**An Integrated System for Production of Neutronics
and Photonics Computational Constants**

Volume 7 Part A Revision 1

**MAJOR NEUTRON-INDUCED INTERACTIONS ($Z \leq 55$):
GRAPHICAL, EXPERIMENTAL DATA**

D. E. Cullen, R. J. Howerton, M. K. MacGregor,
and S. T. Perkins

July 4, 1976

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LAWRENCE LIVERMORE LABORATORY
University of California, Livermore, California 94550

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D. E. Cullen, R. J. Rowerton, M. B. MacGregor,
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MS. date: July 4, 1966

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Foreword

The UCRL-50400 series describes an integrated and computer-oriented system for the production and application of neutronics and photonics calculational constants.

The system must supply reliable up-to-date data, select specific types of data on request, provide output in a variety of forms — ultimately in the form of input to other computer codes — and function rapidly and efficiently. The system has now been developed to a point where these goals are being realized.

The UCRL-50400 series, *An Integrated System for Production of Neutronics and Photonics Calculational Constants*, comprises the following volumes:

- Vol. 1 Rev. 3, *ECCL, A System for Storage, Retrieval and Display of Experimental Neutron Data*, to be published in September 1976.
- Vol. 2 Rev. 2, *Neutron-Induced Interactions: Bibliography of Experimental Data*, July 1976.
- Vol. 3 Rev. 2, *Neutron-Induced Interactions: Index of Experimental Data*, July 1976.
- Vol. 4, *Evaluated Nuclear Cross-Section Library*, April 1971.
- Vol. 5, Rev. 1, *CLYDE: A Code for the Production of Calcula-*

tional Constants from Nuclear Data, September 1975.

- Vol. 6, Rev. 1, *Tables and Graphs of Photon Interaction Cross Sections from 1.0 keV to 100 MeV Derived from the LLL Evaluated Nuclear Data Library*, October 1975.
- Vol. 7 Part A Rev. 1, *Major Neutron-Induced Interactions ($Z \leq 55$): Graphical, Experimental Data*, July 1976.
- Vol. 7 Part B Rev. 1, *Major Neutron-Induced Interactions ($Z > 55$): Graphical, Experimental Data*, July 1976.
- Vol. 8 Rev. 1 Part A, *Supplemental Neutron-Induced Interactions ($Z \leq 35$): Graphical, Experimental Data*, July 1976.
- Vol. 8 Rev. 1 Part B, *Supplemental Neutron-Induced Interactions ($Z > 35$): Graphical, Experimental Data*, July 1976.
- Vol. 9, *Thresholds of Nuclear Reactions Induced by Neutrons, Photons, Deuterons, Tritons, and Alpha Particles*, September 1970.
- Vol. 10, *Tabulated Experimental Data for Neutron-Induced Interactions*, July 1976.
- Vol. 11, *Experimental Data, Indexes and Techniques of*

- Obtaining a Selected Set of Neutron Resonance Parameters*, May 1972.
- Vol. 12, *An Atlas of Resolved Neutron Resonance Parameters*, July 1972.
 - Vol. 13, *An Atlas of Unresolved Neutron Resonance Parameters*, September 1972.
 - Vol. 14, *TARTNP: A Coupled Neutron-Photon Monte Carlo Transport Code*, July 1976.
 - Vol. 15, Part A, *The LLL Evaluated Nuclear Data Library (ENDL): Evaluation Techniques, Reaction Index, and Descriptions of Individual Evaluations*, September 1975.
 - Vol. 15, Part B, *The LLL Evaluated Nuclear Data Library (ENDL): Graphs of Cross Sections from the Library*, April 1976.
 - Vol. 15, Part C, *The LLL Evaluated Nuclear Data Library (ENDL): Translation of ENDL Neutron-Induced Interaction Data into the ENDF/B Format*, April 1976.
 - Vol. 16, *Tabular and Graphical Presentation of 175 Neutron Group Constants Derived from the LLL Evaluated Neutron Data Library (ENDL)*, April 1976.

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MAJOR NEUTRON-INDUCED INTERACTIONS ($Z \leq 55$): GRAPHICAL, EXPERIMENTAL DATA

Abstract

This report (vol. 7) presents graphs of major neutron-induced interaction cross sections in the Experimental Cross Section Information Library (ECSIL) as of July 4, 1976. It consists primarily of interactions where a single data set contains enough points to show cross-section behavior. In contrast, vol. 8 of this UCRL-50400 series consists of interactions where more than one data set is needed to show cross-section behavior. Thus, you can find

the total, elastic, capture, and fission cross sections (along with the parameters $\bar{\nu}$, α , and η) in vol. 7 and all other reactions in vol. 8.

Data are plotted with associated cross-section error bars (when given) and compared with the Evaluated Nuclear Data Library (ENDL) as of July 4, 1976. We arranged the plots in ascending order of atomic number (Z) and atomic weight (A). Part A contains the plots for $Z = 1$ to 55; Part B contains the plots for $Z > 55$.

Introduction

In 1958, Lawrence Livermore Laboratory (LLL) installed a computerized system for the storage and retrieval of experimental neutron-interaction data. This Experimental Cross Section Information Library has developed gradually and is still being improved.

The present ECSIL system¹ comprises two separate files: a numerical data file and a bibliographic information file. The two files are linked through the use of a four-digit number uniquely assigned to each reference.

In 1959 and 1960, LLL published tabulations of integrated and differential neutron cross sections below 15 MeV. Since that time, the number of entries in the system has increased by more than an order of magnitude. Consequently, the current library contains too much data (over 1.6 million data points) to publish tabulations; the resulting volumes would be prohibitively expensive and bulky. However, by presenting the data in graphs^{2,3} and on microfiche,⁴ we can significantly reduce expense and

bulk. Moreover, bulk reduction means that indexes² and bibliographies

can be added to help in data manipulation.

Graphical Data

The present ECSIL library contains 1 605 471 points,^{*} of which 1 269 917 are cross sections.⁺ Of these points, 1 208 246 (over 95%) are total, elastic, capture, fission, $\bar{\nu}$, λ , or μ (putting them in vol. 7). The remaining 61 671 points are in vol. 8. Although vol. 7 contains the vast majority of data points, the division of data sets^{**} between the two volumes is more equitable: 5372 in vol. 7 and 4907 in vol. 8.

In this volume each data set is plotted separately. We arranged the plots in ascending atomic number and atomic weight (see "ECSIL Conventions" for compounds and special materials). Within each material, reactions follow the order: total, elastic, fission,

capture, $\bar{\nu}$, λ , and μ . For each reaction, plots are in ascending least-energy order (identical to the data-index order, vol. 3). Reference number and year of reference appear to the left of each plot (e.g., ECSIL-3327 (68) indicates ECSIL reference number 3327 and reference date 1968).

Any reference containing a large number of points is first plotted as a single entity, then followed by a number of subplots that slightly overlap in energy. We chose each subplot to contain an acceptable number of data points. Master plots do not contain error bars or an ENDL comparison.

Any reference that contains less than six points is not plotted. We listed points from these references at the end of each material (ZA) in the following order: total, elastic, fission, capture, $\bar{\nu}$, λ , and μ . Within each reaction, they are listed by ascending incident energy.

^{*} As compared with 985 158 in the 1974 ECSIL library.

⁺ As opposed to angular and energy distributions.

^{**} A data set in this context is the data from a given reference for a single target and reaction.

1976 Edition

Our present volume, as compared with the 1974 edition, presents 1 208 246 data points, including almost 500 000 new points. Also, this new edition is plotted with associated error bars and compared with the ENDL library.⁶ In general, we base comparisons between ECSIL and ENDL on the same reaction in the same isotope or elemental mixture (i.e., same ZA). However, when ECSIL or ENDL do not contain cross sections for a given ZA, we compare cross sections for the elemental mixture from one library with the most abundant isotope from the other library (e.g., compare ¹⁶O with natural oxygen).

We use only those reactions explicitly contained in ENDL.⁶ For (n,γ),

(n,n'), (n,p), (n,d), (n,t), etc., only the sum of all level excitations (resolved and continuum) in ENDL is compared with the ECSIL data. As such, ENDL data serve as an upper bound for ECSIL data for any specific level and can be used to indicate when one level dominates.

We scale the plots to contain ECSIL data. Any ENDL data falling in the same energy and cross-section range are then plotted. The reaction is then followed by a plot of ENDL data over the entire energy and cross-section range of the evaluated (ENDL) data.

By using color separation, we allow the experimental (blue) and evaluated (red) data to be easily distinguished.

Relationship to Other Volumes

This volume is closely related to other volumes in the UCRL-50400 series and can be used to determine whether experimental data are available for a given target and reaction. The following volumes provide other paths to the information:

- *Volume 1* describes the format and conventions associated with the library as well as the supporting system of programs. It also gives the forms (e.g.,

plots and listings) and the order in which data and bibliographic information may be obtained.

- *Volume 2* contains bibliographic indexes that can be used to determine whether a specific reference is included in the ECSIL system and which experimental data are associated with the reference.
- *Volume 3* lists data indexes that may be used to determine

- the data in the library for a given isotope or reaction.
- *Volume 8* presents graphs of all other integrated (as opposed to angular distribution) cross sections, including (n,n') , (n,α) , etc.
- *Volume 10* contains the ECSIL Library contents tabulated on microfiche.
- *Volume 11* lists the indexes and tabulated resonance parameters in ECSIL.
- *Volume 12* lists selected tabulated resolved resonance parameters
- *Volume 13* lists selected tabulated unresolved resonance parameters.

See this volume's foreword for a list of associated volumes on evaluated data.

Production of Graphs

Program ECSPLT¹ produced the graphs in this volume. This program required a series of noninteractive passes through the ECSIL data library. These passes used 24 min of CDC-7600 time (for Parts A and B) to produce 35 mm film containing all plots in correct order, ready for photo-offset printing.

Corrections and Suggestions

Users of these volumes have been a major aid in detecting and reporting erroneous data that have crept into ECSIL. They have also suggested improvements in the format and scope of these volumes. Please communicate

all corrections and suggestions to:

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with experimental data collected at the four centers.

Many experimenters have furnished us with their data before publication. To them, especially, we offer our grateful thanks. Finally, we would

like to express our sincere gratitude to Violet Gamble and Sally Mooney for their efforts in maintaining the bibliographic file and to Kenneth Hill for ensuring that the numerous computer runs were satisfactorily completed.

References

1. D. E. Cullen, R. J. Howerton, M. H. MacGregor, and S. T. Perkins, *ECSIL, A System for Storage, Retrieval and Display of Experimental Neutron Data*, Lawrence Livermore Laboratory, Rept. UCRL-50400, Vol. 1 (Rev. 3 to be published in 1976).
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Appendix:

ECSIL Conventions

The ECSIL data system describes experimental neutron-induced cross sections and related information by indicating

- *Target.* The ZA number describes the target. There are several special conventions. For example, A is set at zero for elemental mixtures. For compounds, the Z of the element that appears first in the molecular formula is used, and A is defined as 300 plus the molecular weight (e.g., H_2O is assigned $Z = 1$ and $A = 318$). For unstable targets, the longest-lived isomer is assigned the ZA number of the target. Short-lived isomers are assigned the Z of the target, and A is defined as 600 plus the atomic weight of the target (e.g., ^{242g}Am is assigned $Z = 95$ and $A = 842$). See Table 1 for a complete list of compounds and special isotopes.
- *Interaction.* A numerical equivalent is used to designate the interaction: total, elastic, capture, etc. In ECSIL, this numerical equivalent becomes the basic C number. Table 2 gives a complete list of all basic C numbers.
- *Interaction Property.* A numerical equivalent designates the

interaction properties that are measured, such as cross section, angular distribution, or energy distribution. In ECSIL, this numerical equivalent becomes the C-increment number. The total C number used to describe the interaction and its property is the sum of the C-number increment and the basic C number [e.g., 11 indicates the total (n,n') cross section, while 311 indicates the (n,n') secondary neutron energy spectrum].

Table 3 gives a complete list of all C-number increments.

Table 4 lists miscellaneous quantities not included in the basic C-number, C-number-increment scheme.

- *Interaction Modifier.* A numerical equivalent is used to further qualify or describe the interaction. This quantity indicates conditions such as target temperature, the cross section for excitation of one or more levels of the residual nucleus, and the cross section for production of one or more photons. In ECSIL, this numerical equivalent becomes the S number. Table 5 gives a complete list of all S numbers.

Table 1. Compounds and special isotopes (assigned ZA's).

Assigned ZA number	Material	Assigned ZA number	Material
1302	H ₂ (gas)	14360	SiO ₂
1308	H ₂ O	16364	SO ₂
1320	D ₂ O	22349	TiH _{0.6}
5370	B ₂ O ₃	22350	TiH _{1.9}
6328	C ₂ H ₄	26460	Fe ₂ O ₃
6331	CH ₃ OH	27660	60mCo
6376	C ₆ H ₆	40391	ZrH _{0.63}
6384	C ₆ H ₁₂	40392	ZrH _{0.98}
6386	C ₆ H ₁₄	40393	ZrH _{1.5}
6392	C ₃ H ₈ O ₃	40394	ZrH _{1.98}
6404	C ₈ H ₈	40295	Zircaloy-2
6492	C ₁₀ H ₈ O ₄	40423	ZrO ₂
6652	C ₂₅ H ₅₂	52723	123mTe
7328	N ₂ (gas)	60636	Nd ₂ O ₃
7353	NH ₄ Cl	61748	148Pm
7598	NH ₄ Br	82999	RADIO-Pb
7445	NH ₄ I	92570	UO ₂
8332	O ₂ (gas)	95842	242gAm
12340	MgO	95844	244gAm
13402	Al ₂ O ₃	99854	254mEs

Table 2. Basic reaction designator (basic C).

Basic C number	Cross-section type	Basic C number	Cross-section type
1	Total	25	(n,X) charged-particle emission
2	Elastic	26	(n,p)
3	Nonelastic	27	(n,Xp)
4	Neutron emission (elastic + nonelastic)	28	(n,d)
5	Total scattering (inelastic + elastic)	29	(n,Xd)
6	Neutron nonelastic emission	30	(n,t)
7	Removal	31	(n,Xt)
8	—	32	(n, ³ He)
9	—	33	(n,X ³ He)
10	—	34	(n,α)
11	(n,n')	35	(n,Xα)
12	(n,2n)	36	Activation
13	(n,3n)	37	(n,2α)
14	(n,n'p)	38	—
15	(n,n'd)	39	—
16	(n,n't)	40	—
17	(n,n', ³ He)	41	Bound atom
18	(n,n',α)	42	Free atom
19	(n,4n)	43	Coherent scattering
20	—	44	Incoherent scattering
21	Absorption	45	Potential scattering
22	(n,fission)	46	$\bar{\nu}_p$, prompt neutrons per fission (average)
23	(n,γ)	47	$\bar{\nu}_d$, delayed neutrons per fission (average)
24	(n,Xγ) gamma-ray production	48	n, neutrons produced per nonelastic
		49	α, capture-to-fission ratio

Table 3. Reaction designator increments (C increment).

Increment number	Reaction property (units)	Definition
0	Integrated cross sections (b) or related parameters	
50	Spectrum-averaged cross sections (b)	
100 ^a	Angular distributions (b/sr)	$\sigma(E, \theta)$
200	Energy distributions (b/MeV)	$\sigma(E, E')$
250 ^a	Angular distributions integrated between fixed angular limits (b)	$\sigma(E, \theta_{\min}^{\circ}, \theta_{\max}^{\circ})_{\text{lab}}$
300 ^a	Differential energy distributions (b/sr MeV)	$\sigma(E, E', \theta)_{\text{lab}}$
350 ^a	Partial distributions integrated between fixed energy and angular limits (b)	$\sigma(E, E'_{\min}, E'_{\max}, \theta_{\min}, \theta_{\max})_{\text{lab}}$
400	Energy distributions integrated between fixed energy limits (b)	$\sigma(E, E'_{\min}, E'_{\max})$
450 ^a	Legendre expansion of angular distributions - $g_i(E)$ (dimensionless)	$\sigma(E, \theta) = \sigma(E) \sum_{i=0}^{\infty} \frac{2^i + 1}{4^i} g_i(E) P_i(\cos \theta)$
500	Resonance integrals (b)	$R.I. = \int_{E_{\min}}^{E_{\max}} \sigma(E) \frac{dE}{E}$
550 ^a	Polarization (dimensionless)	$P(E, \theta)$
600 ^a	Partial distributions integrated between fixed-energy limits (b/sr)	$\sigma(E, E'_{\min}, E'_{\max}, \theta)_{\text{lab}}$
650 ^a	Partial distributions integrated between fixed angular limits (b/MeV)	$\sigma(E, E', \theta_{\min}, \theta_{\max})_{\text{lab}}$
850	C/S ratios (dimensionless)	
900	Miscellaneous quantities	See Table 4

^a Angular distributions for all unique $12-12-12$ reactions are expressed in the center-of-mass system. Multibody reactions are expressed in the laboratory frame of reference.

Table 4. Reaction designator for miscellaneous quantities.

Spectra parameters					
901	Nuclear temperature, nonelastic (excluding fission)				
902	Nuclear temperature, total nonelastic				
903	Nuclear temperature, fission				
904	Nuclear temperature, inelastic (first neutron)				
905	Nuclear temperature (second neutron)				
Thermal parameters					
911	Thermal scattering law, $S(\alpha, \beta)$				
Average resonance parameters					
941	$\bar{D}_{\text{observed}}$	944	$\bar{\Gamma}_n^{\lambda}$		
942	$\bar{\Gamma}_f$	945	$\bar{D}_2$		
943	$\bar{\Gamma}_f$	946	$\bar{S}_2$		
Resolved resonance parameters					
951	E_o (energy only)	966	$g\Gamma_n$	981	$\sigma_o \Gamma_f / \Gamma_t$
952	J, π	967	$g\Gamma_n^o$	982	$\sigma_o \Gamma_\gamma / \Gamma_t$
953	λ	968	$g\Gamma_\gamma$	983	$\sigma_o \Gamma_a / \Gamma_t$
954	g	969	Γ_n / Γ_t	984	$\sigma_o \Gamma_\gamma \Gamma_f / \Gamma_t$
955	σ_o	970	Γ_a / Γ_t	985	$\sigma_o \Gamma_f^2 / \Gamma_t$
956	Γ_t	971	Γ_γ / Γ_t	986	$g\Gamma_\gamma \Gamma_n / \Gamma_t$
957	Γ_n	972	Γ_n / Γ_a	987	$2g\Gamma_n^2 / \Gamma_t$
958	Γ_n^o	973	Γ_f / Γ_t	988	$\Gamma_t^2 \sigma_o$
959	Γ_γ	974	Γ_f / Γ_a	989	$g\Gamma_n^o \Gamma_f$
960	Γ_f	975	Γ_γ / Γ_f	990	$g\Gamma_f \Gamma_n / \Gamma_t$
961	Γ_a	976	$\Gamma_t \sigma_o$	991	$\sigma_o \Gamma_f \Gamma_t$
962	Γ_a	977	$\Gamma_f \sigma_o$	992	$\Gamma_n^o \Gamma_f / \Gamma_t$
963	Γ_p	978	$\Gamma_\gamma \sigma_o$	993	$g(\Gamma_n)^2$
964	$g\Gamma_n^1$	979	$\Gamma_n \sigma_o$	994	$g\Gamma_n \Gamma_\gamma$
965	$g\Gamma_n^2$	980	$\sigma_o \Gamma_n / \Gamma_t$		

Table 5. Reaction designator modifier^a (S number).

S number	Modification (units)
1	Level excitation (MeV)
2	Isomer production (sec)
3	Isomer production (min)
4	Isomer production (hr)
5	Isomer production (d)
6	Isomer production (yr)
7	Photon production (MeV)
8	Unresolved level excitation (MeV)
9	Material temperature (K)
10	Unresolved photon production (MeV)
11	Spin state (dimensionless)
12	isotope bound in material (dimensionless)
13	Oriented crystal (Miller number)
14	Electron production (MeV)
20	Transmission measurement (b/atom)

^aS + 80 indicates relative distribution.

GRAPHS OF CROSS SECTIONS

07/04/76

1-H-1

Total
Cross Section

Barnes

1-H-1-1

500

1-1

07/04/76

Total
Cross Section

1-H -1

ECSIL-3163 (71)

5 6 7 8 9 10⁰ 2 3 4 5 6 7 8 9 10¹

(Expanded Below)

ECSIL-3329 (69)

ECSIL-3329 (69)

7 8 9 10⁰ 2 3 4 5 6 7 8 9 10¹

7 8 9 10⁰

MeV

1-2

1-H -1 -2

Baron

07/04/76

Total
Cross Section

1-H -1

1-3

Mev

1-H -1 -3

Barns

07/04/76

Total
Cross Section

1-H-1
1000 1001

(Expanded Below)
ECSIL-2941 (69)

ECSIL-2941 (69)

ECSIL-2941 (69)

Barns

07/04/76

1-H -1

Total
Cross Section

EC51L-750 (67)

EC51L-504 (54)

MeV

1-5

1-H -1 -5

Born

07/04/76

Total
Cross Section

1-H -1

ECSIL-22 (57)

ECSIL-107 (54)

ECSIL-789 (61)

Barns

07/04/76

Total
Cross Section

1-H -1

Barns

1-7

MeV

1-H -1 -7

07/04/76

Total

I-H -1

Cross Section

EC51L-3520 (74)

EC51L-1573 (66)

Mev

I-8

I-H -1 -8

Barns

07/04/76

Total
Cross Section

1-H -1

Barns

1-9

Mev

1-H -1 -9

07/04/76

1-H-1

Total
Cross Section

MeV

1-10

1-H-1 -10

Barns

07/04/76

Total
Cross Section

1-H -1

1-11

1-H -1 -11

Barons

07/04/76

Total
Cross Section

1-H -1

1-12

1-H -1 -12

07/04/76

Elastic

I-H -1

Cross Section

07/04/76

Total

I-H -1

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
46	175	3.5000	-2	5.0000	-3	1.6740	1	4.1000	1
55	210	6.0000	-2	1.5100	1	6.0000	1	1.5100	1
55	210	7.5000	-2	1.4200	1	4.0000	1	1.4200	1
55	210	9.0000	-2	1.3000	1	4.0000	1	1.3000	1
55	210	1.2000	-1	1.2000	1	4.0000	1	1.2000	1
46	175	2.6500	-1	5.0000	1	5.0000	1	3.9.1200	0.2.4000
46	175	4.9000	-1	5.0000	1	5.0000	1	3.6.3300	0.2.1000
63	280	4.9260	-1	1.1000	1	1.1000	1	3.6.2020	0.1.1200
71	3248	5.2600	1	1.3000	1	1.3000	1	3.5.9500	0.1.4300
55	210	5.5000	1	5.0000	1	5.0000	1	5.0000	0.1.8000

I-13

I-H -1 -13

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA MEV	X-SEC BARN	DELTA MEV	X-SEC BARN
49	183.75800	1.80000	3.47000	0.40000	2	66.1574	2.73500
41	170.90000	1.50000	3.70000	0.35000	1	60.673	2.82500
50	185.10000	0.15000	2.40000	0.10000	1	60.673	2.82500
54	166.10000	0.30000	4.22800	0.18000	1	60.673	2.82500
49	183.10780	0.80000	3.40000	0.30000	2	63.356	3.40000
54	172.31500	0.30000	3.40000	0.20000	2	60.281	4.20000
49	183.13400	0.90000	3.63000	0.40000	2	63.356	3.40000
49	183.15780	0.80000	3.35000	0.20000	2	60.281	4.20000
53	208.25300	0.60000	3.25000	0.40000	3	55.282	9.34000
51	3187.25300	0.30000	2.55000	0.40000	3	55.282	9.34000
54	126.25400	0.50000	3.25000	0.90000	3	53.355	9.50000
65	1562.27000	0	2.37000	0.20000	2	50.12	9.50000
39	42.28800	0.40000	2.32000	0.90000	2	55.282	9.34000
50	205.31000	0.15000	1.23000	0.10000	1	55.282	1.06800
53	280.32050	0.50000	3.20000	0.68400	3	53.355	1.26000
53	87.47800	0.90000	3.10000	0.60000	3	53.355	1.26000
47	161.65000	0.60000	1.10000	0.10000	2	62.1601	2.00000
51	65.13900	1.00000	0.70000	1.40000	2	55.2056	1.40000
52	207.14000	1	6.90100	1.60000	2	55.2056	1.40000
51	206.14080	1.50000	2.68000	1.50000	3	55.1596	3.90000
70	3056.14100	1	6.71000	1.00000	2	55.1596	3.90000
53	454.14100	1.30000	2.68100	1.70000	3	59.3160	4.20000
52	78.14100	1.50000	6.60100	1.50000	2	61.1566	5.50000
60	673.17800	1.30000	6.89100	1.50000	3	65.1596	5.50000
56	1575.19570	1.50000	1.90000	1.90000	3	64.3160	5.70000
65	927.19580	1.25000	4.30000	1.20000	2	65.1596	6.90000
54	835.19670	1.20000	4.94000	1.25000	3	65.1596	6.90000
53	274.19940	2.70000	5.34100	1.00000	1	71.3180	1.20000
60	673.20600	1.20000	4.70000	1.60000	2	71.3180	1.20000
65	927.20910	1.20000	4.00000	1.20000	2	64.1943	1.40000
65	927.21940	1.20000	4.00000	1.20000	2	64.1943	1.40000
60	673.23600	1.20000	4.00000	1.20000	2	64.1943	1.40000
65	927.25400	1.20000	4.00000	1.20000	2	64.1943	1.40000
65	927.26300	1.20000	4.00000	1.20000	2	64.1943	1.40000

07/04/76

(n,y)

1-H -1

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62	3275	2.5300- 0	3.2700- 1	6.0000- 3	62	3274	1.4400+ 1	3.0600- 5	1.8000- 6
65	3223	2.5300- 0	3.3310- 1	3.0000- 3	61	687	1.4400+ 1	2.0000- 1	3.0000- 6
61	3213	2.5300- 0	3.3500- 1	8.0000- 3	64	3286	1.4400+ 1	3.3800- 5	1.9000- 6
69	3277	2.5300- 0	3.3560- 1	9.2000- 3	61	853	5.0000+ 1	1.0000- 1	6.0010- 5

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	TEMP KELVIN
62	3275	2.5300- 0	3.2150- 1	6.0000- 3	27300+ 2

07/04/76

Total

1-H -2

Cross Section

07/04/76

1-H -2

Total
Cross Section

MeV

1-16

1-H -2 -2

Barns

07/04/76

Total
Cross Section

1-H -2

MeV

1-17

1-H -2 -3

Barns

07/04/76

I-H -2

Total
Cross Section

I-18

MeV

I-H -2 -4

Barns

07/04/76

Total
Cross Section

1-H -2

Barns

Mev

1-19

1-H -2 -5

07/04/76

Total
Cross Section

1-H -2

1-20

1-H -2 -6

07/04/76

Total
Cross Section

I-H -2

07/04/76

Elastic
Cross Section

I-H -2

1-21

I-H -2 -7

211

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Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNS	DELTA BARNS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNS	DELTA BARNS
53	795	1.0000 -	3.3200 -	1.0000 -	53	795	5.5000 -	2.9900 +	0.4000 -
55	214	1.0000 -	2.2700 -	0.1000 -	51	795	3.2900 -	2.7900 +	0.2000 -
55	214	1.6000 -	2.3000 -	0.1000 -	51	285	5.5000 +	1.8000 +	0.2000 -
55	214	1.0000 -	2.0003 -	0.9001 -	51	285	5.5000 +	0.0000 -	1.8000 +
55	214	2.0000 -	2.0000 -	0.9001 -	51	285	5.5000 +	0.0000 -	0.2000 -
53	795	3.0000 -	3.2600 -	0.5000 -	57	22	7.1700 +	1.5000 +	0.2000 -

1-H-2-8

07/04/76

Total

Cross Section

I-H -2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57	22 8.7700	0 1.9300	1.1200	0 1.0000	54	39 9.4600	1 1.5000	0 1.1000	1 7.0010
57	22 1.1130	1 1.1000	1 1.0700	0 2.0000	50	12 9.5000	1 1.0000	0 1.0400	1 4.0000
57	22 1.3130	1 9.0010	2 8.8010	1 2.0000	55	282 9.7200	1 1.0000	0 1.0800	1 5.0000
52	207 1.4000	1 8.2010	1 8.0010	1 2.0000	54	39 9.6000	1 2.5000	0 1.0900	1 5.0000
57	22 1.4010	1 7.0010	2 8.6010	1 2.0000	55	282 1.0110	2 5.0000	1 8.1010	1 2.0000
52	78 1.4100	1 5.0000	1 3.0000	1 1.4000	54	39 1.0200	2 7.6010	1 8.1010	2 9.9010
62	673 1.7800	1 3.0000	1 6.8610	1 8.0010	55	282 1.0680	2 2.0000	0 6.2010	2 2.2000
60	673 2.0600	1 2.0000	1 6.0010	1 1.0000	54	39 1.0790	2 5.0000	0 6.2010	2 2.1900
60	673 2.5300	1 3.0000	1 5.310	1 9.0010	69	3160 4.0000	3 6.0000	2 8.0300	2 1.9000
60	673 2.9900	1 3.0000	1 4.4000	1 7.0010	69	3160 5.7000	3 6.0000	2 7.7800	2 1.3000
50	281 4.2000	1 1.0000	0 2.8900	1 1.3000	68	1948 1.4600	4 7.2200	2 1.5000	3
49	286 9.0000	1 1.1700	1 1.5000	1 5.0000	71	3180 1.8000	4 6.0000	3 7.5800	2 8.0000
55	282 9.3400	1 5.0000	1 1.1010	1 7.0010	68	1948 2.7000	4 6.0000	3 7.5800	2 7.0000

07/04/76

Elastic

Cross Section

I-H -2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69	3454 2.5300	8 5.3256	0 3.2723	2	72	3778 1.4100	1 2.0000	1 6.2300	1 5.0000
53	464 1.4100	1 6.7010	1 1.0000	1	68	2582 1.4300	1 2.0000	1 6.5000	1 6.0000
55	471 1.4100	1 6.1010	1 3.0000	2	70	2761 3.6000	1 2.0000	0 1.9600	1 5.0000
69	3770 1.4100	1 1.5000	1 5.9600	1 2.1000	70	2761 4.6300	1 2.0000	0 1.4600	1 3.0000
REFERENCE					DELTA				
51 2794 7.2400					BARNs				
					TEMP				
					KELVIN				
					3.4000				
					0 4.0000				
					1 7.7000				

I-23

I-H -2

07/04/76

(n, γ)

1-H -2

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
52 1624	2.5300- 8		5.7000- 4	1.0000 5
68 1604	2.5300- 8		5.2100- 4	9.0000- 6
61 687	1.4400+ 1	2.0000- 1	2.9400- 5	5.8000- 6

07/04/76

Total
Cross Section

1-H -3

07/04/76

Elastic
Cross Section

1-H -3

07/04/76

Total
Cross Section

1-H -3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57 491	2.5000+ 0		2.5000+ 0	5.0000- 1
57 491	1.4000+ 1		6.3000- 1	1.7000- 1

07/04/76

Elastic

1-14-77

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs
60	555	1.0000 ± 0	1.7200 ± 0.60010 ± 2	60	555	3.1100 ± 0	0.4100 ± 0.6010 ± 2
60	555	2.0000 ± 0	2.1000 ± 0.60010 ± 2	60	555	6.0000 ± 0	1.9010 ± 0.6010 ± 2

07/04/76

Total

H₂ Gas

Cross Section

1-26

H₂ Gas

Barns

$$\text{H}_2\text{O}$$

Barns

07/04/76

Total

Cross Section

 H_2O

ECSIL-53 (49)

ECSIL-854 (66)

ECSIL-1894 (67)

MeV

1-28

 $H_2O -2$

Barns

07/04/76

Total
Cross Section

H₂O

ECSIL-779 (61)

ECSIL-793 (64)

ECSIL-176 (46)

Barns

07/04/76

Total
Cross SectionH₂O

Barns

07/04/76

Total
Cross SectionH₂O

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65	949	1.4400- 6	4.6100- 1	2.0000- 1
50	12	9.5000+ 1	8.0710- 1	5.0000- 3
50	12	9.5000+ 1	8.1160- 1	5.0000- 3

1-50

H₂O

07/04/76

Total
Cross Section

D₂O

1-31 D₂O 1

Barns

07/04/76

D₂O

Total
Cross Section

Mev

1-32

D₂O

Barns

07/04/76

2-He-Nat

Total
Cross Section

1-34

2-He-Nat - I

Bar 2

07/04/76

2-He-Nat

Total
Cross Section

MeV

1-35

2-He-Nat --2

Barns

07/04/76

Total
Cross Section

2-He-Nat

1-36

2-He-Nat -3

07/04/76

Total
Cross Section

2-He-Nat

Date: 4-800L-7105

07/04/76

Total
Cross Section

2-He-Nat

ECSIL - 2372 (68)

07/04/76

Elastic
Cross Section

2-He-Nat

ECSIL - 2372 (68)

07/04/76

Elastic
Cross Section

2-He-Nat

ENDL-7105

07/04/76

Total
Cross Section

2-He-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 694	6.9900+	0 4.0000-	2 1.9000+	0 5.0000- 2	66 1056	7.7200+	1 1.0000+	0 2.2150-	1 4.4300- 3
62 694	8.0300+	0 4.0000-	2 1.6600+	0 5.0000- 2	54 343	8.8000+	1 2.0000+	0 1.9900-	1 6.0010- 3
62 694	1.0070+	1 4.0000-	2 1.3700+	0 4.0000- 2	66 1056	8.8200+	1 1.0000+	0 1.9510-	1 3.9020- 3
62 694	1.2010+	1 4.0000-	2 1.2600+	0 3.0000- 2	66 1056	1.1000+	2 1.0000+	0 1.5490-	1 3.0980- 3
53 274	1.7970+	1 4.5000-	1 8.4810-	1 2.5000- 2	66 1056	1.2940+	2 1.0000+	0 1.3600-	1 2.7200- 3
33 274	1.9000+	1 3.3000-	1 8.1610-	1 2.4000- 2	66 1056	1.5090+	2 1.0000+	0 1.2140-	1 2.4280- 3
53 274	2.0070+	1 2.6000-	1 7.7010-	1 2.3000- 2	69 3160	5.7000+	3 6.0000+	2 1.4200-	1 3.0000- 3
54 343	4.7500+	1 2.0000+	0 3.7700-	1 1.2000- 2					

07/04/76

Elastic
Cross Section

2-He-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71 3270	1.7600+	1 6.1000-	1 8.5800-	1 3.0000- 2	60 1609	6.0000+	1	2.3000-	1 3.5000- 2
71 3270	2.0900+	1 3.1500-	1 7.3200-	1 2.6000- 2	60 1609	1.0400+	2	6.4000-	2 1.1000- 2
71 3270	2.3700+	1 3.4500-	1 6.5400-	1 3.6000- 2	60 1609	1.3200+	2	2.5000-	2 3.5000- 3

07/04/76

Total
Cross Section

2-He-3

1104

07/04/76

Total
Cross Section

2-He-3

ENDL-7104

07/04/76

Elastic
Cross Section

2-He-3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61	578	9.5000-1	2.2400+0	1.4000-1	74	3537	7.9000+0	1.4300+0	5.0000-2
60	555	1.0000+0	1.9600+0	6.0010-2	61	578	8.0700+0	2.0000-2	1.5800+0
60	555	2.0000+0	2.5200+0	7.0010-2	74	3537	1.2000+1	1.0400+0	3.0000-2
61	578	2.6700+0	2.3300+0	1.0000-1	74	3537	1.3600+1	9.2000-1	3.0000-2
60	555	3.5000+0	2.3400+0	6.0010-2	74	3537	1.4400+1	8.7000-1	3.0000-2
61	578	5.0000+0	1.9700+0	9.0010-1	61	578	1.7500+1	5.0000-2	8.0010-1
60	555	6.0000+0	1.6900+0	7.0010-2	74	3537	2.3700+1	4.8000-1	2.0000-2

07/04/76

(n,γ)
Cross Section

2-He-3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63	839	4.0000+0	5.0000-1	4.2000-5

07/04/76

Total
Cross Section

3-Li-Nat

07/04/76

Total
Cross Section

³-Li-Nat

END: 7107

1-43

Mev

³-Li-Nat -2

Barms

07/04/76

Total
Cross Section

3-Li-Nat

ECSIL-720 (621)

ECSIL-73 (51)

ECSIL-72 (51)

1-44

MeV

3-Li-Nat -3

Barns

07/04/76

Total
Cross Section3-Li-Nat
3-11-7 ENDL-7197

3-Li-Nat -4

07/04/76

Total
Cross Section

3-Li-Nat

ECSIL-1620

1-46

Mev

3-Li-Nat -5

07/04/76

Total
Cross Section

3-Li-Nat

07/04/76

Total
Cross Section

3-Li-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs		
61	755	3.2500+ 0	1.7000- 1	2.4400+ 0	9.0000- 2	61	755	4.5200+ 0	5.0000- 2	2.7400+ 0	8.0000- 2
55	500	3.2900+ 0		2.1000+ 0	5.0000- 2	57	368	1.4800+ 1		1.2400+ 0	6.0010- 2
61	755	3.7000+ 0	1.0000- 1	2.4600+ 0	6.5000- 2	50	281	4.2000+ 1	1.0000+ 0	6.9410- 1	1.1000- 2
61	755	4.1200+ 0	7.0000- 2	2.7900+ 0	6.0000- 2	49	286	9.0000+ 1		3.1400- 1	6.0010- 3

