⁺ + H ₂ ; Kr ⁺ + H ₂ ; Xe ⁺ + H ₂	E	10-100 keV	Hoffman, J. N.; Lockwood, G. J.; Miller, G. H. Emission of 3914-A ^{UV} radiation free charge-transfer excitation. Phys. Rev. A 23, 2582 (1981) United States
0607	H04 hv + Na ₂ H05 hv + Na ₂	T	Under	Lo, Y. K.; Shiu, A. Proposed molecular test of local hidden-variables theories. Phys. Rev. A 23, 3063 (1981) United States
0608	C07 Ba ⁺ + C	E	200 keV	Pinnington, E. R.; O'Neill, J. A.; Brooks, R. L. Polarization measurements for the 2p ² P ^o and 4d ² D ^o terms of neutral barium excited by the beam-tilted-foil interaction. Phys. Rev. A 23, 3032 (1981) Canada
0609	B06 H H07 2hv + H ⁺ ; 2hv + Br ⁺ ; 2hv + F ⁺	T	H07 Under	Reiss, M. B. Properties of the quantum-translational approximation. Phys. Rev. A 23, 3035 (1981) United States
0610	E03 e + B Seq	T	Under	Vajed-Samir, M.; Ton-Tot, E.; Armstrong, L. Jr. Relativistic study of E1 and M1 transitions in the boron isoelectronic sequence. Phys. Rev. A 23, 3024 (1981) United States
0611	A15 Ca ⁺ + Ca	E	300 K	Bhaskar, M. B.; Camparo, J.; Happer, B.; Sharma, A. Light narrowing of magnetic resonance lines in caesium, optically pumped alkali-metal vapor. Phys. Rev. A 23, 3048 (1981) United States
0612	B03 Ba ⁺ H06 hv + Na	E	H06 5890-4100 A ^o	Jays, T. M.; Smith, K. A.; Dunning, F. B.; Stebbings, R. F. Investigation of fine-structure quantum tests in sodium Rydberg atoms by field ionization. Phys. Rev. A 23, 3065 (1981) United States
0613	H02 nhv + SF ₆	E	Under	Koch, M. S.; Yablonsvitch, E.; Bloembergen, R. Study of collisionless multiphoton absorption in SF ₆ using picosecond CO ₂ laser pulses. Phys. Rev. A 23, 3064 (1981) United States

REF. NO.	REACTANTS	EXP OR THEORY	ENERGY RANGE	REFERENCE
0614	E03 Li ⁺ E06 Li ⁺	T		Hubbart, J. B.; Kesh, M. N.; Littson, R. C.; Klappner, E. Dynamical effects at avoided level crossings: a study of the Lorentz-Lorentz effect using hydrogen atoms. <i>Phys. Rev. A</i> 22, 3167 (1981) United States
0615	E06 Ar + CCl ₄	E	25-60 eV	Carls, T. A.; Krause, M. C.; Grinn, F. P.; Allen, J. B., Jr.; Mahaffy, B.; Keller, F. N.; Toyser, J. B. Evidence for shape resonance in the C 2s(σg) ² band of CO ₂ from angle-resolved photoelectron spectroscopy. <i>Phys. Rev. A</i> 22, 3316 (1981) United States
0616	E03 e + H; e + He E17 e + H; e + He	T	120 eV	Kanai, A. N.; Belcham, P. E. Born-approximation approximation to inelastic e-H and e-He scattering. <i>Phys. Rev. A</i> 22, 3319 (1981) Canada
0617	E03 e + He E17 e + He	E	20-24 eV	Phillips, J. P.; Wang, S. F. Electron-impact excitation of He: threshold region. <i>Phys. Rev. A</i> 22, 3324 (1981) United States
0618	A07 H ²⁺ + H ⁺	E T	40 keV/cm	Glinn, R. E. Excitation transfer in ion-hydrogen-atom collisions. <i>Phys. Rev. A</i> 22, 3336 (1981) United States
0619	A01 H ⁺ + H E01 e + H	T	Undef	Shahasht, B. Comment on the isotropic scattering of relativistic charged particles. <i>Phys. Rev. A</i> 23, 2241 (1981) United States
0620	C02 e + H ₂ ⁺	T	0.1-5.0 eV	Shimozono, I. Energy loss by slow electrons and by slow atoms in a molecular gas. <i>Phys. Rev. A</i> 22, 2250 (1981) Japan
0621	A06 H ⁺ + H A19 H ⁺ + H	E	25-125 keV	Martin, P. J.; Eshenrich, B. N.; Kvale, T. J.; Redd, E.; Peach, J. L.; Park, J. T. Electron capture at very small scattering angles from atomic hydrogen by 25-125-keV protons. <i>Phys. Rev. A</i> 23, 3257 (1981) United States
0622	E03 e + He	T	10-22 eV	Bhatia, A. K.; Tomkin, A. Lowest inelastic He ⁺ autoionization state (1p ²) in a Feshbach resonance. <i>Phys. Rev. A</i> 22, 3361 (1981) United States
0623	G02 C ₂ H ₄ + C ₂ H ₆	E	123-293 K	Aranda, B.; Price, K. C.; Trappier, R. J. Self-diffusion in gaseous and liquid ethylene. <i>Physica A</i> 107, 307 (1981) The Netherlands
0624	E03 e + C	T	7.5-5000 eV	Goss, P. S. Electron impact excitation cross sections for carbon. <i>Physica B+C</i> 104, 411 (1981) United States
0625	E03 e + He	E	0.1 eV	Valligat, S.; Levesque, J. Atomic radial distributions as a diagnostic of excitation processes in a low pressure neon discharge. <i>Physica B+C</i> 104, 441 (1981) France
0626	A02 O + Mg	E	45-55 MeV	Brake, D. P.; Kees, J. D.; Perry, W. C.; Stein, M.; Sunier, J. V. Large angle scattering of ¹⁶ O by ²⁴ Mg, ²⁶ Mg by detecting the heavy mass recoil. <i>Phys. Lett.</i> 100B, 236 (1981) United States
0627	A02 H ⁺ + D	E	10 MeV	Sperisen, F.; Gruebler, B.; Kofig, V.; Schuelbach, P. A.; Janny, B.; Eichen, K.; Schweizer, C.; Ulbricht, J.; Deleuchall, P. Evidence for h-h off-shell effects in the polarization transfer coefficients of p-d elastic scattering. <i>Phys. Lett.</i> 102B, 9 (1981) Switzerland
0628	C05 e + Si; e + Ge	T	28-56 MeV	Komaki, K.; Fujimoto, F. Energy levels of channelled electrons and channeling radiation in the planar case. <i>Phys. Lett.</i> 82P, 51 (1981) Japan
0629	C08 e + C	E	870 MeV	Didenko, A. N.; Zabev, V. A.; Kallin, S. B.; Kurkov, A. A.; Potylitsin, A. P.; Tomashov, V. K.; Vorobiev, S. A. Effect of channeling on (small gaps)-radiation spectra of 870 MeV electrons in diamond crystal. <i>Phys. Lett.</i> 82A, 84 (1981) Soviet Union

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0630	A17 Na + Na; K + K	T	Under	Valence, A.; Nguyen Tien Q. Asymptotic potential energies for Na ₂ and K ₂ . Phys. Lett. 82A, 116 (1981) France
0631	H84 He + I H86 He + I	E	56-100 eV	Pattiol, M.; Pazzoni, M.; Tassi, G. F. Excitation of the inner 4d shell of neutral iodine. Phys. Lett. 82A, 168 (1981) Italy
0632	H82 He + Ta ³⁺	E	1.45-1.51 keV	Seiboh-Belkassen, A.; Karsstah, B. C.; Spector, B.; Bonnelle, C. The 3d photoabsorption of Ta ³⁺ . Phys. Lett. 82A, 174 (1981) France
0633	C84 Na + C	T	1-100 MeV	Cowen, R. E. B. Influence of electronic straggling on ion range distributions. Phys. Lett. 82A, 200 (1981) United Kingdom
0634	D83 Xe ⁺ + HFC	E	6 keV	Skymanski, N. The energy distributions of atoms sputtered from HFC. Phys. Lett. 82A, 203 (1981) Poland
0635	A87 R ⁺ + Cu; R ⁺ + Ag; R ⁺ + Tb; Na ²⁺ + Co; Na ²⁺ + Ag; Na ²⁺ + Tb	T	0.2-0.8 MeV/amu	Phayama, Y.; Sorhadi, L. Electronic relativistic effect on the ratios of deuterium to alpha-particle induced K-shell ionization cross sections. Phys. Lett. 82A, 235 (1981) Japan
0636	E82 e + Coulomb potential	T	0-8 Ry	Pihajlov, A.; Ejordjevic, B.; Popovic, M. N. Elastic scattering of an electron on the Coulomb potential with a cut-off. Phys. Lett. 82A, 224 (1981) Yugoslavia
0637	D83 Ar ⁺ + Kr; Ar ⁺ + Xe; Ar ⁺ + CH ₄ ; Ar ⁺ + NH ₃ ; Kr ⁺ + Kr; Kr ⁺ + Xe; Kr ⁺ + CH ₄ ; Kr ⁺ + NH ₃ ; Xe ⁺ + Kr; Xe ⁺ + Xe; Xe ⁺ + CH ₄ ; Xe ⁺ + NH ₃	E	2-8 keV	Podrys, R.; Haring, B. A.; Haring, A.; Saris, F. W.; de Vries, A. E. Sputtering of van der Waals molecules. Phys. Lett. 82A, 371 (1981) The Netherlands
0638	A83 He + He	T	405 keV	Wille, U. Ranges expansion for rotationally induced inner-shell excitation. Phys. Lett. 82A, 385 (1981) West Germany
0639	E83 e + Na ⁺	E	15-100 eV	Phillips, R. N.; Anderson, L. W.; Lin, C. C.; Riess, R. E. The electron excitation cross section for the metastable 3s level in Na. Phys. Lett. 82A, 406 (1981) United States
0640	E17 e + He E18 e + He	T	0.3-4 keV	Collins, J. Inelastic scattering of electrons by helium. Phys. Lett. 82A, 446 (1981) United States
0641	A19 Hl + Hl	E	93 MeV	Schoen, R.; Schmidt-Bocking, M.; Todorova, I. Measurement of the azimuthal distribution of molecular orbital K x-rays emitted in 50 MeV Hl + Hl collisions. Phys. Lett. 82A, 453 (1981) West Germany
0642	C86 e + Si	E	54 MeV	Baron, B. L.; Bloom, S. D.; Betz, S.; Aiguard, M. J.; Suant, R. L.; Pontell, R. M. Observation of radiation from n = 3 transitions for planar-channelled electrons. Phys. Lett. 82A, 459 (1981) United States
0643	A87 R ⁺ + Na; Na ²⁺ + Na; Na ²⁺ + He; O ²⁺ + Na; Na ²⁺ + Na; Si ²⁺ + Na; Ar ²⁺ + Na; Cr ²⁺ + Na; Be ²⁺ + Na	T	20-7000 keV/amu	Jakov, R. E. Impact ionization of helium atoms by multiply charged ions. Phys. Lett. 83A, 8 (1981) Yugoslavia
0644	E12 e ⁺ + H	T	Under	Ramaji, G.; Pandey, P.; Choudh, A. S. Low energy positron-hydrogen scattering. Phys. Lett. 83A, 62 (1981) India
0645	A87 Pb + U	-	4.7-300 MeV/amu	Seiff, G.; Reinhardt, J.; Grainer, B. Is (shell) alpha ionization in high-energy collisions of very heavy ions. Phys. Lett. 83A, 182 (1981) West Germany
0646	A83 Kr ⁺ + Br	E	1000 K	Blagov, A. B.; Pionov, M. M. Excitation transfer in the first triplet levels of krypton. Phys. Lett. 82A, 161 (1981) Bulgaria