07/04/76

Elastic
Cross Section

3-Li-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
59 579	1.4500+ 0	5.0000- 2	1.4000+ 0	3.0000- 1
59 579	4.2100+ 0	1.0000- 1	2 3000+ 0	3.0000- 1

07/04/76

3-Li-6

Total
Cross Section

MeV

1-48

3-Li-6 -1

Barns

07/04/76

3-LI-6

Total
Cross Section

1-49

MeV

3-LI-6 -2

Barns

07/04/76

3-LI-6

Total
Cross Section

I-50

3-LI-6 -3

Barns

07/04/75

3-Li-6

Elastic
Cross Section

07/04/76

Total
Cross Section

3-Li-6

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
54	6 1.0000- 3		4.0000+ 0	1.0000+ 0	57	493 1.4000+ 1		1.3700+ 0	6.0000- 2
57	493 2.5000+ 0		1.4000+ 0	1.4000- 1	52	81 1.4000+ 1		1.3900+ 0	5.0000- 2
57	22 7.0100- 0	1.7000- 1	1.9200+ 0	2.0000- 2	60	673 1.6100+ 1	3.0000- 1	1.2400+ 0	2.0000- 2
57	22 8.5400+ 0	1.5000- 1	1.7500+ 0	3.0000- 2	60	673 2.0400+ 1	2.0000- 1	1.1500+ 0	1.0000- 2
57	22 1.1180+ 1	1.1000- 1	1.6500+ 0	2.0000- 2	60	673 2.5300+ 1	3.0000- 1	1.0100+ 0	1.0000- 2
57	22 1.2630+ 1	9.0010- 2	1.5300+ 0	2.0000- 2	60	673 2.7700+ 1	3.0000- 1	9.4010- 1	1.0000- 2
57	22 1.3980+ 1	7.0010- 2	1.4500+ 0	2.0000- 2					

07/04/76

Elastic
Cross Section

3-Li-6

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 1632	4.8300+ 0	4.7000- 2	1.3500+ 0	6.0000- 2	63 2335	1.4000+ 1		8.7600- 1	9.5000- 2
68 1632	5.7400+ 0	2.3000- 1	1.2760+ 0	5.1000- 2	65 1627	1.4000+ 1		8.5000- 1	9.0000- 2
68 1632	7.5000+ 0	1.7000- 1	1.1940+ 0	4.8000- 2	64 1633	1.4100+ 1	1.0000- 1	8.8300- 1	9.5000- 2

07/04/76

Total
Cross Section

3-Li-7

07/04/76

Total
Cross Section

3-Li-7

07/04/76

3-Li-7

Total
Cross Section

3-Li-7 -3

Barns

07/04/76

3-Li-7

Elastic
Cross Section

07/04/76

(n, γ)
Cross Section

3-Li-7

07/04/76

Total
Cross Section

3-Li-7

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
52	22 2.8000- 3		5.1010- 1	2.0000- 1	57	22 1.1180+ 1	1.1000- 1	1.6400+ 0	2.0000- 2
54	225 2.5700- 1	2.0000- 3	1.1800+ 1	1.2000+ 0	57	22 1.2630+ 1	9.0010- 2	1.5500+ 0	2.0000- 2
57	493 2.5000+ 0		2.0000+ 0	3.0000- 1	57	22 1.3990+ 1	7.0010- 2	1.5000+ 0	2.0000- 2
57	22 7.0100+ 0	1.7000- 1	2.0200+ 0	2.0000- 2	52	81 1.4000+ 1		1.4500+ 0	3.0000- 2
57	22 8.5400+ 0	1.5000- 1	1.8100+ 0	2.0000- 2	57	493 1.4000+ 1		1.3500+ 0	8.0010- 2

1-56

3-Li-7 -5

07/04/76

Total
Cross Section

3-Li-7

REFERENCE	ENERGY	DELTA	X-SEC	DELTA	REFERENCE	ENERGY	DELTA	X-SEC	DELTA		
	MEV	MEV	BARNs	BARNs		MEV	MEV	BARNs	BARNs		
60	673	1.8100+ 1	3.0000+ 1	1.2700+ 0	2.0000- 2	60	673	2.5300+ 1	3.0000+ 1	1.0500+ 0	1.0000- 2
60	673	2.0400+ 1	2.0000+ 1	1.1800+ 0	1.0000- 2	60	673	2.0700+ 1	3.0000+ 1	9.7010- 1	2.0000- 2

07/04/76

Elastic
Cross Section

3-Li-7

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs		
63	841	1.5000+ 0	4.0000- 2	1.3750+ 0	7.0000- 2	68	1632	4.6300+ 0	4.7000- 1	2.2250+ 0	8.9000- 2
68	1632	3.3500+ 0	6.2000- 2	1.8630+ 0	5.2000- 2	63	2335	1.4000+ 1	9.3300- 1	1.0000- 1	
63	841	5.3500+ 0		1.6600+ 0	7.0000- 2	66	1640	1.4000+ 1	1.0550+ 0	8.5000- 2	
63	841	4.0000+ 0	3.0000- 2	1.8000+ 0	7.0000- 2	64	1633	1.4100+ 1	1.0000- 1	9.6900- 1	1.1000- 1

07/04/76

(n,γ)
Cross Section

3-Li-7

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58	354	2.5300- 8	4.0000- 2	8.0000- 3
47	2803	2.5300- 8	3.3000- 2	5.0000- 3

07/04/76

Total

4-Be-9

Cross Section

7109

6 7 8 9 10⁸ 2 3 4 5 6 7 8 9 10⁷

MeV

1-58

4-Be-9 -1

Bars

07/04/76

Total
Cross Section4-Be-9
ENDL-7109

07/04/76

4-Be-9

Total
Cross Section

6600-7100

ECISL-4017 (66)

ECISL-234 (50)

ECISL-3795 (71)

MeV

1-61

4-Be-9 -4

Barns

07/04/76

Total
Cross Section

4-Be-9

MeV

1-62

4-Be-9 -5

Bar 35

07/04/76

Total
Cross Section

4-Be-9

Barns

1-63

MeV

4-Be-9 -6

07/04/76

4-Be-9

Total
Cross Section

4 5 6 7 8 9 10

0.5 0.6 0.7 0.8

1.5 2 2.5 3

MeV

1-64

4-Be-9

Barns

07/04/75

Total
Cross Section

4-Be-9

Barns

1-65

MeV

4-Be-9 -8

07/04/76

Total

4-Be-9

Cross Section

EC51L-504 (54)

EC51L-682 (61)

MeV

1-86

4-Be-9 -9

Barns

07 04 76

4-Be-9

Total
Cross Section

Bars

1-67

MeV

4 8+9 10

07/04/76

Total
Cross Section

4-Be-9

Barns

1-68

4-Be-9 -11

07/04/76

Total
Cross Section

4-Be-9

ECSIL-3618

1-69

Be.

4-Be-9 -12

07/04/76

Total

4-Be-9

Cross Section

Temp = 440 Kelvin

6ECS1L-2057 (55)

1-70

4-Be-9 -13

07/04/76

Elastic

Cross Section

4-Be-9

EX-100-159

EC51L-231 (56)

EC51L-571 (60)

EC51L-885 (66)

1-71

MeV

4-Be-9 -14

Barns

07/04/76

Elastic
Cross Section

4-Be-9

ECSIL 7109

1-72

4-Be-9 -15

07/04/76

Total
Cross Section

4-Be-9

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
49	844 1.1500	4 1.1500	5 6.0710	0
49	844 3.0000	4 3.0000	5 6.0410	0
75	3897 2.3500	2	5.9030	0 1.1000- 2
41	170 9.0000	1	2.8230	0 2.0000- 1
67	1527 2.7000	0 3.0000	2 3.0000	0 1.5600- 1
67	1643 4.0000	0 5.0000	2 1.9900	0 4.0000- 2
55	296 4.1000	0 4.0000	2 1.9600	0 2.0000- 1
59	500 5.0000	0 1.4500	1 1.8320	0 5.0000- 2
59	500 6.0000	0 1.0500	1 1.8100	0 5.0000- 2
57	22 6.6300	0 1.7000	1 1.7500	0 2.0000- 2
57	22 8.5700	0 1.5000	1 1.6800	0 2.0000- 2
57	22 1.0240	1 1.1000	1 1.6600	0 2.0000- 2
57	22 1.2630	1 9.0010	2 1.5600	0 1.0000- 2
51	65 1.3900	1 1.0000	0 1.4100	0 1.1000- 1
58	609 1.4000	1	1.4200	0 2.0000- 2
52	207 1.4000	1	1.4000	0 1.0000- 1
52	61 1.4000	1	1.5300	0 3.0000- 2
57	21 1.4110	1 7.0010	2 1.5100	0 2.0000- 2
70	3300 1.4500	1	1.4400	0 1.5000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
61	711 1.4670	1 1.4000	1 1.4800	0 5.0000- 2
57	368 1.4800	1	1.4600	0 3.0000- 2
60	573 1.7500	1 3.0000	1 1.3900	0 1.0000- 2
60	673 2.0500	1 2.0000	1 1.3100	0 1.0000- 2
60	673 2.5300	1 3.0000	1 1.1900	0 1.0000- 2
60	673 2.7300	1 3.0000	1 1.1500	0 1.0000- 2
72	3196 3.6340	1 2.0000	0 9.7130	1 2.3000- 3
50	281 4.2000	1 1.0000	0 8.5310	1 1.0000- 2
72	3196 4.6180	1 2.0000	0 8.1000	1 1.7000- 3
72	3196 4.9070	1 2.0000	0 7.6220	1 1.7000- 3
72	3196 5.4370	1 2.0000	0 6.9660	1 1.8000- 3
72	3196 5.8900	1 2.0000	0 6.4160	1 1.6000- 3
49	286 9.0000	1	4.3100	1 8.0010- 3
50	12 9.5600	1	3.9600	1 4.0000- 3
55	2056 1.4000	3 2.0000	2 3.1000	1
69	3160 5.7000	3 6.0000	2 3.0100	1 5.0000- 3
71	3100 2.6500	4 3.5000	3 2.6600	1 6.0000- 3
66	2350 2.7000	4	2.5000	1 6.0000- 3

07/04/76

Elastic
Cross Section

4-Be-9

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
55	121 5.4000	1	3.5200	0
55	121 6.2000	1	7.5010	0
55	121 7.0000	1	3.4000	0
64	1643 4.0000	0 5.0000	2 1.2700	0 9.0000- 2
59	500 4.1000	0 3.7500	2 1.2600	0 6.0000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
59	500 5.0000	0 1.4500	1 1.2300	0 6.0000- 2
59	500 6.0000	0 1.0500	1 1.0800	0 5.0000- 2
66	2585 1.4000	1	9.5000	1 7.0000- 2
58	402 1.4000	1	9.4010	1 5.0000- 2
57	331 1.4200	1 5.0000	1 9.4010	1 5.0000- 2

07/04/76

Total

5-B -Nat

Cross Section

5-B 11 (NOV 71)

Mev

1-74

5-B -Nat -1

07/04/76

Total
Cross Section

5-B -Nat

U-B -11 ENDL-7111

Barns

1-75

Mev

5-B -Nat -2

07/04/76

Total
Cross Section

5-B -Nat

1-76

MeV

5-B -Nat -3

07/04/76

Total
Cross Section

5-B -Nat

4-B 10-5000-7000

Barns

1-77

Max

5-B -Nat -4

07/04/76

5-B -Nat

Total
Cross Section

5-B -Nat -5

Barns

07/04/76

Total
Cross Section

5-B -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49	844	1.1500	1.1500	1.1500	49	844	1.1500	1.1500	1.1500
49	844	1.1500	1.1500	1.1500	49	844	1.1500	1.1500	1.1500
50	844	1.1500	1.1500	1.1500	50	844	1.1500	1.1500	1.1500
61	844	1.1500	1.1500	1.1500	61	844	1.1500	1.1500	1.1500
61	844	1.1500	1.1500	1.1500	61	844	1.1500	1.1500	1.1500

07/04/76

Elastic
Cross Section

5-B -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49	844	1.1500	1.1500	1.1500
50	844	1.1500	1.1500	1.1500

07/04/76

Total
Cross Section

5-B -10

07/04/76

5-B -10

Total
Cross Section

1-80

5-B -10 -2

07/04/76

5-B -10

Total
Cross Section

7 8 9 10⁵

3

1-81

10⁵

5-B -10 -3

Bar 35

07/04/76

5-B -10

Total
Cross Section

EC51L-802 (63)

EC51L-72 (51)

1-82

MeV

5-B -10 -4

Bar 25

07/04/76

5-B -10

Total
Cross Section

EC51L-3794 (70)

EC51L-504 (54)

1-83

5-B -10 -5

Bar 5

07/04/76

Total
Cross Section

5-B -10

1-84

5-B -10 -6

Barns

07/04/76

5-B -10

Total
Cross Section

10¹⁰ 10⁹ 10⁸ 10⁷ 10⁶ 10⁵ 10⁴ 10³ 10² 10¹

07/04/53

Elastic
Cross Section

5-B -10

1-85

5-B -10 -8

Barns

07/04/76

Total
Cross Section

5-B -10

REFERENCE	ENERGY	DELTA	K SEI	DELTA	REFERENCE	ENERGY	DELTA	K SEI	DELTA
	MEV	MEV	BARNs	BARNs		MEV	MEV	BARNs	BARNs
55	121.5	0.0000	0.0000	0.0000	55	121.5	0.0000	0.0000	0.0000
70	49.48	0.0000	0.0000	0.0000	70	49.48	0.0000	0.0000	0.0000
96	121.5	0.0000	0.0000	0.0000	96	121.5	0.0000	0.0000	0.0000

07/04/76

Elastic
Cross Section

5-B -10

REFERENCE	ENERGY	DELTA	K SEI	DELTA	REFERENCE	ENERGY	DELTA	K SEI	DELTA
	MEV	MEV	BARNs	BARNs		MEV	MEV	BARNs	BARNs
55	121.5	0.0000	0.0000	0.0000	55	121.5	0.0000	0.0000	0.0000
55	121.5	0.0000	0.0000	0.0000	55	121.5	0.0000	0.0000	0.0000

07/04/76

Total
Cross Section

5-B -11

1-87

5-B -11 -1

07/04/76

Total

5-B -11

Cross Section

MeV

1-88

5-B -11 -2

Barns

07/04/76

Total
Cross Section

5-B -11

ENDL-7111

07/04/76

Elastic Cross Section

5-8 -11

MODEL 7111

Barns

07/04/76

(n,γ)
Cross Section

5-B -11

07/04/76

Total
Cross Section

5-B -11

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 3938	9.7200 ± 0	4.0000 ± 0	1.4650 ± 0	
52 81	1.4000 ± 1		1.4000 ± 0	3.0000 ± 0

07/04/76

Elastic
Cross Section

5-B -11

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
55	121 4.3000- 1		6.1510+ 0		55	121 1.5000+ 0		2.0600+ 0	
55	121 7.0000- 1		2.4000+ 0		69	2999 7.5500+ 0	1.2000- 1	1.2300+ 0	8.8000- 2
55	121 1.0050+ 0		1.8000+ 0		70	3938 9.7200+ 0	4.0000- 2	8.9500- 1	6.3000- 2
55	121 1.2800+ 0		3.7300+ 0						

07/04/76

Total
Cross SectionB₂O₃

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64	776 5.3130- 9		3.3400+ 3		64	776 5.1180- 8		1.0920+ 3	
64	776 1.0060- 8		2.4400+ 3		64	776 1.0050- 7		7.7520+ 2	
64	776 1.9780- 8		1.7270+ 3						

07/04/76

Total
Cross Section

6-C -Nat

1-92

6-C -Nat -1

07/04/76

Total
Cross Section

6-C -Nat

ECSIL-1026 (61)

ECSIL-798 (52)

Mev

1-93

6-C -Nat -2

Baras

07/04/76

6-C -Nat

Total
Cross Section

1-94

6-C -Nat -3

Baras

07/04/76

Total
Cross Section

6-C -Nat

1-95

MeV

6-C -Nat -4

07/04/76

Total
Cross Section

6-C -Nat

Mev

1-96

6-C -Nat -5

Bar 25

07/04/76

6-C -Nat

Total
Cross Section

(Expanded Below)

EC51L-3458 (72)

1-97

MeV

6-C -Nat -E

Barns

07/04/76

6-C -Nat

Total
Cross Section

1-98

MeV

6-C -Nat -7

Barns

07/04/76

Total
Cross Section

6-C -Nat

ECSIL-311 (50)

ECSIL-3505 (73)

1-99

5 6 7 8 9 10
Mev

6-C -Nat -8

Bars

07/04/76

6-C -Nat

Total
Cross Section

1-100

MeV

6-C -Nat -9

Barns

07/04/76

Total
Cross Section

6-C -Nat

1-101

6-C -Nat -10

Barns

Mev

07/04/76

Total
Cross Section

6-C -Nat

1-102

Mev

6-C -Nat -11

07/04/76

Total
Cross Section

6-C -Nat

ECSIL-3153 (70)

(Expanded Below)
ECSIL-2517 (70)

ECSIL-2517 (70)

1-103

MeV

6-C -Nat -12

Barns

07/04/76

Total
Cross Section

6-C -Nat

ECISL-2517 (70)

ECISL-2517 (70)

ECISL-2517 (70)

1-104

MeV

6-C -Nat -13

Barns

07/04/76

6-C -Nat

Total
Cross Section

6-C -Nat -14

Mev

1-105

Baras

07/04/76

6-C -Nat

Total
Cross Section

EC51L-3157 (70)

EC51L-1309 (74)

1-106

MeV

6-C -Nat -15

Barns

07/04/76

6-C -Nat

Total
Cross Section

ECSIL-72 (51)

ECSIL-4014 (76)

ECSIL-322 (58)

1-107

6-C -Nat -16

MeV

Baron

07/04/76

6-C -Nat

Total
Cross Section

Barns

MeV

1-108

6-C -Nat -17

07/04/76

Total
Cross Section

6-C -Nat

Barns

1-109

MeV

6-C -Na: -18

07/04/76

Total
Cross Section

6-C -Nat

MeV

1-110

6-C -Nat -19

Barns

07/04/76

Total
Cross Section

6-C -Nat

1-111

MeV

6-C -Nat -20

07/04/76

Total
Cross Section

6-C -Nat

1-112

MeV

6-C -Nat -21

Barns

07/04/76

Total
Cross Section

6-C -Nat

EC51L-324 (58)

EC51L-781 (63)

EC51L-3102 (72)

Bar 55

1-113

MeV

6-C -Nat -22

07/04/76

Total
Cross Section

G-C - Nat

ECSIL-349 (58)

ECSIL-107 (54)

ECSIL-789 (61)

1-114

G-C - Nat - 23

Barns

07/04/76

Total
Cross Section

6-C -Nat

1-115

MeV

6-C -Nat -24

-3341581

07/04/76

Total
Cross Section

6-C -Nat

1-116

MeV

6-C -Nat -25

07/04/76

Total
Cross Section

6-C -Nat

1-117

Mev

6-C -Nat -26

Barns

07/04/76

6-C -Nat

Total
Cross Section

0.4 0.6 0.8 1.0 1.2 1.4 1.6

4 5 6 7 8 9 10 11 12 13 14 15

0.4 0.6 0.8 1.0 1.2 1.4

MeV

1-118

6-C -Nat -27

Bars

07/04/76

6-C -Nat

Total
Cross Section

Bar 5

07/04/76

Total
Cross Section

6-C -Nat

1-120

6-C -Nat -29

07/04/76

6-C -Nat

Total
Cross Section

ECSIL-2057 (55)

ECSIL-2057 (55)

1-121

6-C -Nat -30

Bares

07/04/76

5-C -Nat

Elastic
Cross Section

MeV

1-122

6-C -Nat -31

Barns

07/04/76

Elastic
Cross Section

6-C -Nat

07/04/76

Total
Cross Section

6-C -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 1716	1.8500	9	6.3000	0
65 949	1.4400	6	4.7400	0 6.0000
65 949	1.4400	6	4.6600	0 3.0000
55 1471	1.4600	6	4.7400	0 3.0000
49 844	1.1500	4 1.1500	5 4.8900	0
49 844	3.0000	4 3.0000	5 4.7200	0
50 186	2.0000	2 7.0010	3 4.8000	0 2.0000
75 3897	2.3500	2	4.6940	0 9.0000
46 175	3.5000	2 5.0000	3 4.6300	0 1.9000
55 210	6.0000	2	4.6000	0 1.4000
55 210	7.5000	2	4.6200	0 1.4000
55 210	9.0000	2	4.6400	0 1.4000
46 175	9.5000	2 5.0000	3 4.6500	0 1.4000
55 210	1.2000	1	4.5700	0 1.4000
41 170	9.0000	1	2.6600	0 2.0000
54 112	1.3150	0 3.0000	3 2.1920	0 2.0000
46 174	1.6000	0 1.5000	1 1.9000	0 5.0000
46 174	2.0000	0 1.5000	1 1.6300	0 4.0000
67 1643	4.0000	0 5.0000	2 1.9800	0 8.0000

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71 3214	4.0400	0 9.0000	2 1.8740	0 3.3000
55 296	4.1000	0 4.0000	2 1.8800	0 2.0000
71 3214	5.0600	0 7.0000	2 1.1800	0 4.5000
71 3214	5.5900	0 9.0000	2 1.1140	0 3.2000
51 65	1.3900	1 1.0000	0 1.2400	0 6.0000
52 207	1.4000	1	1.2000	0 4.0000
52 81	1.4000	1	1.3200	0 2.0000
51 206	1.4080	1 5.0000	2 1.2790	0 4.0000
52 78	1.4100	1 5.0000	2 1.2790	0 4.0000
70 3300	1.4500	1	1.2900	0 9.0000
61 711	1.4670	1 1.4000	1 1.3900	0 4.0000
68 1941	1.4680	1 2.3000	1 1.3900	0 2.0000
66 1653	1.4680	1 4.6000	1 1.3900	0 1.6680
57 368	1.4800	1	1.1800	0 1.2000
53 274	1.7200	1 5.5010	1 1.3900	0 4.2000
60 673	1.7800	1 3.0000	1 1.4200	0 1.0000
53 274	1.9000	1 3.3000	1 1.4500	0 4.4000
65 927	1.9580	1	1.5100	0 4.0000
53 274	2.0070	1 2.6000	1 1.5200	0 4.6000

07/04/76

Total

6-C -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60	673 2.0600*	1 2.0000-	1 4600+ 0 1.0000- 2		49	286 9.0000-	1 5.5010- 1 1.1000- 2		
65	927 2.0810*	1 1.4300+ 0 4.0000- 2			50	12 9.5000*	1 4.9800- 1 3.0000- 3		
65	927 2.1930*	1 1.3400+ 0 3.0000- 2			55	2055 1.4000*	2 3.0000+ 2 3.8000- 1		
60	673 2.5300*	1 3.0000-	1 1.3800+ 0 1.0000- 2		70	3195 3.8000*	3 3.5970- 1 7.0000- 3		
45	307 2.5400*	1 1.2900+ 0			51	1556 5.0000*	3 4.0030+ 2 3.1900- 1 2.0000- 2		
65	927 2.6320*	1 1.4200+ 0 5.0000- 2			69	3160 5.7000*	3 6.0000+ 2 7.0000- 1 6.0000- 3		
60	673 2.8300*	1 3.0000-	1 1.3200+ 0 2.0000- 2		62	1557 8.3000*	3 2.4500- 1 1.5000- 2		
60	673 2.9100*	1 3.0000-	1 1.3200+ 0 1.0000- 2		71	3160 1.2000*	4 3.0030+ 3 3.4200- 1 3.0000- 3		
65	927 3.0460*	1 1.3200+ 0 5.0000- 2			71	3180 4.0000*	4 4.0030+ 3 3.4000- 1 3.0000- 3		
50	281 4.2000*	1 1.0000+ 0 1.0890+ 0 1.0000- 2			71	3180 1.8000*	4 6.0000+ 3 3.4200- 1 3.0000- 3		
54	343 4.7500*	1 2.0000+ 0 9.8410- 1 2.0000- 2			71	3180 2.6500*	4 3.5030+ 3 3.4000- 1 7.0000- 3		
54	343 8.8000*	1 2.0000+ 0 5.6010- 1 8.0010- 3			68	2350 2.7000*	4 3.0000- 1 7.0000- 3		

REFERENCE DELTA TEMP
MEV KELVIN
55 2057 4.2000-10 2.9500* 2
55 2057 1.4700- 9 2.9500* 2

07/04/76

Elastic

6-C -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64	886 5.0000-	1 5.0000- 2 3.6500+ 0 2.5000- 1			65	809 6.0400-	2 2.3000- 1 8.9000- 1 9.0000- 2		
55	121 5.5000-	1 3.2700+ 0			59	544 6.3000*	0 1.2400+ 0		
55	121 1.0000+ 0	2 6400+ 0			59	544 7.0000+ 0	5.2000- 1		
55	121 1.5000+ 0	2 8000+ 0			62	1060 7.5800*	0 1.0000- 1 1.3500+ 0 2.0000- 1		
73	3847 2.6300*	1 1.7140+ 0 3.2000- 2			62	1060 1.4000*	1 7.7500- 1 4.0000- 2		
64	1643 4.0000*	2 1.9400+ 0 1.4000- 1			58	402 1.4000*	1 7.9010- 1 5.0000- 2		
59	579 4.2100*	1 1.0000+ 0 1.8000+ 0 1.2000- 1			60	1659 1.4000*	1 4.2300+ 0 8.0000- 1 2.0000- 2		
59	579 4.7000*	1 1.8000+ 0 2.4000+ 0			60	1648 1.4000*	1 2.8500- 1 3.0000- 2		
70	2989 5.0300*	2 6.5000+ 1 1.0000+ 0 3.0000- 1			64	1639 1.4100*	1 8.2400- 1		
71	3214 5.0600*	2 7.5000+ 1 1.0000+ 0 1.0000- 1			64	645 1.4100*	1 9.0000- 1 7.0000- 2		
70	2989 5.5500*	2 6.5000+ 1 1.0000+ 0 1.0000- 1			59	550 1.4100*	1 8.0000- 1		
71	3214 5.5300*	2 8.0000+ 1 1.0000+ 0 1.0000- 1			60	2352 1.4100*	1 1.5000- 1 8.2000- 1		
59	544 6.0000- 0	8.1000-			60	331 1.4200*	1 9.0000- 1 4.0000- 2		

1-124

1-124

07/04/76

Elastic
Cross Section

6-C -Nat

REFERENCE	ENERGY MEV	DELTA MEV	Y-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	Y-SEC BARNs	DELTA BARNs
58	403	1.4500+ 1	7.7010- 1	4.0000- 2	60	1705	1.6250+ 1	3.4000- 1	8.9900- 1
63	1665	1.4600+ 1	8.1000- 1	4.0000- 2	60	1705	1.9800+ 1	2.1000- 1	1.0440+ 0
69	3708	1.7270+ 1	5.6000- 1	8.8400- 1					

07/04/76

(n,y)
Cross Section

6-C -12

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61	677	3.0000- 2	7.0010- 3	2.0000- 4
61	677	6.5000- 2	2.0000- 2	0.0000+ 0
61	677	1.6700- 1	3.0000- 3	1.3000- 3

07/04/76

Total
Cross Section

6-C -13

1-125

6-C -13 -1

07/04/76

(n,γ)

6-C -13

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 2812	2.5300- 8		1.0000- 3	2.0000- 4	57 2814	2.5300- 8		1.0000- 3	3.0000- 4
61 2813	2.5300- 8		8.0000- 4	2.0000- 4	54 2815	2.5300- 8		9.0000- 4	2.0000- 4

07/04/76

Total
Cross SectionC₆H₆

1-126

C₆H₆ -1

07/04/76

Total
Cross Section $C_{10}H_8O_4$

07/04/76

Total
Cross Section

7-N -Nat

1-127

7-N -Nat -1

07/04/76

Total
Cross Section

7-N -Nat

END 7113

i-128

MeV

7-N -Nat -2

07/04/76

Total
Cross Section

7-N -Nat

ECSIL-2866 (51)

ECSIL-76 (52)

ECSIL-2516 (69)

1-129

MeV

7-N -Nat -3

Barns

07/04/76

Total
Cross Section

7-N -Nat

Bars

1-130

7-N -Nat -4

07/04/76

7-N -Nat

Total
Cross Section

MeV

1-131

7-N -Nat -5

Barns

07/04/76

Total
Cross Section

7-N -Nat

7-12-14 ENDL 7113

Barns

1-132

MeV

7-N -Nat -6

07/04/76

Total
Cross Section

7-N -Nat

1-133

7-N -Nat -7

Barns

07/04/76

Total
Cross Section

7-N -Nat

07/04/76

Elastic
Cross Section

7-N -Nat

1-134

7-N -Nat -8

07/04/76

7-N -Nat

Elastic
Cross Section

ECSIL-952 (66)

Barns

1-135

7-N -Nat -9

07 04/76

Total
Cross Section

7-N -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
52 76 1.4100	1	5.0000	2	1.7000	0	1.0000	- 1		
72 3427 1.4100	1	1.0000	1	1.6140	0	4.0000	- 2		
72 3427 1.4100	1	1.0000	1	1.6380	0	3.5000	- 2		
52 81 1.4120	1	5.0000	2	1.5900	0	3.0000	- 2		
71 3050 1.4700	1			1.5600	0	5.0000	- 2		
71 3815 1.4700	1			1.5600	0	3.0000	- 2		
60 673 1.7700	1	5.4000	1	1.5400	0	2.0000	- 2		
60 673 2.0600	1	3.1000	1	1.5200	0	3.0000	- 2		
60 673 2.5300	1	3.0000	1	1.4100	0	2.0000	- 2		
60 673 2.9100	1	2.5000	1	1.4100	0	2.0000	- 2		
72 3196 3.6340	1	2.0000	0	1.3330	0	7.8000	- 3		
50 381 4.2000	1	1.0000	0	1.2200	0	2.5000	- 2		
72 3196 4.6180	1	2.0000	0	1.1780	0	5.8000	- 3		
54 343 4.7500	1	2.0000	0	1.1100	0	2.5000	- 2		
72 3196 4.9060	1	2.0000	0	1.1100	0	5.2000	- 3		
72 3196 5.4370	1	2.0000	0	1.0170	0	4.2000	- 3		
72 3196 5.8900	1	2.0000	0	9.5100	1	5.6000	- 3		
54 343 6.8000	1	2.0000	0	6.3610	1	1.0000	- 2		
49 285 9.0000	1	2.8000	1	6.5610	1	2.1000	- 2		

07/04/76

Elastic
Cross Section

7-N -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 1646 7.0000	0		8.5000	1	5.0000	- 2			
63 761 1.4100	1	6.0010	1	8.7010	1	9.0010	- 2		
54 110 1.4100	1	1.0000	- 1	8.2010	- 1				
67 3661 1.4800	1	6.0000	- 2	1.4000	0				

07/04/76

(n,γ)
Cross Section

7-N -14

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
59 579 9.5000- 2	1.5000- 2	1.0000- 4	1.0000- 4	

07/04/76

7-N -15

Total
Cross Section

(Expanded Below)

ECSTL-3328 (70)

i-137

Mev

7-N -15 -1

Barns

07/04/76

7-N -15

Total
Cross Section

Mev

1-138

7-N -15 -2

Barns

07/04/76

7-N-15

Total
Cross Section

1-139

7-N-15-3

07/04/76

Elastic
Cross Section

7-N -15

07/04/76

Total
Cross SectionN₂ Gas

07/04/76

Total
Cross Section

8-O -Nat

1-141

8-O -Nat -1

07/04/76

8-0 -Nat

Total
Cross Section

(Expanded Below)

EC51L-3458 (72)

EC51L-3458 (72)

MeV

1-142

8-0 -Nat -2

Barns

07/04/76

Total
Cross Section

8-0 -Nat

Barns

1-143

MeV

8-0 -Nat -3

07/04/76

Total
Cross Section

B-O -Nat

1-144

Mev

B-O -Nat -4

8-0 -Nat

07/04/76

Total
Cross Section

8-0 -Nat

Barns

1-146

MeV

8-0 -Nat -6

07/04/76

8-0 -Nat

Total
Cross Section

ECSIL-2517 (68)

(Expanded Below)

Barns

ECSIL-3168 (70)

MeV

1-147

8-0 -Nat -7

07/04/76

Total
Cross Section

8-0 -Nat

4 - 10 ENDOU-7174

Barns

1-148

Mev

8-0 -Nat -8

07/04/76

Total
Cross Section

8-0 -Nat

Barns

1-149

MeV

8-0 -Nat -9

07/04/76

Total Cross Section 8-0 -Nat 8-0 16 FNUU-7114

1-150

MeV

8-0 -Nat -10

Baras

07/04/76

8-O -Nat

Total
Cross Section

EC51L-643 (60)

EC51L-682 (61)

1-151

Mev

8-O -Nat -11

Barns

07/04/76

Total
Cross Section

8-O -Nat

4.1 10 EN 7114

1-152

Mev

8-O -Nat -12

07/04/76

Total
Cross Section

8-O -Nat

I-153

MeV

8-O -Nat -13

07/04/76

Total
Cross Section

8-O -Nat

Barns

1-154

8-O -Nat -14

07/04/76

8-O -Nat

Elastic
Cross Section

ECSTL-1646 (61)

ECSTL-3222 (72)

ECSTL-646 (61)

1-155

8-O -Nat -15

07/04/76

Elastic
Cross Section

8-O -Nat

3-0 10 100 1000

07/04/76

Total
Cross Section

8-O -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAH'S	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49 844	1.1500- 4	1.1500- 5	4.0800+ 0		60 673	2.7600+ 1	3.0000- 1	1.6100+ 0	2.0000- 2
49 844	3.0000- 4	3.0000- 5	4.1500+ 0		50 281	4.2000+ 1	1.0000+ 0	1.3580+ 0	1.2000- 2
75 3897	2.3500- 2		3.7350+ 0	7.0000- 3	54 343	4.7500+ 1	2.0000+ 0	1.2200+ 0	2.5000- 2
70 3224	2.3700+ 0		9.6700- 2	4.0000- 3	54 343	8.3000+ 1	2.0000+ 0	7.4310- 1	1.5000- 2
39 42	2.4600+ 0		1.0500+ 0	3.0000- 2	49 286	9.0000+ 1		7.6510- 1	2.0000- 2
39 42	2.8800+ 0	4.0000- 1	1.2500+ 0	5.0000- 1	55 282	9.3400+ 1	5.0000- 1	7.2110- 1	1.3000- 2
52 207	1.4000+ 1		1.5000+ 0	1.0000- 1	54 39	9.4800+ 1	1.5000+ 0	7.2110- 1	1.3000- 2
52 81	1.4000+ 1		1.5000+ 0	3.0000- 2	50 12	9.5000+ 1		6.6310- 1	7.0010- 1
52 78	1.4100+ 1	5.0000- 2	1.6400+ 0	4.0000- 2	55 282	9.7200+ 1	1.0000+ 0	6.7510- 1	9.0010- 3
72 3427	1.4100+ 1	1.0000- 1	1.6960+ 0	5.0000- 2	54 39	9.8600+ 1	2.5000+ 0	6.7510- 1	9.0010- 3
71 3815	1.4700+ 1		1.5800+ 0	2.5000- 2	55 282	1.0110+ 2	5.0000- 1	6.4910- 1	1.4000- 2
60 673	1.6000+ 1	3.0000- 1	1.6000+ 0	2.0000- 2	54 39	1.0200+ 2	7.6010- 1	6.4910- 1	1.4000- 2
60 673	2.0800+ 1	2.0000- 1	1.6900+ 0	3.0000- 2	55 282	1.0680+ 2	2.0000+ 0	6.6810- 1	4.2000- 2
60 673	2.4000+ 1	2.0000- 1	1.6500+ 0	2.0000- 2	54 39	1.0790+ 2	5.0000+ 0	6.6810- 1	4.2000- 2
45 307	2.5400+ 1		1.6000+ 0						

07/04/76

Elastic
Cross Section

8-0 -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC B. S	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62	901	9.0000-1	4.2703+0	2.6030-1	53	289	1.4100+1	7.0010-1	
67	1679	1.4000+1	3.0000-2	1.0530+0	66	1681	1.4100+1	1.0700+0	2.5000-1
63	761	1.4100+1	6.0010-1	8.8010-1	67	3661	1.4800+1	5.0000-2	1.3000+0

07/04/76

Total
Cross Section

8-0 -16

1-157

8-0 -16 -1

07/04/76

Total
Cross Section

8-0 -16

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 3224	2.3700 ± 0		8.5300 - 2	9.0000 - 3

07/04/76

Total
Cross Section

8-0 -18

Barns

1-158

8-0 -18 -1

07/04/76

8-0 -18

Total
Cross Section

Barns

07/04/76

8-0 -18

(n,γ)
Cross Section

Barns

1-159

8-0 -18 -2

07/04/76

Total
Cross Section

8-0 -18

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs		
62 452	8.5800	0 6.2000	2 1.5600	0 2.4000	1	62 452	1.0360	1 5.4000	1 2.3600	0 3.0000	1
62 452	9.4500	0 7.0000	2 1.7300	0 2.6000	1	62 452	1.1590	1 7.0000	1 1.4400	0 9.0000	2

07/04/76

(n,y)
Cross Section

8-0 -18

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		2.2000- 4	4.4000- 5
71 3913	2.5300- 8		1.6000- 4	1.0000- 5

07/04/76

Total
Cross SectionO₂ Gas

1-160

O₂ Gas -1

07/04/76

Total

9-F -19

Cross Section

MeV

1-161

9-F -19 -1

Bars

07/04/76

9-F -19

Total
Cross Section

EC51L-63 (50)

EC51L-827 (64)

EC51L-885 (67)

Mev

1-162

9-F -19 -2

Barns

07/04/76

9-F -19

Total
Cross Section

MeV

1-163

9-F -19 -3

Barns

07/04/76

9-F -19

Total
Cross Section

MeV

1-164

9-F -19 -4

Bares

07/04/76

9-F -19

Total
Cross Section

1-165

MeV

9-F -19 -5

07/04/76

Total
Cross Section

9-F -19

Barns

07/04/76

(n, γ)
Cross Section

9-F -19

Barns

1-166

MeV

9-F -19 -6

07/04/76

(n, γ)
Cross Section

9-F -19

07/04/76

Total
Cross Section

9-F -19

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49 844	1.1500- 4	1.1500- 5	3.5700+ 0	0	54 225	1.7000- 1	2.0000- 3	4.2000+ 0	0
49 844	3.0000- 4	3.0000- 5	3.6700+ 0	0	52 81	1.4000+ 1		1.7000+ 0	5.0000- 2
54 225	1.5000- 1	2.0000- 3	4.6000+ 0	0	70 3306	1.4500+ 1		1.7800+ 0	2.0000- 2
54 225	1.5000- 1	2.0000- 3	4.6000+ 0	0	60 673	1.7700+ 1	3.0000- 1	1.7500+ 0	2.0000- 2
54 225	1.6000- 1	2.0000- 3	4.3000+ 0	0	53 274	1.9000+ 1	3.3000- 1	1.8400+ 0	5.5010- 2

1-167

9-F -19 -7

07/04/76

Total
Cross Section

9-F -19

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 673	2.0600+ 1	2.0000- 1	1.7700+ 0	3.0000- 2	60 673	2.9100+ 1	3.0000- 1	1.7500+ 0	2.0000- 2
60 673	2.5300+ 1	3.0000- 1	1.7700+ 0	2.0000- 2	50 281	4.2000+ 1	1.0000+ 0	1.6030+ 0	3.0000- 2

07/04/76

Elastic
Cross Section

9-F -19

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60	696	5.6500- 1	4.7000+ 0	5.0000- 1

07/04/76

(n, γ)
Cross Section

9-F -19

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DLTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DLTA BARNs	
63	2823	2.5300- 8	9.8000- 3	7.0000- 4	61	677	3.0000- 2	7.0010- 3	4.5000- 3	1.0000- 3
47	888	2.5300- 8	9.4000- 3	1.8800- 3	63	1	3.0000- 2	8.0010- 3	4.5000- 3	2.0000- 3

07/04/76

Total
Cross Section

10-Ne-Nat

07/04/76

Total

10-Ne-Nat

Cross Section

Mev

1-169

10-Ne-Nat -2

Barns

07/04/76

10-Ne-Nat

Total
Cross Section

07/04/76

Total
Cross Section

10-Ne-20

ECSIL-220 (57)

Barns

07/04/76

Total
Cross Section

10-Ne-22

ECSIL-220 (57)

Barns

1-171

Mev

10-Ne-22 -1

07/04/76

Total
Cross Section

10-Ne-22

1-172

10-Ne-22 -2

07/04/76

Total
Cross Section

11-Na-23

2-1

MeV

11-Na-23 -1

07/04/76

11-Na-23

Total
Cross Section

2-2

MeV

11-Na-23 -2

Barns

07/04/76

Total
Cross Section

11-Na-23

Barns

2-3

MeV

11-Na-23 -3

07/04/76

Total
Cross Section

11-Na-23

MeV

2-4

11-Na-23 -4

Bar 55

07/04-76

11-Na-23

Total
Cross Section

E0911-1692 (66)

E0911-1692 (66)

E0911-1692 (66)

07/04-76

07/04/76

11-Na-23

total
Cross Section

Baras

2-6

MeV

11-Na-23 -6

07/04/76

11-Na-23

Total
Cross Section

2-7

Mex

11-Na-23 -7

Barns

07/04/76

Total
Cross Section

11-Na-23

ECSIL-2517 (70)

ECSIL-3887 (75)

ECSIL-811 (61)

Bar 55

2-8

11-Na-23 -8

07/04/76

Total
Cross Section

11-Na-23

EC511-817-611

0.5

EC511-817-611

0.5

0.5

0.5

0.5

EC511-817-611

0.5

0.5

0.5

0.5

2-9

11-Na-23 -9

07/04/76

Total
Cross Section

11-Na-23

2-10

MeV

11-Na-23 -10

Barns

07/04/76

11-Na-23

Total
Cross Section

MeV

2-11

11-Na-23 - 11

Bar 55

07/04/76

Total
Cross Section

11-Na-23
(NOL-7116)

2-12

MeV

11-Na-23 -12

Bar 55

07/04/76

11-Na-23

Total
Cross Section

Figure 11-16

Barns

MeV

11-Na-23 -13

2-13

07/04/76

Total
Cross Section11-Na-23
ENDL-7116

2-14

11-Na-23 -14

07/04/76

11-Na-23

Elastic
Cross Section

ECSIL-885 (66)

Barns

ENBL-7118

MeV

07/04/76

11-Na-23

(n, γ)
Cross Section

2-16

MeV

11-Na-23 -16

07/04/76

(n,γ)

11-Na-23

Cross Section

Barns

07/04/76

Total

11-Na-23

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64-0504	0.0000	0	1.0000	0.1000	68-1041	1.0000	1.0000	1.0000	0.3000
64-0504	0.0000	0	1.0000	0.2000	68-1053	1.0000	1.0000	1.0000	0.2000
64-0504	0.0000	0	1.0000	0.1000	68-1097	1.0000	1.0000	1.0000	0.2000
64-0504	1.0000	0	1.0000	0.0000	68-1097	1.0000	1.0000	1.0000	0.2000
64-0504	1.0000	0	1.0000	0.0000	68-1097	1.0000	1.0000	1.0000	0.2000
64-0504	1.0000	0	1.0000	0.0000	68-1097	1.0000	1.0000	1.0000	0.2000
64-0504	1.0000	0	1.0000	0.0000	68-1097	1.0000	1.0000	1.0000	0.2000
64-0504	1.0000	0	1.0000	0.0000	68-1097	1.0000	1.0000	1.0000	0.2000

07/04/76

Elastic

11-Na-23

Cross Section

REFERENCE	ENERGY	DELTA	X-SEC	DELTA	REFERENCE	ENERGY	DELTA	X-SEC	DELTA
	MEV	MEV	BARNs	BARNs		MEV	MEV	BARNs	BARNs
64-0504	0.0000	0	1.0000	0.1000	65-1004	0.0000	0	1.6000	0
64-0504	0.0000	0	1.0000	0.2000	67-1014	0.5150	0	3.9400	0.0000
64-0504	0.0000	0	1.0000	0.1000	67-1044	0.0000	0	2.7500	0.5000
64-0504	0.0000	0	1.0000	0.1000	67-1074	0.0000	0	1.0000	1.6986
64-0504	0.0000	0	1.0000	0.1000	67-1074	0.0000	0	1.0000	1.6050

2-17

11-Na-23 -17

07/04/76

Elastic
Cross Section

11-Na-23

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 3228	7.6000+ 0	1.0000- 1	7.1450- 1	5.1440- 2
72 3228	8.5200+ 0	8.0000- 2	6.1090- 1	4.3980- 2

07/04/76

(n, γ)
Cross Section

11-Na-23

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 43	2.1000- 2	4.0000- 3	1.6700- 3	2.7000- 4	58 363	2.0000- 1	1.5000- 2	1.8000- 3	1.8000- 4
63 1	3.0000- 2	8.0010- 3	5.0000- 3	8.0010- 4	72 3963	1.4400+ 1		2.5000- 4	4.0000- 5
63 1	6.5000- 2	2.1000- 2	7.0010- 4	4.0000- 4	57 521	1.4500+ 1		3.3000- 4	3.0000- 5
58 526	1.9500- 1	2.5000- 2	7.0010- 4	2.0000- 4					

REFERENCE	ENERGY ME	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
72 3857	9.2000- 1		1.0000- 4	4.0000- 5	2.0000- 2
72 3857	2.2800+ 0		1.0000- 4	4.0000- 5	2.0000- 2
72 3857	3.9500+ 0		1.2000- 4	4.0000- 5	2.0000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
47 898	2.5300- 8		6.3000+ 1	1.2600- 1	1.4800+ 1	57 305	2.4000- 2	5.0000- 3	1.0000- 3	2.0000- 4	1.5000+ 1
56 2825	2.5300- 8		5.3700- 1	6.3000- 3	1.5000+ 1	64 2856	2.4000- 2		1.6500- 3	4.8000- 4	1.5000+ 1
57 23	2.1000- 2	4.0000- 3	1.0700- 3	2.3000- 4	1.5000+ 1						

07/04/76

12-Mg-Nat

Total
Cross Section

ECSIL-3591 (79)

ECSIL-293 (56)

2-19

MeV

12-Mg-Nat - 1

Barns

07/04/76

Total
Cross Section

12-Mg-Nat

Mev

2-20

12-Mg-Nat -2

Baras

07/04/76

Total
Cross Section

$^{12}\text{Mg-Nat}$

Barns

MeV

2-21

$^{12}\text{Mg-Nat}$ -3

07/04/76

Total

12-Mg-Nat

Cross Section

2-22

MeV

12-Mg-Nat -4

Barrs

07/04/76

Total
Cross Section

12-Mg-Nat

Barns

07/04/76

Total
Cross Section $^{12}\text{Mg-Nat}$

2-24

 $^{12}\text{Mg-Nat} - 6$

Barns

07/04/76

Total
Cross Section

12-Mg-Nat

2-25

MeV

12-Mg-Nat -7

07/04/76

12-Mg-Nat

Total
Cross Section

FILE 27,17

Temp = 101 Kelvin

Temp = 298 Kelvin

2-26

MeV

12-Mg-Nat ~8

Barns

07/04/76

Total
Cross Section

12-Mg-Nat

ECSIL-2057

07/04/76

Total
Cross Section

12-Mg-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	
65	949	1.4400- 6	3.3500+ 0	3.0000- 2	58	1703	2.6800+ 0	1.0000- 1	5.5300+ 0	1.6590- 1
62	691	2.0000+ 0	2.5700+ 0	8.0010- 2	58	1703	2.8300+ 0	1.0000- 1	2.3700+ 0	7.1100- 2
58	1703	2.1700+ 0	1.0000- 1	1.9700+ 0	62	691	3.0030+ 0		2.6700+ 0	8.0010- 2
58	1703	2.2900+ 0	1.0000- 1	3.0800+ 0	62	691	5.0000+ 0		2.0200+ 0	6.0010- 2
58	1703	2.4800+ 0	1.0000- 1	1.9900+ 0	57	22	7.1700+ 0	1.7000- 1	1.7000+ 0	3.0000- 2

2-27

12-Mg-Nat -9

07/04/76

Total
Cross Section

12-Mg-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57	22 8.5400+ 0	1.5000- 1	1.7300+ 0	2.0000- 2	60	673 2.0700+ 1	2.0000- 1	1.8100+ 0	1.0000- 2
57	22 1.0460+ 1	1.1000- 1	1.6400+ 0	2.0000- 2	60	673 2.5300+ 1	3.0000- 1	1.8400+ 0	3.0000- 2
57	22 1.2700+ 1	9.0010- 2	1.6700+ 0	2.0000- 2	60	673 2.7600+ 1	3.0000- 1	1.8700+ 0	2.0000- 2
52	207 1.4000+ 1		1.6000+ 0	2.0000- 1	61	233 2.8400+ 1		1.9700+ 0	4.0000- 2
52	81 1.4000+ 1		1.7500+ 0	3.0000- 2	72	3196 3.6340+ 1	2.0000+ 0	1.7890+ 0	7.4000- 3
57	22 1.4070+ 1	7.0010- 2	1.7900+ 0	2.0000- 2	50	281 4.2000+ 1	1.0000+ 0	1.7230+ 0	2.4000- 2
54	107 1.4100+ 1	2.0000- 2	1.7400+ 0	5.0000- 2	72	3196 4.6180+ 1	2.0000+ 0	1.6650+ 0	7.7000- 3
70	3300 1.4500+ 1		1.8130+ 0	1.5000- 2	72	3196 4.9060+ 1	2.0000+ 0	1.6170+ 0	5.3000- 3
57	368 1.4800+ 1		1.8300+ 0	5.0000- 2	72	3196 5.4370+ 1	2.0000+ 0	1.5340+ 0	6.3000- 3
54	107 1.6000+ 1	2.0000- 2	1.7200+ 0	5.0000- 2	72	3196 5.8900+ 1	2.0000+ 0	1.4460+ 0	4.6000- 3
60	673 1.7500+ 1	3.0000- 1	1.8100+ 0	1.0000- 2	49	286 9.0000+ 1		1.0300+ 0	2.0000- 2
54	107 1.8000+ 1	2.0000- 2	1.6900+ 0	5.0000- 2					

07/04/76

Elastic
Cross Section

12-Mg-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63	1699 3.0000- 1	2.5000- 2	9.8400+ 0	3.5000- 1	62	671 5.0000+ 0		1.2200+ 0	1.2000- 1
64	886 5.0000- 1	5.0000- 2	6.2400+ 0	1.3000- 1	70	3229 5.4400+ 0	1.7000- 1	8.3610- 1	6.1030- 2
64	886 8.0000- 1	5.0000- 2	3.8000+ 0	1.3000- 1	70	3229 6.4400+ 0	1.3000- 1	7.5540- 1	5.3630- 2
68	2996 1.5000+ 0	5.0000- 1	2.5420+ 0	5.0000- 2	70	3229 7.5500+ 0	4.0000- 2	7.1510- 1	5.1480- 2
68	2996 1.5000+ 0		2.5400+ 0	5.0000- 2	70	3229 8.5600+ 0	8.0000- 2	6.8637- 1	4.9410- 2
62	691 2.0000+ 0		2.5200+ 0	2.5000- 1	54	845 1.4100+ 1	9.0000- 1	8.2000- 1	1.0000- 1
62	691 3.0000+ 0		1.9300+ 0	1.9000- 1	60	631 1.4600+ 1	1.0000- 1	7.5000- 1	9.0000- 2
62	691 4.0000+ 0		1.1000+ 0	1.1000- 1					

07/04/76

(n,γ)
Cross Section

12-Mg-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63	1 3.0000- 2	8.0010- 3	4.0000- 4	3.0000- 4	63	1 6.5000- 2	2.1000- 2	2.1000- 3	8.0010- 4
61	677 3.0000- 2	7.0010- 3	4.0000- 4	2.0000- 4	70	2232 1.4100+ 1	6.7500- 1	3.0000- 4	4.5000- 5
61	677 6.5000- 2	2.0000- 2	2.1000- 3	7.0010- 4					

2-28

12-Mg-Nat -10

07/04/76

Total
Cross Section

12-Mg-25

07/04/76

Total
Cross Section

12-Mg-26

12-Mg-26 -1

07/04/76

(n,y)
Cross Section

12-Mg-26

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 868	2.5300- 8		4.8000- 2	9.6000- 3	68 3775	2.9000+ 0	2.0000- 1	2.1000- 4	3.0000- 5
58 363	2.0000- 1	1.5000- 2	8.2000- 3	1.2000- 3	58 363	4.0000+ 0		2.5000- 4	5.0000- 5
58 363	2.7000+ 0		3.5000- 4	6.9000- 4	57 521	1.4500+ 1		2.0000- 4	5.0000- 5

07/04/76

Total
Cross Section

MgO

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 949	1.4400- 6		7.8000+ 0	2.0000- 1

07/04/76

Total
Cross Section

13-Al-27

2-30

13-Al-27 -1

07/04/76

Total
Cross Section

13-AI-27

Bar's

2-31

Me.

13-AI-27 -2

07/04/76

13-AI-27

Total
Cross Section

MeV

2-32

13-AI-27 -3

Bars

07/04/76

13-A1-27

Total
Cross Section

MeV

2-33

13-A1-27 -4

Bar 25

07/04/76

13-AI-27

Total
Cross Section

Mev

2-34

13-AI-27 -5

Barns

07/04/76

13-A1-27

Total
Cross Section

2-35

MeV

13-A1-27 -6

Barns

07/04/76

Total
Cross Section

13-AI-27

2-36

Net

13-AI-27 -7

Bark

07/04/76

13-A1-27

Total
Cross Section

2-37

13-A1-27 -8

Barns

MeV

07/04/76

13-A1-27

Total
Cross Section

MeV

2-38

13-A1-27 -9

Barns

07/04/76

13-A1-27

Total
Cross Section

2-39

13-A1-27 -10

Bar 15

07/04/76

Total
Cross Section

13-A1-27

Barns

2-40

MeV

13-A1-27 -11

07/04/76

Total

13-A1-27

Cross Section

2-41

Mev

13-A1-27 -12

Baras

07/04/76

13-AI-27

Total
Cross Section

Barns

Mev

2-42

13-AI-27 -13

07/04/76

Total
Cross Section

13-A1-27

Barns

2-43

MeV

13-A1-27 -14

07/04/76

13-AI-27

Total Cross Section

2-44

MeV

13-AI-27 -15

Barns

07/04/78

13-A1-27

Total
Cross Section

Barns

2-45

MeV

13-A1-27 -16

07/04/76

Total
Cross Section

13-A1-27

2-46

Mev

13-A1-27 -17

Barns

07/04/76

Total
Cross Section

13-A1-27

Bars

2-47

MeV

13-A1-27 -18

07/04/76

Total
Cross Section

13-Al-27

2-48

Mev

13-Al-27 -19

07/04/76

Total
Cross Section

13-A1-27

2-49

13-A1-27 -20

07/04/76

Total
Cross Section

13-A1-27

2-50

13-A1-27 -21

07/04/76

13-AI-27

Total
Cross Section

6 7 8 9 10⁹

2

3

4

5

Mev

2-51

13-AI-27 -22

Bars

07/04/76

Total
Cross Section

13-A1-27

07/04/76

Elastic
Cross Section

13-Al-27

07/04/76

(n, γ)

13-A1-27

Cross Section

13-A1-27

4 5 6 7 8 9 10

4 5 6 7 8 9 10

4 5 6 7 8 9 10

MeV

2-54

13-A1-27 -25

Barns

07/04/76

(n, γ)
Cross Section

13-AI-27

07/04/76

Total
Cross Section

13-AI-27

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 3627	7.0000	0	1.5600	0	49 844	1.1500	4	1.4500	0
70 3627	1.1500	7	1.5500	0	49 844	3.0000	4	1.4700	0
70 3627	3.6400	7	1.5000	0	66 2564	7.5640	1	3.4370	0
70 3627	8.3500	7	1.4300	0	41 170	9.0000	1	3.3904	0
65 949	1.4400	6	1.4500	0	62 1012	9.8000	1	5.0000	2

2-55

13-AI-27 -26

07/04/76

Total

13-AI-27

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62	826	1.8500	0	2.3800	0	2.0000	2	1.8100	0 2.0000
62	1012	2.0100	0	2.4000	2	3.1500	0	6.0000	2
62	866	2.0200	0	3.4400	0	3.0000	2	1.8500	0 2.0000
61	1527	2.7000	0	3.1500	0	3.0000	2	1.8800	0 2.0000
62	341	2.7600	0	2.8200	0	2.5000	1	1.8500	0 1.8500
65	1562	2.7100	0	2.9350	0	2.5000	2	1.9100	0 2.0000
63	1012	3.0100	0	2.9500	0	1.5000	2	1.9700	0 6.0010
62	826	3.0200	0	2.5800	0	5.0000	2	1.7800	0 2.0000
62	1012	3.9900	0	2.4400	0	2.0000	2	1.2000	0 2.5000
55	296	4.1000	0	2.3000	0	5.0000	2	1.2000	0 2.5000
55	296	4.1000	0	2.3000	0	2.0000	1	1.1200	0 2.0000
62	866	6.8800	0	2.1000	0	4.0000	2	1.0670	0 2.9000
62	826	6.8800	0	1.8000	0	5.0000	2	1.0670	0 2.9000
69	2025	8.9400	0	2.2000	0	4.0000	2	1.0670	0 2.9000
62	1740	1.4000	1	1.2000	0	1.5000	1	1.0670	0 2.9000
59	567	1.4000	1	1.7300	0	6.0010	2	9.9310	1 1.1000
52	207	1.4000	1	1.8000	0	1.0000	2	1.0000	0 1.0480
54	107	1.4100	1	1.7300	0	3.0000	2	2.9300	0 1.0480
70	3300	1.4500	1	1.7500	0	5.0000	2	5.0000	1 9.2010
61	711	1.4670	1	1.7150	0	1.1000	2	7.6010	1 9.2010
69	2986	1.4800	1	1.8000	0	5.0000	2	2.0000	0 1.0640
57	368	1.4800	1	1.7500	0	8.7500	2	5.0000	0 1.0640
54	107	1.6000	1	1.7500	0	8.0010	2	3.2000	2 7.0000
62	673	1.8000	1	1.6700	0	5.0000	2	6.6600	1 1.6000
54	107	1.8000	1	1.6700	0	5.0000	2	6.6600	1 1.6000
53	274	1.9500	1	1.8400	0	5.5010	2	5.7300	1 1.7000

07/04/76

Elastic

13-AI-27

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60	596	2.0000	1	3.7500	0	2.0000	2	9.0000	0 9.0000
63	1199	3.0000	1	4.0000	2	3.9000	1	5.5100	0 5.9000
64	896	1.0000	1	3.9400	0	3.0000	2	5.5100	0 9.0000
63	1760	5.5100	1	3.6600	0	1.0000	1	5.5100	0 9.0000
64	896	8.0000	1	4.0000	2	4.1000	1	5.5100	0 9.0000

2-ED

07 0476

Elastic
Cross Section

13-A1-27

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61	8-0 7.1000- 0		2.1000- 0	1.0000- 1	72	3230 7.5400- 2	4.0000- 2	8.6760- 1	6.4200- 2
62	1012 3.9900- 0	3.1000- 2	1.5120- 0	4.7000- 2	73	3230 8.5600- 0	8.0000- 2	8.1030- 1	5.9960- 2
72	3230 5.4400- 0	1.1000- 1	1.2510- 0	9.5090- 2	59	567 1.4000- 1		6.3010- 1	4.0000- 2
72	3230 6.4400- 0	1.3000- 1	1.220- 0	6.0790- 2	58	403 1.4500- 1		6.7010- 1	3.0000- 2

07/04/76

(n,y)
Cross Section

13-A1-27

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62	2573 2.5300- 8		2.4600- 1	7.0000- 3	63	1 3.0000- 2	8.0010- 3	2.8000- 3	6.0010- 4
47	888 2.5300- 8		2.1000- 1	4.2000- 2	58	363 2.0000- 1	1.5000- 2	5.6000- 3	5.6000- 4
70	3627 2.5300- 8		2.3800- 1	3.0000- 2	68	3375 2.9000- 0	2.0000- 1	3.0000- 4	5.0000- 5
70	3627 7.0000- 8		1.4900- 1	2.0000- 2	67	1991 3.0000- 0	2.0000- 1	1.60000- 4	1.0000- 4
70	3627 1.1500- 7		1.1400- 1	2.0000- 2	69	3017 1.4100- 1	1.2500- 0	4.1000- 4	8.0000- 5
70	3627 3.6400- 7		5.7000- 2	1.0000- 2	70	3810 1.4100- 1	1.67500- 1	4.1000- 4	8.0000- 5
70	3627 8.3500- 7		5.5000- 2	2.5000- 2	72	3963 1.4400- 1		3.3000- 4	1.0000- 4
58	357 2.1000- 2		2.6000- 3	2.2000- 4	57	521 1.4500- 1		5.3010- 4	1.3000- 4
58	43 2.1000- 2	4.0000- 3	1.8500- 3	2.7000- 4	63	372 1.4600- 1		5.6010- 4	
57	305 2.4000- 2	5.0000- 3	1.4000- 3	2.0000- 4	67	1695 1.4700- 1		5.6000- 4	1.0000- 4
61	677 3.0000- 2	7.0010- 3	2.8000- 3	7.0010- 4					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
68	2856 2.4000- 2		3.3600- 3	1.0000- 3	2.3000+ 0

07/04/76

Total
Cross SectionAl₂O₃

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65	949 1.4400- 0		1.5100- 1	2.0000- 1

Al₂O₃

07/04/76

14-Si-Nat

Total

Cross Section

100-7120

Baras

2-58

Mev

14-Si-Nat -1

07/04/76

Total
Cross Section

$^{14}\text{Si-Nat}$

(Expanded Below)
ECSIL-3458 (72)

ECSIL-3458 (72)

ECSIL-3458 (72)

Barns

2-59

Mev

$^{14}\text{Si-Nat}$ -2

07/04/76

Total
Cross Section

$^{14}\text{Si-Nat}$
ENDL-7120

EC5IL-3458 (72)

EC5IL-3458 (72)

(Expanded Below)
EC5IL-3162 (71)

Barns

2-60

MeV

$^{14}\text{Si-Nat}$ -3

07/04/76

Total
Cross Section

$^{14}\text{Si-Nat}$
07/04/76

Barns

2-61

MeV

$^{14}\text{Si-Nat}$ -4

07/04/76

Total
Cross Section

14-Si-Nat

SHDL-7129

MeV

2-62

14-Si-Nat -5

Barns

07/04/76

¹⁴Si-Nat

Total
Cross Section

Barns

MeV

2-63

¹⁴Si-Nat -6

07/04/76

Total
Cross Section

$^{14}\text{Si-Nat}$

6186-7120

Barns

MeV

2-64

$^{14}\text{Si-Nat}$ -7

07/04/76

14-Si-Nat

Total
Cross Section

EC51L-455 (63)

EC51L-64 (50)

EC51L-3945 (73)

2-65

14-Si-Nat -8

MeV

Barns

07/04/76

Total
Cross Section

14-Si-Nat

E.N.O.-7120

2-66

14-Si-Nat -9

07/04/76

Total
Cross Section

14-Si-Nat

Barns

2-67

MeV

14-Si-Nat -10

07/04/76

Total
Cross Section

14-Si-Nat

2-68

MeV

14-Si-Nat -11

Bars

07/04/76

Total
Cross Section

¹⁴Si-Nat

EC51L-378 (52)

EC51L-3196 (72)

1.0 10⁰ 10¹ 10² 10³ 10⁴ 10⁵ 10⁶ 10⁷ 10⁸ 10⁹ 10¹⁰

2-69

¹⁴Si-Nat -12

Barss

07-04-76

Elastic Cross Section

¹⁴Si-Nat

2-70

¹⁴Si-Nat -13

Barns

14-Si-Nat

Cross Section

[illegible]

07/04/76

Elastic

:4-Si-N,t

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
64 2338 3 0000	3 0000	2 5000	0 4 9000	0 2 5000	60 1758 4 0000	4 0000	0 2 7000	1 1 5000	1 1 5000
64 2339 3 0000	3 0000	2 5000	0 3 5000	0 2 1000	60 1758 4 0000	4 0000	0 2 7000	1 1 5000	1 1 5000
64 2348 3 0000	3 0000	2 5000	0 4 0000	0 3 5000	60 1758 4 0000	4 0000	0 2 7000	1 1 5000	1 1 5000
66 901 9 0000	9 0000	6 0000	0 1 9000	0 1 9000	60 1758 4 0000	4 0000	0 2 7000	1 1 5000	1 1 5000
66 2956 1 5000	1 5000	1 5000	0 1 5000	0 1 5000	60 1758 4 0000	4 0000	0 2 7000	1 1 5000	1 1 5000
60 1758 2 4000	2 4000	2 4000	0 2 4000	0 2 4000	60 1758 4 0000	4 0000	0 2 7000	1 1 5000	1 1 5000
60 1758 2 8000	2 8000	2 8000	0 2 8000	0 2 8000	60 1758 4 0000	4 0000	0 2 7000	1 1 5000	1 1 5000
61 646 3 1000	3 1000	3 1000	0 3 1000	0 3 1000	60 1758 4 0000	4 0000	0 2 7000	1 1 5000	1 1 5000
59 2662 4 0000	4 0000	4 0000	0 4 0000	0 4 0000	60 1758 4 0000	4 0000	0 2 7000	1 1 5000	1 1 5000

07/04/76

10.21

14-Si-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
10	6.532	2.5000	2.1.0000	3.4.2000	11	6.532	2.1.0000	3.8.0020	4
11	6.532	3.0000	2.1.0020	3.1.8000	12	6.532	2.1.0000	2.5.0000	3
12	1.3.0000	2.6.0000	3.1.8000	3.1.8000	13	1.3.0000	2.2.0000	2.1.0000	2

2-71

24 - Si - Nat - 24

07/04/76

(n,γ)
Cross Section

14-Si-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 2232	1.4100+ 1	6.7500- 1	4.7000- 4	7.0000- 5

07/04/76

Elastic
Cross Section

14-Si-28

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 3231	5.4400+ 0	1.7000- 1	1.0880+ 0	7.8310- 2	72 3231	7.5500+ 0	4.0000- 2	8.2150- 1	5.9150- 2
72 3231	6.3700+ 0	1.3000- 1	1.2450+ 0	9.0920- 2	72 3231	8.5600+ 0	8.0000- 2	8.8460- 1	6.4580- 2

07/04/76

(n,γ)
Cross Section

14-Si-30

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		1.1600- 1	2.3200- 2	58 363	2.7000+ 0		3.0000- 4	3.0000- 4
57 23	2.1000- 2	4.0000- 3	1.8000- 3	1.5000- 3	58 363	4.0000+ 0		6.7000- 4	1.0000- 4
58 43	2.1000- 2	4.0000- 3	2.0300- 3	5.1020- 4	57 521	1.4500+ 1		4.9000- 4	5.0000- 5
58 363	2.0000- 1	1.5000- 2	5.5000- 3	5.0000- 4	67 1695	1.4700+ 1		4.8000- 4	5.0000- 5

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC RELATIVE	DELTA RELATIVE	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC RELATIVE	DELTA RELATIVE	E-PHOTON MEV
72 3417	2.5000- 8		1.0000+ 0	1.0000+ 1	7.5244- 1	72 3417	2.5000- 8		7.1000+ 1	7.0000+ 0	3.0548+ 0
72 3417	2.5000- 8		1.8000+ 1	2.0000+ 0	1.3061+ 0	72 3417	2.5000- 8		5.0000+ 0	7.0000- 1	3.5340+ 0
72 3417	2.5000- 8		2.3000+ 0	8.0000- 1	1.6956+ 0	72 3417	2.5000- 8		6.3000+ 0	8.0000- 1	3.6307+ 0
72 3417	2.5000- 8		2.6000+ 0	8.0000- 1	1.6373+ 0	72 3417	2.5000- 8		1.7000+ 0	3.0000- 1	4.3820+ 0
72 3417	2.5000- 8		1.2000+ 1	2.0000+ 0	2.2046+ 0	72 3417	2.5000- 8		1.4000+ 1	1.5000+ 0	4.5293+ 0
72 3417	2.5000- 8		2.8000+ 0	6.0000- 1	2.3167+ 0	72 3417	2.5000- 8		1.0000+ 0	2.0000- 1	4.9030+ 0
72 3417	2.5000- 8		6.6000+ 1	7.0000+ 0	2.7811+ 0	72 3417	2.5000- 8		1.1000+ 0	2.0000- 1	6.5876+ 0

2-72

14-Si-30 -1

07/04/76

Total
Cross Section

SiO₂

(Expanded Below)

ECSIL-3458 (72)

ECSIL-3458 (72)

Mev

2-73

SiO₂ -1

Barns

07/04/76

Total
Cross Section

SiO₂

2-74

SiO₂ -2

Barns

07/04/76

Total
Cross SectionSiO₂

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 949	1.4400- 6		9.4000+ 0	2.0000- 1

07/04/76

Total
Cross Section

15-P -31

2-75

15-P -31 -1

07/04/76

Total
Cross Section

15-P -31

2-76

MeV

15-P -31 -2

07/04/76

Total
Cross Section

15-P -31

Barns

2-77

MeV

15-P -31 -3

07/04/76

15-P -31

Total
Cross Section

2-78

Mev

15-P -31 -4

Bar 33

07/04/76

Total
Cross Section

15-P -31

2-79

15-P -31 -5

07/04/76

Total
Cross Section

15-P -31

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA ME	X-SEC BARNs	DELTA BARNs
49	844	1.1500- 4	1.1500- 5	4.1100- 0	52	81	1.4000- 1	1.9700- 0	4.0000- 2
49	844	3.0000- 4	3.0000- 5	4.1600- 0	70	3303	1.4500- 1	7.0200- 0	1.9000- 2
47	46	2.4000- 2	1.5000- 2	3.8000- 0	61	233	2.0400- 1	3.0300- 0	6.0020- 2

07/04/76

Elastic
Cross Section

15-P -31

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 1509	2.0000+ 0	5.0000- 2	3.3000- 0	
65 1765	1.4200+ 1	7.1000- 1	8.7000- 1	2.0000- 3

07/04/76

(n,γ)
Cross Section

15-P -31

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	
47	898	2.5300- 8	2.3000- 1	4.6000- 2	70	2232	1.4100- 1	6.7500- 1	3.6000- 4	5.5000- 5
63	1	3.0000- 2	2.8002- 3	7.0000- 3	1.0000- 3	67	1695	1.4700- 1	3.4000- 4	1.0000- 4
53	1	6.5000- 2	2.1000- 2	5.0000- 4	2.0000- 4					

P-80

15-P -31 -6

07/04/76

Total

16-S -Nat

Cross Section

EC91L-174 (98)

EC91L-243 (96)

EC91L-335 (94)

Energy (MeV)

2-81

MeV

16-S -Nat -1

Barms

07:04:76

16-S -Nat

Total
Cross Section

MeV

2-82

16-S -Nat -2

Bars

07/04/76

Total
Cross Section

16-S - Nat

ECSIL-1062 (66)

ECSIL-58 (50)

ECSIL-450 (58)

Barry

2-83

MeV

16-S - Nat - 3

07/04/76

16-S -Nat

Total
Cross Section

2-84

16-S -Nat -4

07/04/76

16-S -Nat

Total
Cross Section

Baras

2-85

Net

16-S -Nat -5

07/04/76

Total
Cross Section

16-S -Nat

Borns

2-86

MeV

16-S -Nat -6

07/04/76

16-S -Nat

Total
Cross Section

2-87

16-S -Nat -7

Barns

07/04/76

16-S -Nat

Total
Cross Section

2-88

NeV

16-S -Nat -8

Barns

07:04 76

Total
Cross Section

16-S -Nat

Barns

2-R9

Elev

16-S -Nat -9

07/04/76

Total
Cross Section

16-S -Nat

Bars

2-90

MA

16-S -Nat -10

07-04-76

Total Cross Section

16-S -Nat

07-04-76

Elastic
Cross Section

16-S -Nat

07/04/76

Total
Cross Section

16-S -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
49	844	1.1500	4	1.1500	4	1.1500	1	3.0500	0 1.2200
49	844	3.0000	4	3.0000	4	1.1500	1	3.2800	0 1.3120
49	1000	1.9500	0	1.5000	2	3.1250	0	1.5000	1
49	1000	1.9500	0	1.5000	2	3.1250	0	1.5000	1
49	1000	1.9500	0	1.5000	2	3.1250	0	1.5000	1
49	1000	1.9500	0	1.5000	2	3.1250	0	1.5000	1
49	1000	1.9500	0	1.5000	2	3.1250	0	1.5000	1
49	1000	1.9500	0	1.5000	2	3.1250	0	1.5000	1
49	1000	1.9500	0	1.5000	2	3.1250	0	1.5000	1
49	1000	1.9500	0	1.5000	2	3.1250	0	1.5000	1

2-92

16-S -Nat -12

07/04/76

Total
Cross Section

16-S -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
54	137 1.4000	1	2.0000	0 5.0000- 2	61	233 2.8400	1	2.1100	0 7.0000- 2
54	137 1.4000	1	2.1000	2 1.9000+ 0 5.0000- 2	56	281 4.2000	1	1.0000	0 1.9740+ 0 3.0000- 2
54	137 1.6000	1	2.0000	2 1.8100+ 0 5.0000- 2					

07/04/76

Elastic
Cross Section

16-S -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60	1756 2.4500	0	1.3000	1	2.3900	0	2.3900	1	
60	1756 2.6500	1	1.2000	1	2.8000	0	2.8000	1	
59	559 3.6500	0	2.0000	1	1.6000	0	2.0000	2	
60	1756 4.0000	0	2.7500	1	1.8700	0	1.8700	1	
60	1756 4.9000	0	3.4000	1	1.5700	0	1.5700	1	
70	3175 5.5000	0	1.7000	1	1.3130	0	9.4530	2	
60	1756 5.8000	0	2.4000	1	1.0700	0	1.0700	1	
70	3175 6.3700	0	1.3000	1	1.2330	0	8.7510	2	
70	3175 7.6000	0	1.0000	1	1.0000	0	7.3030	2	
70	3175 8.5200	0	8.0000	2	8.8430	1	5.3670	2	
72	3440 9.8000	0	6.0000	1	8.4600	1	6.5000	2	
62	1060 1.4000	1			8.2000	1	5.0000	2	
59	567 1.4000	1			9.1020	1	5.0000	2	
64	845 1.4100	1	9.0000	1	7.4000	1	8.0000	2	

07/04/76

(n,γ)
Cross Section

16-S -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61	677 3.0000	2 7.0000	3 2.5000	2 8.0020	69	3017 1.4100	1 1.3500	0 5.0000	4 1.0000
63	1 3.0000	2 8.0000	3 2.5000	2 8.0000	70	3810 1.4100	1 6.7500	1 5.0000	4 1.0000
63	1 6.0000	2 7.1000	2 8.0000	4 6.0000					

2-20

15-S -Nat -13

2-04-26

Total
Cross Section

16-S-32
END 7122

Barns

2-94

16-S-32 -1

07/04/76

(n, γ)
Cross Section

16-S -32

2-95

16-S -32 -2

07/04/76

(n, γ)
Cross Section

16-S -34

REFERENCE		ENERGY		DELTA		X-SEC		DELTA	
		MEV		MEV		BARN		BARN	
47		688 2.5300- 8				2.6000- 1		5.2000- 2	

REFERENCE	ENERGY	DELTA	X-SEC	DELTA	E-PHOTON	REFERENCE	ENERGY	DELTA	X-SEC	DELTA	E-PHOTON
	MEV	MEV	RELATIVE	RELATIVE	MEV		MEV	MEV	RELATIVE	RELATIVE	MEV
72 3417	2.5000- 8		7.0000- 1	1.0000- 1	6.4690- 1	72 3417	2.5000- 8		7.0000- 1	9.0000- 1	3.1843+ 0
72 3417	2.5000- 8		1.9500+ 1	2.0000+ 0	7.7550- 1	72 3417	2.5000- 8		1.8000+ 0	1.0000+ 0	3.3311+ 0
72 3417	2.5000- 8		5.0000- 1	1.0000- 1	9.0810- 1	72 3417	2.5000- 8		5.5000+ 0	8.0000- 1	3.3909+ 0
72 3417	2.5000- 8		3.9000+ 1	4.0000+ 0	1.5721+ 0	72 3417	2.5000- 8		3.6000+ 0	7.3000- 1	3.8020+ 0
72 3417	2.5000- 8		3.6000+ 0	8.0000- 1	1.8390+ 0	72 3417	2.5000- 8		1.9000+ 0	4.0000- 1	4.1896+ 0
72 3417	2.5000- 8		1.2000+ 1	1.5000+ 0	2.0228+ 0	72 3417	2.5000- 8		4.0000- 1	2.0000- 1	4.2684+ 0
72 3417	2.5000- 8		1.8000+ 1	1.5000+ 0	2.0826+ 0	72 3417	2.5000- 8		5.6000+ 1	6.0000+ 0	4.6384+ 0
72 3417	2.5000- 8		5.4000+ 1	5.0000+ 0	2.3475+ 0	72 3417	2.5000- 8		3.2000+ 0	8.0000- 1	4.9034+ 0
72 3417	2.5000- 8		3.4000+ 0	7.0000- 1	2.5555+ 0	72 3417	2.5000- 8		2.6000+ 0	8.0000- 1	4.9632+ 0
72 3417	2.5000- 8		1.3000+ 0	4.0000- 1	2.6143+ 0	72 3417	2.5000- 8		3.0000- 1	1.0000- 1	6.0782+ 0
72 3417	2.5000- 8		6.1000+ 0	8.0000- 1	2.7965+ 0						

07/04/76

Total
Cross Section

17-Cl-Nat

2-96

Mev

17-Cl-Nat -1

07/04/76

17-Cl-Nat

Total
Cross Section

Mev

2-97

17-Cl-Nat -2

Barns

07/04/76

17-Cl-Nat

Total
Cross Section

MeV

2-98

17-Cl-Nat -5

Baras

07/04/76

17-CI-Nat

Total
Cross Section

Barns

2-99

WV.