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0647	B16 $\text{He} + \text{Ht}$	E	30-600 keV	Hasegawa, R.; Ozawa, I. Location and depth profiling of He atoms implanted in a Si crystal using a resonant nuclear reaction. Phys. Lett. 83B, 178 (1981) Japan
0648	A03 $\text{N}^+ + \text{Ne}$ A10 $\text{N}^+ + \text{Ne}$	T	20-150 keV	Theodorsson, C.-E. Differential and total cross sections for proton impact excitation of Ne. Phys. Lett. 83B, 254 (1981) West Germany
0649	C03 $e + \text{C}$	E	60-900 MeV	Adishevskiy, Y. N.; Sidonko, A. B.; Pashin, V. G.; Potylitsina, M. F.; Vorobiev, S. P. Energy characteristics of planar-channeling radiation from high-energy electrons in diamond. Phys. Lett. 83A, 337 (1981) Soviet Union
0650	K01 Review	E T	Underf	Rabinowitz, J.; Girard, J. P. Atomic and molecular physics problems in fast neutral injection: I-II. Phys. Scr. 23, 1c7 (1981) France
0651	A06 Underf	T	Underf	Abramov, V. A.; Morgunovich, E. F.; Litvinenko, V. S. Charge exchange between hydrogen atoms and multicharged ions in a fusion plasma. Phys. Scr. 23, 125 (1981) Soviet Union
0652	Z03 $e + \text{Fe}^{2+}$ K02 $e + \text{Fe}^{2+}$	T	500-5000 Ry	Bubau, J.; Loulergue, P. Electron excitation cross-sections and oscillator strengths for highly ionized atoms. Phys. Scr. 23, 13c (1981) France
0653	A06 Review K01 Review	E T	37-200 keV	Gilbody, H. W. Charge exchange in oscillators between multiply charged ions and neutral hydrogen. Phys. Scr. 23, 143 (1981) United Kingdom
0654	Z05 Review K02 Review	E T	7-3000 eV	Crandall, L. D. Electron impact ionization of multicharged ions. Phys. Scr. 23, 153 (1981) United States
0655	A03 Review A06 Review K01 Review	E T	1-100 keV	Dreuilhard, F. Electron capture for and inter excited states. Phys. Scr. 23, 163 (1981) Belgium
0656	Z04 Review K02 Review	E T	3-1000 eV	de Meer, F. J. Electron excitation, dissociation and ionization of F_2 , D_2 , T_2 and simple hydrocarbons and their ions. Phys. Scr. 23, 170 (1981) The Netherlands
0657	A06 Review A07 Review K01 Review	E T	0-400 keV	Jones, K. E. Ionization and electron loss of hydrogen atoms by highly charged ions. Phys. Scr. 23, 180 (1981) Yugoslavia
0658	A06 $\text{Ar}^{20+} + \text{Ar}; \text{Ar}^{20+} + \text{Ar}; \text{Ar}^{20+} + \text{Ar};$ $\text{Ar}^{20+} + \text{Ar}; \text{Ar}^{20+} + \text{Ar}; \text{Ar}^{20+} + \text{Ar};$ $\text{Ar}^{20+} + \text{Ar}; \text{Ar}^{20+} + \text{Ar}; \text{Ar}^{20+} + \text{Ar};$ $\text{Ar}^{20+} + \text{Ar}; \text{Ar}^{20+} + \text{Ar}; \text{O}^{8+} + \text{L}_{\alpha};$ $\text{O}^{8+} + \text{L}_{\beta}; \text{C}^{6+} + \text{L}_{\gamma}; \text{O}^{8+} + \text{L}_{\delta}; [\text{P}]^{10+}$ $+ \text{D}_{\gamma}$ A08 $\text{Ar}^{20+} + \text{Br}; \text{Ar}^{20+} + \text{Kr}; \text{Ar}^{20+} + \text{Xe};$ $\text{Ar}^{20+} + \text{At}$	E	1-10 keV	Blissner, S.; Deussen, S.; Gallier, R.; Jacquelin, S.; von Hellermann, O. Charge changing collision cross-sections of atomic ions. Phys. Scr. 23, 184 (1981) France
0659	A06 $\text{C}^{2+} + \text{H}_2; \text{C}^{2+} + \text{H}_2; \text{C}^{2+} + \text{D}_2; \text{Xe}^{20+}$ $+ \text{H}_2; \text{Xe}^{20+} + \text{H}_2; \text{Xe}^{20+} + \text{H}_2; \text{Xe}^{20+} +$ $\text{N}_2; \text{Xe}^{20+} + \text{N}_2; \text{Xe}^{20+} + \text{H}_2; \text{Xe}^{20+} + \text{H}_2;$ $\text{Xe}^{20+} + \text{I}_2; \text{Xe}^{20+} + \text{N}_2; \text{Xe}^{20+} + \text{H}_2;$ $\text{Xe}^{20+} + \text{N}_2; \text{Xe}^{20+} + \text{H}_2; \text{Ar}^{20+} + \text{I}_2;$ $\text{Ar}^{20+} + \text{N}_2; \text{Ar}^{20+} + \text{N}_2; \text{Ar}^{20+} + \text{I}_2;$ $\text{Ar}^{20+} + \text{H}_2; \text{Ar}^{20+} + \text{H}_2; \text{Ar}^{20+} + \text{N}_2;$ $\text{Ar}^{20+} + \text{I}_2; \text{Ar}^{20+} + \text{N}_2; \text{Ar}^{20+} + \text{I}_2;$ $\text{Ar}^{20+} + \text{H}_2; \text{Ar}^{20+} + \text{H}_2; \text{Ar}^{20+} + \text{I}_2;$ $\text{Ar}^{20+} + \text{H}_2; \text{Fe}^{20+} + \text{H}_2; \text{Fe}^{20+} + \text{I}_2; \text{Fe}^{20+}$ $+ \text{H}_2; \text{Fe}^{20+} + \text{H}_2$	E	0.45-312 keV	Pfeiffer, R. A.; Crandall, D. W.; Meyer, P. W. Low energy electron capture by multicharged ions free hydrogen. Phys. Scr. 23, 180 (1981) United States

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
8670	H02 $h\nu + \text{CC}; h\nu + \text{CO}_2$	T	4.3 μ ; 4.7 μ	Kudryavtsov, N. D.; Navikov, S. E. A study of infrared radiation of vibrationally excited CC in the 4.7 μ band and CO_2 in the 4.3 μ and 2.7 μ bands. <i>Sov. Phys. Appl. (Paris)</i> 16, 45 (1971); Soviet Union
8671	E11 Undef	T	Undef	Ternov, I. N.; Sholliev, V. B.; Zagrev, V. G.; Nishlin, N. N. Radiation of systems with relativistic electrons. <i>Sov. Phys. J.</i> 23, 75 (1980); Soviet Union
8672	E11 Undef	T	Undef	Sokolov, A. A. Electromagnetic and gravitational synchrotron radiation. <i>Sov. Phys. J.</i> 23, 112 (1981); Soviet Union
8673	E03 $e + \text{N}_2$	T	2.2-3.3 eV	Papopert, L. P.; Lisitsyn, V. I. Vibrational excitation of diatomic molecules during resonance scattering of slow electrons. <i>Sov. Phys. J.</i> 22, 114 (1980); Soviet Union
8674	E11 Undef	T	Undef	Borisov, A. V.; Zhukovskii, V. C.; Eskinov, F. A. Resonance bremsstrahlung of an electron by a nucleus in the field of a plane electromagnetic wave. <i>Sov. Phys. J.</i> 22, 104 (1980); Soviet Union
8675	C08 $\text{H}^+ + \text{KCl}; \text{He}^+ + \text{KCl}$ D07 $\text{H}^+ + \text{KCl}; \text{He}^+ + \text{KCl}$	E	1 MeV	Serevsk, A. S.; Shipilov, E. Y. Investigation of the radiation damage to a single crystal of KCl using the method of backward scattering and channeling of hydrogen and helium ions. <i>Sov. Phys. J.</i> 23, 218 (1980); Soviet Union
8676	C05 $e + \text{Al}; e + \text{Cu}; e + \text{Pb}; e + \text{Sn}; e^+ + \text{Al}; e^+ + \text{Cu}; e^+ + \text{Pb}; e^+ + \text{Sn}$	E	0.1-5 MeV	Kuz'minykh, V. A.; Vorob'ev, S. P. Radial and transverse distributions of particle density and energy in absorption of fast electrons and positrons by matter. <i>Sov. Phys. J.</i> 23, 280 (1980); Soviet Union
8677	E01 Undef	T	Undef	Samonenko, N. V.; Dubrov, S. L. Scattering of electrons by a Coulomb center. <i>Sov. Phys. J.</i> 23, 261 (1980); Soviet Union
8678	E11 Undef	T	Undef	Gul'tsov, D. V.; Grata, Y. V.; Matyushkin, A. A. Problem of Bremsstrahlung in the case of gravitational interaction. <i>Sov. Phys. J.</i> 22, 315 (1980); Soviet Union
8679	D01 Undef	T		Ternov, I. N.; Khapov, A. P.; Veksel, B. A. Resonance effects for an electron moving in the Renssela field. <i>Sov. Phys. J.</i> 23, 496 (1980); Soviet Union
8680	H14 $h\nu + \text{CC}_2$	E	10.6 μ	Grigor'yants, V. V.; Zhabotinskii, P. E.; Rozyshev, E. A. Measurement of the stimulated emission cross section in a waveguide CO_2 laser. <i>Sov. J. Quantum Electron.</i> 10, 743 (1980); Soviet Union
8681	A10 $\text{CO}_2^+ + \text{CO}_2$	E	707-825 K	Vargin, A. N.; Gogokhiya, V. V.; Koryukhov, V. N.; Koval', A. N.; Lukovnikov, A. I.; Isaychev, L. M. Experimental determination of the relaxation channels of vibrationally excited CO_2 molecules. <i>Sov. J. Quantum Electron.</i> 10, 859 (1980); Soviet Union
8682	H05 $nh\nu + \text{SF}_6$	E	17.6 μ	Kolomiishii, Y. B.; Khudzenov, A. P.; Ryabov, E. A. Some characteristics of the dissociation of SF_6 molecules in a strong infrared CC_2 laser field. <i>Sov. J. Quantum Electron.</i> 10, 863 (1980); Soviet Union
8683	H08 $h\nu + \text{KrF}_2 + \text{Ar} + \text{N}_2$	E	Undef	Zuev, V. S.; Koro, V. A. V.; Nishnev, L. E.; Stepanovich, E. I. Mechanism of emission of blue luminescence from $\text{ArKrF}_2 + \text{KrF}_2$ excimers. <i>Sov. J. Quantum Electron.</i> 10, 898 (1980); Soviet Union
8684	H02 Undef	T	Undef	Beklenov, E. V.; Dubetskii, E. Y.; Lyskin, V. A. Two-photon resonance in a standing-wave field under conditions of longitudinal interaction with an atomic beam. <i>Sov. J. Quantum Electron.</i> 10, 1002 (1980); Soviet Union