17-CI-Nat -4

07/04/76

Total
Cross Section

17-Cl-Nat

Barns

2-100

MeV

17-Cl-Nat -5

07/04/76

17-Cl-Nat

Total
Cross Section

ECSIL-94 (53)

ECSIL-750 (67)

2-101

MeV

17-Cl-Nat -6

Barns

07/04/76

Total
Cross Section

17-Cl-Nat

Barns

2-102

MeV

17-Cl-Nat -7

07/04/76

Total
Cross Section

17-Cl-Nat

07/04/76

(n,γ)
Cross Section

17-Cl-Nat

2-103

17-Cl-Nat -8

07/04/76

(n,γ)
Cross Section

17-Cl-Nat

07/04/76

Total
Cross Section

17-Cl-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49	844	3.0000-4	3.0000-5	3.3200-0	61	233	2.8400+1	2.1000+0	7.0000-2
50	81	1.4120+1	4.0000-2	2.0000-0	50	281	4.2000+1	2.1100+0	4.0000-2
70	3300	1.4500+1	2.0000-0	2.0000-2	49	286	9.0000+1	1.2800+1	3.0000-2
45	507	2.5400+1	1.6800+0	1.0800-1					

07/04/76

Elastic
Cross Section

17-Cl-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
50	235	2.7000-1	1.6000+0	
65	1509	2.0000+0	5.0000-2	3.1000+0

2-104

17-Cl-Nat -9

07/04/76

10.5)

17-CI-Nat

Cross Section

DEPTH	TEMP	DELTA	SIC	DELTA
0.0	10.0	0.0	0.0	0.0
1.0	10.0	0.0	0.0	0.0
2.0	10.0	0.0	0.0	0.0
3.0	10.0	0.0	0.0	0.0
4.0	10.0	0.0	0.0	0.0
5.0	10.0	0.0	0.0	0.0
6.0	10.0	0.0	0.0	0.0
7.0	10.0	0.0	0.0	0.0
8.0	10.0	0.0	0.0	0.0
9.0	10.0	0.0	0.0	0.0
10.0	10.0	0.0	0.0	0.0

07/04/76

10.5)

17-CI-35

Cross Section

DEPTH	TEMP	DELTA	SIC	DELTA
0.0	10.0	0.0	0.0	0.0
1.0	10.0	0.0	0.0	0.0
2.0	10.0	0.0	0.0	0.0
3.0	10.0	0.0	0.0	0.0
4.0	10.0	0.0	0.0	0.0
5.0	10.0	0.0	0.0	0.0
6.0	10.0	0.0	0.0	0.0
7.0	10.0	0.0	0.0	0.0
8.0	10.0	0.0	0.0	0.0
9.0	10.0	0.0	0.0	0.0
10.0	10.0	0.0	0.0	0.0

07/04/76

10.5)

17-CI-37

Cross Section

07/04/76

10.5)

17-CI-39

Cross Section

07/04/76

(n, γ)

17-CI-37

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58	43 2 1000- 2	4.0000- 3	3.6100- 2	6.4020- 4	68	3375 2.9000- 0	2.0000- 1	5.9000- 4	9.0000- 5
58	363 2.0000- 1	1.5000- 2	4.3100- 3	4.0000- 5	58	363 4.0000- 0		3.4000- 4	9.0000- 5
58	363 2.7000- 0		6.5000- 4	9.0000- 5	72	3963 1.4400- 1		1.8000- 3	2.0000- 4

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
47	888 2.5300- 8		5.6000- 1	1.1200- 1	3.7000- 1
57	305 2.4000- 2	5.0000- 3	1.1000- 3	2.0000- 4	3.7000- 1
68	2895 2.4000- 2		3.1200- 3	1.0000- 3	3.8000- 1

07/04/76

Total
Cross Section

18-Ar-Nat

07/04/76

18-Ar-Nat

Total
Cross Section

MeV

18-Ar-Nat ~2

2-107

Barns

07/04/76

Total
Cross Section

18-Ar-Nat

2-108

Mev

18-Ar-Nat -3

Barns

07/04/76

Total
Cross Section

18-Ar-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61	753 2.2200+ 0		3.1000+ 0	1.5000- 1	61	753 2.9400+ 0		2.9000+ 0	1.5000- 1
61	753 2.4500+ 0		3.0500+ 0	1.5000- 1	71	3815 1.4700+ 1		1.9500+ 0	4.0000- 2
61	753 2.6000+ 0		2.9500+ 0	1.5000- 1	54	343 4.7500+ 1	2.0000+ 0	2.3800+ 0	4.5000- 2
61	753 2.7800+ 0		2.9000+ 0	1.5000- 1	54	343 8.8000+ 1	2.0000+ 0	1.4800+ 0	2.0000- 2

07/04/76

Elastic
Cross Section

18-Ar-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67	1678 1.4000+ 1	3.0000- 2	1.0000+ 0	7.0000- 2

07/04/76

(n, γ)
Cross Section

18-Ar-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69	2998 2.5300- 8		6.8700- 1	9.0000- 3

07/04/76

Total
Cross Section

18-Ar-36

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57	2029 7.5600- 8		7.7000+ 1	9.0000+ 0

07/04/76

(n,γ)

18-Ar-40

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
59 579	1.3600- 1	6.0020- 2	2.2000- 3	8.0020- 4	59 579	4.0000- 1	7.0020- 2	1.3000- 3	5.0000- 4
55 579	2.0000- 1	7.0020- 2	1.9000- 3	7.0020- 4	59 579	1.0000+ 0	1.1000- 1	9.3020- 4	3.4000- 4
59 579	3.0000- 1	6.0020- 2	1.3000- 3	5.0000- 4					

07/04/76

Total
Cross Section

19-K -Nat

ENDL 7125

2-110

MeV

19-K -Nat -1

07/04/76

19-K -Nat

Total
Cross Section

MeV

19-K -Nat -2

2-111

Bars

07/04/76

Total
Cross Section

19-K -Nat

2-112

19-K -Nat -3

07/04/76

19-K -Nat

Total
Cross Section

Barns

Mev

2-114

19-K -Nat -5

07/04/76

Total
Cross Section

19-K - Nat

ECSIL-2517 (70)

ECSIL-407 (61)

ECSIL-380 (61)

2-115

MeV

19-K - Nat - 6

Barns

07/04/76

Total
Cross Section

19-K -Nat

2-116

MeV

19-K -Nat -7

07/04/78

Total
Cross Section

19-K -Nat

2-117

19-K -Nat -8

Barns

07/04/76

Total
Cross Section

19-K -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47	46 6.2000-	1 7.0020-	2 2.3000+	0 1.0000-	62	452 1.0360+	1	2.3100+ 0 3.1000-	1
47	46 8.3000-	1 4.0000-	2 2.7000+	0 1.0000-	62	452 1.1590+	1	1.9200+ 0 9.0000-	2
39	42 2.8800+	0 4.0000-	2 3.1300+	0 1.5000-	52	81 1.4000+	1	2.2400+ 0 4.0000-	2
51	637 3.6600+	0 2.0000-	1 3.4800+	0 2.4000-	70	3300 1.4500+	1	2.6600+ 0 3.0000-	2
62	452 8.5800+	0	2.8400+	0 2.5000-	68	1941 1.4680+	1 2.3000-	1 2.1400+ 0 4.6000-	2
62	452 9.4500+	0	2.7800+	0 4.1000-	51	233 2.8400+	1	2.1300+ 0 2.0000-	1

07/04/76

Elastic
Cross Section

19-K -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63	1899 3.0000-	1 2.5000-	2 3.2800+	0 3.6000-	67	1784 3.7400+	0 8.5000-	2 2.6300+	0
65	1785 1.4900+	0 9.0000-	2 2.6300+	0 9.0000-	65	1785 3.7600+	0 9.0000-	2 2.8700+ 0 1.0000-	1
67	1784 2.0600+	0 1.1500-	1 2.9000+	0	67	1784 4.3300+	0 7.8000-	2 2.4400+	0
65	1785 2.3800+	0 9.0000-	2 2.8600+	0 1.0000-	67	1784 6.5200+	0 1.6000-	1 1.3400+	0
65	1785 3.0000+	0 9.0000-	2 3.1700+	0 1.1000-	67	1784 7.9100+	0 2.2000-	1 1.3900+	0
61	846 3.1800+	0	3.0000+	0 1.0000-	66	1648 1.4000+	1	1.0350+ 0 5.7000-	2
61	637 3.6600+	0 2.0000-	1 3.0800+	0 2.4000-					

07/04/76

(n,γ)
Cross Section

19-K -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63	1 3.0000-	2 8.0020	3 1.6000-	2 3.0000-
63	1 6.5000-	2 2.1000-	2 4.0000-	3 2.0000-

2-118

19-K -Nat -2

07/04/76

19-K -39

Total
Cross Section

ECSIL-272 157

Barns

2-119

19-K -39 -1

07/04/76

Total
Cross Section

19-K -41

07/04/76

(n, γ)
Cross Section

19-K -41

2-120

19-K -41 -1

07/04/76

(n,γ)

19-K -41

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		1.0000+ 0	2.0000- 1	72 3963	1.4400+ 1		2.0000- 3	3.0000- 4
57 23	2.1000- 2	4.0000- 3	2.1000- 2	5.0000- 3	57 521	1.4500+ 1		3.5000- 3	7.0020- 4
66 1788	2.4000- 2		3.0000- 2	5.0000- 3					

07/04/76

Total
Cross Section

20-Ca-Nat

2-121

MeV

20-Ca-Nat -1

07/04/76

20-Ca-Nat

Total
Cross Section

Baron

2-122

20-Ca-Nat -2

2 3 4 5 6 7
x10¹ Mev

07/04/76

Total
Cross Section

20-Ca-Nat

(Expanded Below)
ECSIL-3458 (72)

ECSIL-3458 (72)

ECSIL-3458 (72)

2-123

MeV

20-Ca-Nat -3

Barns

07/04/76

20-Ca-Nat

Total
Cross Section

2-124

Mev

20-Ca-Nat -4

Baras

07/04/76

Total
Cross Section

20-Ca-Nat

ECSIL-451 (59)

(Expanded Below)
ECSIL-3164 (71)

ECSIL-3164 (71)

Barns

2-125

MeV

20-Ca-Nat -5

07/04/76

Total
Cross Section

20-Ca-Nat

ECSIL-3164 (71)

ECSIL-3164 (71)

Barns

2-126

20-Ca-Nat -6

07/04/76

Total
Cross Section

20-Ca-Nat

2-127

20-Ca-Nat -7

07/04/76

Total
Cross Section

20-Ca-Nat

Barns

2-128

Mev

20-Ca-Nat - 8

07/04/76

Total
Cross Section

20-Ca-Nat

Barns

2-129

MeV

20-Ca-Nat -9

07/04/76

Total
Cross Section

20-Ca-Nat

2-130

MeV

20-Ca-Nat -10

07/04/76

20-Ca-Nat

Total
Cross Section

20-Ca-Nat -11

2-131

07/04/76

Total
Cross Section

20-Ca-Nat

2-132

20-Ca-Nat -12

07/04/76

Elastic
Cross Section

20-Ca-Nat

07/04/76

Total
Cross Section

20-Ca-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49	844	1.1500- 4	1.1500- 5	4.5600+ 0	62	452	8.5800+ 0	2.8700+ 0	1.8000- 1
49	844	3.0000- 4	3.0000- 5	4.3700+ 0	62	452	9.4500+ 0	2.6800+ 0	3.0000- 1
61	632	8.6500- 1	7.0000- 3	2.0000+ 0	62	452	1.0360+ 1	2.7900+ 0	2.3000- 1
61	637	3.6600+ 0	2.0000- 1	3.5800+ 0	62	452	1.1590+ 1	2.0400+ 0	7.0000- 2
60	576	4.1000+ 0	1.0000- 1	3.6000+ 0	52	81	1.4000+ 1	2.1900+ 0	4.0000- 2

2-133

20-Ca-Nat -13

07/04/76

Total
Cross Section

20-Ca-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70	3300	1.4500+ 1	2.1000+ 0	3.0000- 2	60	673	2.0400+ 1	2.0000- 1	2.1100+ 0
60	1941	1.4000+ 1	2.1700+ 0	3.0000- 2	60	673	2.5300+ 1	3.0000- 1	2.1500+ 0
71	3815	1.4700+ 1	2.1200+ 0	4.0000- 2	60	673	2.7700+ 1	3.0000- 1	2.2000+ 0
60	673	1.8100+ 1	3.0000- 1	2.0900+ 0	50	281	4.2000+ 1	1.0000+ 0	2.1100+ 0

07/04/76

Elastic
Cross Section

20-Ca-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62	708	9.0000- 1	4.0000- 2	2.6200+ 0	1.4000- 1	69	2890	7.0500+ 0	1.6700+ 0
61	846	3.1000+ 0	3.6000+ 0	1.0000- 1	70	3192	7.6000+ 0	1.0000- 1	1.4090+ 0
61	637	3.6600+ 0	2.0000- 1	3.0900+ 0	2.1000- 1	69	2890	8.0500+ 0	1.5800+ 0
60	578	1.1000+ 0	1.0000- 1	2.9000+ 0	3.0000- 1	70	3192	8.6200+ 0	8.0000- 2
70	3192	5.5000+ 0	5.0000- 2	2.0820+ 0	1.4990- 1	66	1648	1.4000+ 1	9.1800- 1
69	2890	6.0900+ 0	1.6500+ 0	8.0000- 2	60	631	1.4600+ 1	1.0000- 1	8.2000- 1
70	3192	6.3700+ 0	1.3000- 1	1.7980+ 0	1.3120- 1				

07/04/76

(n,γ)
Cross Section

20-Ca-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67	1.3.0000- 2	8.0020- 3	1.0000- 2	2.0000- 3
63	1.6.5000- 2	2.1000- 2	3.0000- 3	2.0000- 3
60	673	4.0000- 1	9.0020- 2	3.5.0000- 4

2-134

20-Ca-Nat -14

07/04/76

20-Ca-40

Total
Cross Section

Barns

MeV

07/04/76

20-Ca-40

Total
Cross Section

20-Ca-40 -2

2-136

Barns

07/04/76

Total
Cross Section

20-Ca-40

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1925	2.7600+ 0	1.0000+ 1	5.0000+ 0	5.0000+ 1

07/04/76

Elastic
Cross Section

20-Ca-40

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 2016	1.4100+ 1		9.3000- 1	1.0000- 1

07/04/76

(n,γ)
Cross Section

20-Ca-40

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 2232	1.4100+ 1	6.7500- 1	5.4000- 4	8.0000- 5

07/04/76

Total
Cross Section

20-Ca-42

07/04/76

20-Ca-42

Total
Cross Section

Barns

2-138

20-Ca-42 -2

MeV

07/04/76

Total
Cross Section

20-Ca-44

(Expanded Below)
ECSIL-751 (63)

ECSIL-751 (63)

ECSIL-751 (63)

2-139

MeV

20 Ca-44 -1

Barns

07/04/76

Total
Cross Section

20-Ca-44

07/04/76

(n, γ)
Cross Section

20-Ca-44

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		6.3000- 1	1.2600- 1

07/04/76

(n, γ)
Cross Section

20-Ca-48

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1695	1.4700+ 1		2.6000- 4	8.0000- 5

07/04/76

Total
Cross Section

21-Sc-45

ECSIL-1793 (55)

ECSIL-3845 (66)

ECSIL-548 (58)

Barns

07/04-76

21-Sc-45

Total
Cross Section

Bates

MeV

Z-2

21-Sc-45 -2

07/04/76

Total
Cross Section

21-Sc-45

ECSIL-3295 (70)

ECSIL-750 (67)

07/04/76

Elastic

21-Sc-45

Cross Section

Barns

07/04/76

21-Sc-45

Cross Section

Barns

07/04/76

(n,γ)
Cross Section

21-Sc-45

07/04/76

(n,γ)
Cross Section

21-Sc-45

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 3845	2.5300- 8		2.6600+ 1	5.0000- 1
67 1695	1.4700+ 1		2.3000- 3	7.0000- 4

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs DAYS
47 888	2.5300- 8		2.2000+ 1	4.4000+ 0 8.5000+ 1
57 23	2.1000- 2	4.0000- 3	5.4020- 2	3.0000- 2 8.5020+ 1

07/04/76

22-Ti-Nat

Total
Cross Section

Bars

3-6

22-Ti-Nat -1

07/04/76

Total
Cross Section

22-Tl-Nat

07/04/76

Total
Cross Section

22-Ti-Nat

ECSIL-814 (65)

ECSIL-814 (65)

ECSIL-15 (58)

Barns

3-8

MeV

22-Ti-Nat -3

07/04/76

Total
Cross Section

22-Tl-Nat

END 7125

MeV

3-9

22-Tl-Nat -4

Barns

07/04/76

22-Ti-Nat

Total
Cross Section

(Expanded Below)

MeV

3-10

22-Ti-Nat -5

Barns

07/04/76

Total
Cross Section

22-Ti-Nat

3-11

22-Ti-Nat -6

07/04/76

22-Ti-Nat

Total
Cross Section

3-12

MeV

22-Ti-Nat -7

Bar

07/04/76

22-Ti-Nat

Total
Cross Section

EC511-2425 (68)

EC511-2425 (68)

EC511-2425 (68)

MeV

3-13

22-Ti-Nat -8

Barns

07/04/76

22-Ti-Nat

Total
Cross Section

MeV

22-Ti-Nat -9

3-14

Bar 23

07/04/76

Total
Cross Section22-Tl-Nat
ENDL-7128

Barns

3-15

MeV

22-Tl-Nat -10

07/04/76

Total
Cross Section

22-Ti-Nat
ENDL-7128

07/04/76

22-Ti-Nat

ENDL-7128

Elastic
Cross Section

Barns

07/04/76

(n,γ)
Cross Section

22-Ti-Nat

ENDL-7128

07/04/76

Total
Cross Section

22-Ti-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49	844 1.1500	4 1.1500	5 5.1020	0	59	567 1.4000	1	2.2300	0 6.0020
49	844 3.0000	4 3.0000	5 5.3920	0	52	207 1.4000	1	2.2000	0 7.0000
61	637 3.6600	0 2.0000	1 3.6300	0 1.8000	52	81 1.4000	1	2.2800	0 4.0000
55	296 4.1000	0 4.0000	2 3.7000	0 2.0030	60	673 1.7500	1 3.0000	1 2.1900	0 2.0000
51	65 1.3900	1 1.0000	0 2.3700	0 3.5000	60	673 2.1400	1 2.0000	1 2.1700	0 2.0000

3-18

22-Ti-Nat -13

07/04/76

Total
Cross Section

22-Ti-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60	673 2.5100+ 1	3.0000- 1	2.2400+ 0	3.0000- 2
60	673 2.8600+ 1	3.0000- 1	2.3100+ 0	3.0000- 2

07/04/76

Elastic
Cross Section

22-Ti-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66	2339 3.0000- 1	2.5000- 2	2.6900+ 0	1.9000- 1	73	3448 4.3400+ 0	7.0000- 2	2.3636+ 0	1.7163- 1
66	2339 5.0000- 1	5.0000- 2	2.5700+ 0	1.0000- 1	73	3448 4.9200+ 0	6.0000- 2	2.1101+ 0	1.5404- 1
72	3546 6.9+30- 1	2.0000- 1	2.5665+ 0		73	3448 6.4400+ 0	7.0000- 2	2.0365+ 0	1.4866- 1
62	708 9.0000- 1	4.0000- 2	3.2500+ 0	1.3000- 1	73	3448 7.5400+ 0	6.0000- 2	1.7670+ 0	1.3076- 1
54	103 1.0000+ 0	8.0000- 2	2.8000+ 0	4.2000- 1	73	3448 8.5600+ 0	5.0000- 2	1.5467+ 0	1.1445- 1
67	3394 1.5000+ 0		2.7653+ 0	1.3400- 1	59	557 1.4000+ 1		1.0400+ 0	5.0000- 2
65	1509 2.0000+ 0	5.0000- 2	3.0000+ 0						

07/04/76

(n,γ)
Cross Section

22-Ti-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61	987 2.5300- 8		6.0900+ 0	1.3000- 1	63	1 6.5000- 2	2.1000- 2	5.0000- 3	2.0000- 3
60	633 2.5000- 2	1.0000- 3	2.3000- 2	6.0020- 3	60	633 2.2000- 1	2.0000- 2	2.1000- 2	2.0000- 2
63	1 3.0000- 2	8.0020- 3	2.9000- 2	4.0000- 3	60	633 8.3000- 1	4.0000- 2	1.1000- 2	2.0000- 2

07/04/76

Total

22-Ti-46

Cross Section

ECSIL-747 (62)

Barns

07/04/76

Total

22-Ti-46

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 4036	1.4200+ 1		2.4500+ 0	3.5000- 2

07/04/76

Total

22-Ti-47

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 4036	1.4200+ 1		2.3190+ 0	4.8000- 2

3.2.2

22-Ti-47

07/04/76

Total

22-11-48

Cross Section

22-11-48

ENCL-7128

Barns

07/04/76

Total

22-11-48

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 4036	1.4200 ± 1		2.4920 ± 0.250	2

07/04/76

22-Ti-49

Total
Cross Section

Mev

3-22

22-Ti-49 -1

Barns

07/04/76

Total
Cross Section

22-Ti-49

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 4036	1.4200 ± 1		2.4170 ± 0.4	1.000 ± 2

07/04/76

Total
Cross Section

22-Ti-50

37/04/76

(n,γ)

22-TI-50

Cross Section

ECSIL-2076 (69)

ECSIL-3001 (67)

07/04/76

Total

22-TI-50

Cross Section

REFERENCE	ENERGY	DELTA	X-SEC	DELTA
72 4036	1.4200 ± 1	MEV	BARNs	BARNs
			2.3930 ± 0.63000	-2

22-TI-50 -2

07/04/76

(n, γ)
Cross Section

22-T1-50

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 357	2.1000- 2		2.3000- 3	6.0020- 4	58 1044	4.0000+ 0		7.0000- 4	
57 305	2.4000- 2	5.0000- 3	5.0000- 3	3.0000- 3	72 3963	1.4400+ 1		8.0000- 4	2.0000- 4
58 1044	2.5000+ 0		8.2000- 4		57 521	1.4500+ 1		3.5000- 3	1.0500- 3
58 1044	3.1000+ 0		7.3000- 4		67 1695	1.4700+ 1		3.0000- 4	1.0000- 4

07/04/76

Total
Cross Section

23-V -Nat

3-25

Mev

23-V -Nat -1

07/04/76

23-V -Nat

Total
Cross Section

MeV

3-26

23-V -Nat -2

Barns

Barns

07/04/76

Total
Cross Section

23-V -Nat

23-V -Nat -4

3-28

Mev

Bars

07/04/76

Total
Cross Section

23-V -Nat
23-V -51 ENOL-7129

Barns

3-29

MeV

23-V -Nat -5

07/04/76

Total
Cross Section23-V -Nat
23-V -51 ENOL-7129

07/04/76

Total
Cross Section

23-V -Nat
23-V 51 ENDL-7129

3-31

23-V -Nat -7

Barns

07/04/76

23-V -Nat

Total
Cross Section

Barns

Mev

3-32

23-V -Nat -8

07/04/76

Total
Cross Section

23-V-Na
1.17E+01

(Expanded Below)
ECSIL-2517 (70)

ECSIL-2517 (70)

ECSIL-2517 (70)

Barns

3-33

23-V-Na -9

07/04/76

Total
Cross Section

23-V -Nat

23 V 51 ENDI-7129

3-34

23-V -Nat -10

07/04/76

Total
Cross Section

23-V -Nat

3-35

23-V -Nat -11

Barns

07/04/76

Total

23-V -Nat

Cross Section

23-V -51 ENOI -7129

Barns

Mev

3-36

23-V -Nat -12

07/04/76

Total
Cross Section23-V -Nat
23-V -5; ENDL-7129

3-37

MeV

23-V -Nat -13

07/04/76

Total

23-V -Nat

Cross Section

23-V 51

ENDL-7129

3-38

23-V -Nat -14

07/04/76

23-V -Nat

Elastic
Cross Section

3-39

23-V -Nat -15

Barns

07/04/76

(n, γ)
Cross Section

23-V -Nat

3-40

23-V -Nat -16

07/04/76

Total
Cross Section

23-V -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 1773	1.0000- 8		1.2900+ 1	4.0000- 2	51 66	1.1800+ 1	1.0000- 0	2.5800+ 0	2.4000- 1
65 1773	2.5300- 8		9.9300+ 0	7.0000- 2	52 207	1.4000+ 1		2.4000+ 0	1.0000- 1
65 1773	1.0000- 7		7.4900+ 0	7.0000- 2	60 673	1.1000+ 1	1.0000- 1	2.1600+ 0	2.0000- 2
65 949	1.4000- 6		5.3600+ 0	7.0000- 2	60 673	2.0000+ 1	2.0000- 1	2.1000+ 0	3.0000- 2
65 1773	4.0000- 6		5.3300+ 0	2.0000- 2	60 673	2.4000+ 1	2.0000- 1	2.1800+ 0	2.0000- 2
67 1527	2.7000+ 0	3.0000- 2	4.7800+ 0	2.0000- 1	60 673	2.7000+ 1	3.0000- 1	2.2000+ 0	3.0000- 2
61 637	3.6600+ 0	2.0000- 1	3.8400+ 0	1.9000- 1					

07/04/76

Elastic
Cross Section

23-V -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 35+6	8.9660- 1	2.0000- 1	2.5464+ 0		70 3581	7.6000+ 0	1.0000- 1	2.2878+ 0	2.1048- 1
70 3581	5.4400+ 0	1.7000- 1	2.2869+ 0	1.6634- 1	70 3581	8.9600+ 0	8.0000- 2	1.8246+ 0	1.3320- 1
70 3581	6.4400+ 0	1.3000- 1	2.1809+ 0	1.5703- 1					

07/04/76

(n,γ)
Cross Section

23-V -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 1	3.0000- 2	8.0020- 3	2.3000- 2	9.0020- 3	67 1807	1.5000- 1	2.1000- 2	6.9000- 3	2.3000- 3
61 677	3.0000- 2	7.0020- 3	3.0000- 2	8.0020- 3	67 1807	1.8000- 1	2.1000- 2	7.6000- 3	2.3000- 3
53 1	6.5000- 2	2.1000- 2	3.0000- 3	2.0000- 3	69 3017	1.4100+ 1	1.3500- 0	7.3000- 4	1.5000- 4
67 1807	1.0400+ 1	1.5000- 2	5.5000- 3	1.2000- 3	70 3810	1.4100+ 1	6.7500- 1	7.3000- 4	1.5000- 4
67 1807	1.2500- 1	2.3000- 2	4.1000- 3	1.4000- 3					

07/04/76

23-V -50

Total
Cross Section

(Expanded Below)
EC51L-987 (66)

EC51L-987 (66)

-42

MeV

23-V -50 -1

Barns

07 04/76

Total
Cross Section

23-V -50

07/04/76

(n,γ)
Cross Section

23-V -50

REFERENCE	ENERGY MEV	DELTA MEV	K-SEC BARNs	DELTA BARNs
53 2572	2.5130- 8		2.2000+ 2	1.4000+ 2
63 2571	2.5300- 8		5.5000+ 1	7.5000+ 1

3-43

23-V -50 -2

07/04/76

Elastic Cross Section

23-V -51

ENDL-7129

Barns

3-44

23-V -51 -1

07/04/75

 (n, γ)
Cross Section

23-V -51

Barns

3-45

23-V -51 -2

07/04/76

(n, γ)

23-V -51

Cross Section

ENDI -7125

3-46

23-V -51 -3

Baras

07/04/76

(n,y)
Cross Section

23-V -51

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62	2573	2.5300- 8	5.5000+ 0	3.0000- 1	58	363	2.0000- 1	1.5000- 2	1.0000- 2
63	2571	2.5300- 8	4.8800+ 0	1.8000- 1	58	363	2.7000+ 0		1.9700- 3
47	888	2.5300- 8	4.5000+ 0	9.0000- 1	68	3375	2.9000+ 0	2.0000- 1	1.4000- 3
58	43	2.1000- 2	4.0000- 3	3.1600- 2	58	363	4.0000+ 0		1.7800- 3
65	1788	2.4000- 2	4.0000- 2	1.2000- 2	72	3963	1.4400+ 1		1.4000- 3
57	305	2.4000- 2	5.0000- 3	5.0000- 3	67	1695	1.4700+ 1		3.7000- 4
59	526	1.9500- 1	1.5000- 2	7.0020- 3					6.0000- 5

07/04/76

Total
Cross Section24-Cr-Nat
END 11.40

3-47

Mev

24-Cr-Nat -1

07/04/76

Total
Cross Section

²⁴Cr-NaI
ENDL-7130

ECSIL-736 (61)

ECSIL-1062 (66)

(Expanded Below)
ECSIL-3521 (72)P

Barns

07/04/76

Total
Cross Section

²⁴Cr-Nat

Barns

3-49

MeV

²⁴Cr-Nat -3

07/04/76

Total
Cross Section

²⁴Cr-Nat
ENDL-7130

3-50

²⁴Cr-Nat -4

07/04/76

Total
Cross Section

²⁴Cr-Nat
ENDL-7130

3-51

MeV

²⁴Cr-Nat -5

Barns

07/04/76

Total
Cross Section

²⁴Cr-NaI
ENCL-7136

(Expanded Below)
ECSIL-2517 (68)

ECSIL-2517 (68)

ECSIL-2517 (68)

3-S2

MeV

²⁴Cr-NaI -6

Barns

07/04/76

24-Cr-Nat

Total
Cross Section

Barns

Mev

3-53

24-Cr-Nat -7

07/04/76

Total
Cross Section

24-Cr-Nat

100 1030

3-54

Nat

24-Cr-Nat -8

07/04/76

24-Cr-Nat

Total
Cross Section

Bars

3-55

24-Cr-Nat -9

07/04/76

Total
Cross Section

²⁴Cr-Nat

Temp = 293.15 Kelvin

3-56

²⁴Cr-Nat -10

Barns

07/04/76

Elastic
Cross Section

24-Cr-Nat

3-57

MeV

24-Cr-Nat -11

07/04/76

Elastic Cross Section

24-Cr-Nat

710 0130

07/04/76

(n,γ)
Cross Section

²⁴Cr-NaI
100%

Barns

3-59

²⁴Cr-NaI -13

07/04/76

(n,γ)
Cross Section

24-Cr-Nat

END 1730

07/04/76

Total
Cross Section

24-Cr-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs					
49 B44	1.1500	4	1.5000	5 3.2800	0	57	22 1.1180	1	1.0000	2 2.7500	0	3.0000	2	
49 R44	3.0000	4	3.0000	5 4.5600	0	57	22 1.2300	1	9.0020	2 2.6300	0	3.0000	2	
72 3973	3.1000	0		3.6800	0 8 0000	2	52	20 1.4000	1		2.3000	0	2.0000	1
57	22 7.0500	0	1.7000	1 3.5000	0 4.0000	2	52	81 1.4000	1		2.4500	0	4.0000	2
57	22 8.6900	0	1.5000	1 3.1200	0 3.0000	2	57	22 1.4250	1	7.0020	2 2.4200	0	2.0000	2

3-60

24-Cr-Nat -14

07/04/76

Total
Cross Section

24-Cr-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60	673	1.7500	1.25000	1.25000	60	673	1.7500	1.25000	1.25000
60	673	2.1400	1.25000	1.25000	60	673	2.1400	1.25000	1.25000

07/04/76

Elastic
Cross Section

24-Cr-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64	2338	3.0000	0.25000	0.25000	72	2890	2.2500	0.25000	0.25000
64	2712	5.0000	0.25000	0.25000	72	2890	2.2500	0.25000	0.25000
64	2734	8.0000	0.25000	0.25000	74	3450	4.2500	0.25000	0.25000
67	3304	1.5000	0.25000	0.25000	74	3450	4.2500	0.25000	0.25000
70	2892	1.7500	0.25000	0.25000	74	3450	4.2500	0.25000	0.25000
65	1509	2.0000	0.25000	0.25000	74	3550	0.5600	0.25000	0.25000
70	2890	2.2500	0.25000	0.25000	74	3550	0.5600	0.25000	0.25000

07/04/76

(n,γ)
Cross Section

24-Cr-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
75	4010	2.5000	0.25000	0.25000	61	673	1.7500	1.25000	1.25000
60	673	2.1400	1.25000	1.25000	61	673	2.1400	1.25000	1.25000
61	673	3.0000	1.25000	1.25000	61	673	3.0000	1.25000	1.25000
63	1.35000	0.25000	0.25000	0.25000	70	2890	2.2500	0.25000	0.25000

07 04 76

24-Cr-50

Total
Cross Section

07 04 76 24-Cr-50

Bar 35

07/04/76

Total

E-Cr-50

Cross Section

Barns

07/04/76

(n,γ)

24-Cr-50

Cross Section

07/04/76

Total

24-Cr-50

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 4036	1.4200+ 1		2.4280+ 0	2.7000- 2

07/04/76

(n,γ)

24-Cr-50

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		1.1000+ 1	4.4000+ 0

3-64

24-Cr-50 -3

07/04/76

Total
Cross Section

24-Cr-52

3-65 ENOL-7130

3-65

MeV

24-Cr-52 -1

Barns

07/04/76

(n, γ)

24-Cr-52

Cross Section

24-Cr-Nat ENDL-7130

07/04/76

Total
Cross Section

24-Cr-52

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1527	2.7000+ 0	3.0000- 2	3.6000+ 0	1.5000- 1
72 4036	1.4200+ 1		2.4530+ 0	2.4000- 2

3-66

24-Cr-52 -2

07/04/76

Total
Cross Section

24-Cr-53

(Expanded Below)
ECSIL-3067 (69)

ECSIL-3067 (69)

ECSIL-3067 (69)

3-67

Max

24-Cr-53

Barns

07/04/76

Total
Cross Section

24-Cr-53

07/04/76

(n,γ)

24-Cr-53

Cross Section

7-68

24-Cr-53 -2

07/04/76

24-Cr-53

Total
Cross Section

REFERENCE	EMLOY	DELTA	X-SEC	DELTA
	PEV	HEV	BARNs	BARNs
72 4C36 1.4200+ 1		2.1422C+ 0 3 0000- 2		

07/04/76

24-Cr-54

Total
Cross Section

Barns

3-69

24 Cr-54

07/04/76

Total

24-Cr-54

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 4036	1.4200 ± 1	2.5410 ± 0	3.7500 ± 2	

07/04/76

Total

25-Mn-55

Cross Section

Barns

3-70

07/04/76

25-Mn-55

Total
Cross Section

(Expanded Below)
ECSIL-814 (65)

ECSIL-814 (65)

3-71

25-Mn-55 -2

07/04/75

25-Mn-55

Total
Cross Section

Barns

MeV

3-72

25-Mn-55 -3

07/04/76

25-Mn-55

Total
Cross Section

ECSIL-1820 (58)

ECSIL-157 (57)

ECSIL-75 (52)

Mev

3-73

25-Mn-55 -4

Barns

07/04/76

25-Mn-55

Total
Cross Section

2

10¹

5

2

10¹

8 9

Mev

3-74

25-Mn-55 -5

Barns

07/04/76

25-Mn-55

Total
Cross Section

3-75

Mev

25-Mn-55 -6

Barns

07/04/76

Total
(Cross Section)

25-Mn-55

3-76

MeV

25-Mn-55

Barns

07/04/76

25-Mn-55

Total
Cross Section

Barns

MeV

3-77

25-Mn-55 -8

07/04/76

Total
Cross Section

25-Mn-55

E NEEL - 7131

Barns

MeV

3-78

25-Mn-55 -9

07/04/76

Total
Cross Section25-Mn-55
ENDL-7131

Barns

6

07/04/76

Elastic
Cross Section25-Mn-55
ENDL-7131

Barns

3-79

25-Mn-55 -10

07/04/76

Elastic
Cross Section

25-Mn-55

ENDL-7131

07/04/76

(n, γ)
Cross Section

25-Mn-55

ENDL-7131

07/04/76

(n,γ)
Cross Section

25-Mn-55
ENDL-7131

Barns

3-81

Mev

25-Mn-55 -12

07/04/76

(n, γ)
Cross Section25-Mn-55
ENDL-7131

07/04/76

(n, γ)
Cross Section

25-Mn-55

07/04/76

Total
Cross Section

25-Mn-55

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49	844	1.1500- 4	1.1500- 5	6.7820- 0	51	81	1.4000- 1	2.5400- 0	5.0000- 2
49	844	3.0000- 4	3.0000- 5	3.9800- 0	70	3300	1.4 00- 1	2.7000- 0	3.0000- 2
70	3968	1.3360- 1	6.0000- 2	2.3600- 0	61	233	2.8400- 1	2.3600- 0	1.2000- 1
70	3968	1.3480- 1	5.0600- 2	2.2700- 0					

3-83

25-Mn-55 -14

07/04/76

Elastic
Cross Section

25-Mn-55

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65	1509	2.0000	0 5.3000	2 3.2000

07/04/76

(n,γ)
Cross Section

25-Mn-55

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
4	888	2.5300	0	1.0700
57	23	2.1000	2 4.0000	3 5.1020
58	43	2.1000	2 4.0000	3 6.3020
65	867	2.4000	2	4.0000
57	305	2.4000	2 5.0000	3 5.5020
63	1	3.0000	2 8.0020	3 2.2000
63	1	3.0000	2 8.0000	3 2.2000
59	579	4.0000	2 8.0020	3 3.9000
63	1	6.5000	2 2.1000	2 9.0000
59	526	1.9500	1 1.5000	1 1.1000
58	363	2.0000	1	2.3000

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58	363	2.0000	1 1.5000	2 1.9700
58	363	2.7000	0	3.1200
68	3375	2.9000	0 2.0000	1 2.2000
67	1991	3.0000	0 2.0000	1 2.0000
59	579	3.5000	0 4.0000	1 1.7000
58	363	4.0000	0	1.7900
69	3017	1.4100	1 1.3500	0 7.8000
70	3810	1.4100	1 6.7500	1 7.8000
72	3963	1.4400	1	1.4000
57	521	1.4500	1	7.6000

07/04/76

Total
Cross Section

26-Fe-Nat

07/04/76

Total
Cross Section

26-Fe-Nat

100-1000

3-85

26-Fe-Nat -2

Baras

07/04/76

Total
Cross Section

²⁶Fe-Nat
END 71.52

3-86

MeV

²⁶Fe-Nat -3

07/04/76

Total
Cross Section

26-Fe-Nat
1.00 1.00

(Expanded Below)
ECSIL-3923 (73)

3-87

MeV

26-Fe-Nat -4

Barns

07/04/76

26-Fe-Nat

Total
Cross Section

3-88

MeV

26-Fe-Nat -5

Barns

07/04/76

Total
Cross Section

26-Fe-Nat

3-89

26-Fe-Nat -6

07/04/76

Total
Cross Section

26-Fe-Nat

END 71.56

3-90

MeV

26-Fe-Nat -7

07/04/76

26-Fe-Nat

Total
Cross Section

Barns

07/04/76

26-Fe-Nat

Total
Cross Section

(Expanded Below)
EC51L-3458 (72)

2 4 6 8 10⁰ 2 4 6 8 10¹ 4

EC51L-3458 (72)

0.2 0.22 0.24 0.26 0.28 0.3 0.32

EC51L-3458 (72)

0.3 0.4 0.5 0.6

MeV

3-92

26-Fe-Nat -9

Barns

07/04/76

Total
Cross Section

26-Fe-Nat

ENC 3132

ECS1L-3458 (72)

ECS1L-3458 (72)

(Expanded Below)
ECS1L-1546 (68)

Mev

3-93

26-Fe-Nat -10

Barns

07/04/76

Total
Cross Section

$^{26}\text{Fe-Nat}$

ECSIL-1546 (68)

ECSIL-1546 (68)

ECSIL-971 (67)

Z-94

MeV

$^{26}\text{Fe-Nat}$ -11

Barr.s

07/04/76

Total
Cross Section

²⁶Fe-Nat
ENCLOSURE

3-95

Mev

²⁶Fe-Nat -12

07/04/76

Total
Cross Section

$^{26}\text{Fe-Nat}$

Barns

3-96

Mev

$^{26}\text{Fe-Nat}$ -13

07/04/76

26-Fe-Nat

Total
Cross Section

Baras

MeV

26-Fe-Nat -14

3-97

07/04/76

Total
Cross Section

26-Fe-Nat

07/04/76

26-Fe-Nat

Total
Cross Section

Baras

3-99

Mev

26-Fe-Nat -16

07/04/76

Total
Cross Section

26-Fe-Nat

Barns

3-100

MeV

26-Fe-Nat -17

07/04/76

Total
Cross Section

²⁶Fe-Nat
(NOV-71-32)

ECSIL-263 (51)

ECSIL-748 (63)

ECSIL-3961 (70)

3-101

MeV

²⁶Fe-Nat -18

Barns

07/04/76

Total
Cross Section

26-Fe-Nat

Barns

3-102

Mev

26-Fe-Nat -19

07/04/76

Total
Cross Section

²⁶Fe-Nat

ECSIL-750 (67)

ECSIL-504 (54)

ECSIL-400 (58)

Barns

3-103

MeV

²⁶Fe-Nat ~20

07/04/76

Total
Cross Section

26-Fe-Nat

100.00%

3-104

MeV

26-Fe-Nat -21

Barns

07/04/76

Total
Cross Section

²⁶-Fe-Nat

ECSIL-622 (60)

ECSIL-133 (55)

ECSIL-349 (58)

Barns

3-105

MeV

²⁶-Fe-Nat -22

07/04/76

Total
Cross Section

²⁶Fe-Nat

ECSIL-310 (53)

ECSIL-3264 (71)

ECSIL-3618 (74)

3-106

MeV

²⁶Fe-Nat -23

Barns

07/04/76

Total
Cross Section

26-Fe-Nat

3-107

MeV

26-Fe-Nat -24

07/04/76

Total
Cross Section

26-Fe-Nat

Barns

07/04/76

Elastic
Cross Section

26-Fe-Nat

Barns

3-108

26-Fe-Nat -25

07/04/76

Elastic Cross Section

²⁶Fe-Nat

3-109

²⁶Fe-Nat -26

Barns

07/04/76

(n, γ)
Cross Section

26-Fe-Nat

07/04/76

26-Fe-Nat

(n, γ)
Cross Section

ECSIL-1825 (64)

ECSIL-674 (60)

Barns

3-111

26-Fe-Nat -28

07/04/76

(n,γ)

26-Fe-Nat

Cross Section

07/04/76

Total

26-Fe-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
85 949	1.4400- 6		1.1690+ 1	5.0000- 2	69 2988	1.4800+ 1		2.4800+ 0	1.2400- 1
73 3343	2.4300- 2	1.0000- 4	4.2000- 1	3.0000- 2	57 368	1.4800+ 1		2.5100+ 0	6.0020- 2
56 146	1.5800+ 0	4.0000- 2	2.8300+ 0	5.0000- 2	60 673	1.7300+ 1	3.0000- 1	2.3500+ 0	3.0000- 2
56 146	1.6630+ 0	4.0000- 2	2.7300+ 0	5.0000- 2	53 274	1.9000+ 1	3.3000- 1	2.2300+ 0	6.7020- 2
65 1016	2.0100+ 0	4.0000- 2	3.2000+ 0	6.0000- 2	60 673	2.1400+ 1	2.0000- 1	2.2300+ 0	2.0000- 2
58 497	2.2000+ 0	2.0000- 2	3.0500+ 0	2.0070- 1	60 673	2.5100+ 1	3.0000- 1	2.2600+ 0	3.0000- 2
65 1016	3.0100+ 0	3.0000- 2	3.2700+ 0	7.0000- 2	60 673	2.7800+ 1	3.0000- 1	2.3000+ 0	2.0000- 2
59 559	3.6600+ 0	2.0000- 1	3.4100+ 0	1.4000- 1	61 233	2.8400+ 1		2.3900+ 0	9.0020- 2
65 1016	3.9900+ 0	3.0000- 2	3.5100+ 0	7.0000- 2	50 281	4.2000+ 1	1.0000- 0	2.4410+ 0	2.1000- 2
55 296	4.1000+ 0	4.0000- 2	3.6000+ 0	2.0000- 1	55 282	9.3400+ 1	5.0000- 1	1.9470+ 0	4.8000- 2
57 22	7.0500+ 0	1.7000- 1	3.6200+ 0	4.0000- 2	54 39	9.4800+ 1	1.5000- 0	1.9470+ 0	4.8000- 2
57 22	8.7000+ 0	1.5000- 1	3.2900+ 0	4.0000- 2	55 282	9.7200+ 1	1.0000- 0	1.8740+ 0	3.7000- 2
69 2025	8.9400+ 0	5.0000- 1	3.5100+ 0	8.0000- 2	54 39	9.8600+ 1	2.5000- 0	1.8740+ 0	3.7000- 2
57 22	1.0220+ 1	1.1000- 1	3.1200+ 0	3.0000- 2	55 282	1.0110+ 2	5.0000- 1	1.7350+ 0	8.0020- 2
57 22	1.2300+ 1	9.0020- 2	2.8300+ 0	3.0000- 2	54 39	1.0200+ 2	7.6020- 1	1.7340+ 0	8.1020- 2
52 207	1.4000+ 1		2.4000+ 0	2.0000- 1	55 282	1.0680+ 2	2.0000+ 0	1.9400+ 0	1.8500- 1
52 81	1.4000+ 1		2.6000+ 0	5.0000- 2	54 39	1.0790+ 2	5.0000+ 0	1.9460+ 0	1.8400- 1
57 22	1.4500+ 1	7.0020- 2	2.5400+ 0	3.0000- 2	69 3160	5.7000+ 3	6.0000+ 2	1.2500+ 0	2.0000- 2
70 3300	1.4500+ 1		2.5100+ 0	2.0000- 2	68 2350	2.7000+ 4		1.0230+ 0	2.5000- 2

3-112

26-Fe-Nat -29

07/04/76

Elastic
Cross Section

26-Fe-Nat

REFERENCE	ENERGY MEV	DELTA MEV	Y-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
51	2794	7.2400- 2	1.2650+ 1	5.0000- 1	58	2890	2.2000+ 0	2.0000- 2	1.9400+ 0
60	586	2.2000- 1	3.4900+ 0		70	2890	2.2700+ 0	5.0000- 2	2.3700+ 0
63	1699	3.0000- 1	2.5000- 2	2.6600+ 0	70	2890	2.5200+ 0	5.0000- 2	2.3600+ 0
64	870	5.0000- 1	5.0000- 2	3.1700+ 0	70	2890	2.7600+ 0	5.0000- 2	2.3500+ 0
64	870	6.0000- 1	5.0000- 2	3.1700+ 0	57	416	2.9000+ 0	1.0000- 1	2.5000+ 0
72	3546	9.0210- 1	2.0000- 1	2.3362+ 0	69	2890	3.0000+ 0	5.0000- 2	2.0800+ 0
65	1016	9.8000- 1	5.0000- 2	2.0200+ 0	65	1016	3.0100+ 0	3.0000- 2	2.0000+ 0
54	103	1.0000- 0	6.0000- 2	2.1090+ 0	59	559	3.6500+ 0	2.0000- 1	1.9000+ 0
56	146	1.4800+ 0	7.5020+ 0	1.7900+ 0	65	1016	3.9900+ 0	3.0000- 2	2.1700+ 0
67	3394	1.5000+ 0		1.8850+ 0	69	2890	4.0000+ 0	5.0000- 2	2.1400+ 0
56	146	1.5800+ 0	7.5020+ 0	1.8500+ 0	63	2890	4.5600+ 0	5.0000- 2	2.1000+ 0
56	146	1.6600+ 0	7.5020+ 0	1.7900+ 0	69	3660	5.9600+ 0	9.0000- 2	1.7900+ 0
70	2890	1.7700+ 0	5.0000- 2	2.2300+ 0	65	889	6.0400+ 0	2.3000- 1	1.7000+ 0
65	1505	2.0000+ 0	5.0000- 2	2.3000+ 0	69	2890	7.0500+ 0	1.0000- 1	1.8000+ 0
65	1016	2.0100+ 0	4.0000- 2	2.3400+ 0	69	2890	8.0500+ 0	1.0000- 1	1.7600+ 0
70	2690	2.0200+ 0	5.0000- 2	2.2000+ 0	58	403	1.4500+ 1		1.1400+ 0

07/04/76

(n,γ)
Cross Section

26-Fe-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
63	1	3.0000- 2	8.0020- 3	1.2000- 2	67	1807	1.5000- 1	2.1000- 2	1.2400- 2
61	677	3.0000- 2	7.0020- 3	1.2000- 2	67	1807	1.8200- 1	2.1000- 2	6.5000- 3
61	677	6.5000- 2	2.6000- 2	6.3020- 3	69	3017	1.4100+ 1	1.3500+ 0	8.7000- 4
63	1	6.5000- 2	2.1000- 2	6.3020- 3	70	3810	1.4100+ 1	6.7500- 1	8.7000- 4
67	1807	1.2500- 1	2.3000- 2	7.2000- 3					

07/04/76

Neutrons: Nonelastic Event

26-Fe-Nat

REFERENCE	ENERGY MEV	DELTA MEV	RATIO	DELTA
58	870	1.4900+ 1	1.2000+ 0	1.5000- 1

07-04-76

Total
Cross Section

26-Fe-54

Barns

07/04/76

Total
Cross Section

26-Fe-54

REF:REF	ENERGY	DELTA	X-SEC	DELTA
	MEV	DELTA	BARNs	BARNs
1	3214 + 0+00 - 0 9 0000 - 2	3.5640 + 0 3 0000 - 2		
1	3214 + 0+00 - 0 1 0000 - 2	3.5970 + 0 5 0000 - 2		
1	3214 + 6000 - 0 9 1000 - 2	3.5320 + 0 3 2000 - 2		

3-114

26-Fe-54 -1

07/04/76

Elastic
Cross Section

26-Fe-54

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71 3214	4.0400+ 0	9.0000- 2	2.4960+ 0	6.5000- 2	71 3214	5.6000+ 0	9.0000- 2	2.0910+ 0	5.5000- 2
71 3214	5.0600+ 0	7.0000- 2	2.2220+ 0	6.5000- 2	74 3589	7.0000+ 0	6.0000- 2	2.1074+ 0	1.5384- 1
74 3589	5.5000+ 0	9.0000- 2	2.3045+ 0	1.6592- 1	74 3589	8.5000+ 0	5.0000- 2	1.8317+ 0	1.3371- 1

07/04/76

Total
Cross Section

26-Fe-56

3-115

26-Fe-56 -1

07/04/76

Elastic
Cross Section

26-Fe-56

26-Fe-56 ENO 7130

07/04/76

Total
Cross Section

26-Fe-56

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 949	1.4400- 6		1.2700+ 1	2.0000- 1
71 3214	5.0500+ 0	9.0000- 2	3.6070+ 0	3.2000- 2

3-116

26-Fe-56 -2

07/04/76

Elastic

26-Fe-56

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71	3214	5.0500+ 0	9.0000- 2	2.1290+ 0
71	3214	5.5800+ 0	9.0000- 2	1.9160+ 0
				5.0000- 2

07/04/76

(n,γ)

26-Fe-56

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
5C	9	4.0000- 1	1.0000- 3	6.0010- 4

07/04/76

Total

26-Fe-57

Cross Section

07-04-76

26-Fe-57

Total
Cross Section

Barns

S-116

26-Fe-57 -2

07/04/76

(n, γ)

26-Fe-57

Cross Section

(h9) 866-71503

Barns

07/04/76

Total
Cross Section

26-Fe-57

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
52	221 2.8000- 3		6.7010+ 0 3.0000+ 0	

07/04/76

(n, γ)

26-Fe-58

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47	888 2.5300- B		3.6000- 1 7.2000- 2	
55	3675 2.5300- B		1.1800+ 0 3.0000- 2	

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC RELATIVE	DELTA MEV	X-SEC RELATIVE	DELTA MEV	E-PHOTON MEV
71	3416 2.5000- B		5.8000+ 1		5.1000+ 0		2.1580+ 0
71	3416 2.5000- B		1.8000+ 1		4.2000+ 0		4.1370+ 0
71	3416 2.5000- B		1.6000+ 0		4.2000+ 0		4.6180+ 0
71	3416 2.5000- B		7.3000+ 0		9.1000+ 0		4.6600+ 0
71	3416 2.5000- B		3.5000+ 0		2.5000+ 0		5.4200+ 0

3-119

26-Fe-58 -1

07/04/76

(n, γ)
Cross Section

26-Fe-58

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC RELATIVE	DELTA RELATIVE	E-PHOTON MEV
71 3416	2.5000- 8		1.6800+ 1		5.8540+ 0
71 3416	2.5000- 8		5.1000+ 1		6.2950+ 0
71 3416	2.5000- 8		2.3000+ 0		6.5820+ 0

07/04/76

Total
Cross SectionFe₂O₃

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 949	1.4400- 6		3.6500+ 1	3.0000- 1

07/04/76

Total
Cross Section

27-Co-59

07/04/76

27-Co-59

Total
Cross Section

Barns

3-121

27-Co-59 -2

07/04/76

Total
Cross Section

27-Co-59

Barns

3-122

MeV

27-Co-59 -3

07/04/76

Total
Cross Section

27-Co-59

Barns

3-123

Mev

27-Co-59 -4

07/04/76

Total
Cross Section

27-Co-59

Barns

3-124

MeV

27-Co-59 -5

07/04/76

27-Co-59

Total
Cross Section

Barns

Mev

3-125

27-Co-59 -6

07/04/76

Total
Cross Section

27-Co-59

1100 7135

Barns

3-126

MeV

27-Co-59 -7

07/04/76

Total
Cross Section

27-Co-59

3-127

MeV

27-Co-59 -8

07/04/76

27-Co-59

Total
Cross Section

MeV

27-Co-59 -9

3-128

Barns

07/04/76

27-Co-59

Total
Cross Section

Barns

3-129

MeV

27-Co-59 -10

07/04/76

Total
Cross Section

27-Co-59

1976-07-04

07/04/76

Elastic
Cross Section

27-Co-59

3-131

27-Co-59 -12

07/04/76

(n,γ)
Cross Section

27-Co-59

07/04/76

Total
Cross Section

27-Co-59

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49	844	1.1500- 4	1.1500- 5	9.3010+ 0	59	557	1.4000+ 1	2.7200+ 0	5.0000- 2
49	844	3.0000- 4	3.0000- 5	7.2310+ 0	52	811	1.4000+ 1	2.7200+ 0	5.0000- 2
67	1527	2.7000+ 0	3.0000- 2	3.0500+ 0	71	3815	1.4700+ 1	2.6600+ 0	6.0000- 2
59	559	3.6600+ 0	2.0000- 1	3.5900+ 0	60	673	1.7400+ 1	3.0000- 1	2.4500+ 0
67	1643	4.5000+ 0	5.0000- 2	3.6400+ 0	60	673	2.1400+ 1	2.0000- 1	2.3400+ 0

3-132

27-Co-59 -13

07/04/76

Total
Cross Section

27-Co-59

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
60	573 2.5300+ 1	3.0000- 1	2.3200+ 0	3.0000- 2
50	573 2.9000+ 1	3.0000- 1	2.4100+ 0	3.0000- 2

07/04/76

Elastic
Cross Section

27-Co-59

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
66	2339 5.3000- 1	5.0000- 2	4.7700+ 0	2.4000- 1	70	3170 5.0000+ 0	4.0000- 2	2.0190+ 0	1.4940- 1
66	2339 8.0000- 1	5.0000- 2	3.7300+ 0	2.6000- 1	70	3170 5.4400+ 0	1.7000- 1	2.1950+ 0	1.5950- 1
72	3546 8.9600- 1	2.0000- 1	3.3045+ 0		70	3170 6.4400+ 0	1.3000- 1	2.1710+ 0	1.5630- 1
54	103 1.0000+ 0	8.0000- 2	3.3000+ 0	4.9500- 1	70	3170 7.5500+ 0	4.0000- 2	2.0360+ 0	1.5060- 1
3394	1.5000+ 0		2.4380+ 0	1.6600- 1	70	3170 8.5600+ 0	8.0000- 2	2.0470+ 0	1.5150- 1
59	559 3.6600+ 0	2.3000- 1	1.9700+ 0	1.0000- 1	59	567 1.4000+ 1		1.2900+ 0	7.0000- 2
54	1843 4.0000+ 0	5.0000- 2	2.2000+ 0	1.5000- 1					

07/04/76

(n,γ)
Cross Section

27-Co-59

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
1 65	2575 2.5300- 8		3.8000+ 1		61	677 3.0000- 2	7.0010- 3	8.8010- 2	3.0000- 2
60	2565 2.5300- 8		3.8000+ 1	5.0000- 1	63	1 6.5000- 2	2.1000- 2	1.8000- 2	1.6000- 3
47	888 2.5300- 8		2.2360+ 1	4.4720+ 0	67	3786 1.7800+ 0	2.0000- 1	3.8000- 3	6.0000- 4
67	3674 2.5300- 8		3.7700+ 1	4.0000- 1	67	3786 2.2000+ 0	9.0000- 2	3.6000- 3	4.0000- 4
53	222 2.5000- 2	5.0000- 3	7.7010- 3	2.3000- 3	67	3786 6.2100+ 0	8.0000- 2	2.1000- 3	2.0000- 4
63	1 3.0000- 2	8.0010- 3	8.6010- 2	3.1000- 2	67	3786 1.4000+ 1	1.2000- 1	2.2000- 3	2.0000- 4

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	HALF-LIFE MINUTES	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	HALF-LIFE MINUTES
67	3786 1.7900+ 0	2.0000- 1	1.9600- 3	2.0000- 4	1.0350+ 1	67	3786 1.4000+ 1	1.2000- 1	6.5000- 4	1.3000- 4	1.0350+ 1
67	3786 2.2000+ 0	9.0000- 2	1.6600- 3	1.7000- 4	1.0350+ 1	51	2568 2.5300- 8		1.9400+ 1		1.0700+ 1
67	3786 6.2100+ 0	8.0000- 2	7.9000- 4	8.0000- 5	1.0350+ 1						

3-133

27-Co-59 -14

07/04/76

(n, γ)

27-Co-59

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs	YEARS
51 2588	2.5300-8		2.1600+1		5.2000+0
51 2567	2.5300-8		3.4200+1	1.4000+0	5.2600+0
68 2479	2.5300-8		3.7090+1	2.7600-1	5.2610+0

07/04/76

Total

28-Ni-Nat

Cross Section

Barns

EC51L-873 (54)

3-134

MeV

28-Ni-Nat -1

07/04/76

Total
Cross Section

28-Ni-Nat

07/04/76

28-Ni-Nat

Total
Cross Section

28-Ni-Nat -3

3-136

Barns

07/04/76

28-Ni-Nat

Total
Cross Section

ECSIL-3945 (73)

ECSIL-1062 (66)

ECSIL-4017 (66)

Barns

Mev

28-Ni-Nat -4

3-137

07/04/76

Total

28-Ni-Nat

Cross Section

MeV

28-Ni-Nat -5

3-138

Barns

07/04/76

Total
Cross Section

28-Ni-Nat

3-139

MeV

28-Ni-Nat -6

07/04/76

Total
Cross Section

28-Ni-Nat

Barns

3-140

MeV

28-Ni-Nat -7

07/04/76

Total
Cross Section

28-Ni-Nat

2

(Expanded Below)

ECSIL-3539 (73)

5 6 7 8 9 10⁰ 2 3 4 5 6 7 8 9 10⁰

ECSIL-3539 (73)

Mev

3-141

28-Ni-Nat

Barns

07-C-76

28-Ni-Nat

Total
Cross Section

FC511-3539 (74)

EC511-3539 (73)

3-142

MeV

28-Ni-Nat -9

Barns

07/04/76

28-Ni-Nat

Total
Cross Section

Mev

3-143

28-Ni-Nat -10

Barns

07.04/76

28-Ni-Nat

Total
Cross Section

ECSIL-2517 (68)

ECSIL-2517 (68)

Barns

MeV

3-144

28-Ni-Nat -11

07/04/76

Total
Cross Section

28-Ni-Nat
END-0136

Barns

3-145

MeV

28-Ni-Nat -12

07/04/76

Total

28-Ni-Nat

Cross Section

0001 7135

MeV

3-146

28-Ni-Nat -13

Baras

07/04/76

Total
Cross Section

28-Ni-Nat

Barns

3-147

MeV

28-Ni-Nat -14

07/04/76

28-Ni-Nat

Total
Cross Section

ECS1L-3264 (71)

07/04/76

Elastic
Cross Section

28-Ni-Nat

Barns

MeV

28-Ni-Nat -16

3-149

07/04/76

Elastic
Cross Section

28-Ni-Nat

Barns

07/04/76

(n, γ)
Cross Section

28-Ni-Nat

Barns

3-150

28-Ni-Nat -17

07/04/76

(n,y)
Cross Section

28-Ni-NaI

(Expanded Below)
ECSIL-2552 (68)

ECSIL-2552 (68)

ECSIL-2552 (68)

3-151

MeV

28-Ni-NaI -18

Barns

07/04 76

28-Ni-Nat

(n, γ)
Cross Section

0.01 0.015 0.02 0.025

3 4 5 6 7 8 9 10^1

8 9 10^2 2 3 4 5 6 7 8 9 10^1

MeV

3-152

28-Ni-Nat -19

Barns

07.04.76

28-Ni-Nat

Cross Section
(N.Y.)

28-Ni-Nat -20

07/04/76

Total

28-Ni-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 362	3.300-6		2.0340-1	57 20	1.2300-1	9.0010-2	2.9500-2	0.3.0000-2
70 362	7.500-8		1.9460-1	52 20	1.4000-1		2.5000-0	0.1.0000-1
70 362	1.1500-7		1.8660-1	52 81	1.4000-1		2.6700-0	0.5.0000-2
70 362	2.7000-7		1.9250-1	57 20	1.4480-1	7.0010-2	2.7600-0	0.3.0000-2
65 949	1.4400-6		1.7430-1	71 815	1.7500-1		2.7600-0	0.6.0000-2
49 844	1.1500-4	1.1500-5	1.16900-1	50 673	1.7500-1	3.0000-1	1.2.4400-0	0.2.0000-2
49 844	3.0000-4	3.0000-5	1.5600-1	50 673	1.8400-1	3.0000-1	1.2.4000-0	0.3.0000-2
47 46	1.3000-2	2.0000-2	6.4010-0	50 673	2.1400-1	3.0000-1	1.2.3100-0	0.3.0000-2
55 559	3.6600-2	2.0000-2	3.3300-0	50 673	2.5100-1	3.0000-1	1.2.3100-0	0.2.0000-2
57 22	7.0500-0	0.1700-1	3.6900-0	60 673	2.8600-1	3.0000-1	1.2.3700-0	0.3.0000-2
57 22	8.7000-0	0.6200-1	3.4300-0	50 281	4.2000-1	1.0000-0	0.2.5100-0	0.3.4000-2
57 22	1.6220-1	1.1000-1	3.2700-0					

07/04/76

Elastic

28-Ni-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 1639	3.300-6	2.5000-2	4.1800-0	70 289	2.5200-0	0.5.0000-2	2.4900-0	0.2.5000-1
64 886	6.0000-1	6.0000-2	3.5700-0	70 289	7.6200-0	0.5.0000-2	2.3600-0	0.2.5000-1
63 1750	6.4000-1		3.5700-0	43 549	3.6600-0	0.2.0000-1	1.8200-0	0.1.0000-1
62 3946	8.7000-0	4.2200-2	3.1500-0	74 3460	3.4000-0	0.7.0000-2	0.1.4982-1	
62 3946	7.5400-0	2.0000-1	3.1551-0	74 3460	6.4400-0	0.6.0000-2	1.8977-0	0.1.3684-1
67 901	9.0000-1	4.0000-2	3.2700-0	74 3460	5.4000-0	0.7.0000-2	2.1.0099-0	0.1.5337-1
54 123	1.0000-1	2.0000-2	2.9700-0	74 3460	8.5600-0	0.5.0000-2	1.8970-0	0.1.3779-1
67 3694	1.5000-2	2.0000-2	2.7650-0	63 947	1.4000-1		1.2300-0	0.1.0000-1
67 3694	1.7000-2	2.0000-2	2.7650-0	67 2341	1.4100-1	9.0000-1	1.2000-0	0.1.1000-1
65 949	1.4400-6	0.4200-1	3.4300-0	74 3536	1.4600-1		1.0900-0	0.1.1000-1
67 3694	2.0000-2	2.0000-2	2.7650-0					
67 3694	2.0000-2	2.0000-2	2.7650-0					

07/04/76

28-Ni-Nat -21

07/04/76

(n, γ)

28-Ni-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 3627	2.5300- 8		4.2700+ 0 1.6000- 1		53	1 3.0000- 2 8.3010- 3		1.6000- 2 5.0000- 3	
70 3627	3.3000- 8		3.8200+ 0 1.0000- 1		61	6.77 6.5000- 2 2.1000- 2		6.5010- 3 2.0000- 3	
70 3627	7.5000- 8		2.6800+ 0 8.0000- 2		63	1 6.5000- 2 2.1000- 2		6.5010- 3 3.0000- 3	
70 3627	1.1500- 7		2.1500+ 0 7.0000- 2		67	1807 1.2500- 1 2.3000- 2		1.4100- 2 1.5000- 3	
70 3627	2.7000- 7		1.5100+ 0 6.0000- 2		67	1807 1.5000- 1 2.1000- 2		2.9200- 2 3.0000- 3	
61 677	3.0000- 2 7.0010- 3		1.6000- 2 4.0000- 3		67	1807 1.8200- 1 2.1000- 2		1.2600- 2 2.6000- 3	

07/04/76

Total

28-Ni-58

Cross Section

(Expanded Below)

3-155

Mev

28-Ni-58 -1

Barns

07/04/76

28-Ni-58

Total
Cross Section

28-Ni-58 -2

Baras

07/04/76

Total

28-Ni-58

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	N-SEC BARNs	DELTA MEV	N-SEC BARNs	DELTA BARNs
65/949	1.44000-6	2.42000-6	0.00000-1	2.42000-6	0.00000-1	0.00000-1
67/1527	2.70000-2	3.00000-2	0.00000-1	3.00000-2	0.00000-1	0.00000-1
71/3214	5.05000-2	5.00000-2	3.59400-2	3.59400-2	0.00000-2	0.00000-2

07/04/76

Elastic

28-Ni-58

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	N-SEC BARNs	DELTA BARNs
71/3214	5.05000-2	0.9.00000-2	2.04900-2	0.5.00000-2
71/3214	5.58000-2	0.9.00000-2	2.01500-2	0.5.00000-2

07/04/76

Total

28-Ni-60

Cross Section

3-157

Nev

28-Ni-60

05-11-60

Total
Cross Section

05-11-60

Barnes

Max

05-11-60 -2

07/04/76

28-Ni-5C

Total
Cross Section

(Expanded (flow))
EC51L-3158 (71)

EC51L-3158 (71)

EC51L-3158 (71)

4-159

MeV

4-159-7

5-159

07/04/76

Total
Cross Section

28-Ni-60

07/04/76

Total
Cross Section

28-Ni-60

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71	3214	5.0500+ 0	9.0000- 2	3.7990+ 0
71	3214	5.5800+ 0	9.0000- 2	3.6650+ 0
67	1869	1.4200+ 1		2.7440+ 0

07/04/76

Elastic
Cross Section

28-Ni-60

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
74 3460	4.3400+ 0	7.0000- 2	2.1757+ 0	1.5665- 1	70 3172	6.4400+ 0	7.0000- 2	2.0980+ 0	1.5100- 1
74 3460	4.9200+ 0	6.0000- 2	1.9795+ 0	1.4253- 1	70 3172	7.5400+ 0	8.0000- 2	1.9570+ 0	1.4280- 1
71 3214	5.0500+ 0	9.0000- 2	2.1620+ 0	5.5000- 2	70 3172	8.5600+ 0	5.0000- 2	1.9370+ 0	1.4330- 1
71 3214	5.5800+ 0	9.0000- 2	2.0430+ 0	5.5000- 2					

3-160

28-Ni-60 -4

07/04/76

28-NI-61

Total
Cross Section

(Expanded Below)
ECS1L-3658 (70)

ECS1L-3658 (70)

ECS1L-3658 (70)

3-161

Mev

28-NI-61 -1

Betas

07/04/76

Total
Cross Section

28-Ni-62

ECSIL-266 (53)

ECSIL-751 (66)

(Expanded Below)
ECSIL-751 (63)

Barns

07/04/76

Total
Cross Section

28-Ni-62

Barns

07/04/76

Total
Cross Section

28-Ni-62

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1643	4.0000+ 0	5.0000- 2	3.5500+ 0	1.0000- 1
67 1869	1.4200+ 1		2.7960+ 0	1.0000- 2

3-163

28-Ni-62 -2

07/04/76

Elastic

28-Ni-62

Cross Section

REFERENCE	ENERGY	DELTA	X-SEC	DELTA
	MEV	MEV	BARNs	BARNs
64-16-3	4.0000-0	5.0000-2	2.0500-0	1.4000-1

07/04/76

Total

28-Ni-64

Cross Section

(Expanded Below)

ECSIL-751 (63)

ECSIL-751 (63)

Barns

07/04/76

28-Ni-64

Total
Cross Section

07/04/76

28-Ni-64

(n,γ)
Cross Section

7-185

28 Ni-64 -2

07/04/76

Total
Cross Section

28-Ni-64

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200+ 1		2.8340+ 0 1.0000 2	

07/04/76

(n,y)
Cross Section

28-Ni-64

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300 8		1.9600+ 0 3.9200- 1		58 363	2.0000- 1 1.5300- 2		4.3500- 2 4.1000- 3	
57 23	2.1000- 2 4.0000		3.8.5210- 3 2.3000- 3		58 363	4.0000+ 0		2.6000- 3 1.3000- 3	

07/04/76

(n,y)
Cross Section

28-Ni-65

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 977	2.5300- 8		2.0000+ 1 2.0000+ 0	

07/04/76

Total
Cross Section

29-Cu-Nat

3-186

29-Cu-Nat -1

07/04/76

Total
Cross Section

29-Cu-Nat

ECSIL-1987 (55)

(Expanded Below)
ECSIL-814 (65)

3-167

29-Cu-Nat -2

Barns

07/04/76

Total
Cross Section

29-Cu-Nat

3-168

29-Cu-Nat -3

07/04/76

Total
Cross Section

29-Cu-Nat

ECSIL-814 (65)

ECSIL-814 (65)

ECSIL-814 (65)

3-169

MeV

29-Cu-Nat -4

Barns

07/04/76

Total
Cross Section

29-Cu-Nat

07/04/76

Total
Cross Section

29-Cu-Nat

Barns

29-Cu-Nat -6

3-171

07/04/76

Total
Cross Section

29-Cu-Nat

3-172

MeV

29-Cu-Nat -7

07/04/76

29-Cu-Nat

Total
Cross Section

Barns

MeV

29-Cu-Nat -8

3-173

07/04/76

29-Cu-Nat

11/17/78

Total
Cross Section

3-174

Mev

29-Cu-Nat -9

07/04/76

Total
Cross Section

29-Cu-Nat

ENDL-7138

Barns

3-175

MeV

29-Cu-Nat -10

07/04/76

29-Cu-Nat

Total
Cross Section

Barns

MeV

3-176

29-Cu-Nat -11

07/04/76

Total
Cross Section

29-Cu-Nat

ENCL 7136

3-177

Mev

29-Cu-Nat -12

07/04/76

29-Cu-Nat

Total
Cross Section

3-178

29-Cu-Nat -13

07/04/76

Total
Cross Section

29-Cu-Nat

ECSIL-2057 (55)

ECSIL-2057 (55)

ECSIL-2057 (55)

2 5.5 6.5 7.5 8.5 9.5 10.5

3-179

29-Cu-Nat -14

B4413

07/04/76

29-Cu-Nat

Total
Cross Section

Barns

29-Cu-Nat -15

07/04/76

Elastic Cross Section

29-Cu-Nat

07/04/76

(n, γ)