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0685	M02 Undef	T	Undef	Gore, V. D.; Karazin, Y. N.; Zubchenkov, A. P. Adiabatic model of resonance two-photon self-focusing and defocusing of optical beams. <i>Sov. J. Quantum Electron.</i> 10, 1009 (1980) Soviet Union
0686	A14 Cu + Cl + Ne; Cu + Cl + Ne; Cu + Cl + Ar; Cu + Br + Ne; Cu + Br + Ne; Cu + Br + Ar; Cu + I + Ne; Cu + I + Ar	E T	557-665 K	Datenin, V. N.; Zayakin, A. A.; Blinovskii, I. I. Kinetics of recombination of copper atoms in copper halide vapor lasers. <i>Sov. J. Quantum Electron.</i> 16, 1045 (1988) Soviet Union
0687	M05 nhw + CF ₃ I	E T	10000-300 nm	Kudryavtsov, Y. A. Influence of temperature on the selectivity of dissociation of CF ₃ I molecules by multiphoton vibrational and subsequent electronic excitation. <i>Sov. J. Quantum Electron.</i> 10, 1142 (1980) Soviet Union
0688	M02 nhw + UF ₆	E	612-621 cm ⁻¹	Amertsunyan, R. V.; Apatin, V. P.; Evseev, A. V.; Ferizhev, N. P. Absorption of CF ₄ laser radiation by UF ₆ molecules. <i>Sov. J. Quantum Electron.</i> 10, 1152 (1980) Soviet Union
0689	M14 hw + CO ₂ *	E T	10.6 μ	Grigor'yants, V. V.; Zhabotinskii, R. E.; Rozyshev, E. A. Cross section for stimulated emission of the CO ₂ molecule from the 0001-1000 transition in a waveguide laser. <i>Sov. J. Quantum Electron.</i> 10, 1210 (1980) Soviet Union
0690	M06 2hw + Li; 2hw + Na; 2hw + R; 2hw + Rb; 2hw + Cs	T	Undef	Parzyński, R. Integrated cross sections and polarization of photoelectrons in two-photon ionization of alkali metal atoms using two optical beams. <i>Sov. J. Quantum Electron.</i> 10, 1245 (1980) Poland
0691	M06 4hw + Cs	T	Undef	Eberly, J. N.; O'Neill, S. V.; de Meljere, J.-L.F. Extended two-level model of multiphoton absorption. <i>Sov. J. Quantum Electron.</i> 10, 1255 (1980) United States
0692	M01 Undef	T	Undef	Eberly, J. N.; Karozhnyi, N. B.; Sanchez-Pandragon, J. Oscillations, decay, and recurrences in a single quantum model. <i>Sov. J. Quantum Electron.</i> 10, 1261 (1980) United States
0693	B07 Undef	T		Gel'mukhanov, F. K.; Perkhachenko, P. I.; Frolov, V. E.; Shalagin, A. R. Collisional-relaxative cooling and heating of a gas. <i>Sov. J. Quantum Electron.</i> 10, 1268 (1980) Soviet Union
0694	M02 3hw + Kr + Xe; 3hw + Kr + Ar	E	365 nm	Batishchev, S. A.; Burakov, V. I.; Gladushchik, V. I.; Kosterich, Y. V.; Mostovnikov, V. P.; Roshchalev, S. P.; Rumyantsev, P. A.; Razdchev, G. Y. Influence of nonlinear susceptibility of a buffer gas on third harmonic generation. <i>Sov. J. Quantum Electron.</i> 10, 1310 (1980) Soviet Union
0695	K03 Review	E T	Undef	Grasyuk, A. S.; Letokhov, V. S.; Likhov, V. V. Molecular infrared lasers using resonant laser pumping. <i>Sov. J. Quantum Electron.</i> 10, 1317 (1980) Soviet Union
0696	M06 2hw + Ne; 2hw + K; 2hw + Rb; 2hw + Cs	T	0-1 Ry	Andryushin, A. I.; Kazakov, A. E. Polarization of electrons by resonant two-photon ionization of unpolarized atoms. <i>Sov. J. Quantum Electron.</i> 10, 1261 (1980) Soviet Union
0697	B07 Undef	T		Behrman, E. V.; Titov, E. A.; Ulytin, V. A. Two-photon absorption line profile of ions captured in a trap. <i>Sov. J. Quantum Electron.</i> 10, 1358 (1980) Soviet Union
0698	A11 Ne* + Ne; Ne* + Ne	E	300 K	Zhuk, V. P.; Petrukhin, E. A.; Zvezdovskii, P. P. Determination of the relaxation constant of the 3s ₂ -3p transition in neon by investigation of the absorption line wings. <i>Sov. J. Quantum Electron.</i> 10, 1441 (1980) Soviet Union

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8699	H02 2h ν + h α	E	1.76 μ	Komarov, S. A.; Kraushov, V. V.; Isomatin, V. S. Conversion of tunable infrared radiation in alkali metal vapors. Sov. J. Quantum Electron. 10, 1445 (1980) Soviet Union
8700	A03 Under C08 Under	T	Under	Ryabov, V. A.; Yudin, G. L. Cumulative excitation of atoms by fast protons. Sov. Phys.-JETP 51, 239 (1980) Soviet Union
8701	A10 Under B07 Under	T	A1 μ Under	Behaev, D. S.; Voevodin, Y. A. Associative collisions of atoms with excitation transfer at ion resonance defects. Sov. Phys.-JETP 51, 250 (1980) Soviet Union
8702	A03 H α + H $_2$ E03 e + H $_2$	E	A03 8.2-10 keV E03 0.8 keV	Lavrov, V. M.; Gochitskii, P. M.; Anisimov, V. A.; Kikhsel, B. I. Vibrational excitation of H $_2$ ions in collisions of protons and electrons with H $_2$ molecules. Sov. Phys.-JETP 51, 260 (1980) Soviet Union
8703	H06 h ν + Xe; h ν + Cs; h α + Ba	T	6-12 Ry	Amus'ya, M. Y.; Ivanov, V. E.; Steinerman, S. A.; Sheftel, S. I.; Ioffe, A. F. Penetration of restructuring of the electron shells in atoms in the course of ionization. Sov. Phys.-JETP 51, 408 (1980) Soviet Union
8704	C02 H α + Si; D α + Si; H α + Si C08 H α + Si; D α + Si; H α + Si	T	0.1-10 MeV/mm; 0-150 keV	Burenkov, A. F.; Komarov, F. F.; Kuznetsov, M. A. Energy loss of charged particles in crystals. Sov. Phys.-JETP 51, 741 (1980) Soviet Union
8705	E03 e + Hg E17 e + Hg	E	4.7-12 eV	Kazakov, S. M.; Korotkov, A. I.; Stetskiy, O. B. Resonant scattering of low-energy electrons by mercury atoms. Sov. Phys.-JETP 51, 847 (1980) Soviet Union
8706	A03 H α + Ag	E	150-500 keV	Kabachnik, M. P.; Petukhov, V. P.; Romanovskii, E. A.; Sizov, V. V. Polarization of characteristic x rays excited by proton impact. Sov. Phys.-JETP 51, 865 (1980) Soviet Union
8707	C02 He α + Al; H α + Al; He α + Cu; H α + Cu; He α + Ag; H α + Ag; He α + Au; H α + Au	E	50-1000 keV	Bednyakov, A. A.; Bulgakov, Y. V.; Nikol'sev, V. S.; Chernov, V. L. Energy losses and their straggling of H α and He α ions of several hundred keV energy after passing through metal and polystyrene films. Sov. Phys.-JETP 51, 954 (1980) Soviet Union
8708	A05 Under A10 Under B07 Under	T	A05; A10 601 K	Platonenko, V. T.; Sukharova, A. A. Gas vibrational energy exchange between strongly excited polycyclic molecules. Sov. Phys.-JETP 51, 1668 (1980) Soviet Union
8709	A14 Under B07 Under	T	A14 Under	Agre, M. Y.; Repoport, L. P. Associative binding of slowly colliding atoms into a molecule in a laser field. Sov. Phys.-JETP 51, 185 (1980) Soviet Union
8710	B07 h ν + H Seq H06 h ν + H Seq	T	H06 Under	Kondratovich, V. D.; Ostrovskii, I. B. Photoionization of a hydrogenlike atom in a homogeneous electric field. Sov. Phys.-JETP 52, 198 (1980) Soviet Union
8711	A06 H + Ne; H + Ar; Fe α + Ne; Fe α + Ar	T	1-1000 keV	Berezko, E. G.; Kabachnik, M. M. Alignment of hydrogenlike atoms produced by electron capture in collisions of heavy-charged particles with target atoms. Sov. Phys.-JETP 52, 205 (1980) Soviet Union
8712	D03 Under	T	Under	Vahler, V. I. Two-photon mechanism for the formation of a continuous spectrum of optical radiation emitted by metal-sputtering products. Sov. Phys.-Solid State 22, 1829 (1980) Soviet Union
8713	D06 e + Si	E	20-100 keV	Grachev, B. D.; Grabonshchikov, V. V.; Kozlovskii, E. S.; Kurobachko, Y. S.; Minshev, V. I. Energy spectra and angular distributions of electrons with energy up to 100 keV scattered by a massive silicon crystal. Sov. Phys.-Solid State 22, 1823 (1980) Soviet Union

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8714	C88 e + Si	T	15 MeV	Malyshevskii, V. S. Scattering of fast electrons by crystals. <i>Sov. Phys.-Solid State</i> 25, 1274 (1980) Soviet Union
8715	D02 e + Na + W	E	100-600 eV	Kirsanova, T. S.; Tamarova, T. A. Anisotropy of electron stimulated desorption of barium on tungsten. <i>Sov. Phys.-Solid State</i> 22, 1818 (1980) Soviet Union
8716	D13 Undef	T	Undef	Rubio, J.; Lopez-Sancho, J. M. Estimation of relaxation energy from electron-stimulated desorption and photoemission data. <i>Surf. Sci.</i> 95, 1267 (1980) Spain
8717	D06 H ₂ ⁺ + Nb	E	5 ⁺ keV	Partip, P. J.; Barzilai, L.; MacDonald, R. J. Polarized emission of Balmer-radiation produced by medium energy hydrogen scattering off Nb - effects of oxygen exposure. <i>Surf. Sci.</i> 95, L277 (1980) Australia
8718	D07 Ar ⁺ + Cu	E	30 keV	Borisev, A. M.; Dodonov, A. I.; Pashchev, E. S.; Melchakov, V. A. The effect of thermal vibrations of crystal lattice on the energy distributions of fast ionized species. <i>Surf. Sci.</i> 95, 1289 (1980) Soviet Union
8719	D07 He + C	E	2.85-63.2 meV	Wenger, D.; Derry, G.; Vidali, G.; Thwaites, I.; Frankl, D. H. Inelastic effects in the scattering of ⁴ He by a graphite surface. <i>Surf. Sci.</i> 95, 367 (1980) United States
8720	D07 H ₂ ⁺ + Au; H ₂ ⁺ + W; H ₂ ⁺ + Mo; H ₂ ⁺ + Ti; H ₂ ⁺ + Ni; H ₂ ⁺ + Si; H ₂ ⁺ + Si ₃ N ₄ ; H ₂ ⁺ + TiH ₂ ; H ₂ ⁺ + C D08 H ₂ ⁺ + Au; H ₂ ⁺ + W; H ₂ ⁺ + Mo; H ₂ ⁺ + Ti; H ₂ ⁺ + Ni; H ₂ ⁺ + Si; H ₂ ⁺ + Si ₃ N ₄ ; H ₂ ⁺ + TiH ₂ ; H ₂ ⁺ + C	E	5-16 keV	Verbeek, H.; Eckstein, W.; Bhattacharya, S. S. Negative hydrogen ion formation by backscattering from solid surfaces. <i>Surf. Sci.</i> 91, 326 (1980) West Germany
8721	D07 Undef	T	Undef	Adams, J. E. Electron-surface scattering in the impulsive collision limit. <i>Surf. Sci.</i> 97, 43 (1980) United States
8722	D04 Na ⁺ + Be; Na ⁺ + Mg; Na ⁺ + Al; Na ⁺ + Be; Na ⁺ + Mg; Na ⁺ + Al D09 Na ⁺ + Be; Na ⁺ + Mg; Na ⁺ + Al; Na ⁺ + Be; Na ⁺ + Mg; Na ⁺ + Al	E	5-50 keV	Bonazeth, H.; Leonard, C.; Bonazeth, C.; Viel, L.; Negro, M. Emission d'électrons Auger caractéristiques du sodium et du sodium, observées lors de collisions de ces ions avec différentes cibles solides. <i>Surf. Sci.</i> 97, 171 (1980) France
8723	D03 Kr ⁺ + Li; Kr ⁺ + Zn; Kr ⁺ + Cd; Kr ⁺ + Se; Kr ⁺ + Ti; O ₂ ⁺ + Li; C ₂ ⁺ + Zn; O ₂ ⁺ + Cd; O ₂ ⁺ + Se; O ₂ ⁺ + Ti	E	12 keV	Morrow, H. R.; Aucello, G.; Dzicba, S.; Kelly, K. In the problem of whether the transition probability plays a role in describing secondary-photo yields. <i>Surf. Sci.</i> 97, 243 (1980) Canada
8724	D10 Undef	T	Undef	Palke, W. E. The effect of image charges on molecular adsorption. <i>Surf. Sci.</i> 97, L231 (1980) United States
8725	D11 O ₂ + Zn	E	300 K	Kroger, A.; Kasper, B. Kinetics of initial oxidation of UHV prepared Zn films. <i>Surf. Sci.</i> 97, L335 (1980) Sweden
8726	D02 Ar ⁺ + [Cu + Ni]	E	50 ⁺ eV	Shikata, M.; Shimizu, R. Sputtering of Cu-Ni alloys at elevated temperature. <i>Surf. Sci.</i> 97, L362 (1980) Japan
8727	D09 Undef	T	0.50-3.16 keV	Muda, Y.; Hasegawa, T. Theory of ion neutralization near the surface. <i>Surf. Sci.</i> 97, 222 (1980) Japan
8728	D11 Br ₂ + Au	E	300 K	Bortel, E.; Netzer, F. P. Adsorption of bromine on the reconstructed Au(100) surface: LEE, thermal desorption and work function measurements. <i>Surf. Sci.</i> 97, 405 (1980) Austria
8729	D11 NH ₃ + Al; NH ₃ + Al ₂ C ₃	E	120 K	Myers, J. W., Jr.; Campbell, C. T.; Hance, R. L.; Ito, J. P. An electron spectroscopy study of ammonia adsorption on clean and oxidized aluminum. <i>Surf. Sci.</i> 97, 428 (1980) United States

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8739	D19 He + C	T	Undef	Stein, W. A. Isopotential surfaces and the corrugated wall model for gas-solid interactions. <i>Surf. Sci.</i> 57, 478 (1980) United States
8731	D10 e + GaAs	T	Undef	Meyer, R. J.; Eke, C. B.; Fatch, A. Energy-dependent exchange potentials in low-energy electron diffraction from GaAs(110). <i>Surf. Sci.</i> 97, 512 (1980) United States
8732	D07 Kr ⁺ + Cu	E	1 ⁺ keV	Partin, D. J. The influence of correlated atomic vibrations on low energy ion scattering: I. Quasi-triple scattering from a (100) row of copper atoms. <i>Surf. Sci.</i> 97, 586 (1980) United Kingdom
8733	D01 e + CO + Ni D05 e + CO + Ni	E	5 eV	Parsons, B.M.J.; Ibach, H. Inelastic scattering of slow electrons from adsorbed CO. <i>Surf. Sci.</i> 95, 282 (1980) Sweden
8734	D11 H ₂ + Pt	E	171 K	Behr, R. J.; Christmann, R.; Ertl, G. Adsorption of hydrogen on Pd(100). <i>Surf. Sci.</i> 92, 326 (1980) West Germany
8735	D13 e + H + Nb	E	70 ⁺ eV	Bauer, E.; Poppo, M. On the origin of electron stimulated desorption of H ⁺ from metal surfaces. <i>Surf. Sci.</i> 97, 341 (1980) United States
8736	D07 H ₂ ⁺ + Cu; He ⁺ + Cu D08 H ₂ ⁺ + Cu; He ⁺ + Cu	E	1-15 keV	Eckstein, W.; Verbeek, M.; Thattacharya, S. S. Scattering of hydrogen and helium from canted surfaces. <i>Surf. Sci.</i> 99, 256 (1980) West Germany
8737	D10 Undef	T	Undef	Mehl, M. J.; Schalch, W. L. The van der Waals interaction between an atom and a solid. <i>Surf. Sci.</i> 99, 513 (1980) United States
8738	D07 He ⁺ + Cu D08 He ⁺ + Cu	E	5-10 keV	Luitjens, S. B.; Algra, A. J.; Stuurteijer, L.F.T.M.; Boers, A. L. Low energy (E ₀ coming from 10 keV) atom and ion scattering of neon from a Cu(100) surface; ionization and neutralization. <i>Surf. Sci.</i> 97, 631 (1980) The Netherlands
8739	D07 Ar ⁺ + Cu D08 Ar ⁺ + Cu	E	5-10 keV	Luitjens, S. B.; Algra, A. J.; Stuurteijer, L.F.T.M.; Boers, A. L. Interaction of low energy (5-10 keV) argon atom and ions with a Cu(100) surface; ion fraction, ionization and neutralization. <i>Surf. Sci.</i> 99, 652 (1980) The Netherlands
8740	D13 e + O ₂ + Pt	E	1170 eV	Craig, J. W., Jr.; Hoch, J. L. Anomalous ESC results for the O ₂ /Pt adsorption system. <i>Surf. Sci.</i> 103, L81 (1981) United States
8741	D07 H + Cu	E	77 meV	Lopujkulade, J.; Le Gruer, Y.; Lefert, R.; Lejay, Y.; Maurer, E. The diffraction of hydrogen from Cu(100). <i>Surf. Sci.</i> 103, L25 (1981) France
8742	D07 He + NaF	T	Undef	Avila, R.; Legor, M. Dispersion relations of surface phonons from atomic scattering. <i>Surf. Sci.</i> 103, L164 (1981) United States
8743	D06 e + W	T	30-200 eV	Feder, R.; Kirchner, J. Spin-polarized low-energy electron diffraction: theory, experiment and analysis of results from W(001) (1 x 1). <i>Surf. Sci.</i> 102, 72 (1981) West Germany
8744	D02 He ⁺ + Si; He ⁺ + Si; Ar ⁺ + Si D17 XeF ₂ + Si; Cl ₂ + Si	E	D ⁺ 1 keV D17 30 ⁺ K	Garisch-Mayer, L.; Coburn, J. L.; Roy, L. Ion-enhanced gas-surface chemistry: the influence of the mass of the incident ion. <i>Surf. Sci.</i> 103, 177 (1981) United States
8745	D04 Ar ⁺ + [Cu + Al]	E	2-15 keV	Vierle de Leveque, P.; Hennequin, G.-F. Ar ⁺ excited aluminum Auger electron desorption from Cu-Al alloys. <i>Surf. Sci.</i> 103, 257 (1981) France

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8745	D07 He + LiF	T	293 K	Benedek, G.; Gerito, R. Inelastic scattering of He from LiF(001) surface: theoretical analysis of time-of-flight spectra. <i>Surf. Sci.</i> 103, 1143 (1981); Italy
8747	D07 K ⁺ + Ni; K ⁺ + K + Ni	T	Undef	Meskovic, N.; Ciric, D.; Kuvshin, P. V. Small angle ion-surface dipole scattering. <i>Surf. Sci.</i> 102, 1125 (1981); Yugoslavia
8748	D04 He ⁺ + b D07 He ⁺ + b	E	300 K	Titiley, D. J.; Leichner, I. A. Argon resolved scattering and electron ejection by helium metastable atoms incident on a tungsten (111) surface. <i>Surf. Sci.</i> 103, 438 (1981); United Kingdom
8749	D11 Undef	T	Undef	Adams, J. E.; Coll, J. D. Dynamical corrections to transition state theory adsorption rates: effect of a precursor state. <i>Surf. Sci.</i> 102, 472 (1981); United States
8750	D02 He ⁺ + Si; Ar ⁺ + Si; Ne ⁺ + Si	T	1 keV	Gerlach-Meyer, U. Ion enhanced gas-surface reactions: a kinetic model for the etching mechanism. <i>Surf. Sci.</i> 103, 524 (1981); West Germany
8751	D13 hv + CC ₂ + Ti	E	523-290 nm	van Hieu, N.; Lichtman, E. Barogas radiation induced photoadsorption from titanium oxide surfaces. <i>Surf. Sci.</i> 103, 535 (1981); United States
8752	D11 Bi + Si	E	300 K	Salto, Y.; Kawazu, A.; Tomimaga, G. An influence of the first adlayer structure on the sticking coefficient of the successive adsorption in a system of bismuth on silicon (111) surface. <i>Surf. Sci.</i> 103, 563 (1981); Japan
8753	D02 Ar ⁺ + KCl	T	2 keV	Moyes, D. P.; Barber, P.; Clarke, J. H. F. The use of sputtering as a method for analysing surface chemical composition: a molecular dynamics study. <i>Surf. Sci.</i> 105, 225 (1981); United Kingdom
8754	A10 Cs + D ₂ A11 Cs + D ₂	E	433-593 K	Lukaszewicz, P. Temperature dependence of the 77F states mixing and quenching in cesium-deuterium collisions. <i>Z. Naturforsch. A</i> 35, 1217 (1980); Poland
8755	E05 e + Fe ²⁺ ; e + Fe ³⁺ ; e + Fe ⁴⁺ ; e + Fe ⁵⁺ ; e + Fe ⁶⁺ ; e + Fe ⁷⁺ ; e + Fe ⁸⁺ ; e + Fe ⁹⁺ ; e + Fe ¹⁰⁺ ; e + Fe ¹¹⁺ ; e + Fe ¹²⁺ ; e + Fe ¹³⁺	T	23-1000 eV	Pital, M. P.; Narain, U. On dielectronic recombination in some coronal ions. <i>Z. Naturforsch. A</i> 35, 1325 (1980); India
8756	E02 e + He E03 e + He	T	1-4 eV	Koledin, D.; Grcic, P. Low-energy e-He(2 ¹ S) scattering calculations. <i>Z. Naturforsch. A</i> 36, 124 (1981); Yugoslavia
8757	E05 e + He; e + Xe; e + N ₂ O E17 e + He; e + Xe; e + N ₂ O	E T	200-3600 eV	Giardini-Guidol, A.; Santoni, F.; Gentile, R.; Stefani, G. (e,2e) experiments. <i>Comments At. Mol. Phys.</i> 10, 107 (1981); Italy
8758	A03 Be ⁺ + He	E T	1-70 keV	Anderson, A. Direct excitation in quasi-free-electron systems. <i>Comments At. Mol. Phys.</i> 10, 122 (1981); Denmark
8759	A06 Kr ⁺ + Kr; Kr ²⁺ + Kr; Xe ⁺ + Xe; Xe ²⁺ + Xe G06 Ar ⁺ + Ne; Ar ⁺ + [O ₂ -Ne] G08 Ar ⁺ + Ne; Ar ⁺ + [O ₂ -Ne]	E T	A36 0.02-20 eV G06; G08 82-300 K	Kaneko, Y. New developments in drift-tube studies. <i>Comments At. Mol. Phys.</i> 10, 145 (1981); Japan
8760	H06 hv + He; hv + Ne; hv + Ar; hv + Xe	E T	33-300 eV	Amusia, M. Y. Double-electron photoionization. <i>Comments At. Mol. Phys.</i> 10, 155 (1981); Soviet Union
8761	A08 H ⁻ + He; H ⁻ + Ne; He ⁻ + He; He ⁻ + Ne	T	1.5-30 eV	Gauyacq, J. P. Electron detachment in negative-ion-atom collisions. <i>Comments At. Mol. Phys.</i> 10, 171 (1981); France