²⁹Cu-NaI

Cross Section

Barns

3-182

MeV

²⁹Cu-NaI -17

07/04/76

(n,γ)

29-Cu-Nat

Cross Section

Barns

07/04.76

Total

29-Cu-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 3627	3.3000- 8		1.0880+ 1		45 307	2.5400+ 1		2.5000+ 0	2.5000- 1
70 3627	7.5000- 8		9.5600+ 0		50 281	4.2000+ 1	1.0000+ 0	2.5400+ 0	1.9000- 2
70 3627	1.1500- 7		9.2600+ 0		54 343	4.7500+ 1	2.0000+ 0	2.8100+ 0	7.0010- 2
70 3627	2.7000- 7		8.8200+ 0		54 343	8.8000+ 1	2.0000+ 0	2.2650+ 0	3.5000- 2
65 949	1.4400- 6		8.2100+ 0	3.0000- 2	49 286	9.0000+ 1		2.2200+ 0	4.0000- 2
49 844	1.1500- 4	1.1500- 5	6.6810+ 0		50 12	9.5000+ 1		2.0000+ 0	2.0000- 2
49 844	3.0000- 4	3.0000- 5	6.3810+ 0		50 12	9.5000+ 1		2.0000+ 0	3.0000- 2
47 46	8.3000- 1	4.0000- 2	3.8000+ 0	2.0000- 1	55 2056	1.4000+ 3	2.0000+ 2	1.3900+ 0	
41 170	9.0000- 1		2.7800+ 0	1.5000- 1	70 3195	3.8000+ 3		1.3310+ 0	1.7000- 2
55 559	3.6600+ 0	2.0000- 1	3.3800+ 0	1.5000- 1	61 1566	5.0000+ 3	4.0000+ 2	1.1580+ 0	3.4000- 2
69 2025	8.9400+ 0	5.0000- 1	3.6700+ 0	8.0000- 2	69 3160	5.7000+ 3	6.0000+ 2	1.4100+ 0	3.0000- 2
62 1740	1.4000+ 1		2.9800+ 0	3.0000- 2	62 1657	8.3000+ 3		1.2170+ 0	4.8000- 2
52 207	1.4000+ 1		2.5000+ 0	1.0000- 1	71 3180	1.2000+ 4	3.0000+ 3	1.3050+ 0	9.0000- 3
52 81	1.4000+ 1		2.9600+ 0	6.0010- 2	71 3180	1.3000+ 4	4.0000+ 3	1.2950+ 0	8.0000- 3
71 3815	1.4700+ 1		2.9300+ 0	3.0000- 2	71 3180	1.8000+ 4	6.0000+ 3	1.2650+ 0	8.0000- 3
69 2988	1.4800+ 1		2.9500+ 0	1.4250- 1	71 3180	2.6500+ 4	3.5000+ 3	1.2510+ 0	1.9000- 2
57 368	1.4800+ 1		2.8600+ 0	7.0010- 2	68 2350	2.7000+ 4		1.0900+ 0	3.0000- 2
53 274	1.9000+ 1	3.3000- 1	2.5600+ 0	7.7010- 2					

07/04/76

Total
Cross Section

29-Cu-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	TEMP KELVIN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	TEMP KELVIN
66 2052	3.4800-10		3.4230+ 1	1.0269+ 0	3.0000+ 2	66 2052	9.5800-10		2.0210+ 1	3.0315- 1	3.0000+ 2
66 2052	4.9700-10		2.7950+ 1	8.3880- 1	3.0000+ 2	66 2052	1.6180- 9		1.5680+ 1	2.3520- 1	3.0000+ 2
66 2052	6.6300-10		2.4230+ 1	7.2690- 1	3.0000+ 2						

07/04/76

Elastic
Cross Section

29-Cu-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
64 865	5.0000- 1	5.0000- 2	4.2200+ 0	1.2000- 1	65 1509	2.0000+ 0	5.0000- 2	2.1000+ 0	
64 865	8.0000- 1	5.0000- 2	3.6200+ 0	1.0000- 1	57 416	2.9000+ 0	1.0000- 1	1.8800+ 0	1.0000- 1
72 3546	8.7680- 1	2.0000- 1	2.8624+ 0		59 559	3.6600+ 0	2.0000- 1	1.8100+ 0	1.0000- 1
54 103	1.0000+ 0	8.0000- 2	2.9000+ 0	4.3500- 1	58 403	1.4500+ 1		1.4500+ 0	7.0010- 2
67 3394	1.5000+ 0		1.9730+ 0	8.2000- 2					

07/04/76

(n,γ)
Cross Section

29-Cu-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
70 3627	2.5300- 8		3.0800+ 0	1.5000- 1	61 677	3.0000- 2	7.0010- 3	3.9000- 2	7.0010- 3
70 3627	3.3000- 8		3.2500+ 0	1.0000- 1	63	3.0000- 2	8.0010- 3	3.9000- 2	8.0010- 3
70 3627	7.5000- 8		2.3300+ 0	5.0000- 2	61 677	6.5000- 2	2.0000- 2	2.5000- 2	5.0000- 3
70 3627	1.1500- 7		1.8200+ 0	5.0000- 2	63	1.6.5000- 2	2.1000- 2	2.5000- 2	6.0010- 3
70 3627	2.7000- 7		1.2500+ 0	5.0000- 2	58 363	2.0000- 1		5.1000- 2	1.1000- 2
60 639	2.4000- 2	2.0000- 3	4.2000- 2	1.5000- 2	70 2232	1.4100+ 1	1.7500- 1	7.7000- 4	1.1000- 4

3-184

29-Cu-Nat -18

07/04/76

Neutrons/Nonelastic Event

29-Cu-Nat

REFERENCE	ENERGY MEV	DELTA MEV	RATIO	DELTA
59 877	$1.4000 \pm .1$		$1.3400 \pm 0.15000 - .1$	

07/04/76

Total
Cross Section

29-Cu-63

3-185

29-Cu-63 -1

07/04/76

Total
Cross Section

29-Cu-63

07/04/76

(n, γ)
Cross Section

29-Cu-63

3-186

29-Cu-63 -2

07/04/76

(n, γ)

29-Cu-63

Cross Section

Barns

Mev

07/04/76

Total

29-Cu-63

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 4035	1.4200 ± 1		2.9050 ± 0.3	1000 ± 2

3-187

29-Cu-63 -3

07/04/76

Elastic
Cross Section

29-Cu-63

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
75 3831	5.5000+ 0	9.0000- 2	2.1253+ 0	7.3000- 3
75 3831	7.0000+ 0	6.0000- 2	2.2122+ 0	7.3000- 3
75 3831	3.5000+ 0	5.0000- 2	2.0210+ 0	7.3000- 3

07/04/76

(n,γ)
Cross Section

29-Cu-63

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 3677	2.5300- 8		4.0300+ 0	1.7000- 1	57 305	2.4000- 2	5.0000- 3	1.1600- 1	1.2000- 2
47 888	2.5300- 8		2.8200+ 0	5.6400- 1	59 526	1.9500- 1	1.5000- 2	4.2000- 2	6.0010- 3
58 357	2.1000- 2		1.0500- 1	9.4010- 3	68 2345	3.0000+ 0	2.0000- 1	6.7000- 3	1.4000- 3
57 23	2.1000- 2	4.0000- 3	1.1100- 1	2.4000- 2	57 521	1.4500+ 1		2.5600- 3	3.8400- 4

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
68 2858	2.4000- 2	1.3000+ 1	1.1000- 1	1.0000- 2	1.3000+ 1

07/04/76

Total
Cross Section

29-Cu-65

07/04/76

29-Cu-65

Total
Cross Section

Bars

F31-2

Mev

29-Cu-65 -2

070415

(n, γ)

29-Cu-65

Cross Section

ECSIL-2064 (54)

ECSIL-715 (61)

ECSIL-663 (59)

3-190

Mev

29-Cu-65 -3

Barns

07/04/76

(n,γ)

29-Cu-65

Cross Section

07/04/76

Total

29-Cu-65

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 4036	1.4200+ 1		2.9640+ 0	2.9000- 2

07/04/76

Elastic

29-Cu-65

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
74 3831	5.5000+ 0	9.0000- 2	2.2941+ 0	1.6518- 1
74 3831	7.0000+ 0	6.0000- 2	2.3807+ 0	1.7379- 1
74 3831	8.5000+ 0	5.0000- 2	2.1144+ 0	1.5435- 1

07/04/76

Total
Cross Section

50-Zn-Na1

ECSIL-903 (58)

(Expanded Below)

ECSIL-814 (65)

ECSIL-814 (65)

3-192

50-Zn-Na1 -2

Barns

07/04/76

30-Zn-Nat

Total
Cross Section

3-194

Mev

30-Zn-Nat -3

Barns

07/04/76

30-Zn-Nat

Total
Cross Section

Barns

3-195

30-Zn-Nat

Mev

07/04/76

Total
Cross Section

30-Zn-Nat

MeV

3-1966

30-Zn-Nat -5

Barns

07/04/76

30-Zn-Nat

Total
Cross Section

Barns

MeV

3-197

30-Zn-Nat -E

Mev

07/04/76

30-Zn-Nat

Total
Cross Section

Barns

MeV

5-199

30-Zn-Nat 8

07/04/76

Total
Cross Section

30-Zn-Nat

Barns

3-200

30-Zn-Nat -9

07/04/76

30-Zn-Nat

Elastic
Cross Section

3-201

MeV

30-Zn-Nat -10

Barns

07/04/76

(n,γ)

30-Zr-Nat

Cross Section

07/04/76

Total

30-Zr-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	
49 844 1.1500	4	1.1500	5 3.9100	0	52 207 1.4000	1	3.0000	0 2.0000	- 1	
49 844 3.0000	4	3.0000	5 3.7400	0	52 81 1.4000	1	3.0600	0 6.0010	- 2	
47 46 2.2000	1	2.0000	2 5.1010	0 3.0000	- 1	57 22 1.4070	1	7.0010	2 3.1100	0 3.0000
47 46 6.2000	1	7.0010	2 4.7000	0 2.0000	- 1	71 3815 1.4700	1	2.9100	0 3.0000	- 2
47 46 8.3000	1	4.2000	2 4.3000	0 2.0000	- 1	60 673 1.7500	1	3.0000	1 2.7500	0 3.0000
59 559 3.6600	0	2.2000	1 3.5900	0 1.7000	- 1	60 673 2.1400	1	2.0000	1 2.5800	0 3.0000
55 296 4.1000	0	4.0000	2 3.7000	0 2.0000	- 1	60 673 2.5100	1	3.0000	1 2.4900	0 3.0000
57 22 7.0500	0	1.7000	1 3.9100	0 3.0000	- 2	61 233 2.8400	1	2.5500	0 5.0000	- 2
57 22 8.5400	0	1.7000	1 3.7800	0 4.0000	- 2	60 673 2.8600	1	3.0000	1 2.5200	0 3.0000
57 22 1.0460	1	1.1000	1 3.5800	0 3.0000	- 2	50 281 4.2000	1	1.0000	0 2.6100	0 2.7000
57 22 1.2630	1	9.0010	2 3.2700	0 3.0000	- 2	49 286 9.0000	1	2.2100	0 4.0000	- 2

3-202

30-Zr-Nat -11

07/04/76

Elastic
Cross Section

30-Zn-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 1699	3.0000- 1	2.5000- 2	5.7200- 0	1.0000- 1	72 3546	8.7500- 1	2.0000- 1	3.4025- 0	
64 870	5.0000- 1	5.0000- 2	4.4100- 0	1.5000- 1	54 103	1.0000- 0	8.0000- 2	3.3000- 0	4.9500- 1
63 1750	6.5000- 1		4.4300- 0	1.3000- 1	65 1509	2.0000- 0	5.0000- 2	2.6000- 0	
64 870	8.0000- 1	5.0000- 2	4.0500- 0	1.2000- 1	59 559	3.6600- 0	2.0000- 1	1.7500- 0	1.0000- 1

07/04/76

(n,y)
Cross Section

30-Zn-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 639	2.4000- 2	2.0000- 3	6.4010- 2	2.0000- 2	61 677	6.5000- 2	2.0000- 2	2.0000- 2	5.0000- 3
63 1	3.0000- 2	8.0010- 3	3.1000- 2	7.0010- 3	63 1	6.5000- 2	2.1000- 2	2.0000- 2	6.0010- 3
61 677	3.0000- 2	7.0010- 3	3.1000- 2	6.0010- 3	58 363	2.0000- 1		2.9000- 2	9.0000- 3

07/04/76

Total
Cross Section

30-Zn-64

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200- 1		2.9650- 0	1.0000- 2

07/04/76

(n,y)
Cross Section

30-Zn-64

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		5.1000- 1	1.0200- 1

3-203

30-Zn-64 1

07/04/76

Total
Cross Section

30-Zn-66

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200+ 1		3.0110+ 0	1.0000- 2

07/04/76

Total
Cross Section

30-Zn-67

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200+ 1		2.9900+ 0	3.0000- 2

07/04/76

Total
Cross Section

30-Zn-68

(Expanded Below)
ECSIL-751 (63)

3-204

30-Zn-68 -1

07/04/76

Total
Cross Section

30-Zn-68

07/04/76

Total
Cross Section

30-Zn-68

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DETA BARNs
67 1869	1.4200 ± 1		3.0510 ± 0	1.0000 ± 2

3-205

30-Zn-68 -2

07/04/76

(n,y)
Cross Section

30-Zn-68

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		1.4000+ 0	2.8000- 1
58 43	2.1000- 2	4.0000- 3	2.3400- 1	2.8000- 3
58 363	2.0000- 1	1.5000- 2	3.5000- 2	4.5000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs MINUTES
66 1788	2.4000- 2		2.2000- 2	3.0000- 3 5.2000+ 1
57 23	2.1000- 2	4.0000- 3	2.5000- 2	1.0000- 2 5.2010+ 1
68 3375	2.9000+ 0	2.0000- 1	2.6000- 3	4.0000- 4 5.5000+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs HOURS
57 23	2.1000- 2	4.0000- 3	5.5010- 3	2.0000- 3 1.3800+ 1
66 1788	2.4000- 2		5.0000- 3	1.0000- 3 1.3800+ 1

07/04/76

Total
Cross Section

30-Zn-70

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200+ 1		3.1160+ 0	1.8000- 2

3-206

30-Zn-70 -1

07/04/76

Total
Cross Section

³¹Ga-Nat
ENDL-7140

4-1

MeV

³¹Ga-Nat -1

07/04/76

Total
Cross Section

³¹Ga-Nat
ENCL-7140

Barns

³¹Ga-Nat -2

4-2

07/04/76

31-Ga-Nat

(n, γ)

Cross Section

4-3

31-Ga-Nat -3

Barns

07/04/76

Total
Cross Section

31-Ga-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs		
53	100	1.0000-3	1.0000-3	8.0010+0	5.0000-1	57	22	1.4500+1	7.0010-2	3.1800+0	3.0000-2
53	100	1.0000-1	1.0000-3	6.0010+0	5.0000-1	71	3815	1.4700+1		3.0500+0	3.0000-2
67	1527	2.7000+0	3.0000-2	3.0000+0	1.0000-1	60	673	1.7600+1	3.0000-1	2.8700+0	5.0000-2
57	22	8.6800+0	1.5000-1	3.6900+0	4.0000-2	60	673	2.1400+1	2.0000-1	2.6500+0	3.0000-2
57	22	1.1170+1	1.1000-1	3.6400+0	3.0000-2	60	673	2.5300+1	3.0000-1	2.5600+0	4.0000-2
52	81	1.4000+1		3.1900+0	6.0010-2	60	673	2.8600+1	3.0000-1	2.5600+0	4.0000-2

07/04/76

(n,γ)
Cross Section

31-Ga-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63	1 3.0000- 2	8.0010- 3	1.0300- 1	9.3010- 3
63	1 6.5000- 2	2.1000- 2	5.6010- 2	5.0000- 3

07/04/76

(n,γ)
Cross Section

31-Ga-69

07/04/76

(n,γ)

31-Ga-69

Cross Section

31-Ga-69 ENEL-7146

07/04/76

(n,γ)

31-Ga-69

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47	888	2.5300- 8			67	1991	3.0000+ 0	2.0000- 1	1.6900- 2
58	43	2.1000- 2	4.0000- 3	1.4700- 1	1.2000- 3	58	1044	3.1000+ 0	1.2300- 2
66	1788	2.4000- 2		5.0000- 2	5.0000- 3	58	1044	4.0000+ 0	1.2000- 2
58	1044	2.5000+ 0		1.3000- 2	1.5000- 3				1.3000- 3

4-5

31-Ga-69 -2

07/04/76

(n, γ)

31-Ga-71

Cross Section

07/04/76

(n,γ)
Cross Section

31-Ga-71

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs		
57	365	2.4000- 2	5.0000- 3	6.8010- 2	1.3000- 2	67	1991	3.0000- 3	2.0000- 1	4.3000- 3	1.0000- 3
59	526	2.5000- 2	5.0000- 3	1.4000- 1	3.0000- 2	57	521	1.4500- 1	1.9000- 3	1.9000- 4	
59	526	1.9500- 1	1.5000- 2	5.3010- 2	3.0000- 3						

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
47 888	2.5300- 8		3.3600- 0	6.7200- 1	1.4100- 1
66 1788	2.4000- 2		7.5000- 2	1.0000- 2	1.4200- 1
70 4008	1.4800- 1	8.0000- 2	1.2900- 3	1.9350- 4	1.4300- 1

07/04/76

Total
Cross Section

32-Ge-Nat

07/04/76.

32-Ge-Nat

Total
Cross Section

32-Ge-Nat -2

Mev

4-B

Barns

07/04/76

32-Ge-Nat

Total
Cross Section

4-9

Mev

32-Ge-Nat - 3

Baron

07/04/76

Total
Cross Section

32-Ge-NaI

Barns

07/04/76

Elastic
Cross Section

32-Ge-NaI

Barns

07/04/76

Total
Cross Section

32-Ge-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	
55	637	3.6600	0 2 0010	1 3.6700	0 1 8000	70	3300	1.4500	1 1.4700	0 1 2000
57	62	1.9500	0 1 7000	1 4.0100	0 4 0000	71	3815	1.4700	1 3.1200	0 5 0000
57	62	8.9400	0 1 5000	1 3.9600	0 4 0000	61	677	6.5000	2 3 0000	2 3 0000
57	62	1.0450	1 1 1000	1 3 9100	0 7 0000	61	677	1.1400	1 2 0000	2 3 0000
57	62	1.2430	1 5 0010	2 5.4800	0 4 0000	61	677	2.5100	1 3 0000	2 3 0000
57	62	1.4070	1 7 0010	2 3 3400	0 3 0000	60	673	2 8900	1 3 0000	1 2 6100

07/04/76

Elastic
Cross Section

32-Ge-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72	3546	8.7040	1 2.0000	1 4.2315
62	637	3.6600	0 2.0000	1 1.7000
69	2850	7.5500	0 1.3000	1 2.5000

07/04/76

(n,γ)
Cross Section

32-Ge-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63	1 3.0000	2 8 0010	3 7.4010	2 6.7010
61	677	6.5000	2 2.0000	2 3.9000
63	1 6.5000	2 2.1000	2 3.9000	2 7.0010

07 04/76

(n,γ)

32-Ge-74

Cross Section

07/04/76

(n,γ)

32-Ge-74

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 3969	2.5000- 2	5.0000- 3	2.4800- 2	2.0000- 3	59 526	1.9500- 1	1.5000- 2	1.9000- 2	2.0000- 3
70 3969	2.5000- 2	5.0000- 3	6.4800- 2	5.0000- 3	67 1991	3.0000- 0	2.0000- 1	5.6000- 3	1.3000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
68 2345	3.0000- 0	2.0000- 1	8.1000- 4	1.4000- 4	4.9000- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
66 1768	2.4000- 2	5.0000- 3	2.0000- 2	5.0000- 3	7.9000- 1	58 1044	4.0000- 0	6.0000- 3	5.0000- 4	8.2000- 1	
58 1044	2.5000- 0	1.0000- 2	7.0000- 4	6.2000- 4	6.2000- 1	57 305	2.4000- 2	5.0000- 3	5.4010- 2	8.0010- 3	8.2010- 1
57 305	2.4000- 2	5.0000- 3	3.5000- 4	8.2000- 4	8.2000- 1	47 898	2.5300- 0	3.8000- 1	7.6000- 2	8.9000- 1	
57 305	2.4000- 2	5.0000- 3	1.5000- 3	6.0000- 4	8.2000- 1						

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	SPIN
70 3969	2.5000- 2	5.0000- 3	2.4800- 2	2.0000- 3	5.0000- 1
70 3969	2.5000- 2	5.0000- 3	6.4800- 2	5.0000- 3	3.5000- 0

4-12

32-Ge-74 -1

07/04/76

(n, γ)

32-Ge-76

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE	
				SECONDS	HOURS
66 1788	2.4000 - 2		6.5000 - 2	2 5.7000* 1	
68 2392	2.4000 - 2		4.5000 - 2	1.2000 - 2	5.9000* 1
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE	
				SECONDS	HOURS
47 2698	2.5300 - 8		66 1788	2.4000 - 2	8.0000 - 3
68 2392	2.4000 - 2		47 888	2.5300 - 8	8.5000 - 2
				1.5000 - 2	1.2000* 1

07/04/76

Total

33-As-75

Cross Section

Barns

33-As-75 -1

4-13

07-04-75

33-A5-75

Total
Cross Section

MeV

4-14

33-A5-75-2

Barns

07/04/76

Total
Cross Section

33-As-75

07/04/76

33-As-75

Total
Cross Section

2 2.5 3 3.5
MeV

4-16

33-As-75 -4

Bars

07/04/76

33-As-75

Total
Cross Section

4-17

Mev

33-As-75 -5

Barns

07/04/76

Total
Cross Section

33-As-75

07/04/76

(n,γ)

33-As-75

Cross Section

Barns

07/04/76

Total

33-As-75

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	REFERENCE	ENERGY MEV	DELTA MEV	N-SEC BARNs	DELTA BARNs
60	1716	2.5300	0	52	332	1.4000	3.7600	0.8.0010- 2
49	844	1.1500	4	61	233	2.8400	2.6500	0.1.1000- 1
49	844	3.0000	4					

4-19

33-As-75 -7

07/04/76

Elastic
Cross Section

33-As-75

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69	3660 8.0500+ 0	9.0000- 2	2.3700+ 0	1.1000- 1

07/04/76

(n,γ)
Cross Section

33-As-75

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47	888 2.5300- 8		4.2000+ 0	8.4000- 1	68	3375 2.9000+ 0	2.0000- 1	1.4000- 2	1.4000- 3
57	305 2.4000- 2	5.0000- 3	7.4010- 1	7.0010- 2	68	2345 3.0000+ 0	2.0000- 1	1.2880- 2	1.6000- 3
63	1 3.0000- 2	8.0010- 3	3.5000- 1	3.2000- 2	67	1991 3.0000+ 0	2.0000- 1	1.1500- 2	1.0000- 3
63	1 6.5000- 2	2.1000- 2	1.7500- 1	1.6000- 2	72	3963 1.4400+ 1		4.2600- 3	5.0000- 4
59	526 1.9500- 1	1 5000- 2	1.5000- 1	1.5000- 2					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
68	2856 2.4000- 2	2.6500+ 1	3.1000- 1	2.0000- 2	2.6500+ 1
70	4008 1.4800+ 1	8.0000- 2	1.3900- 3	1.6680- 4	2.6500+ 1
57	23 2.1000- 2	4.0000- 3	6.3010- 1	1.6000- 1	2.6700+ 1

07/04/76

Total
Cross Section

34-Se-Nat

07/04/76

34-Se-Nat

Total
Cross Section

Barns

Mev

4-21

34-Se-Nat -2

07/04/76

Total
Cross Section

$^{34}\text{Se-Nat}$

ECSIL-143 (56)

ECSIL-15 (58)

ECSIL-90 (53)

Barns

$^{4-22}$

MeV

$^{34}\text{Se-Nat}$ -3

07/04/76

34-Se-Nat

Total
Cross Section

Barns

4-23

34-Se-Nat -4

MeV

07/04/76

Total
Cross Section

34-Se-Nat

07/04/76

Elastic
Cross Section

34-Se-Nat

07/04/76

Total
Cross Section

34-Se-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49 844	1.1500- 4	1.1500- 5	8.1110+ 3		62 637	3.6600+ 3	2.0000- 1	4.2100+ 0	2.1000- 1
49 544	3.0000- 4	3.0000- 5	1.1300+ 1		52 81	1.4000+ 1		3.5600+ 0	7.0010- 2

07/04/76

Elastic
Cross Section

34-Se-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 836	5.0000- 1	5.0000- 2	5.8900+ 0	2.0000- 1	54 103	1.0000+ 0	8.0000- 2	4.3000+ 0	6.4500- 1
64 886	8.0000- 1	5.0000- 2	4.7200+ 0	2.0000- 1	62 637	3.6600+ 0	2.0000- 1	1.8600+ 0	1.2000- 1
72 3546	8.3600- 1	2.0000- 1	5.1182+ 0						

07/04/76

(n,γ)
Cross Section

34-Se-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 1	3.0000- 2	8.0010- 3	9.4010- 2	8.5010- 3	58 363	2.0000- 1		8.3000- 2	1.7000- 2
63 1	6.5000- 2	2.1000- 2	7.1010- 2	4.6000- 3	70 2232	1.4100+ 1	6.7500- 1	8.6000- 4	1.3000- 4

07/04/76

(n,γ)
Cross Section

34-Se-74

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		2.2000+ 1	4.4010+ 0
70 3971	2.5000- 2		2.3830+ 0	2.1600- 1

07/04/76

Elastic
Cross Section

34-Sc-76

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
75 3903	6.0000+ 0	1.0000- 1	2.1657+ 0	7.3633- 2
75 3903	8.0000+ 0	1.0000- 1	1.8719+ 0	1.1606- 1
75 3903	1.0000+ 1	1.0000- 1	2.2815+ 0	3.1712- 1

07/04/76

Elastic
Cross Section

34-Sc-78

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
75 3903	8.0000+ 0	1.0000- 1	1.9975+ 0	1.7778- 1

07/04/76

(n,γ)
Cross Section

34-Sc-80

4-26

34-Sc-80 -1

07/04/76

34- Se -80

(n, γ)
Cross Section

Half-Life = 18 Minutes

Half-Life = 57 Minutes

4-27

34- Se -80 -2

Bars

07/04/76

Total
Cross Section

34-Se-80

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1643	4.0000+ 0	5.0000- 2	4.2000+ 0	1.8000- 1

07/04/76

Elastic
Cross Section

34-Se-80

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 1643	4.0000+ 0	5.0000- 2	2.1500+ 0	1.5000- 1
75 3903	8.0000+ 0	1.0000- 1	2.1952+ 0	1.6776- 1

07/04/76

(n,γ)
Cross Section

34-Se-80

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
66 1788	2.4000- 2		5.0000- 3	1.0000- 3	1.8000+ 1	66 1788	2.4000- 2		7.0000- 3	1.5000- 3	5.7000+ 1
68 2345	3.0000+ 0	2.0000- 1	2.1100- 3	2.0000- 4	1.8000+ 1	68 2345	3.0000+ 0	2.0000- 1	2.3600- 3	2.5000- 4	5.7000+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	SPIN
72 3965	2.5000- 2	5.0000- 3	5.5000- 2	1.1000- 2	5.0000+ 1
72 3965	2.5000- 2	5.0000- 3	2.6000- 2	3.0000- 3	3.5000+ 0

07/04/76

Elastic
Cross Section

34-Se-82

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
75 3903	6.0000+ 0	1.0000- 1	2.3466+ 0	8.4478- 2
75 3903	8.0000+ 0	1.0000- 1	2.3270+ 0	1.6997- 1
75 3903	1.0000+ 1	1.0000- 1	2.3198+ 0	2.7142- 1

4-28

34-Se-82 -1

07/04/76

(n,γ)

34-Se-82

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57	521.14520 ± 1		6.5000 - 2	1.9500 - 4
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE SECONDS
66	1788.24000 - 2		4.5000 - 2	1.5000 - 2
				7.0000 - 1
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE MINUTES
47	888.25300 - 8		6.0000 - 2	1.2000 - 2
				3.0000 - 1

07/04/76

Total

35-Br-Nat

Cross Section

Mev

- 28

35-Br Nat - 1

07/04/76

35-Br-Nat

Total
Cross Section

(Expanded Below)

EC51L-814 (65)

EC51L-814 (65)

MeV

4-30

35-Br-Nat -2

Bar 5

07/04/76

Total
Cross Section

35-Br-Nat

Barns

07/04/76

35-Br-Nat

Total
Cross Section

Barns

MeV

35-Br-Nat -5

4 72

07/04/76

(n,γ)

35-Br-Nat

Cross Section

07/04/76

Total

35-Br-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49	844	1.1500-4	1.1500-5	9.6610+0	52	81	1.4000-1	3.5200+0	7.0010-2
49	844	3.0000-4	3.0000-5	8.9410+0	53	274	1.7200-1	3.1200+0	9.4010-2
51	70	1.0000-3	7.2010+0	5.0000-1	53	274	1.9000+1	2.9800+0	8.9010-2
51	70	5.0000-3	8.6010+0	5.0000-1	53	274	2.0070+1	2.9600+0	8.9010-2
51	70	1.0000-2	8.2010+0	5.0000-1	61	233	2.8+00+1	2.7500+0	9.0010-2
51	70	1.0000-1	7.3010+0	1.0000-1	50	281	4.2000+1	1.0000+0	6.0010-2
61	637	3.6500-0	2.0000-1	4.0800+0					

07/04/76

Elastic

35-Br-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65	1509	2.0100+0	5.0000-2	2.1900+0

4-34

35-Br-Nat -E

07/04/76

(n, γ)

35-Br-Nat

Cross Sec. -

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63	6.77	3.0000-2	7.0000-2	6.5010-1	63	1	6.5000-2	2.1000-2	3.4500-1
63	1	3.0000-2	6.0010-2	6.5010-1	58	363	2.0000-1	3.8000-1	5.5000-2
61	6.77	6.5000-2	2.0000-2	3.4500-1	70	2332	1.4100-1	6.7500-1	1.1000-3
									1.6000-4

07/04/76

(n, γ)

35-Br-79

Cross Section

Half-Life= 18 Minutes

Half-Life= 18 Minutes

4-35

35-Br-79 -1

07/04/76

(n,γ)

35-Br-79

Cross Section

Barns

07/04/76

(n,γ)

35-Br-79

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47	450	1.0000 ± 0.0000	8.9000 ± 0.1000	0	5P	363	2.7000 ± 0	2.6000 ± 2.5000	4
5R	42	1.0000 ± 0.0000	8.9000 ± 0.1000	2	5B	393	4.0000 ± 0	1.1700 ± 3.0000	4
16	44	1.0000 ± 0.0000	7.8000 ± 0.1000	3					

4-36

35-Br-79 -2

07/04/76

(n,γ)

35-Br-79

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
66 1788	2.4000- 2		5.4500- 1	4.5000- 2	1.8000+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
66 1788	2.4000- 2		8.0000- 2	1.0000- 2	4.5000+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	SPIN
72 3965	2.5000- 2	5.0000- 3	5.4000- 1	6.6000- 2	1.0000+ 0
72 3965	2.5000- 2	5.0000- 3	5.3000- 2	6.0000- 3	5.0000+ 0

07/04/76

(n,γ)

35-Br-81

Cross Section

07/04/76

(n,γ)
Cross Section

35-Br-81

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		2.2500+ 0	4.5000- 1	59 663	2.0000+ 0	1.0000- 1	1.0000- 2	
57 305	2.4000- 2	5.0000- 3	5.5010- 1	5.5010- 2	59 663	2.5000+ 0	1.0000- 1	4.8000- 3	
59 663	1.8000- 1	2.0000- 2	1.1000- 1		57 521	1.4500+ 1		3.5000- 3	8.7500- 4
59 526	1.9500- 1	1.5000- 2	1.3700- 1	1.5000- 2					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
68 2345	3.0000+ 0	2.0000- 1	1.4190- 2	5.0000- 4	6.1000+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
66 1788	2.4000- 2		5.6000- 1	7.5000- 2	3.6000+ 1

07/04/76

36-Kr-NaI

Total
Cross Section

MeV

36-Kr-NaI -2

Barns

07-04-76

Total
Cross Section

36-Kr-Nat

07/04/76

Total
Cross Section

36-Kr-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61	753	2.1600+ 0	3.4000+ 0		61	753	2.6000+ 0	3.4500+ 0	
61	753	2.2200+ 0	3.5000+ 0		61	753	2.8500+ 0	3.3000+ 0	
61	753	2.3900+ 0	3.4500+ 0						

07-04-76

(n,y)
Cross Section

36-Kr-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69	2198	2.1300+ 0	2.6200+ 1	4.0000- 1
69	2198	2.1300+ 0	3.18000- 1	1.6000- 2
69	2198	2.1300+ 0	2.89010- 2	8.0010- 3

36-Kr-Nat -3

07/04/76

20-4-86

Cross Section

DIFFERENTIAL CROSS SECTION
 49 1551 0000-3
 1 SEC
 2-000-3
 OLLIA
 BARS

07/04/76

37-Rb-Na1

Total
 Cross Section

ECSIL-228 (55)

ECSIL-737 (61)

Bars

07-67-76

37-Rb-Nat

Total
Cross Section

37-Rb-Nat-2

MeV

0.4 0.6 0.8 1.0

07/04/76

57-Rb-Nat

Total
Elastic Section

Barns

07/04/76

57 Rb-Nat

Elastic
Cross Section

Barns

07/04/76

57 Rb-Nat

Elastic
Cross Section

Barns

07/04/76

(n,γ)

37-Rb-Nat

Cross Section

07/04/76

Total

37-Rb-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 2074	1.4590 ± 1		3.9000 ± 0	1.0000 - 1
66 2074	1.4960 ± 1		3.9000 ± 0	1.0000 - 1

07/04/76

(n,γ)

37-Rb-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63	1.37000	± 0.010	1.5500	± 1.4000	63	1.65300	± 0.100	2.4000	± 2.2000
63	1.37000	± 0.010	1.6000	± 1.6000	63	1.65000	± 0.100	2.6010	± 2.6010
60	674 ± 0.000	± 0.010	2.52010	± 7.0010					

4-44

37-Rb-Nat -4

07/04/76

Total

37-Rb-85

Cross Section

Barns

07/04/76

(n,γ)

37-Rb-85

Cross Section

Barns

37-Rb-85

07/04/76

(n, γ)

37-Rb-85

Cross Section

07/04/76

(n, γ)

37-Rb-85

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 3969	2.5000	2.5000	3.35100	2.28000
70 3969	2.5000	2.5000	3.3450	1.28000

07/04/76

2-24-80

Energy Section

REMARKS: 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 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621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000. 1001. 1002. 1003. 1004. 1005. 1006. 1007. 1008. 1009. 1010. 1011. 1012. 1013. 1014. 1015. 1016. 1017. 1018. 1019. 1020. 1021. 1022. 1023. 1024. 1025. 1026. 1027. 1028. 1029. 1030. 1031. 1032. 1033. 1034. 1035. 1036. 1037. 1038. 1039. 1040. 1041. 1042. 1043. 1044. 1045. 1046. 1047. 1048. 1049. 1050. 1051. 1052. 1053. 1054. 1055. 1056. 1057. 1058. 1059. 1060. 1061. 1062. 1063. 1064. 1065. 1066. 1067. 1068. 1069. 1070. 1071. 1072. 1073. 1074. 1075. 1076. 1077. 1078. 1079. 1080. 1081. 1082. 1083. 1084. 1085. 1086. 1087. 1088. 1089. 1090. 1091. 1092. 1093. 1094. 1095. 1096. 1097. 1098. 1099. 1100. 1101. 1102. 1103. 1104. 1105. 1106. 1107. 1108. 1109. 1110. 1111. 1112. 1113. 1114. 1115. 1116. 1117. 1118. 1119. 1120. 1121. 1122. 1123. 1124. 1125. 1126. 1127. 1128. 1129. 1130. 1131. 1132. 1133. 1134. 1135. 1136. 1137. 1138. 1139. 1140. 1141. 1142. 1143. 1144. 1145. 1146. 1147. 1148. 1149. 1150. 1151. 1152. 1153. 1154. 1155. 1156. 1157. 1158. 1159. 1160. 1161. 1162. 1163. 1164. 1165. 1166. 1167. 1168. 1169. 1170. 1171. 1172. 1173. 1174. 1175. 1176. 1177. 1178. 1179. 1180. 1181. 1182. 1183. 1184. 1185. 1186. 1187. 1188. 1189. 1190. 1191. 1192. 1193. 1194. 1195. 1196. 1197. 1198. 1199. 1200. 1201. 1202. 1203. 1204. 1205. 1206. 1207. 1208. 1209. 1210. 1211. 1212. 1213. 1214. 1215. 1216. 1217. 1218. 1219. 1220. 1221. 1222. 1223. 1224. 1225. 1226. 1227. 1228. 1229. 1230. 1231. 1232. 1233. 1234. 1235. 1236. 1237. 1238. 1239. 1240. 1241. 1242. 1243. 1244. 1245. 1246. 1247. 1248. 1249. 1250. 1251. 1252. 1253. 1254. 1255. 1256. 1257. 1258. 1259. 1260. 1261. 1262. 1263. 1264. 1265. 1266. 1267. 1268. 1269. 1270. 1271. 1272. 1273. 1274. 1275. 1276. 1277. 1278. 1279. 1280. 1281. 1282. 1283. 1284. 1285. 1286. 1287. 1288. 1289. 1290. 1291. 1292. 1293. 1294. 1295. 1296. 1297. 1298. 1299. 1300. 1301. 1302. 1303. 1304. 1305. 1306. 1307. 1308. 1309. 1310. 1311. 1312. 1313. 1314. 1315. 1316. 1317. 1318. 1319. 1320. 1321. 1322. 1323. 1324. 1325. 1326. 1327. 1328. 1329. 1330. 1331. 1332. 1333. 1334. 1335. 1336. 1337. 1338. 1339. 1340. 1341. 1342. 1343. 1344. 1345. 1346. 1347. 1348. 1349. 1350. 1351. 1352. 1353. 1354. 1355. 1356. 1357. 1358. 1359. 1360. 1361. 1362. 1363. 1364. 1365. 1366. 1367. 1368. 1369. 1370. 1371. 1372. 1373. 1374. 1375. 1376. 1377. 1378. 1379. 1380. 1381. 1382. 1383. 1384. 1385. 1386. 1387. 1388. 1389. 1390. 1391. 1392. 1393. 1394. 1395. 1396. 1397. 1398. 1399. 1400. 1401. 1402. 1403. 1404. 1405. 1406. 1407. 1408. 1409. 1410. 1411. 1412. 1413. 1414. 1415. 1416. 1417. 1418. 1419. 1420. 1421. 1422. 1423. 1424. 1425. 1426. 1427. 1428. 1429. 1430. 1431. 1432. 1433. 1434. 1435. 1436. 1437. 1438. 1439. 1440. 1441. 1442. 1443. 1444. 1445. 1446. 1447. 1448. 1449. 1450. 1451. 1452. 1453. 1454. 1455. 1456. 1457. 1458. 1459. 1460. 1461. 1462. 1463. 1464. 1465. 1466. 1467. 1468. 1469. 1470. 1471. 1472. 1473. 1474. 1475. 1476. 1477. 1478. 1479. 1480. 1481. 1482. 1483. 1484. 1485. 1486. 1487. 1488. 1489. 1490. 1491. 1492. 1493. 1494. 1495. 1496. 1497. 1498. 1499. 1500. 1501. 1502. 1503. 1504. 1505. 1506. 1507. 1508. 1509. 1510. 1511. 1512. 1513. 1514. 1515. 1516. 1517. 1518. 1519. 1520. 1521. 1522. 1523. 1524. 1525. 1526. 1527. 1528. 1529. 1530. 1531. 1532. 1533. 1534. 1535. 1536. 1537. 1538. 1539. 1540. 1541. 1542. 1543. 1544. 1545. 1546. 1547. 1548. 1549. 1550. 1551. 1552. 1553. 1554. 1555. 1556. 1557. 1558. 1559. 1560. 1561. 1562. 1563. 1564. 1565. 1566. 1567. 1568. 1569. 1570. 1571. 1572. 1573. 1574. 1575. 1576. 1577. 1578. 1579. 1580. 1581. 1582. 1583. 1584. 1585. 1586. 1587. 1588. 1589. 1590. 1591. 1592. 1593. 1594. 1595. 1596. 1597. 1598. 1599. 1600. 1601. 1602. 1603. 1604. 1605. 1606. 1607. 1608. 1609. 1610. 1611. 1612. 1613. 1614. 1615. 1616. 1617. 1618. 1619. 1620. 1621. 1622. 1623. 1624. 1625. 1626. 1627. 1628. 1629. 1630. 1631. 1632. 1633. 1634. 1635. 1636. 1637. 1638. 1639. 1640. 1641. 1642. 1643. 1644. 1645. 1646. 1647. 1648. 1649. 1650. 1651. 1652. 1653. 1654. 1655. 1656. 1657. 1658. 1659. 1660. 1661. 1662. 1663. 1664. 1665. 1666. 1667. 1668. 1669. 1670. 1671. 1672. 1673. 1674. 1675. 1676. 1677. 1678. 1679. 1680. 1681. 1682. 1683. 1684. 1685. 1686. 1687. 1688. 1689. 1690. 1691. 1692. 1693. 1694. 1695. 1696. 1697. 1698. 1699. 1700. 1701. 1702. 1703. 1704. 1705. 1706. 1707. 1708. 1709. 1710. 1711. 1712. 1713. 1714. 1715. 1716. 1717. 1718. 1719. 1720. 1721. 1722. 1723. 1724. 1725. 1726. 1727. 1728. 1729. 1730. 1731. 1732. 1733. 1734. 1735. 1736. 1737. 1738. 1739. 1740. 1741. 1742. 1743. 1744. 1745. 1746. 1747. 1748. 1749. 1750. 1751. 1752. 1753. 1754. 1755. 1756. 1757. 1758. 1759. 1760. 1761. 1762. 1763. 1764. 1765. 1766. 1767. 1768. 1769. 1770. 1771. 1772. 1773. 1774. 1775. 1776. 1777. 1778. 1779. 1780. 1781. 1782. 1783. 1784. 1785. 1786. 1787. 1788. 1789. 1790. 1791. 1792. 1793. 1794. 1795. 1796. 1797. 1798. 1799. 1800. 1801. 1802. 1803. 1804. 1805. 1806. 1807. 1808. 1809. 1810. 1811. 1812. 1813. 1814. 1815. 1816. 1817. 1818. 1819. 1820. 1821. 1822. 1823. 1824. 1825. 1826. 1827. 1828. 1829. 1830. 1831. 1832. 1833. 1834. 1835. 1836. 1837. 1838. 1839. 1840. 1841. 1842. 1843. 1844. 1845. 1846. 1847. 1848. 1849. 1850. 1851. 1852. 1853. 1854. 1855. 1856. 1857. 1858. 1859. 1860. 1861. 1862. 1863. 1864. 1865. 1866. 1867. 1868. 1869. 1870. 1871. 1872. 1873. 1874. 1875. 1876. 1877. 1878. 1879. 1880. 1881. 1882. 1883. 1884. 1885. 1886. 1887. 1888. 1889. 1890. 1891. 1892. 1893. 1894. 1895. 1896. 1897. 1898. 1899. 1900. 1901. 1902. 1903. 1904. 1905. 1906. 1907. 1908. 1909. 1910. 1911. 1912. 1913. 1914. 1915. 1916. 1917. 1918. 1919. 1920. 1921. 1922. 1923. 1924. 1925. 1926. 1927. 1928. 1929. 1930. 1931. 1932. 1933. 1934. 1935. 1936. 1937. 1938. 1939. 1940. 1941. 1942. 1943. 1944. 1945. 1946. 1947. 1948. 1949. 1950. 1951. 1952. 1953. 1954. 1955. 1956. 1957. 1958. 1959. 1960. 1961. 1962. 1963. 1964. 1965. 1966. 1967. 1968. 1969. 1970. 1971. 1972. 1973. 1974. 1975. 1976. 1977. 1978. 1979. 1980. 1981. 1982. 1983. 1984. 1985. 1986. 1987. 1988. 1989. 1990. 1991. 1992. 1993. 1994. 1995. 1996. 1997. 1998. 1999. 2000. 2001. 2002. 2003. 2004. 2005. 2006. 2007. 2008. 2009. 2010. 2011. 2012. 2013. 2014. 2015. 2016. 2017. 2018. 2019. 2020. 2021. 2022. 2023. 2024. 2025. 2026. 2027. 2028. 2029. 2030. 2031. 2032. 2033. 2034. 2035. 2036. 2037. 2038. 2039. 2040. 2041. 2042. 2043. 2044. 2045. 2046. 2047. 2048. 2049. 2050. 2051. 2052. 2053. 2054. 2055. 2056. 2057. 2058. 2059. 2060. 2061. 2062. 2063. 2064. 2065. 2066. 2067. 2068. 2069. 2070. 2071. 2072. 2073. 2074. 2075. 2076. 2077. 2078. 2079. 2080. 2081. 2082. 2083. 2084. 2085. 2086. 2087. 2088. 2089. 2090. 2091. 2092. 2093. 2094. 2095. 2096. 2097. 2098. 2099. 2100. 2101. 2102. 2103. 2104. 2105. 2106. 2107. 2108. 2109. 2110. 2111. 2112. 2113. 2114. 2115. 2116. 2117. 2118. 2119. 2120. 2121. 2122. 2123. 2124. 2125. 2126. 2127. 2128. 2129. 2130. 2131. 2132. 2133. 2134. 2135. 2136. 2137. 2138. 2139. 2140. 2141. 2142. 2143. 2144. 2145. 2146. 2147. 2148. 2149. 2150. 2151. 2152. 2153. 2154. 2155. 2156. 2157. 2158. 2159. 2160. 2161. 2162. 2163. 2164. 2165. 2166. 2167. 2168. 2169. 2170. 2171. 2172. 2173. 2174. 2175. 2176. 2177. 2178. 2179. 2180. 2181. 2182. 2183. 2184. 2185. 2186. 2187. 2188. 2189. 2190. 2191. 2192. 2193. 2194. 2195. 2196. 2197. 2198. 2199. 2200. 2201. 2202. 2203. 2204. 2205. 2206. 2207. 2208. 2209. 2210. 2211. 2212. 2213. 2214. 2215. 2216. 2217. 2218. 2219. 2220

07/04/76

37-Rb-87

Total
Cross Section

Barns

07/04/76

37-Rb-87

(n, γ)
Cross Section

Barns

4-48

MeV

37-Rb-87 -2

07/04/76

(n,γ)

57-Rb-87

Cross Section

EC57L-2533 (69)

07/04/76

(n,γ)

37-Rb-87

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	Y SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	Y SEC BARNs	DELTA BARNs
47 888	2.5300 - 8		1.2500 - 1	2.4400 - 2	38 1044	2.5000 + 0		5400 - 3	4.0000 - 4
58 43	2.1000 - 2	4.0000	3.2.8700 - 1	1.4000 - 3	58 1044	3.1000 + 0		1.4000 - 3	3.0000 - 4
57 305	2.4000 - 2	5.0000	3.7.5010 - 2	1.5010 - 2	58 1044	4.0000 + 0		1.1000 - 3	2.0000 - 4
49 165	1.0000 + 0		1.8000 - 3						

REFERENCE	ENERGY MEV	DELTA MEV	Y SEC BARNs	DELTA HALF-LIFE MINUTES
38 2046	2.4000 - 2		2.5000 - 3	1.8000 + 1

4-ug

57-Rb-87

07/04/76

Total

36-Sr-Nat

Cross Section

ECSIL-143 (56)

ECSIL-728 (61)

ECSIL-80 (52)

Nev

4-50

38-Sr-Nat - 1

Barns

07/04/76

Total
Cross Section

38-Sr-Nat

07/04/76

Total
Cross Section

38-Sr-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs		
61	637	3.6600+ 0	2.0000- 1	4.4200+ 0	2.1000- 1	58	975	1.6200+ 1	3.5100+ 0	4.9000- 1	
52	81	1.4000+ 1	3.6800+ 0	7.0010- 2	55	133	1.6200+ 1	3.5100+ 0	4.9000- 1		
65	3697	1.4760+ 1	5.0000- 2	3.3000+ 0	9.9000- 2	50	281	4.2000+ 1	1.0000+ 0	2.9900+ 0	1.2000- 1

07/04/76

Elastic
Cross Section

38-Sr-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58	325 6.6000+ 2		7.6000+ 0	6.0000- 1	72	3546 8.8000+ 1	2.0000- 1	8.2612+ 0	
58	325 7.5000+ 2		5.9000+ 0		54	103 1.0000+ 0	8.0000+ 2	6.0000+ 0	9.0000- 1
58	325 8.3000+ 2		7.2000+ 0		65	1503 2.0000+ 0	5.0000- 2	4.7000+ 0	
58	325 9.0000+ 2		6.2000+ 0	2.0000- 1	7	637 3.6600+ 0	2.0000- 1	2.7400+ 0	2.3000- 1
58	325 9.7000+ 2		5.6000+ 0	6.0000- 1					

07/04/76

(n,y)

38-Sr-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60	633 2.5000-	2 1.0000-	3 9.9010-	2 9.9010- 3	63	1 6.5000-	2 2.1000-	2 2.4000-	2 2.2000- 3
61	677 3.0000-	2 7.0010-	3 1.5500-	1 1.5000- 2	60	633 2.2000-	2 2.0000-	2 1.2400-	1 3.0000- 2
63	1 3.0000-	2 8.0010-	3 1.5500-	1 1.4000- 2	60	633 6.3000-	1 4.0000-	2 1.0500-	1 2.0000- 2
61	677 6.5000-	2 2.0000-	2 2.4000-	2 2.0000- 3	69	2220 1.4100+	1 6.7500-	1 1.3500-	3 2.5000- 4

07/04/76

(n,y)

38-Sr-84

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70	3971 2.5000-	2	4.6900-	1 4.7000- 2

07/04/76

(n,y)

38-Sr-86

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 2632	2.5300- 8		7.6000- 1	4.8000- 2	67 1807	6.5000- 2	2.0000- 2	3.5100- 2	3.3000- 3
67 1807	1.0000- 2	1.0000- 2	7.4000- 2	6.8000- 3	67 1807	1.2500- 1	2.3000- 2	2.8900- 2	2.4000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
47 886	2.5300- 8		1.2900- 0	2.5800- 1	2.7000- 0	59 663	3.1000- 1	2.0000- 2	2.5000- 2		2.8000+ 0
59 663	1.2000- 1	2.0000- 2	3.1000- 2		2.8000- 0	59 663	3.2000- 1	2.0000- 2	2.5000- 2		2.8000+ 0
59 663	2.5000- 1	2.0000- 2	3.0000- 2		2.6000- 0						

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC RELATIVE	DELTA RELATIVE	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC RELATIVE	DELTA RELATIVE	E-PHOTON MEV
72 3418	2.5000- 8		8.0000- 2		3.5000- 1	72 3418	2.5000- 6		3.7000- 1		9.1020- 1
72 3418	2.5000- 8		4.4000- 0		3.6400- 1	72 3418	2.5000- 8		4.0000- 1		9.2560- 1
72 3418	2.5000- 8		3.8900+ 0		4.8400- 1	72 3418	2.5000- 8		1.0100+ 0		1.2280+ 0
72 3418	2.5000- 8		1.5000- 1		6.5500- 1	72 3418	2.5000- 8		3.5000- 1		1.2633+ 0
72 3418	2.5000- 8		2.4000- 1		6.6000- 1	72 3418	2.5000- 8		0.6000- 1		4.6608+ 0
72 3418	2.5000- 8		2.1000- 1		6.6000- 1	72 3418	2.5000- 8		2.3000- 1		5.1400+ 1
72 3418	2.5000- 8		1.5500- 0		6.6400- 1	72 3418	2.5000- 8		6.1000- 1		5.2760+ 0

4-52

38-Sr-86 -1

07/04/76

(n, γ)

38-Sr-86

Cross Section

REFERENCE	ENERGY MEV	DELTA RELATIVE	X-SEC RELATIVE	DELTA RELATIVE	ENERGY MEV	DELTA RELATIVE	X-SEC RELATIVE	DELTA RELATIVE	E-PHOTON MEV
72 3418	2.5000-8	5.3066-0	5.3066-0	72 3418	2.5000-8	1.8000-1	5.9912-0	5.9912-0	
72 3418	2.5000-8	4.4600-0	5.3610-0	72 3418	2.5000-8	1.7700-1	6.0132-0	6.0132-0	
72 3418	2.5000-8	2.5600-0	5.4084-0	72 3418	2.5000-8	1.4000-1	6.1765-0	6.1765-0	
72 3418	2.5000-8	6.6000-1	5.4784-0	72 3418	2.5000-8	9.4000-1	6.2588-0	6.2588-0	
72 3418	2.5000-8	1.7000-1	5.5936-0	72 3418	2.5000-8	1.0400-0	6.3193-0	6.3193-0	
72 3418	2.5000-8	9.0000-2	5.6195-0	72 3418	2.5000-8	2.8000-1	6.4308-0	6.4308-0	
72 3418	2.5000-8	2.2000-1	5.6736-0	72 3418	2.5000-3	7.0000-1	7.5440-0	7.5440-0	
72 3418	2.5000-8	1.7000-1	5.7384-0	72 3418	2.5000-8	1.3300-1	8.0398-0	8.0398-0	
72 3418	2.5000-8	8.0000-1	5.7510-0						

07/04/76

(n, γ)

38-Sr-87

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
67 1807	3.0000-2	1.0000-2	1.0870-1	3.9000-3
67 1807	6.5000-2	2.0000-2	5.6000-2	4.5000-3
67 1807	1.2500-1	2.3000-2	3.7600-2	2.9000-3

07/04/76

Total

38-Sr-88

Cross Section

4-53

MeV

38-Sr-88

07/04/76

(n,γ)
Cross Section

38-5r-88

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		5.0000- 3	1.0000- 3
-9 165	1.0000+ 0		1.4000- 3	

07/04/76

Total
Cross Section

39-Y -89

4-54

Mev

39-Y -89 -1

07/04/76

Total

ECSTL-903 (58)

ECSTL-4005 (74)

ECSTL-737 (61)

Bar 3

07 04, 76

39-V -89

Total
Cross Section

+55

Net

39-V -89 -2

Barns

07-04-76

Total
Cross Section

23-Y-62

ECSIL-154 (57)

ECSIL-80 (52)

ECSIL-2121 (67)

Barcs

07/04/76

39-Y -89

Total
Cross Section

Mev

4-58

39-Y -89 -5

Barns

07/04/76

39-Y-89

(n, γ)
Cross Section

Barns

4-59

MeV

59 Y-89-6

07/04/76

39-Y -89

(n, γ)
Cross Section

Barns

MeV

39-Y -89 -7

4-60

07/04/76

(n,y)

39-Y-89

Cross Section

Half-Life = 3.2 Hours

Half-Life = 3.2 Hours

B_{eff}
x 10⁻⁵

x 10⁻⁴

101

39-Y-89

07/04/76

(n, γ)

39-Y -89

Cross Section

07/04/76

Total

39-Y -89

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58	497 2.2000	0 2.0000	2 4.4000	0 2.0000
61	637 3.5600	0 2.0000	1 5.0100	0 2.0000
52	81 1.4000	1	3.8800	0 1.4000

07/04/76

Elastic

39-Y -89

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57	3446 8.8900	1 2.0000	1 6.5777	0	53	579 4.7000	0 9.0010	2 2.9000	0 4.0000
54	579 1.4500	0 5.0060	2 3.5000	0 5.0000	70	3443 5.5000	0 1.7000	1 2.1077	0 1.5808
58	497 2.2000	0 2.0000	2 3.0500	0	65	884 6.0400	0 2.3000	1 2.3000	0 4.0000
55	579 3.6700	0 4.3000	1 2.1000	0 3.0000	70	3443 6.4400	0 1.3000	1 2.3319	0 1.6804
63	1879 3.7700	0 7.0000	2 2.1000	0 2.0000	70	3443 7.0000	0 1.0000	1 2.5459	0 1.8585
54	579 4.2700	0 1.0000	1 2.1000	0 3.0000	70	3443 8.5600	0 2.0000	2 2.5687	0 1.8751

4-62

39-Y -89 -9

07/04/76

(n, γ)
Cross Section

39-Y -89

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 2118	2.5300- 8		1.2800+ 0	1.0000- 2	49 165	1.0000+ 0		7.0010- 3	
61 677	3.0000- 2	7.0010- 3	1.3500- 2	3.0000- 3	67 1991	3.0000+ 0	2.0000- 1	3.6000- 3	4.0000- 4
63 1	3.0000- 2	8.0010- 3	1.3500- 2	4.0000- 3	57 521	1.4500+ 1		2.9000- 3	2.9000- 4
61 677	6.5000- 2	2.0000- 2	6.9010- 3	2.0000- 3	67 1695	1.4700+ 1		1.4000- 3	3.0000- 4
63 1	6.5000- 2	2.1000- 2	6.9010- 3	3.0000- 3	63 756	1.4800+ 1	2.0000- 1	1.1000- 3	6.0010- 4
60 677	4.0000- 1	9.0010- 2	7.0010- 3	3.0000- 3					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
47 888	2.5300- 8		1.2400+ 0	2.4800- 1	6.0000+ 1
68 2856	2.4000- 2		2.5000- 2	5.0000- 3	6.4000+ 1
57 23	2.1000- 2	4.0000- 3	2.7000- 2	7.0010- 3	6.4010+ 1

4-63

07/04/76

Total
Cross Section

40-Zr-Nat

4-84

Mev

 $\times 10^4$

40-Zr-Nat -2

Barns

07/04/76

Total
Cross Section

⁴⁰Zr-Nat

700-0114

4-65

⁴⁰Zr-Nat -3

07/04/76

Total
Cross Section

40-Zr-Nat

EVAL 2141

4-66

Mev

40-Zr-Nat -4

07/04/76

Total
Cross Section

$^{40}\text{Zr-Nat}$
ENDL-7141

Barns

4-67

$^{40}\text{Zr-Nat}$ -5

07/04/76

Total
Cross Section

⁴⁰Zr-Nat

(Expanded Below)
ECSIL-3341 (71)

ECSIL-3341 (71)

ECSIL-3341 (71)

4-68

⁴⁰Zr-Nat -6

Barns

07/04/76

Total
Cross Section

$^{40}\text{Zr-Nat}$

07/04/76

Total
Cross Section

40-Zr-Nat

07/04/76

Total
Cross Section

40-Zr-Nat

07/04/76

Total
Cross Section

40-Zr-Nat

Barns

07/04/76

Elastic
Cross Section

40-Zr-Nat

Barns

4-72

40-Zr-Nat -10

07/04/76

Elastic
Cross Section

40-Zr-Nat

07/04/76

(n, γ)
Cross Section

40-Zr-Nat

4-73

40-Zr-Nat -11

07/04/75

⁴⁰Zr-Nat

(n,γ)
Cross Section

⁴⁰Zr-Nat -12

4-74

Bar 5

07/04/76

Total

40-Zr-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 3627	3.300-8		6.1700+0		59 207	1.4000+		3.6000+0	2.0000-1
70 3627	7.5000-8		6.3500+0		59 21	1.4000+		4.0000+0	8.0010-2
70 3627	1.1500-7		6.3500+0		59 22	1.4000+		3.9300+0	4.0000-2
70 3627	2.7000-7		6.3800+0		59 575	1.6200+		3.5600+0	1.5000-1
62 637	3.6600+0	2.0000-	3.9300+0	2.0000-1	59 133	1.6200+		3.5600+0	1.5000-1
57 320	3.6600+0	2.0000-	4.1000+0	1.0000-1	60 673	1.7400+	3.0000-	3.5500+0	4.0000-2
55 296	4.1000+0	4.0000-	4.1000+0	2.0000-1	59 274	1.9000+	3.3000-	3.6000+0	1.1000-1
57 22	7.0500+0	1.7000-	4.1900+0	4.0000-2	60 673	2.0600+	2.0000-	3.3100+0	4.0000-2
57 22	8.6800+0	1.5000-	4.3000+0	4.0000-2	60 673	2.5200+	3.0000-	3.3100+0	2.0000-2
57 22	1.0380+	1.1000-	4.3200+0	4.0000-2	60 673	2.6900+	3.0000-	3.0000+0	2.0000-2
57 22	1.2700+	1.9000-	4.1500+0	4.0000-2					

07/04/76

Elastic

40-Zr-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 2338	3.0000-1	2.5000-2	8.4900+0	5.1000-1	59 579	1.4500+0	5.0000-	2.4.5000+0	8.0010-1
64 2338	5.0000-1	5.0000-2	8.7000+0	3.5000-1	60 637	3.6600+0	2.0000-	1.2.2200+0	1.1000-1
63 1750	6.5000-1		8.2700+0	2.8000-1	59 579	3.6700+0	4.3000-	1.2.3000+0	5.0000-1
64 870	8.0000-1	5.0000-2	7.0000+0	1.6000-1	59 579	4.2100+0	1.0000-	1.2.3000+0	5.0000-1
72 3545	9.0210-1	2.0000-	1.6.5827+		59 579	4.7000+0	9.0010-	2.2.7000+0	6.0010-1
54 103	1.0000+0	8.0000-2	6.6000+0	9.9000-1					

07/04/76

In,y)

40-Zr-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 2855	2.5300-8		2.0000-	1.4.0000-2	70 3627	2.7000-7		7.4000-2	1.5000-2
70 3627	2.5300-8		2.5000-	1.9.0000-2	61 1	3.0000+	8.0010-	3.1.4000-2	4.0000-3
70 3627	3.3000-8		1.7700-	1.3.0000-2	61 677	3.0000+	2.0010-	3.1.4000-2	3.0000-3
70 3627	7.5000-8		1.4100-	1.2.0000-2	62 1	5.5000+	1.0000-	2.1.0300-	2.3.0000-3
70 3627	1.1500-7		1.2400-	1.2.0000-2	61 677	5.5000+	2.0000-	2.1.0300-	2.3.0000-3

4-75

40-Zr-Nat -13

07/04/76

40-Zr-90

Total
Cross Section

ECSIL-534 (59)

ECSIL-3505 (73)

ECSIL-3341 (71)

Mev

4-76

40-Zr-90 -1

Barns

07/04/76

Total
Cross Section

40-Zr-90

07/04/76

(n,γ)
Cross Section

40-Zr-90

07/14/76

Elastic
Cross Section

40-Zr-90

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
74 3585	1.5000 ± 0.0000	0.84000 ± 0.0000	24.9792 ± 0.0000	

4-78

40-Zr-90 -3

07/04/76

40-Zr-91

(n,γ)

Cross Section

Barns

07/04/76

40-Zr-92

Total

Cross Section

Barns

07/04/76

Total
Cross Section

40-Zr-92

Barns

EC51L-3572 (74)

07/04/76

Elastic
Cross Section

40-Zr-92

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
74 3586	1.5000 ± 0.0400	2.4253 ± 0		

4-80

40-Zr-92 -2

07/04/76

100

29
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N
C
r

201205501

[illegible]

07/04/76

Total

40-71-94

Cross Section

07/04/76 Elastic 40-Zr-94

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
74	3586	1.5000- 0	8.4000- 2	4.2894- 0

07/04/76 (n,y) 40-Zr-94

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71 3434	2.5300- 8		5.2000- 2	3.0000- 3	59 526	1.9500- 1	1.5000- 2	4.2000- 2	8.0010- 3
57 305	2.4000- 2	5.0000	3.24300- 1	3.6000- 2	72 3871	7.5000+ 0	7.5000+ 0	6.3000- 2	8.0000- 3
59 526	2.5000	2.5000	3.24000- 2	4.0000- 3					

07/04/76

(n,γ)

40-2-96

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	N-SEC BARNs	REFERENCE	ENERGY MEV	DELTA MEV	N-SEC BARNs
71 3434	2.5300-8		2.0000-2 3.0000-3	72 3871	2.5000-2 2.5000-3		5.7500-3 1.0000-3
57 305	2.4000-2 5.0000-3	2.4.0000-3	2.4.0000-3	57 521	1.4500-1		4.0000-3
59 526	1.9500-1 5.0000-3	7.0010-3 2.0000-3					

07/04/76

Total
Cross Section

Zircaloy-2

Barns

07/04/76

Total
Cross Section

ZrO₂

4-84

ZrO₂ -1

07/04/76

Total
Cross Section

41-Nb-93

107 7142

Barns

5-1

Mev

41-Nb-93 -1

07/04/76

Total
Cross Section

41-Nb-93

5-2

41-Nb-93 -2

Barns

07/04/76

Total
Cross Section

41-Nb-93

ENC 174-3

Barns

5-3

41-Nb-93 -3

07/04/76

41-Nb-93

Total
Cross Section

3.200 7.143

5-4

MeV

41-Nb-93 -4

Barns

07/04/76

Total
Cross Section

41-Nb-93

Barns

5-5

Mev

41-Nb-93 -5

07/04/76

Total
Cross Section

41-Nb-93

07/04/76

41-Nb-93

Total
Cross Section

Barns

Mev

5-7

41-Nb-93 -7

07/04/76

41-Nb-93

Total
Cross Section

Barns

5-8

Mev

41-Nb-93 -8

07/04/76

Total
Cross Section

41-Nb-93

Barns

5-9

Mev

41-Nb-93 -9

07/04/76

41-Nb-93

Total
Cross Section

41-Nb-93 -10

Bar 25

07/04/76

Elastic
Cross Section

41-Nb-93

5-11

MeV

41-Nb-93 -11

07/04/76

(n, γ)
Cross Section41-Nb-93
ENCIL-7143

5-12

MeV

41-Nb-93 -12

07/04/76

41-Nb-93

(n, γ)
Cross Section

ENDL-7113

5-13

MeV

41-Nb-93 -13

Barns

07/04/76

(n, γ)

Cross Section

41-Nb-93

ENDL-7143

41-Nb-93 -14

5-14

Barns

07/04/76

Total
Cross Section

41-Nb-93

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 637	3.6500+ 0	2.0000- 1	3.7500+ 0	2.5000- 1
67 1543	4.0000+ 0	5.0000- 2	4.2300+ 0	1.5000- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
52 81	1.4000+ 1		4.0200+ 0	8.0010- 2
66 2127	1.4700+ 1	3.0000- 1	3.9400+ 0	

07/04/76

Elastic
Cross Section

41-Nb-93

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 3546	8.7540- 1	2.0000- 1	6.9796+ 0	
54 103	1.0000+ 0	8.0000- 2	5.6000+ 0	8.7000- 1
65 1509	2.0000+ 0	5.0000- 2	3.3000+ 0	

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 1643	4.0000+ 0	5.0000- 2	2.0500+ 0	1.4000- 1
63 3660	8.0500+ 0	9.0000- 2	2.6800+ 0	1.4000- 1
66 2127	1.4700+ 1	3.0000- 1	1.7700+ 0	5.3100- 2

07/04/76

(n,γ)
Cross Section

41-Nb-93

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
1 67 3532	2.5300- 8		1.1000+ 0	
58 43	2.1000- 2	4.0000- 3	1.1600- 1	1.2000- 2
75 3909	2.3700- 2		3.7000- 1	9.9000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 1	3.0000- 2	8.0010- 3	2.6400- 1	2.4000- 2
63 1	6.5000- 2	2.1000- 2	1.3500- 1	1.2000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
47 888	2.5300- 8		1.0000+ 0	4.0000- 1	6.6000+ 0
63 756	1.4800+ 1		1.8000- 3	6.0000- 4	6.6000+ 0
62 3169	1.4500+ 1	9.0000- 1	4.4000- 4	2.5000- 4	6.6000+ 0

07/04/76

41-Nb-94

Total
Cross Section

41-Nb-94 -1

MeV

5-16

Barns

07/04/76

(n,γ)
Cross Section

41-Nb-94

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
1 67 3532	2.5300 ± 8		1.1000 ± 1	

07/04/76

Total
Cross Section

42-Mo-Nat

[N] 11 2144

5-17

42-Mo-Nat -1

07/04/76

Total

42-Mo-Nat

Cross Section

Barns

5-18

Mev

42-Mo-Nat -2

07/04/76

Total
Cross Section

42-Mo-Nat
FNEL-7144

5-19
42-Mo-Nat -3

Barns

07/04/76

42-Mo-Nat

Total
Cross Section

42-Mo-Nat -4

5-20

Barns

07/04/76

Total
Cross Section

42-Mo-Nat

Barns

5-21

Mev

42-Mo-Nat -5

07/04/76

Total
Cross Section

42-Mo-Nat

5-22

MeV

42-Mo-Nat -6

07/04/76

Total
Cross Section

42-Mo-Nat

5-23

MeV

42-Mo-Nat -7

07/04/76

Total
Cross Section

42-Mo-Nat

07/04/76

42-Mo-Nat

Total
Cross Section

5-25

42-Mo-Nat -9

Barns

07/04/76

Total
Cross Section

42-Mo-Nat

ENDL-7144

5-26

MeV

42-Mo-Nat -10

07/04/76

Total
Cross Section

⁴²Mo-Nat

EC51L-673 (60)

Bars

07/04/76

42-Mo-Nat
Elastic
Cross Section
EVAL 7/144

MeV

5-28

42-Mo-Nat -12

Barns

07/04/76

Elastic
Cross Section

42-Mo-Nat

ENDL-7144

07/04/76

(n, γ)
Cross Section

42-Mo-Nat

ENDL-7144

5-29

42-Mo-Nat -13

07/04/76

(n, γ)

$^{42}\text{Mo-Nat}$
[NDL 7144]

Cross Section

Mev

5-30

$^{42}\text{Mo-Nat} - 14$

Barns

07/04/76

42-Mo-Nat

(n,γ)
Cross Section

5-31

42-Mo-Nat -15

Barns

07/04/76

(n,γ)
Cross Section

42-Mo-Nat

07/04/76

Total
Cross Section

42-Mo-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 4017	4.4000- 2	2.1000- 2	8.9200+ 0	1.1000- 1	57 22	8.6100+ 0	1.5000- 1	4.2400+ 0	4.0000- 2
66 4017	6.0000- 2	3.3000- 2	8.8900+ 0	2.0000- 1	57 22	1.0220+ 1	1.1000- 1	4.2800+ 0	4.0000- 2
66 4017	1.3200- 1	2.6000- 2	8.7800+ 0	7.0000- 2	57 22	1.2430+ 1	9.0010- 2	4.1700+ 0	5.0000- 2
66 4017	2.1700- 1	1.7000- 2	8.8900+ 0	1.0000- 1	52 207	1.4000+ 1		3.6000+ 0	3.0000- 1
66 4017	3.4000- 1	2.0000- 2	8.6600+ 0	5.0000- 2	52 81	1.4000+ 1		4.0400+ 0	8.0010- 2
61 637	3.6600+ 0	2.0000- 1	4.1100+ 0	2.1000- 1	57 22	1.4500+ 1	7.0010- 2	3.9600+ 0	4.0000- 2
60 576	4.1000+ 0	1.0000- 1	3.9000+ 0	1.0000- 1	61 233	2.8400+ 1		2.9300+ 0	1.0000- 1
57 22	7.0900+ 0	1.7000- 1	4.0600+ 0	4.0000- 2	50 281	4.2000+ 1	1.0000+ 0	3.1100+ 0	5.0000- 2

07/04/76

Elastic
Cross Section

42-Mo-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC PARNS	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 1255	3.0000- 1		8.3000+ 0	3.5000- 1	72 3546	8.7540- 1	2.0000- 1	5.3104+ 0	
64 1255	5.0000- 1		7.8300+ 0	2.3000- 1	54 103	1.0000+ 0	8.0000- 2	5.7000+ 0	8 5500- 1
64 1255	8.0000- 1		6.9000+ 0	2.8000- 1	65 1509	2.0000+ 0	5.0000- 2	3.5000+ 0	

5-32

42-Mo-Nat -16

07/04/76

Elastic
Cross Section

42-Mo-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs		
57	320	3.6600+ 0	2.0000- 1	1.7000+ 0	3.0000- 1	65	889	6.0400+ 0	2.3000- 1	1.9000+ 0	3.0000- 1
60	576	4.1000+ 0	1.0000- 1	1.9000+ 0	3.0000- 1	69	3660	8.0500+ 0	9.0000- 2	2.2200+ 0	1.3000- 1

07/04/76

(n,γ)
Cross Section

42-Mo-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs		
60	633	2.5000- 2	1.0000- 3	2.6200- 1	1.1000- 2	63	16.5000- 2	2.1000- 2	6.9010- 2	6.2010- 3	
63	799	3.0000- 2	2.0000- 3	1.4100- 1	3.2000- 2	58	363	2.0000- 1	9.7000- 2	1.6000- 2	
51	677	3.0000- 2	7.0010- 3	1.4000- 1	1.0000- 2	60	633	2.2000- 1	2.0000- 2	7.0010- 2	6.0010- 3
13	1	3.0000- 2	8.0010- 3	1.4000- 1	1.3000- 2	56	9	4.0000- 1	9.0010- 2	4.2800- 2	1.7000- 3
61	677	6.5000- 2	2.0000- 2	6.9010- 2	7.0010- 3	60	633	8.3000- 1	4.0000- 2	1.1000- 1	1.0000- 2

07/04/76

Neutrons/Nonelastic Event

42-Mo-Nat

REFERENCE	ENERGY MEV	DELTA MEV	RATIO	DELTA
58	877	1.4000+ 1	1.6400+ 0	2.0000- 1

42-Mo-92 -1

07/04/76

Elastic
Cross Section

42-Mo-92

Barns

07/04/76

Elastic
Cross Section

42-Mo-92

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
74 3586	1.5000 ± 0	8.4000 - 2	5.1653 ± 0	

07/04/76

Total
Cross Section

42-Mo-94

Barns

E-35

42-Mo-94 -1

07/04/76

Total
Cross Section

42-Mo-94

07/04/76

Elastic
Cross Section

42-Mo-94

5-36

42-Mo-94 -2

07/04/76

Elastic
Cross Section

42-Mo-94

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNS	DELTA BARNS
74 3586	1.5000 ± 0	3.4000 ± 2	4.4706 ± 0	

07/04/76

Total
Cross Section

42-Mo-95

5-37

42-Mo-95 11

07/04/76

(n,γ)

42-Mo-96

Cross Section

07/04/76

Total

42-Mo-96

Cross Section

5-38

42-Mo-96 -1

07/04/76

Total
Cross Section

42-Mo-96

07/04/76

Elastic
Cross Section

42-Mo-96

5-39

42-Mo-96 -2

07/04/76

42-Mo-96

(n, γ)
Cross Section

ECS11-896 (63)

07/04/76

42-Mo-96

Elastic
Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
74 3586	1.5000 ± 0.8	4.0000 ± 2.4	3784 ± 0	