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8762	B14 $H^+ + Cu$	E	325 keV	Tanaka, R. S.; Ibbel Singh, N.; Nigam, A. K. Sponge-like blisters on copper by H^+ -ion implantation at ambient temperatures. <i>J. Phys. E</i> 13, 2077 (1980) India
8763	A11 $Pb^+ + H$	E	1600-2400 K	Brady, T. J.; Phillips, L. F. Core-crossing collisions of excited lead atoms in flames. <i>Proc. 5. Soc. London Ser. A</i> 376, 545 (1981) New Zealand
8764	D05 $He + V$	E	21.2-40.0 eV	Holmes, R. W.; King, B. A. Crystals and bands at metal surfaces: photoemission from the (110) surface of tungsten. <i>Proc. R. Soc. London Ser. A</i> 376, 565 (1981) United States
8765	A04 $H + H_2$ A14 $D + D_2; H + H_2$	T	A04 $0-6 \times 10^{-8}$ cm/s A14 $0.75-1.5 \times 10^{-6}$ cm/s; $0-2 \times 10^{-8}$ cm/s	Pozdnev, S. A. Quantum-mechanical calculation of the cross section for the reaction $H + H_2$ in a three-body-problem approximation. <i>High Energy Chem.</i> 13, 253 (1979) Soviet Union
8766	A14 $O + H_2; O + H_2; H + O_2$	T	0-12 eV	Levitshii, A. A.; Polak, L. S. Effect of the vibrational excitation of the reactants on the rate constants of some exchange reactions. Monte Carlo calculations. <i>High Energy Chem.</i> 14, 1 (1980) Soviet Union
8767	M05 $h\nu + H_2O$ R00 $h\nu + H_2O$	E	90-430 nm	Vinogradov, I. P.; Firsov, V. V. Vacuum-UV photoanalysis of H_2C : quantum yields for the ionization of $H_2C(2^2\pi)$ and $H_2C(2^2\sigma)$. <i>High Energy Chem.</i> 14, 16 (1980) Soviet Union
8768	G10 $e + H_2C$	E	53-200 Td	Subrovin, V. Y.; Nakhimov, A. I. Effect of dissociation on the properties of a water vapor plasma. <i>High Energy Chem.</i> 14, 45 (1980) Soviet Union
8769	A06 $Li^{2+} + H$	T	5-40 keV	Cassabon, J. I.; Piacentini, R. L.; Selin, A. Charge exchange in low-energy $Li^{2+}-H$ collisions. <i>J. Phys. B</i> 14, L297 (1981) Argentina
8770	M06 $2h\nu + Cs$	T	21300-20300 cm^{-1}	Bernard, B.; Morellec, J. Influence of laser light polarization on the two-photon ionization cross section of Cs atoms around (small isobars) = 400 nm. <i>J. Phys. B</i> 14, L401 (1981) France
8771	E12 $e + e^+$	T	Undef	Down, B. G. S. A relativistic treatment of positron annihilation in a strong magnetic field. <i>J. Phys. B</i> 14, L405 (1981) United Kingdom
8772	E01 Undef	T	Undef	Belkic, D. Bound-free non-relativistic transition cross factors in atomic hydrogen. <i>J. Phys. B</i> 14, 1907 (1981) Yugoslavia
8773	E03 $e + Li$ Seq; $e + Na$ Seq; $e + K$ Seq; $e + Rb$ Seq; $e + Cs$ Seq	T	Undef	Karwowski, J.; Szulkin, M. Relativistic calculations on the alkali atoms by modified Hartree-Fock method. <i>J. Phys. B</i> 14, 1515 (1981) Poland
8774	E03 $e + Li$ Seq; $e + Na$ Seq; $e + B$ Seq; $e + C$ Seq; $e + N$ Seq; $e + F$ Seq; $e + F$ Seq	E	Undef	Louise, K. D.; Peacock, M. J.; Stang, P. F. Allowed and forbidden $n = 2-2$ transitions of the elements Li, Cr, Fe, Co and Ni in tokamak discharges. <i>J. Phys. B</i> 14, 1529 (1981) United Kingdom
8775	A12 $Na^+ + Na; Na^+ + Na; Na^+ + Ar; Na^+ + Kr; Na^+ + Xe$	E	450 K	Unkeus, R.; Spielfiedel, A.; Ely, L.; Phillips, W. L.; Pritchard, B. E. Pressure-broadening rates from the near-wing amplitude. <i>J. Phys. B</i> 14, 1553 (1981) United States
8776	M02 Undef	T	Undef	Nienhuis, G. Absorption spectra of a driven atom in a perturber gas. <i>J. Phys. B</i> 14, 1563 (1981) The Netherlands
8777	A02 $He + He; Li^+ + He$ A10 $He + He; Li^+ + He$	T	0.1 eV	Korsch, M. J.; Richards, D. On classical rotational rainbows. <i>J. Phys. B</i> 14, 1572 (1981) West Germany

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8778	A17 $Ar^{2+} + He$	T	Undef	Falcar, C.; Hecles, A.; Siera, A.; Sella, A. On the diabatic separate-atom limit of molecular orbitals in atomic collisions. <i>J. Phys. B</i> 14, 1583 (1981) France
8779	A03 $H^+ + H$ A06 $H^+ + H$ A07 $H^+ + H$	T	18-200 keV	Boeding, J. F.; Ford, A. L.; Becker, B. L. A new atomic orbital method for ion-atom collisions. <i>J. Phys. B</i> 14, 1555 (1981) United States
8780	A07 $H^+ + Kr$; $H^+ + Xe$	T	0.1-10 a.u.	Sizov, V. V.; Kobachuk, N. P. Postree-Slater calculation of the cross sections for inner p- and d-shell ionization of atoms by proton impact. <i>J. Phys. B</i> 14, 2013 (1981) Soviet Union
8781	A06 $Li^+ + He$ A07 $Li^+ + He$ A18 $Li^+ + He$	E	20-500 keV	Blagaard, P.; Dahl, P.; Fostang, B.; Møhlhorn, B. Excitation of autoionizing Li I and He states in 20-200 keV Li^+He collisions. <i>J. Phys. B</i> 14, 2023 (1981) Denmark
8782	A03 $He^+ + Au$; $He^+ + Pb$ A07 $He^+ + Au$; $He^+ + Pb$	E	0.0-3.0 MeV	Cohen, B. E. L-subshell inelastic cross sections for Au and Pb by He^+ bombardment. <i>J. Phys. E</i> 14, 2037 (1981) Australia
8783	A09 $He^+ + F^-$; $He^+ + F^-$; $Ar^+ + F^-$; $Kr^+ + F^-$; $Te^+ + F^-$; $Ne_2^+ + F^-$; $Ne_2^+ + F^-$; $Ar_2^+ + F^-$; $Kr_2^+ + F^-$; $Te_2^+ + F^-$; $He^+ + Cl^-$; $He^+ + Cl^-$; $He^+ + Cl^-$; $Ar^+ + Cl^-$; $Ar^+ + Cl^-$; $Kr^+ + Cl^-$; $Te^+ + Cl^-$; $Te^+ + Cl^-$	T	100-500 K	Christov, C. G.; Lyutshanev, V. L.; Ivanov, I. V. Rates of three-body ionic recombination processes in the rare-gas-halides. <i>J. Phys. B</i> 14, 2033 (1981) Bulgaria
8784	E03 $e + He$; $e + Ar$ E17 $e + He$; $e + Ar$	T	60-120 eV	Belenkov, V. V.; Kozhevnikov, I. V.; Nagurnov, A. I. Inelastic scattering of electrons from atoms in the multichannel diffraction approximation. <i>J. Phys. B</i> 14, 2059 (1981) Soviet Union
8785	E03 $e + Be$ Seq	T	50-1000 eV	Allouche, A.; Marinelli, F. Polarization propagator study of the electron impact excitation of the beryllium ion-electronic sequence. <i>J. Phys. B</i> 14, 2669 (1981) West Germany
8786	E03 $e + H_2$ E17 $e + H_2$	E	3-30 eV	Tanaka, M.; Yonemoto, T.; Ohada, T. Electron impact cross sections for $v = 0 + 1$ vibrational excitation of H_2 at electron energies from 3 to 30 eV. <i>J. Phys. E</i> 14, 2681 (1981) Japan
8787	E03 $e + Fe^{22+}$	T	Undef	Glass, R. Radiative decay of the $2p^{21}D_2$ state of beryllium-like iron. <i>J. Phys. B</i> 14, L405 (1981) Australia
8788	E01 Unref	T	Undef	Reebot, R. K. A variational method for multichannel scattering. <i>J. Phys. B</i> 14, L411 (1981) United States
8789	A03 $Na^+ + He$; $Na^+ + Ar$ A10 $Na^+ + He$; $Na^+ + Ar$ A11 $Na^+ + He$; $Na^+ + Ar$	T	430 K	Nichman, A. P. The effect of core interactions in l-mixing collisions on Rydberg atoms with rare gases. <i>J. Phys. B</i> 14, L419 (1981) France
8790	A03 $CN + H_2$	T	0.11-527 cm^{-1}	Davungen, B. P.; Flower, D. H. Collisional excitation of CN by H_2 : transitions within the ground-state A doublet. <i>J. Phys. B</i> 14, L425 (1981) United Kingdom
8791	A07 $H_2^+ + He$; $H_2^+ + He$ A16 $H_2^+ + He$; $H_2^+ + He$	E	5-20 keV	Urakawa, J.; Takara, A.; Oda, H. Differential cross sections for ejection of electrons and dissociative ionization cross sections for 1-20 keV H_2^+ and H_2^+ impacts on helium. <i>J. Phys. B</i> 14, L431 (1981) Japan
8792	F02 $e + Ba$; $e + Hg$; $e + Zn$; $e + Cd$	T	0-1 eV	Sin Fai Lee, L. T. Shape resonances in elastic scattering of slow electrons by Ba, Hg, Zn and Cd. <i>J. Phys. B</i> 14, L427 (1981) Australia

REF. NO.	REACTANTS	EXP OR THEOP	ENERGY RANGE	REFERENCE
8793	E02 $e + \text{CaCl}$ E17 $e + \text{CaCl}$	T	5-20 eV	Siegel, J.; Dehner, J. L.; Gill, D. Effects of long- and short-range forces in $e\text{-CaCl}$ scattering. <i>J. Phys. B</i> 14, L441 (1981) United States
8794	E18 Underf	T	Underf	Kohmoto, N.; Fano, U. Orientation by collision. <i>J. Phys. B</i> 14, L447 (1981) United States
8795	E03 $e + \text{Ne}$	T	40-200 eV	Willis, S. L.; McDowell, R. E. Electron impact excitation of Helium at intermediate energies. <i>J. Phys. B</i> 14, L423 (1981) United Kingdom
8796	E03 $e + \text{Ne Seq}$	T	Underf	Hata, J.; Grant, I. P. MCHF calculations of wavelengths and radiative lifetimes in helium-like ions. <i>J. Phys. B</i> 14, 2111 (1981) United Kingdom
8797	H06 Underf	T	Underf	Coleman, P. E.; Knight, P. L. Integrity of dressed states in multiphoton ionization. <i>J. Phys. B</i> 14, 2139 (1981) United Kingdom
8798	E03 $e + \text{CO}$ E05 $e + \text{CO}$	E	20-500 eV	Arqueres, F.; Campos, J. Emission cross sections of CO^+ by electron impact. <i>J. Phys. E</i> 14, 2155 (1981) Sweden
8799	H06 Underf	T	Underf	Chernozhukov, N. A. Theory of spin polarization phenomena in molecular photoionization processes. <i>J. Phys. B</i> 14, 2165 (1981) West Germany
8800	A03 $\text{OH} + \text{H}_2$	T	0.5-22 cm ⁻¹	Devaux, D. P.; Flower, D. B. Rotational excitation of OH by H_2 at thermal energies. <i>J. Phys. E</i> 14, 2179 (1981) United Kingdom
8801	A03 $\text{H}^+ + \text{H}$ A06 $\text{H}^+ + \text{H}$	E	2-8 keV	Ludde, H. J.; Erolizer, D. M. Direct and capture processes in proton-hydrogen scattering: I. Fillet study for bombarding energies of 2 and 8 keV. <i>J. Phys. E</i> 14, 2191 (1981) West Germany
8802	A02 $\text{Li}^+ + \text{Li}$ A03 $\text{Li}^+ + \text{Li}$ A06 $\text{Li}^+ + \text{Li}$	T	100-1000 eV	Shimokura, N.; Inouye, H.; Kishi, S.; Matsubara, T. Impact parameter treatment of $\text{Li}^+\text{-Li}$ collisions using molecular bases with electron transition factors. <i>J. Phys. B</i> 14, 2263 (1981) Japan
8803	A03 $\text{O}^+ + \text{H}_2\text{O}; \text{C}^+ + \text{O}_2; \text{C}^+ + \text{N}_2; \text{C}^+ + \text{NH}_3; \text{N}^+ + \text{C}_2; \text{N}^+ + \text{H}_2\text{O}$	T	0.3-1.45 MeV	Lennard, B. N.; Mitchell, I. V.; Phillips, E. Contribution to the low energy alpha continuum radiation from single and double collisions in the C and N systems. <i>J. Phys. B</i> 14, 2215 (1981) Canada
8804	A07 $\text{H}^+ + \text{P}; \text{H}^+ + \text{S}; \text{H}^+ + \text{Cl}; \text{H}^+ + \text{F}; \text{H}^+ + \text{Ca}; \text{He}^{2+} + \text{Cl}; \text{He}^{2+} + \text{Ca}$	E	0.6-2.8 MeV	Avaldi, L.; Milazzo, N.; Gato, A.; Sicaletano, G. Ionization cross sections of P, S, Cl, F and Ca for protons and alpha particles between 0.6 and 2.8 MeV. <i>J. Phys. B</i> 14, 2223 (1981) Italy
8805	A03 $\text{He}^{2+} + \text{H}$ A06 $\text{He}^{2+} + \text{H}$	T	Underf	Crothers, D.S.F.; Todd, A. E. Variational transition factors for $\text{He}^{2+}\text{-H}$ collisions. <i>J. Phys. E</i> 14, 2232 (1981) United Kingdom
8806	A03 $\text{He}^{2+} + \text{H}$ A06 $\text{He}^{2+} + \text{H}$ A10 $\text{He}^{2+} + \text{H}$	T	2-25 keV	Crothers, D.S.F.; Todd, A. E. Molecular treatment of charge transfer in $\text{He}^{2+}\text{-H}$ collisions. <i>J. Phys. B</i> 14, 2281 (1981) United Kingdom
8807	A06 $\text{N}^{3+} + \text{H}; \text{C}^{4+} + \text{H}$	T	0.01-100 eV	Gargaud, M.; Morssen, J.; McCarrilli, R.; Veltrian, P. Charge exchange with multiply charged ions at low energies: application to the N^{3+}/H and C^{4+}/H system. <i>J. Phys. B</i> 14, 2269 (1981) France
8808	E02 $e + \text{H}$ E17 $e + \text{H}$	T	1-100 eV	Scott, T.; Bransden, B. H. A second-order potential for the elastic scattering of electrons by atomic hydrogen. <i>J. Phys. B</i> 14, 2277 (1981) United Kingdom

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0009	E02 e + NF; e + NCl E03 e + NF; e + NCl	T	2-14 eV	Segal, G. A.; Wolf, E. Electron scattering from NF. J. Phys. B. 14, 2291 (1981) United States
0010	E03 e + Au	E	Undef	Monnauld, P.; Lathies, P. L.; Lewis, R. P. Radiation lifetimes and branching ratios for the 6s ² levels of gold. J. Phys. B 14, 2321 (1981) Australia
0011	A10 Ca ⁰ + Ar A12 Ca ⁰ + Ar	E	Undef	Vielicat, J. P.; Szudy, J.; Sayer, E. Semi-classical description of the satellite profile of the Ca(4s _{1/2} - 5d _{3/2}) transition perturbed by argon atomic scattering potential determination. J. Phys. E 14, 2229 (1981) France
0012	H02 hv + He H04 hv + He	T	1.74-1.75 Ry	Luke, T. W.; Phillips, S. Sequence line shape description from an analysis of the complex photoionization amplitudes. J. Phys. B 14, 2337 (1981) Canada
0013	H06 hv + Ca; hv + Sr	E	25-36 eV	Holland, B. H. P.; Codling, K. Noble photoionization in Ca and Sr in the region of the subshell 3p (or 4p) ionization (25-36 eV). J. Phys. B 14, 2245 (1981) United Kingdom
0014	H06 3He + Sr	E	5560-5540 Å	Chin, S. L.; Feldmann, D.; Brautwald, J.; Balge, R. P. Three-photon ionization spectra of strontium in the excitation range 5540-5560 Å. J. Phys. B 14, 2252 (1981) West Germany
0015	A07 H ⁰ + H; He ²⁺ + H	E	30-2200 keV	Shah, M. B.; Gilbody, M. B. Experimental study of the ionization of atomic hydrogen by fast H ⁰ and He ²⁺ ions. J. Phys. B 14, 2361 (1981) United Kingdom
0016	A03 Li ⁰ + He; He ⁰ + Li A06 Li ⁰ + He; He ⁰ + Li A10 Li ⁰ + He; He ⁰ + Li	E	750-2000 eV	Chenote, Y.; Sato, Y.; Shinohara, S.; Iseya, H. Time-of-flight study of differential scattering in Li ⁰ -He and He ⁰ -Li collisions. J. Phys. B 14, 2275 (1981) Japan
0017	A03 H ⁰ + Tl; He ²⁺ + Tl A07 H ⁰ + Tl; He ²⁺ + Tl	E	1.2-6 MeV	Hernstorf, P.; Zelazny, Z.; Jaschke, R.; Zentel, L.; Keller, A.; Skorypa, J. The K-shell ionization of Tl by protons and alpha particles. J. Phys. B 14, 2351 (1981) Denmark
0018	A06 H ⁰ + He; H ⁰ + He; H ⁰ + Ar; H ⁰ + Kr; H ⁰ + Xe; He ⁰ + He; He ⁰ + Ar; He ⁰ + Kr; He ⁰ + Xe A07 H ⁰ + He; H ⁰ + He; H ⁰ + Ar; H ⁰ + Kr; H ⁰ + Xe; He ⁰ + He; He ⁰ + Ar; He ⁰ + Kr; He ⁰ + Xe	T	Undef	Tan, C. K.; Lee, A. R. Applicability of a modified binary encounter approach (BEA) to calculations of cross sections of charge transfer and impact ionization in ion-atom collisions. J. Phys. E 14, 2295 (1981) Australia
0019	A06 H ⁰ + N; H ⁰ + O; H ⁰ + He; H ⁰ + Ne; H ⁰ + Ar; H ⁰ + Kr; H ⁰ + Xe; H ⁰ + N; He ⁰ + N; He ⁰ + O; He ⁰ + He; H ⁰ + He; H ⁰ + Ar; H ⁰ + Kr; H ⁰ + Xe; H ⁰ + N	T	60-2000 keV	Tan, C. K.; Lee, A. R. Cross sections of single charge transfer in the modified binary encounter approach for proton and He ⁰ incident on neutral gas atoms. J. Phys. E 14, 2405 (1981) Australia
0020	A06 He ²⁺ + He; Fe ²⁺ + Ar	T	0.5-62 MeV	Gayet, R.; Riverola, R. G.; Salir, A. Gentle electron capture by fast nuclei. J. Phys. E 14, 2421 (1981) France
0021	E02 e + H; e ⁺ + H E12 e + H; e ⁺ + H	T	52-500 eV	Byron, F. W., Jr.; Joachain, C. J. A third-order optical and potential theory for elastic scattering of electrons and positrons, by atomic hydrogen. J. Phys. B 14, 2425 (1981) United States
0022	E01 Undef	T	Undef	Papov, Y. Investigation of a three-charged-particle break-up scattering amplitude. J. Phys. E 14, 2445 (1981) Denmark
0023	E03 e + H	T	20-1000 eV	Roy, F. K.; Saha, B. B.; Sill, J. C. Behavior of the asymptotic cross section for excitation of hydrogen atoms by electron impact. J. Phys. E 14, 2459 (1981) India

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8824	E93 $e + \text{Hg}^+$ E95 $e + \text{Hg}^+$	T	5000-20000 K	Pandoza, C.: Electron impact excitation cross sections of Hg II calculated in a four-state close-coupling approximation. <i>J. Phys. B</i> 14, 2445 (1981) United Kingdom
8825	E95 $e + \text{He}; e + \text{H}_2$ E17 $e + \text{He}; e + \text{H}_2$	E	23 ⁺ -2800 eV	van Bingerden, P.; Kimm, J.-Y.; van Tilburg, R.; de Boer, F. J. Triple and double differential cross sections for electron impact ionization of helium and molecular hydrogen. <i>J. Phys. E</i> 14, 2475 (1981) The Netherlands
8826	E93 $e + \text{H}_2$	E	12.2-16.0 eV	Bose, N.; Linder, F. Decay of electronically excited singlet states of molecular hydrogen investigated by electron-photon coincidence. <i>J. Phys. B</i> 14, 2459 (1981) West Germany
8827	E12 $e^+ + \text{H}_2; e^+ + \text{H}_2; e^+ + \text{D}_2$	T	0-0.5 eV	Colman, P. G.; Griffith, T. C.; Haglund, G. H. Potential excitation and momentum transfer in slow positron-molecule collisions. <i>J. Phys. E</i> 14, 2385 (1981) United States
8828	B16 $\text{Ga} + \text{Si}$	E	Thermal	Chakraborty, B. C.; Prasad, A. Diffusion of gallium into silicon. <i>Indian J. Phys. A</i> 22, 83 (1978) India
8829	B16 $\text{Ca} + \text{Bi}$	E	0-10 μ	Riera, M. R.; Venkatesubramanian, V. S. Impurity diffusion in bismuth single crystals. <i>Indian J. Phys. A</i> 23, 109 (1979) India
8830	A96 $\text{H}^+ + \text{H}_2$	T	Uncol	Chatterjee, G.; Banerjee, A. K. An analytical approach for evaluation of electron capture cross-section using single centre molecular wave function. <i>Indian J. Phys. B</i> 22, 23 (1978) India
8831	A92 $\text{H}^+ + \text{He}$ A93 $\text{H}^+ + \text{He}$	T	5-25 keV	Rudra, R.; Sili, M. C. Elastic and the 2p and 2s excitations of Helium atom by proton impact. <i>Indian J. Phys. B</i> 22, 74 (1978) India
8832	E93 $e + \text{He Seq}$	T	1-5 Threshold	Das, A. K.; Maiti, N.; Sili, M. C. Electron exchange by the CEC approximation in the excitation of helium-like positive ions by electron impact. <i>Indian J. Phys. E</i> 22, 82 (1978) India
8833	E93 $e + \text{Li}; e + \text{Na}$	T	1-50 Threshold	Ray, E. N. Some first order exchange approximations in the calculation of total excitation cross-section of Li and Na by electron-impact. <i>Indian J. Phys. B</i> 22, 145 (1978) India
8834	E93 $e + \text{O}_2; e + \text{O}; e + \text{H}_2$ E95 $e + \text{O}_2; e + \text{O}; e + \text{H}_2$	T	1-19 keV	Srinastava, B. B. Auroral spectral intensities by electron impact excitation. <i>Indian J. Phys. B</i> 22, 271 (1978) India
8835	E92 $e + \text{N}; e + \text{He}$	T	50-200 eV	Shingai, R.; Srinastava, B. B. Eikonal approximation calculations of e-N and e-He scattering using an energy-dependent polarization potential. <i>Indian J. Phys. B</i> 22, 281 (1978) India
8836	H96 $h\nu + \text{H}; h\nu + \text{He}$	T	5770 Å	Pian, S. M.; Harnberger, W. C.; Sanders, F. C., Jr. Photophoton ionization potentials for H and He atoms in intense circularly polarized laser beams. <i>Indian J. Phys. B</i> 22, 316 (1978) India
8837	E92 $e + \text{H}$	T	3.1-1 e.u.	Talukder, B.; Sengupta, D.; Chatterji, M.; Sarkar, R.; Basu, E. Variable-phase approach to electron-hydrogen elastic scattering. <i>Indian J. Phys. B</i> 22, 37b (1978) India
8838	E92 $e + \text{H}$	T	20-400 eV	Ghosh, A. S. e ⁻ -H scattering at intermediate energies. <i>Indian J. Phys. E</i> 22, 461 (1978) India
8839	E93 $e + \text{CO}_2; e + \text{CO}$ E99 $e + \text{CO}_2; e + \text{CO}$	T	0.11-0.1 eV	Seel, P.; Narayan, M. V. The effect of non-spherical short range interactions on resonant transfer cross sections for e-CC and e-CC ₂ collisions. <i>Indian J. Phys. B</i> 22, 438 (1978) India

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8840	A85 $\text{He}^+ + \text{HeI}$	E	70 keV	Chamoun, E.; Abou-Chakra, B. Direct measuring method of the anisotropic collisions. <i>Indian J. Phys. E</i> 52, 7 (1979) Lebanon
8841	E92 $e + \text{Li}$	T	15-200 eV	Guba, S.; Ghusb, A. S. e^- -Li scattering by simplified form of FSA. <i>Indian J. Phys. E</i> 52, 163 (1979) India
8842	H87 $h\nu + \text{H}^-$	T	1600 Å	Dashbom, M.; Ray, K.; Ghosh, A. S. Photoelectron cross section of negative hydrogen. <i>Indian J. Phys. B</i> 53, 183 (1979) India
8843	A17 Under	T	22 MeV	Upadhyay, S. N. Calculation of scattering amplitudes by the eikonal approximation method for a modified Gaussian potential. <i>Indian J. Phys. B</i> 52, 156 (1979) India
8844	A96 $\text{He}^+ + \text{H}$	T	2-200 keV	Basu, B.; Bhattacharya, D. P. Probability of charge transfer in alpha particle-hydrogen atom collisions. <i>Indian J. Phys. B</i> 53, 273 (1979) India
8845	E93 Under	T	0.1-0.09 eV	Dasal, M. S.; Chhaya, V. R. Slow electron scattering by polar molecules. <i>Indian J. Pure Appl. Phys.</i> 17, 188 (1979) India
8846	A83 $\text{He}^+ + \text{He}$	T	0-160 keV	Cjha, S. P.; Tibari, P.; Srivastava, R. V. Excitation cross section of helium by He^+ impact. <i>Indian J. Pure Appl. Phys.</i> 17, 260 (1979) India
8847	C82 $\text{Cu}^+ + \text{Cu}$	T	10^2 - 10^4 eV	Karpuzov, D. S. On the inelastic-loss approximation for keV-energy ion collisions in solids. <i>Appl. Phys. (Germany)</i> 24, 121 (1981) Bulgaria
8848	A17 $\text{H} + \text{H}^-$	T	Under	Koga, T.; Porita, M. Binding/unbinding analysis for diatomic interactions. Hydrogen atom-negative charge system. <i>Chem. Phys.</i> 54, 387 (1981) Japan
8849	A96 $\text{O}^+ + \text{O}; \text{O}^+ + \text{S}; \text{S}^+ + \text{O}; \text{S}^+ + \text{S}$	T	0.3-2.6 keV	Func, J. A.; Judge, D. L. Electron-capture cross sections for some astrophysical processes. <i>Geophys. Res. Lett.</i> 8, 177 (1981) United States
8850	H85 $h\nu + \text{CC}; h\nu + \text{CO}_2$ H86 $h\nu + \text{CC}; h\nu + \text{CO}_2$	E	325-90 Å	Somson, J.A.R.; Masuhara, T.; Muntress, W. I. The production rate of C^+ from the photoionization of CC and CO_2 . <i>Geophys. Res. Lett.</i> 8, 465 (1981) United States
8851	E83 $e + \text{Ne } 2s^2$	T	1 Threshold	Vinogradov, A. V.; Shlyaptsev, V. I. Calculations of population inversion due to transitions in multiply charged neon-like ions in the 230-360 Å range. <i>Sov. J. Quantum Electron.</i> 10, 754 (1980) Soviet Union
8852	A87 Under A18 Under	T	500 Å	Duman, E. L.; Shustov, I. P. Ionization of highly excited atoms in their own gas. <i>Sov. Phys.-JETP</i> 51, 1061 (1980) Soviet Union
8853	E11 Under	T	1 Threshold	Zhdanov, V. P. Resonance transmutation of an electron in collision with an ion. <i>Sov. Phys.-JETP</i> 52, 1 (1980) Soviet Union
8854	D87 $\text{H}^+ + \text{H}; \text{H}^+ + \text{HC}_2$	T	20 keV; 275 keV	Romizovich, V. I.; Ryzanov, M. I.; Tiflin, I. S. Energy and angular distributions of particles reflected in glancing incidence of a beam of ions on the surface of a material. <i>Sov. Phys.-JETP</i> 52, 225 (1980) Soviet Union
8855	E96 $e + \text{Ne}_2^+; e + \text{Ne}^+$	E	5.12×10^3 K	Ivanov, V. A.; Shablo, Y. E. Recombination of molecular helium ions at high electron temperatures. <i>Sov. Phys.-Tech. Phys.</i> 25, 435 (1981) Soviet Union

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8856	D07 He + U; He + U; Ar + U; Kr + U; Xe + U; N ₂ + U; N ₂ + U D19 He + U; He + U; Ar + U; Kr + U; Xe + U; N ₂ + U; N ₂ + U	T	Thermal	Borcia, J.; Brosig, W. Theory of inelastic atom-surface scattering: example of energy distributions. Z. Phys. B 41, 242 (1981) West Germany
8857	C84 Ne ⁺ + Al D14 Ne ⁺ + Al	E	40-200 keV	Luthra, J. R. Correlation between excitation depth, the maximum in the damage-energy distribution and ranges of Ne ⁺ ions in nickel. Indian J. Pure Appl. Phys. 17, 336 (1979) India
8858	E03 e + Al ³⁺ ; e + Cl ³⁺ ; e + Ar ³⁺ ; e + Ar ²⁺ ; e + Ar ⁺ ; e + Si ³⁺ ; e + Si ²⁺ ; e + Cl ²⁺ ; e + K ²⁺ ; e + Cu ²⁺ ; e + Ni ²⁺ ; e + Zn ²⁺ ; e + Ca ²⁺ ; e + Sc ³⁺ ; e + Y ³⁺ ; e + Bi ³⁺ ; e + Si ⁴⁺ ; e + Ba ²⁺ ; e + Pb ²⁺ ; e + Zr ⁴⁺ ; e + Sr ²⁺ ; e + S ²⁺ ; e + F ²⁺ ; e + Ar ¹³⁺	T	10 ³ K	Choudra, S. Excitation within the ground configuration of the ions in the p and p ² configurations. Indian J. Pure Appl. Phys. 17, 338 (1979) India
8859	C02 e + C; e + Fe; e + Sn; e + U C04 e + C; e + Fe; e + Sn; e + U	T	0.2-10 MeV	Gupta, S. K.; Gupta, D. K. An empirical relation for the total stopping power of electrons. Indian J. Pure Appl. Phys. 17, 775 (1979) India
8860	E03 e + He Seq	T	Undef	Vishnoi, T.; Mahan, N. Distorted-wave theory of electron interaction with helium type of ions. Indian J. Pure Appl. Phys. 17, 812 (1979) India
8861	H06 Undef	T	Undef	Bhattacharya, S.; Chatterjee, L.; Ray, T. Photon scattering from bound electron accompanied by ionization of atom: a field theoretic approach. Indian J. Pure Appl. Phys. 17, 825 (1979) India
8862	A17 HF; PF; PF ⁺ ; AsF; SbF	T	Undef	Ramakrishna Reddy, T. V.; Baldu, G. J.; Sankarishnan Reddy, R. Potential energy curves and dissociation energies of fluorides of VA group elements. Indian J. Pure Appl. Phys. 17, 842 (1979) India
8863	A17 P1H; P1D	T	Undef	Ram Suresh Man; Rai, S. B.; Upadhyay, K. N. Potential energy curves, r-centroids FC factors and their rotational dependence in the A ² A _{1/2} - X ² A _{1/2} and B ² A _{1/2} - X ² A _{1/2} systems of 1H and P1D molecules. Indian J. Pure Appl. Phys. 17, 844 (1979) India
8864	D14 He ⁺ + SS	E	2 MeV	Pande, B. P.; Arora, N. S.; Agarwal, H. P. Study of blisters formed due to helium ion bombardment on stainless steel. Indian J. Pure Appl. Phys. 18, 74 (1980) India
8865	A07 H ⁺ + He	T	0.1-1 MeV	Singh, V. Effect of polarized velocity distribution of electrons on double ionization of He by proton impact. Indian J. Pure Appl. Phys. 18, 176 (1980) India
8866	F03 e + He ⁺	T	40-800 eV	Kuang, R.; Williamson, M., Jr. Applications of the Coulomb-Glauber-Cocher approximation to n = 2 and n = 3 electron-impact excitation of He ⁺ . Indian J. Pure Appl. Phys. 18, 265 (1980) United States
8867	E02 e + O ₂ E03 e + O ₂	T	0.1-13.6 eV	Pande, A. K.; Tripathy, D. N.; Singh, N. Z. Close-coupling approach to low energy electron scattering by oxygen molecule. Indian J. Pure Appl. Phys. 18, 408 (1980) India
8868	C04 e + PFET	T	0.2-10 MeV	Gupta, S. K.; Gupta, D. K. Calculations of (SEA) range and projected range of monoelectronic electrons. Indian J. Pure Appl. Phys. 18, 461 (1980) India
8869	F02 e + H ₂ C	T	0.125 eV	Joshiyura, K. N.; Dossel, M. B. Application of Glauber approximation of Feshbach-type resonance scattering. Indian J. Pure Appl. Phys. 18, 411 (1980) India

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8870	A17 CoO	T	Undef	Sreedhara Murthy, N.; Prohlid, L. E.; Ramakrishna Rao, T. V.; Thimma Maide, G. RRBb potential energy curve and dissociation energy of CoO. <i>Indian J. Pure Appl. Phys.</i> 18, 812 (1980) India
8871	A01 $N_2^+ + D_2$ A03 $N_2^+ + D_2$ A06 $N_2^+ + D_2$	E	Thermal	Littlewood, I. P.; Webb, C. E. A technique for optical fibre primary coating using glass applicators. <i>J. Phys. D</i> 14, 1155 (1981) United Kingdom
8872	D04 $H^+ + Al$; $H^+ + Cu$; $H^+ + Ag$; $H^+ + Au$	E	4-12 MeV	Koyama, A.; Shikata, T.; Sakurai, T. Secondary electron emission from Al, Cu, Ag and Au metal targets under proton bombardment. <i>Jpn. J. Appl. Phys.</i> 20, 45 (1981) Japan
8873	D02 $h\nu + CH_4$	E	1295-1306 cm^{-1}	Shimohara, K.; Akamatsu, T.; Ueda, H. ν_2 absorption of methane ($^{12}CH_4$, $^{13}CH_4$) with ultra high resolution using tunable diode lasers. <i>Jpn. J. Appl. Phys.</i> 20, 435 (1981) Japan
8874	E03 $e + N_2$; $e + N_2$; $e + O_2$	E	8-20 eV	Zavilevskiy, A. B.; Smagoritskiy, A. V.; Shperik, O. E. Resonances and the electron-atom excitation of metastable molecular levels. <i>Sov. Phys.-JETP Lett.</i> 31, 11 (1980) Soviet Union
8875	E03 $e + Rb^+$; $e + Cs^+$ E05 $e + Rb^+$; $e + Cs^+$ E15 $e + Rb^+$; $e + Cs^+$	E	20-300 eV	Zapetschnyi, A. I.; Iora, A. I.; Alekshin, I. S. Spectroscopic investigation of the production of doubly charged rubidium and cesium ions by electron-ion collisions. <i>Sov. Phys.-JETP Lett.</i> 21, 26 (1980) Soviet Union
8876	D02 Review K04 Review	E	0-150 keV	Veheler, V. I. The ionic component in the sputtering of metals. <i>Radiat. Eff.</i> 51, 125 (1980) Soviet Union
8877	D04 $He^+ + S + Cu$; $He^+ + Cu$	E	15 keV	Soszka, W.; Algra, A. J.; Suuronen, E. P. J. P.; Boers, A. L. Angle-resolved ion-electron spectroscopy (aries), a new technique to study surface structural features. <i>Radiat. Eff.</i> 51, 171 (1980) The Netherlands
8878	D12 $He^+ + CdS$; $He^+ + CuCl$; $N_2^+ + CdS$; $N_2^+ + CuCl$; $N_2^+ + CdS$; $N_2^+ + CuCl$; $He^+ + CdS$; $He^+ + CuCl$	E	1.5-2.8 MeV	Mitsushima, Y.; Itoh, M. High density effect induced in the tracks of heavy charged particles in CuS and CuCl. <i>Radiat. Eff.</i> 51, 125 (1980) Japan
8879	C02 $H^+ + W$ C06 $H^+ + W$	T	6 MeV	Rhodyshev, V. A.; Sirotnin, E. I.; Tolstov, A. F. Energy losses of channelled protons. <i>Radiat. Eff.</i> 51, 203 (1980) Soviet Union
8880	C04 $e + PEET$	T	10^{-2} - 10^2 MeV	Matthaus, M. D. A simple method for the approximate calculation of electron ranges in solids. <i>Radiat. Eff.</i> 51, 209 (1980) United Kingdom
8881	D02 $F^+ + UF_6$; $F^{2+} + UF_6$; $F^{3+} + UF_6$; $F^{4+} + UF_6$; $F^{5+} + UF_6$	E	1-26.5 MeV	Griffith, J. E.; Weller, M. A.; Islerling, L. E.; Tombrillo, T. A. Sputtering of uranium tetrafluoride in the electronic stopping region. <i>Radiat. Eff.</i> 51, 223 (1980) United States
8882	D14 $H^+ + Cu$ D16 $H^+ + Cu$	E	325 keV	Yadava, R. D. S.; Ibbel Singh, N.; Nijam, A. A. High fluence hydrogen implantation in copper: blistering and grain boundary movement. <i>Radiat. Eff.</i> 51, 233 (1980) India
8883	D02 $Ar^+ + Pb$	E	15 keV	Tortorelli, P. F.; Altstetter, C. W. The sputtering yield of polycrystalline materials. <i>Radiat. Eff.</i> 51, 241 (1980) United States
8884	D02 $e + KI$; $e + KBr$	T	10^1 -600 eV	Szymanski, M. On the model of the electron sputtering process of alkali halides. <i>Radiat. Eff.</i> 52, 9 (1980) Poland

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
8885	D01 Under	T	Under	Ryzasov, A. I.; Metelkin, E. V. (concerning the theory of radiation cascades of atomic collisions in a solid with an arbitrary interatomic interaction potential. Radiat. Eff. 52, 15 (1980) Soviet Union
8886	C94 He ⁺ + b C94 He ⁺ + b D07 He ⁺ + b D16 He ⁺ + b; Ar ⁺ + W	E	0-5000 eV	van Gerken, A. A.; Kornelien, E. V. The entrance probability and range of helium in b(100) for energies 0 eV to 5000 eV as measured by thermal desorption spectrometry. Radiat. Eff. 52, 21 (1980) Canada
8887	D72 N ⁺ + Ca; N ⁺ + CaF ₂ ; N ₂ ⁺ + Ca; N ₂ ⁺ + CaF ₂ D17 N ⁺ + Ca; N ⁺ + CaF ₂ ; N ₂ ⁺ + Ca; N ₂ ⁺ + CaF ₂	E	100-130 keV	Russell, W. A.; Papamastassiou, E. A.; Tontrelic, T. A. The fractionation of Ca isotopes by sputtering. Radiat. Eff. 52, 41 (1980) United States
8888	C08 D ⁺ + NbC; He ⁺ + NbC	T	1.27-2.9 MeV	Kaufmann, R.; Peyer, C. Computer simulation of channelling measurements in carbon-implanted NbC-silico crystals. Radiat. Eff. 52, 52 (1980) West Germany
8889	D07 Ne ⁺ + Ag	T	400 eV	Mosunov, A. S.; Shelyakin, L. E.; Yarovova, V. E.; Ciric, D.; Parovic, B.; Tarsic, I. Computer simulation of ion scattering by polycrystals. Radiat. Eff. 52, 85 (1980) Soviet Union
8890	C08 e ⁺ + Si D12 e ⁺ + Si	T	1.3 GeV	Wedell, R. Comparison of the Kevex radiation in channelling with other types of radiation. Radiat. Eff. 52, 95 (1980) East Germany
8891	C04 Fr + N ₂ ; Rb + Ar C05 Fr + N ₂ ; Rb + Ar	E	62 keV	Sidenius, G. Lateral range distribution measurements with heavy particles in gases. Radiat. Eff. 52, 81 (1980) Denmark
8892	C08 He ⁺ + Al	E	2 MeV	Fuschini, E.; Palegutti, F.; Uguzzoni, A.; Veronesi, L. A diffusion model calculation of axial blanching discs of (small alpha)-particles in aluminium. Radiat. Eff. 53, 27 (1980) Italy
8893	D07 Review R04 Review	E T	0.15-50 keV	Mashkova, E. S. Particle and energy reflection from solid surfaces. Radiat. Eff. 54, 1 (1981) Soviet Union
8894	C08 e ⁺ + C; e ⁺ + Si; e ⁺ + Ge; e ⁺ + W; e ⁺ + C; e ⁺ + Si; e ⁺ + Ge; e ⁺ + W	E T	6-14 GeV	Bazylev, V. A.; Zhavago, R. K. Electromagnetic radiation by channeled particles. Radiat. Eff. 54, 41 (1981) Soviet Union
8895	D14 n + Cu D15 n + Cu	E	Under	Eldrup, M.; Evans, J. H.; Rogensen, C. E.; Singh, K. N. A positron annihilation investigation of defects in neutron irradiated copper. Radiat. Eff. 54, 65 (1981) Denmark
8896	D15 e ⁺ + SS	F	1 MeV	Suganuma, K.; Kayano, H. Dislocation loops in electron irradiated ferritic stainless steel. Radiat. Eff. 54, 81 (1981) Japan
8897	D17 Ne ⁺ + Si	T	10 keV	Karpuzov, B. S. Energy spectra of keV-ions backscattered from solid surfaces as influenced by inelastic losses. Radiat. Eff. 54, 87 (1981) Bulgaria
8898	D15 n + C	E	Under	Platonov, F. A.; Novobratskaya, I. F.; Yuzenov, V. F.; Karpukhin, V. I.; Alekseyev, S. I. Effect of neutron irradiation on the dimensional stability of graphite pre-treated at different temperatures. Radiat. Eff. 54, 91 (1981) Soviet Union
8899	D15 Cu ⁺ + Cu; Ni ⁺ + Cu; Au ⁺ + Cu; Kr ⁺ + Cu; Xe ⁺ + Cu	E	40 keV	van Wyk, G. N. The influence of ion species on ion bombardment induced preferential orientation. Radiat. Eff. Lett. 57, 187 (1981) South Africa

REF. NO.	REACTANTS	EXP OR THEOR	ENERGY RANGE	REFERENCE
8900	D02 $Ar^+ + Cu$	E T	5.7 eV	Rossnagel, S. P.; Robinson, W. S. The time development of impurity-generated sputter cores on copper. <i>Radiat. Eff. Lett.</i> 58, 11 (1981) United States
8901	D14 $He^+ + Po$	E	230 keV	Greggi, J. Multilayer exfoliation by blistering and spalling in He ion bombarded Po single crystals. <i>Radiat. Eff. Lett.</i> 58, 25 (1981) United States
8902	D15 $e + Cr$	E	3 MeV	Johansson, J.; Vehanen, A.; Yli-Kauppila, J.; Naotojarvi, P. Positron lifetime measurements on electron irradiated chromium. <i>Radiat. Eff. Lett.</i> 58, 31 (1981) Finland
8903	D03 $Sb^+ + Ag; Sb_2^+ + Ag; Sb_3^+ + Ag$ D04 $Se^+ + Ag; Sb_2^+ + Ag; Sb_3^+ + Ag$	E	30-90 keV	Veje, E. Emission of secondary electrons and photons from silver bombarded with Sb^+ , Sb_2^+ , and Sb_3^+ . <i>Radiat. Eff. Lett.</i> 58, 35 (1981) Denmark
8904	C08 $e + Si; e + W$	T	1 GeV	Beloshitsky, V. V.; Kuznetsov, P. A. Theory of axial channeling of negative particles. <i>Radiat. Eff. Lett.</i> 58, 41 (1981) Soviet Union
8905	D02 $H^+ + Au; N_2^+ + Au$	E	73 keV	Lebedev, S. Y.; Lysova, G. V. Surface recoil atoms in the angular distribution of sputtered gold under bombardment of monocrystals with ions. <i>Radiat. Eff. Lett.</i> 58, 47 (1981) Soviet Union
8906	C06 $Ar^+ + Ni$ D07 $Ar^+ + Ni$	T	6 keV	Evdokimov, I. N.; Webb, R. F.; Armer, C. E. On the validity of the continuous potential approximation for the description of surface hyperchanneling effects. <i>Radiat. Eff. Lett.</i> 58, 59 (1981) United Kingdom
8907	E11 $e + H^+$	T	10-20 Ry	Golovinski, P. A.; Zon, B. A. Bremsstrahlung during collision of electrons with negative ions. <i>Sov. Phys.-Tech. Phys.</i> 25, 1076 (1980) Soviet Union
8908	C02 $e + Cu$ C08 $e + Cu$	E	100 keV	Grachev, B. D.; Kozlovskii, S. S.; Korotchkov, Y. S.; Mineev, V. I.; Petrochenko, A. F. Inelastic scattering of electrons with energy up to 100 keV in thin copper crystals. <i>Sov. Phys.-Tech. Phys.</i> 25, 1314 (1980) Soviet Union
8909	E11 Under	T	Under	Balaistov, V. M.; Krotov, Y. A.; Trakhtenberg, L. I. Photon emission in collisions of a proton or positron with an atom. <i>Sov. Phys.-JTP</i> 52, 411 (1980) Soviet Union
8910	A17 $H_2; D_2$	E T	0.4-3.6 e.u.	Cheung, L. M.; Bishop, D. M.; Eapen, D. L.; Rosenthal, G. P. Relative laser line intensities for H_2 and for D_2 . Correction factors for molecular non-rigidity. <i>Chem. Phys. Lett.</i> 86, 445 (1981) Canada
8911	D09 $CO + Ce$	E	300-420 X	Prior, K. A.; Scott, E. G.; Leabert, R. M. An x-ray and UV photoelectron spectroscopic study of CO chemisorption and dissociation on the stepped $Ce(10\bar{1}2)$ surface. <i>Chem. Phys. Lett.</i> 86, 517 (1981) United Kingdom
8912	A06 $K + O_2$	T	Under	Parlant, G.; Schroder, M.; Gorseauc, S. Classical trajectory calculation for ion-pair formation in $K + O_2$ collisions. <i>Chem. Phys. Lett.</i> 80, 526 (1981) France
8913	D10 Under	T	2 eV	Fitz, D. E.; Newagen, A. U.; Heard, L. M.; Kouri, L. J.; Gerber, R. E. Rotational-translational energy exchange in molecule-surface collisions. <i>Chem. Phys. Lett.</i> 80, 537 (1981) United States
8914	A09 Under	T	Under	Flannery, M. R. Ion-ion recombination as a function of ion and gas densities. <i>Chem. Phys. Lett.</i> 86, 541 (1981) United States