07/04/76

42-Mo-97

(n, γ)
Cross Section

ECS11-896 (63)

5-40

42-Mo-97 -1

Barns

Barns

07/04/76

Total
Cross Section

42-Mo-98

5-41

42-Mo-98 -1

Barns

07-76

42-M0-98

Total
Cross Section

Barns

5-42

42-M0-98 -2

07/04/76

Elastic
Cross Section

42-Mo-98

Barns

07/04/76

(n,γ)
Cross Section

42-Mo-98

Barns

5-43

42-Mo-98 - 5

07/04/76

(n, γ)
Cross Section

42-Mo-98

ECSIL-2694 (67)

ECSIL-3002 (69)

Barns

07/04/76

(n, γ)
Cross Section

42-Mo-98

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 2718 2.5300- 8		1.3600- 1	3.0000 3		61 2718 2.5300- 8		1.3600- 1	3.0000 3	
47 888 2.5300- 8		1.8000- 1	2.0000 2		47 888 2.5300- 8		1.8000- 1	2.0000 2	
69 3678 2.5300- 8		1.2000 1	4.0000 3		69 3678 2.5300- 8		1.2000 1	4.0000 3	
58 357 2.1000- 2		4.1000- 1	5.8000 2		58 357 2.1000- 2		4.1000- 1	5.8000 2	

5-44

42-Mo-98 -4

07/04/76

(n, γ)

42-Mo-98

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	N-SEC S	DELTA HALF-LIFE BARNs	HOURS
68 2656 2	4000-2	1...	1	1.5000-2	6.7000+1

07/04/76

Total
Cross Section

42-Mo-100

ECSIL-3439 (72)

ECSIL-3638 (67)

Barns

5-45

42-Mo-100 -1

07/04/76

Elastic
Cross Section

42-Mo-100

07/04/76

(n, γ)
Cross Section

42-Mo-100

5-46

42-Mo-100 -2

07/04/76

(n, γ)
Cross Section

42-Mo-100

5-47

42-Mo-100 3

07-04/76

(n, γ)
Cross Section

42-Mo-100

07/04/76

Elastic
Cross Section

42-Mo-100

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
74 3586	1.5000+ 0	8.4000- 2	4.0146+ 0	

07/04/76

(n, γ)
Cross Section

42-Mo-100

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 0		4.7500- 1	9.5000- 2	58 363	2.0000- 1	1.5000- 2	5.1600- 2	2.1000- 3
58 357	2.1000- 2		1.4800- 1	3.9000- 2	58 1044	2.5000+ 0		6.3000- 3	1.2000- 3
58 45	2.1000- 2	4.0000- 3	1.6900- 1	3.0000- 3	58 363	2.7000+ 0		6.5000- 3	7.0000- 4
57 305	2.4000- 2	5.0000- 3	3.6000- 2	8.0010- 3	58 1044	3.1000+ 0		5.6000- 3	1.0000- 3
62 697	2.5000- 2	5.0000- 3	1.0800- 1	5.0000- 2	58 1044	4.0000+ 0		4.5000- 3	7.0000- 4
59 526	1.5000- 1	1.5000- 2	2.7000- 2	6.0010- 3	58 363	4.0000+ 0		3.9000- 3	4.0000- 4

5-48

42-Mo-100 -4

07/04/76

43-Tc-99

Total
Cross Section

Bases

5-49

43-Tc-99 -1

07/04/76

Total

43-Tc-99

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58	2720	2.5300 - 8	3.0000 + 1	2.0000 + 0
70	3550	2.5300 - 8	2.4700 + 1	1.7000 + 0

07/04/76

Total

44-Ru-Nat

Cross Section

5-50

MeV

44-Ru-Nat -1

Barns

07/04/76

Total
Cross Section

$^{44}\text{Ru-Nat}$

ECSIL-3638 (67)

ECSIL-750 (67)

Barns

1.51

$^{44}\text{Ru-Nat} - 2$

07/04/76

(n,γ)

44-Ru-Nat

Cross Section

Barns

ECSTL-674 (60)

07/04/76

Total

44-Ru-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53	100	1.0000- 2	1.0000- 3	0.0010- 0
53	100	1.0000- 1	1.0000- 2	0.0010- 0

5-52

44-Ru-Nat -3

07/04/76

10.0

44-RU-96

Cross Section

REFERENCE	ENERGY	DELTA	N SEC	DELTA
	MEV		BARNs	BARNs
63 370B	2.5000-8	MEV	1.3000-0	1.3200-1
64 375	2.4000-2	5.0000-3	3.4600-1	3.9000-2
64 426	1.9000-1	1.6000-1	1.9000-2	2.5000-2

07/04/76

10.0

44-RU-102

Cross Section

REFERENCE	ENERGY	DELTA	N SEC	DELTA
	MEV		BARNs	BARNs
63 370B	2.5000-8	MEV	1.3000-0	1.3200-1
64 375	2.4000-2	5.0000-3	3.4600-1	3.9000-2
64 426	1.9000-1	1.6000-1	1.9000-2	2.5000-2

07/04/76

10.0

44-RU-104

Cross Section

REFERENCE	ENERGY	DELTA	N SEC	DELTA	ENERGY	DELTA	N SEC	DELTA
	MEV		BARNs	BARNs	MEV		BARNs	BARNs
63 370B	2.5000-8	MEV	1.3000-0	1.3200-1	63 370B	2.5000-8	MEV	1.3000-0
64 375	2.4000-2	5.0000-3	3.4600-1	3.9000-2	64 375	2.4000-2	5.0000-3	3.4600-1
64 426	1.9000-1	1.6000-1	1.9000-2	2.5000-2	64 426	1.9000-1	1.6000-1	1.9000-2

07/04/76

10.0

44-RU-106

Cross Section

REFERENCE	ENERGY	DELTA	N SEC	DELTA
	MEV		BARNs	BARNs
63 370B	2.5000-8	MEV	1.3000-0	1.3200-1
64 375	2.4000-2	5.0000-3	3.4600-1	3.9000-2
64 426	1.9000-1	1.6000-1	1.9000-2	2.5000-2

5-53

44-RU-106-1

07:04.76

45-Rh-103

Total
Cross Section

Mev

45-Rh-103 -1

5-54

Barns

07/04/76

Total
Cross Section

45-R1-103

EC5IL-2152 (61)

EC5IL-2146 (62)

EC5IL-1820 (58)

5-55

MeV

45-R1-103-2

Barns

00-04-76

45-RH-103

Total
Cross Section

5-56

Mev

45-RH-103 -3

Barns

07-04-76

45-Rh-103

Total
Cross Section

Bar 3

MeV

5-57

45-Rh 103 -4

07/04/76

45-Rh-103

Total
Cross Section

EC51L-3638 (67)

EC51L-750 (67)

(E Banded Below)
EC51L-2155 (66)

MeV

5-58

45-Rh-103 -5

Barns

07/04/76

45-44-103

Total
Cross Section

Barns

5.4

Vol.

45 RP 103-10

07/04/76

Total
Cross Section

45-Rh-103

07/04/76

Elastic
Cross Section

45-Rh-103

07/04/76

45-RH-103

ln. 3
Cross Section

45-RH-103 B

MeV

5-61

Barns

07/04/76

(n, γ)

45-Rh-103

Cross Section

Barns

07/04/76

(n, γ)
Cross Section

45-Rh-103

ECSIL-3552 (74)

ECSIL-674 (60)

ECSIL-1695 (67)

5-63

MeV

45-Rh-103 - 10

Barns

07/04/76

(n, γ)

45-Rh-103

Cross Section

5-64

Mev

45-Rh-103 -11

Bases

07/04/76

(n,γ)
Cross Section

45-Rh-103

07/04/76

Elastic
Cross Section

45-Rh-103

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53 874	1.5000- 7		4.1000+ 0	
65 889	6.0400+ 0	2.3000- 1	1.7000+ 0	2.5000- 1

07/04/76

(n,γ)
Cross Section

45-Rh-103

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		1.4860+ 2	1.4860+ 1	67 1807	1.5000- 1	2.1000- 2	3.5330- 1	2.2300- 2
62 697	2.5000- 2	5.0000- 3	6.4010- 1	2.2000- 1	67 1807	1.8200- 1	2.1000- 2	3.3670- 1	2.3300- 2
63 1	3.0000- 2	8.0010- 3	8.4010- 1	7.7010- 2	58 1044	2.5000+ 0		6.4400- 2	6.4000- 3
61 677	6.5000- 2	2.0000- 2	5.4010- 1	5.4010- 2	58 1044	3.1000+ 0		5.2400- 2	4.6000- 3
63 1	6.5000- 2	2.1000- 2	5.4010- 1	4.5000- 2	58 1044	4.0000+ 0		4.2300- 2	3.6000- 3
67 1807	7.0000- 2	1.9000- 2	7.0810- 1	2.5700- 2	63 749	1.4670+ 1		1.0570- 2	
67 1807	1.2500- 1	2.3000- 2	4.1550- 1	1.5900- 2					

5-65

45-Rh-103 -12

07/04/76

(n, γ)
Cross Section

45-Rh-103

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
66 2150	2.5300- 8		1.3500- 2	3.0000- 0	4.2000+ 1	58 1044	2.5000+ 0		5.4600- 2	4.5000- 3	4.4000+ 1
66 1713	2.4000- 2		4.5500- 1	4.5000- 2	4.2000+ 1	58 1044	3.1000+ 0		4.3500- 2	3.2000- 3	4.4000+ 1
63 749	1.4670+ 1		3.2300- 3		4.2000+ 1	58 1044	4.0000+ 0		3.4600- 2	2.7000- 3	4.4000+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
66 2150	2.5300- 8		1.1000+ 1	1.0000+ 0	4.4000+ 0	58 1044	2.5000+ 0		9.8000- 3	1.9000- 3	4.7000+ 0
66 1788	2.4000- 2		5.5000- 2	2.5000- 2	4.4000+ 0	58 1044	3.1000+ 0		8.9000- 3	1.4000- 3	4.7000+ 0
67 1991	3.0000+ 0	2.0000- 1	2.0800- 2	4.0000- 3	4.4000+ 0	58 1044	4.0000+ 0		7.7000- 3	1.1000- 3	4.7000+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	SPIN
72 3965	2.5000- 2	5.0000- 3	6.0000- 1	9.0000- 2	1.0000+ 0
72 3965	2.5000- 2	5.0000- 3	4.5000- 2	6.0000- 3	5.0000+ 0

07/04/76

Total
Cross Section

46-Pd-Nat

5-66

46-Pd-Nat -1

07/04/76

46-P4-Nat

Total
Cross Section

5-6"

Mev

Bars

07:04:76

46 Pd-Nat

Total
Cross Section

MeV

5-68

46-Pd-Nat -3

Barns

07/04/76

46-Pd-Nat

Total
Cross Section

Bar 3

3 4 5 6 7 8 9 10

8 10 12 14

Mev

6-50

46-Pd-Nat

07/04/76

Elastic
Cross Section

46-Pd-Nat

07/04/76

(n,γ)
Cross Section

46-Pd-Nat

07/04/76

(n,γ)

46-Pd-Nat

Cross Section

07/04/76

Total

46-Pd-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
56	232	1.4000 ± 1	4.3200 ± 1	4.0000 ± 2	60	673	2.1400 ± 1	2.0000 ± 1	3.5700 ± 0.40000 ± 2
57	368	1.4800 ± 1	4.1000 ± 0.1	0.000 ± 1	60	673	2.5200 ± 1	3.0000 ± 1	3.3400 ± 0.40000 ± 2
60	673	1.7500 ± 1	3.0000 ± 1	3.9600 ± 0.40000 ± 2	60	673	2.6900 ± 1	3.0000 ± 1	3.1600 ± 0.40000 ± 2

5-71

46-Pd-Nat 6

07/04/76

(n, γ)
Cross Section

46-Pd-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53	1 3.0000- 2	0.0010- 3	4.5400- 1	4.1000- 2
53	1 6.5000- 2	2.1000- 2	2.6500- 1	2.4000- 2

07/04/76

(n, γ)
Cross Section

46-Pd-105

5-72

46-Pd-105 -1

07/04/76

(n,γ)
Cross Section

46-Pd-108

07/04/76

(n,γ)
Cross Section

46-Pd-108

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 1788	2.4000- 2		1.8500- 1	1.5000- 2
59 526	1.9500- 1	1.5000- 2	7.7010- 2	8.0010- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
68 2392	2.4000- 2		2.6000- 2	6.0000- 3	4.8000+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
47 888	2.5300- 8		1.1200+ 1	2.2400+ 0	1.3000+ 1	57 305	2.4000- 2	5.0000- 3	5.4010- 1	6.0010- 2	1.3500+ 1
68 2392	2.4000- 2		1.5900- 1	1.6000- 2	1.3500+ 1	57 23	2.1000- 2	4.0000- 3	5.6010- 1	2.0000- 1	1.3500+ 1

07/04/76

(n,y)

46-Pd-110

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 3969	2.5000- 2	5.0000- 3	7.6000- 3	6.0000- 4	49 212	9.0000- 1	1.3000- 2	1.3100- 1	5.0000- 2
70 3969	2.5000- 2	5.0000- 3	1.2000- 1	1.1000- 2	57 521	1.4500+ 1		2.0000- 3	4.0000- 4
49 212	2.0000- 1	2.8000- 2	1.4600- 1	7.0010- 2					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
65 1788	2.4000- 2		1.2000- 1	1.5000- 2	2.2000+ 1	58 1044	4.0000+ 0		1.6296- 2	1.6000- 3	2.2000+ 1
58 1044	2.5000+ 0		2.2100- 2	2.0000- 3	2.2000+ 1	47 888	2.5300- 8		3.9000- 1	7.9000- 2	2.6000+ 1
58 1044	3.1000+ 0		2.0000- 2	1.8000- 3	2.2000+ 1						

07/04/76

Total
Cross Section

47-Ag-Nat

47 Ag 107.1501 5145

07/04/76

47-Ag-Nat

Total
Cross Section

ECSIL-261 (47)

ECSIL-459 (54)

Mev

5-75

47-Ag-Nat -2

Baron

07/04/76

Total
Cross Section

$^{47}\text{Ag-NaI}$

ECSIL-903 (58)

ECSIL-1237 (56)

(Expanded Below)
ECSIL-814 (65)

5-76

MeV

$^{47}\text{Ag-NaI}$ -3

Barns

07/04/76

Total
Cross Section

47-Ag-Nat

5-77

Mev

47-Ag-Nat -4

Barns

07/04/76

Total
Cross Section

47-Ag-Nat

47-Ag-107 ENOL-7145

07/04/76

Total

47-Ag-Nat

Cross Section

47-Ag-Nat 7105

5-79

47-Ag-Nat -6

07/04/76

Total
Cross Section

47-Ag-Nat

47-Ag 1.27 ENOL-7145

07/04/76

Total
Cross Section

$^{47}\text{Ag-Nat}$

Barns

5-B1

MeV

$^{47}\text{Ag-Nat}$ -P

07/04/76

Total

47-Ag-Nat

Cross Section

47-Ag-100 PND 7145

Barns

5-82

MeV

47-Ag-Nat -9

07/04/76

Total
Cross Section

⁴⁷Ag-Nat

07/04/76

47-Ag-Nat

Elastic
Cross Section

5-84

47-Ag-Nat -11

Barns

07/04/76

⁴⁷Ag-Nat

(n,γ)

Cross Section

Barns

Mev

⁴⁷Ag-Nat -12

5-85

07/04/76

(n, γ)
Cross Section

47-Ag-Nat

5-86

47-Ag-Nat -13

07/04/76

(n,γ)
Cross Section

⁴⁷Ag-Nat

Barns

5-87

⁴⁷Ag-Nat -14

07/04/76

(n, γ)
Cross Section

47-Ag-Nat

5-88

MeV

47-Ag-Nat -15

07/04/76

47-Ag-Nat

(n, γ)

Cross Section

10⁰

10¹

10²

10³

10⁴

10⁵

10⁶

10⁷

10⁸

10⁹

10¹⁰

10¹¹

10¹²

10¹³

10¹⁴

10¹⁵

10¹⁶

10¹⁷

10¹⁸

10¹⁹

10²⁰

10²¹

10²²

10²³

10²⁴

10²⁵

10²⁶

10²⁷

10²⁸

10²⁹

10³⁰

10³¹

10³²

10³³

10³⁴

10³⁵

10³⁶

10³⁷

10³⁸

10³⁹

10⁴⁰

10⁴¹

10⁴²

10⁴³

10⁴⁴

10⁴⁵

10⁴⁶

10⁴⁷

10⁴⁸

10⁴⁹

10⁵⁰

10⁵¹

10⁵²

10⁵³

10⁵⁴

10⁵⁵

10⁵⁶

10⁵⁷

10⁵⁸

10⁵⁹

10⁶⁰

10⁶¹

10⁶²

10⁶³

10⁶⁴

10⁶⁵

10⁶⁶

10⁶⁷

10⁶⁸

10⁶⁹

10⁷⁰

10⁷¹

10⁷²

10⁷³

10⁷⁴

10⁷⁵

10⁷⁶

10⁷⁷

10⁷⁸

10⁷⁹

10⁸⁰

10⁸¹

10⁸²

10⁸³

10⁸⁴

10⁸⁵

10⁸⁶

10⁸⁷

10⁸⁸

10⁸⁹

10⁹⁰

10⁹¹

10⁹²

10⁹³

10⁹⁴

10⁹⁵

10⁹⁶

10⁹⁷

10⁹⁸

10⁹⁹

10¹⁰⁰

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07/04/76

Total

47-Ag-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
70 3627	7.0000- 9		4.1800- 1		57	22 1.0400- 1	1.1000- 1	4.4900- 0	4.0000- 2
70 3627	1.1500- 7		3.6000- 1		57	22 1.2430- 1	9.07 10- 2	4.4400- 0	5.0000- 2
70 3627	3.6400- 7		2.2600- 1		52	81 1.4000- 1		4.3400- 0	9.0010- 2
70 3627	8.3500- 7		1.8500- 1		57	22 1.4110- 1	7.0010- 2	4.3900- 0	4.0000- 2
65 949	1.4400- 6		1.7470- 1	5.0000- 2	60	673 1.7400- 1	3.0000- 1	3.9800- 0	5.0000- 2
47 261	7.1700- 6		0.0000- 0	3.0000- 1	60	673 2.1400- 1	2.0000- 1	3.5900- 0	4.0000- 2
49 84	1.1500- 6	1.1500- 6	5.62110- 0		60	673 2.9200- 1	3.0000- 1	3.3400- 0	4.0000- 2
49 844	3.0000- 4	3.0000- 4	5.64310- 0		45	307 2.9400- 1		3.7000- 0	3.7000- 1
62 2182	6.7000- 0	1.0000- 1	4.3300- 0	9.0000- 2	60	673 2.8800- 1	3.0000- 1	3.1700- 0	3.0000- 2
57 22	6.8300- 0	1.7000- 1	4.2700- 0	4.0290- 2	50	281 4.2000- 1	1.0000- 0	3.2590- 0	3.4000- 2
57 22	8.5700- 0	1.5000- 1	4.4100- 0	4.0000- 2					

07/04/76

Elastic

47-Ag-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
63 1750	6.5000- 1		6.8500- 0	1.8000- 1	65	1509 2.0000- 0	5.0000- 2	3.2000- 0	
72 3546	8.7330- 1	2.0000- 1	5.4448- 0		62	2165 6.7000- 0	1.0000- 1	2.1100- 0	
54 103	1.0000- 0	8.0000- 2	4.5000- 0	6.7500- 1					

07/04/76

(n,γ)

47-Ag-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
70 3627	2.5300- 8		6.7500- 1	1.5000- 0	63	1 3.0000- 2	8.0010- 3	9.5110- 1	8.6010- 2
70 3627	7.0000- 8		4.0900- 1	9.0000- 1	63	1 6.5000- 2	2.1000- 2	5.8610- 1	5.3010- 2
70 3627	1.1500- 7		4.3900- 1	1.8000- 1	67	1807 1.9400- 1	1.5000- 2	4.3450- 1	3.0500- 2
70 3627	3.6400- 7		2.0300- 1	5.0000- 1	67	1807 1.2500- 1	2.3000- 2	4.0540- 1	1.5000- 2
70 3627	8.3500- 7		1.2000- 1	1.8000- 1	67	1807 1.9000- 1	2.1000- 2	3.4230- 1	2.4800- 2
75 3009	2.8700- 2		1.1000- 0	2.4000- 2	67	1807 1.8200- 1	2.1000- 2	3.1050- 1	2.1500- 2
62 697	2.5000- 2	5.0000- 3	1.2000- 0	3.9400- 1	56	363 2.0000- 1		5.9000- 1	7.7000- 2
60 633	2.4000- 2	5.0000- 3	3.9840- 1	4.9400- 1	60	633 2.2000- 1	2.0000- 2	4.5200- 1	4.0000- 2
60 639	2.5000- 2	5.0000- 3	3.1165- 1	6.0000- 1	60	633 3.3000- 1	4.0000- 2	2.3000- 1	2.3000- 2

5-90

47-Ag-Nat -17

07/04/76

(n, γ)
Cross Section

$^{47}\text{Ag-107}$
(n, γ)

(Expanded Below)
ECSIL-2387 (66)

ECSIL-2387 (66)

ECSIL-2387 (66)

Barns

07/04/76

(n, γ)
Cross Section

47-Ag-107

ECSIL-726 (60)

ECSIL-313 (46)

ECSIL-2388 (65)

Barns

5-92

47-Ag-107 -2

07/04/76

(n,γ)
Cross Section

47-Ag-107

07/04/76

Total
Cross Section

47-Ag-107

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200 ± 1		4.3400 ± 0	3.0000 ± 2

07/04/76

(n,γ)

47-Ag-107

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58	357 2.1000- 2		1.7880+ 0	2.0800- 1	59	526 1.9500- 1	1.5000- 2	2.9000- 1	6.0010- 2
58	43 2.1000- 2	4.0000- 3	1.2940+ 0	9.1010- 2	58	363 2.0000- 1	3.0000- 2	3.9000- 1	1.3000- 2
57	305 2.4000- 2	5.0000- 3	9.3010- 1	1.8000- 1	58	363 2.7000+ 0		5.6000- 2	1.0000- 3
62	697 2.5000- 2	5.0000- 3	8.0010- 1	2.8000- 1	58	363 4.0000+ 0		2.9400- 2	9.0000- 4

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
65	867 2.4000- 2		8.4000- 1	9.0000- 2	2.4000+ 0
67	1991 3.0000+ 0	2.0000- 1	5.1000- 2	8.0000- 3	2.4000+ 0

07/04/76

Total
Cross Section

47-Ag-109

[7.0] 7/196

5-94

47-Ag-109 -1

07/04/76

Total
Cross Section

47-Ag-109

07/04/76

47-Ag-109

(n, γ)

Cross Section

(Expanded Below)
ECS1L-2387 (66)

ECS1L-2387 (66)

ECS1L-2387 (66)

MeV

5-96

47-Ag-109 -3

Barns

07/04/76

(n,γ)
Cross Section

47-Ag-109

5-97

47-Ag-109 -4

07/04/76

(n,γ)
Cross Section

47-Ag-109

ENR 7148

07/04/76

Total
Cross Section

47-Ag-109

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200+ 1		4.3800+ 0	2.0000- 2

07/04/76

(n,γ)
Cross Section

47-Ag-109

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 889	2.5300- 8		9.9300+ 1	1.9860+ 1
62 697	2.5000- 2	5.0000- 3	1.6200+ 0	4.8000- 1
70 3971	2.5000- 2		1.8000- 2	1.5000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs SECONDS
66 1788	2.4000- 2		6.9000- 1	6.0000- 2 2.4000+ 1

5-98

47-Ag-109 -5

07/04/76

(n, γ)
Cross Section

47-Ag-109

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE DAYS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE DAYS
66 3019	7.8000- 3		5.0000- 2		2.5000+ 2	66 3019	6.4000- 2		6.0000- 2		2.5300+ 2
66 3019	3.0000- 2		4.0000- 2		2.5000+ 2	72 3727	2.5300- 8		4.5770+ 0	7.2730- 2	2.5300+ 2

07/04/76

Total
Cross Section

48-Cd-Nat

07/04/76

Total
Cross Section

48-Cd-Nat

07/04/76

Total
Cross Section

48-Cd-Nat

48-Cd-Nat -3

07/04/76

Total

$^{48}\text{Cd-Nat}$

Cross Section

1969 2149

5-102

MeV

$^{48}\text{Cd-Nat}$

Baras

07/04/76

$^{48}\text{Cd-Nat}$

Total
Cross Section

ECS11-3241 (71)

ECS11-750 (67)

MeV

5-103

$^{48}\text{Cd-Nat}$ -5

Barns

07/04/76

Total
Cross Section

48-Cd-Nat

5-104

MeV

48-Cd-Nat -6

07/04/76

48-Cd-Nat

Total
Cross Section

Mev

5-105

48-Cd-Nat -7

Barns

07/04/76

Total
Cross Section

48-Cd-Nat

07/04/76

Elastic
Cross Section⁴⁸Cd-Nat

5-107

MeV

⁴⁸Cd-Nat -9

07/04/76

Elastic
Cross Section

48-Cd-Nat

07/04/76

(n, γ)
Cross Section

48-Cd-Nat

5-108

48-Cd-Nat -10

07/04/76

(n, γ)
Cross Section

⁴⁸Cd-Nat

Barns

07/04/76

Total
Cross Section

48-Cd-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 3378	7.6000-12	1.3680-12	1.0400+ 5	5.0000+ 3	66 4017	1.7000- 1	4.0000- 2	7.3500+ 0	1.9000- 1
68 3378	9.2000-12	1.6560-12	1.0100+ 5	7.0000+ 3	66 4017	2.0000- 1	4.0000- 2	7.6400+ 0	1.8000- 1
68 3378	1.0600-11	1.9440-12	8.7000+ 4	5.0000+ 3	66 4017	2.4000- 1	4.0000- 2	7.8000+ 0	5.0000- 1
67 1875	2.5300- 8		2.4550+ 3	1.0000+ 1	35 296	4.1000+ 0	4.0000- 2	4.1000+ 0	2.0000- 1
49 844	1.1500- 4	1.1500- 5	5.6710+ 0		52 81	1.4000+ 1		4.4400+ 0	9.0010- 2
49 844	3.0000- 4	3.0000- 5	5.1710+ 0		57 368	1.4800+ 1		4.1200+ 0	6.0010- 2
46 261	1.0000- 3	5.7300- 4	7.0010+ 0	2.0000- 1	60 673	1.7300+ 1	3.0000- 1	4.1300+ 0	5.0000- 2
56 138	1.0000- 3	3.0000- 4	5.0000+ 0		60 673	2.1400+ 1	2.0000- 1	3.7200+ 0	4.0000- 2
56 138	2.0000- 3	6.0010- 4	7.0010+ 0		60 673	2.5200+ 1	3.0000- 1	3.4600+ 0	4.0000- 2
47 46	2.4000- 2	1.5000- 2	6.9010+ 0	3.0000- 1	60 673	2.8800+ 1	3.0000- 1	3.2600+ 0	3.0000- 2
66 4017	4.0000- 2	3.0000- 2	7.3000+ 0	4.0000- 1	69 3160	5.7000+ 3	6.0000+ 2	2.1200+ 0	3.0000- 2
66 4017	1.2000- 1	4.0000- 2	7.2000+ 0	3.0000- 1	71 3180	2.6500+ 4	3.5000+ 3	1.9070+ 0	3.2000- 2

07/04/76

Elastic
Cross Section

48-Cd-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 261	1.7500- 7	2.0000- 9	5.3000+ 0	7.0000- 1	54 103	1.0000+ 0	8.0000- 2	5.5000+ 0	8.2500- 1
63 1699	3.0000- 1	2.5000- 2	7.4400+ 0	3.0000- 1	65 1509	2.0000+ 0	5.0000- 2	3.9000+ 0	
64 870	5.0000- 1	5.0000- 2	6.8800+ 0	2.1000- 1	65 889	6.0400+ 0	2.3000- 1	1.8000+ 0	3.0000- 1
64 870	8.0000- 1	5.0000- 2	6.1600+ 0	1.8000- 1	69 3660	8.0500+ 0	9.0000- 2	1.6300+ 0	1.0000- 1
72 3546	8.7000- 1	2.0000- 1	5.8994+ 0		60 631	1.4600+ 1	1.0000- 1	2.3700+ 0	2.1000- 1

07/04/76

(n,γ)
Cross Section

48-Cd-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 2175	2.5300- 8		2.4840+ 3	1.4000+ 1	63 1	3.0000- 2	8.0010- 3	3.3000- 1	3.0000- 2
64 895	2.5300- 8		2.3920+ 3	4.5000+ 1	63 1	6.5000- 2	2.1000- 2	1.8300- 1	1.6000- 2
64 895	2.5300- 8		2.4450+ 3	2.5000+ 1	58 363	2.0000- 1		1.7700+ 1	3.3000- 2
64 895	2.5300- 8		2.4440+ 3		60 674	4.0000- 1	4.0000- 2	1.0100+ 1	1.1000- 2
60 639	2.4000- 2	2.0000- 3	5.1510+ 1	7.0000- 2	66 3863	9.6000- 1	4.0000- 2	6.5000- 1	5.0000- 2
63 399	4.1000- 2	3.0000- 3	3.4300+ 1	7.2010- 2					

5-110

48-Cd-Nat -12

07/04/76

Neutrons/Nonelastic Event

48-Cd-Nat

REFERENCE	ENERGY MEV	DELTA MEV	RATIO	DELTA
58 877	1.4000+ 1		1.7400+ 0	2.0000- 1

07/04/76

Total
Cross Section

48-Cd-106

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200+ 1		4.2900+ 0	7.0000- 2

07/04/76

Total
Cross Section

48-Cd-108

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200+ 1		4.3300+ 0	7.0000- 2

07/04/76

Total
Cross Section

48-Cd-110

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200+ 1		4.3400+ 0	4.0000- 2

07/04/76

(n,γ)
Cross Section

48-Cd-110

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
46 2688	2.5300- 6		2.0000- 1	

5-111

48-Cd-110 - 1

07/04/76

Total
Cross Section

48-Cd-111

Barns

07/04/76

Total
Cross Section

48-Cd-111

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200+ 1		4.4400+ 0	4.0000- 2

07/04/76

(n,γ)
Cross Section

48-Cd-111

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 3420	2.5300- 8		7.7000+ 0	8.0000- 1

5-112

48-Cd-111 -1

07/04/76

Total
Cross Section

48-Cd-112

07/04/76

Total
Cross Section

48-Cd-112

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1859	1.4200+ 1		4.5300+ 0	3.0000- 2

07/04/76

(n,γ)
Cross Section

48-Cd-112

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 3420	2.5300- 8		5.0000- 1	5.0000- 1

07/04/76

Total

48-Cd-113

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200 ± 1		4.5000 ± 0.3.0000	± 2

07/04/76

Total

48-Cd-114

Cross Section

5-114

48-Cd-114 -1

07/04/76

(n,γ)

48-Cd-114

Cross Section

07/04/76

Total

48-Cd-114

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57 1643	4.0000± 0.50000	± 2	4.2100± 0.10000	± 1
57 1859	1.4200± 1		4.5400± 0.20000	± 2

07/04/76

Elastic

48-Cd-114

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
54 1643	4.0000± 0.50000	± 2	2.0000± 0.10000	± 1

5-115

48-Cd-114 -2

07/04/76

(n, γ)
Cross Section

48-Cd-114

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 3420	2.5300- 8		6.9000+ 0	7.0000- 1
47 888	2.5300- 8		1.2400+ 0	2.4800- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
65 867	2.4000- 2		2.4000- 1	2.5000- 2	5.6000+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE DAYS
66 2622	2.5300- 8		3.0000- 1	1.5000- 2	2.3000+ 0
66 2622	2.5300- 8		3.6000- 2	7.0000- 3	4.3000+ 1

07/04/76

Total
Cross Section

48-Cd-116

07/04/76

Total
Cross Section

48-Cd-116

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200- 1		4.5600- 0	3.0000- 2

07/04/76

(n,y)
Cross Section

48-Cd-116

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		1.4000- 0	2.8000- 1	70 3969	2.5000- 2	5.0000- 3	1.8200- 2	1.5000- 3
68 3420	2.5300- 8		2.5000- 0	2.5000- 0	70 3969	2.5000- 2	5.0000- 3	6.1200- 2	4.8000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
66 1788	2.4000- 2		2.7000- 1	2.5000- 2	5.0000- 1

07/04/76

Total
Cross Section

49-In-Nat

07-04-76

49-In-Nat

Total
Cross Section

Mev

5-118

49-In-Nat -2

Barons

07:04/76

Total
Cross Section

49-In-Nat

Barns

MeV

5-119

49-In-Nat -3

5-120

Total

$^{49}\text{-In-Nat}$

Cross Section

Mev

5-120

$^{49}\text{-In-Nat -4}$

Baras

07/04/76

Total
Cross Section

49-In-Nat

5-12:

MeV

49-In-Nat -5

17-04-76

Elastic
Cross Section

17-04-76

Barns

07/04/76

49-In-Nat

(n, γ)

Cross Section

MeV

5 123

49-In-Nat -7

Barns

07/04/76

49-In-Nat

(n, γ)
Cross Section

MeV

5-124

49-In-Nat -8

Barns

07/04/76

(n,γ)
Cross Section

49-In-Nat

07/04/76

Total
Cross Section

49-In-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49 844	1.1500-	4 1.1500-	5 5.0410+ 0		52 81	1.4000+ 1		4 5.3000+ 0	9 0.010- 2
49 844	3.0000-	4 3.0000-	5 6.0610+ 0		60 673	1.7500+ 1	3 3.0000-	4 4.2600+ 0	5 0.000- 2
47 44	1.0000-	3 1.0000-	4 3.0000+ 1	1 1.0000- 1	60 673	1.8400+ 1	2 2.0000-	4 4.1200+ 0	5 0.000- 2
61 637	3.6600+ 0	2 2.0000-	1 4.2800+ 0	2 2.1000- 1	60 673	2.1400+ 1	2 2.0000-	1 3.8200+ 0	4 0.000- 2
62 2155	6.7000+ 0	1 1.0000-	4 4.3900+ 0	9 0.0000- 2	60 673	2.5300+ 1	3 3.0000-	1 3.4600+ 0	4 0.000- 2

5-125

49-In-Nat -9

07/04/76

Total
Cross Section

49-In-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60	673 2.8900+ 1	3.0000	3.3100+ 0	4.0000- 2

07/04/76

Elastic
Cross Section

49-In-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72	3546 8 7040- 1	2.0000- 1	6.5237+ 0	
54	103 1.0000+ 0	8.0000- 2	6.2000+ 0	9.3000- 1
62	2165 6.7000+ 0	1.0000- 1	2.0800+ 0	

07/04/76

(n,y)
Cross Section

49-In-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60	639 2.4000- 2	2.0000	8.2310- 1	6.0010- 2	70	2232 1.4100+ 1	6.7500- 1	1.1020- 3	1.6400- 4
62	697 2.5000- 2	5.0000- 3	8.5010- 1	3.4000- 1	69	2220 1.4100+ 1	6.7500- 1	1.2000- 3	2.0000- 4
68	3019 3.0000- 2		8.1400- 1	4.8000- 2					

5-126

49-In-Nat -10

07/04/76

(n, γ)
Cross Section

49-In-113

07/04/76

(n, γ)
Cross Section

49-In-113

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
66 1788	2.4000- 2		2.6000- 1	9.0000- 2	7.2000+ 1

5-127

49-In-113 -1

07/04/76

(n,γ)

49-In-113

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNS	DELTA BARNS	HALF-LIFE DAYS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNS	DELTA BARNS	HALF-LIFE DAYS
47 888	2.0500- 8		5.6000+ 1	1.1200+ 1	4.8000+ 1	66 3019	3.0000- 2		6.1200- 1		5.0000+ 1
57 23	2.1000- 2	4.0000- 3	8.3010+ 0	2.7000+ 0	4.9000+ 1	68 3019	6.4000- 2		4.5000- 1		5.0000+ 1
66 3019	7.8000- 3		1.1200+ 0		5.0000+ 1						

07/04/76

(n,γ)

49-In-115

Cross Section

5-128

49-In-115 -1

07/04/76

(n, γ)

49-[n-115

Cross Section

5-129

M.V.

49-[n-115 -2

Bar 95

07/04/76

49-10-115

(n, γ)
Cross Section

49-10-115 -3

07/04/76

(n,γ)
Cross Section

49-In-115

07/04/76

Total
Cross Section

49-In-115

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1643	4.0000+ 0	5.0000- 2	3.9400+ 0	1.5000- 1
67 1869	1.4200+ 1		4.5400+ 0	2.0000- 2

07/04/76

Elastic
Cross Section

49-In-115

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 1643	4.0000+ 0	5.0000- 2	1.8400+ 0	1.3000- 1

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
F3	43 2.1000-	2 4.0000-	3 5.7010-	1 2.0600- 2	56	9 4.0000-	1 9.0010-	2 2.8200-	1 1.4000- 2
52	305 2.4000-	2 5.0000-	3 6.0510-	1 8.0010- 2	59	363 2.7000+ 0	7.4000-	2 3.0000- 3	
F3	749 2.4000-	2 1.0280+ 0			63	749 3.1000+ 0	1.0800-	1	
58	363 2.0000-	1 1.5000-	2 2.3400-	1 1.5600- 2	58	363 4.0000+ 0	3.9270-	2 1.6000- 3	
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA SECONDS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA SECONDS
65 2739 2.5300- 8			8.1000+ 1 8.0000+ 0 2.0000+ 0		63	749 2.4000- 2	2.2300-	1	1.4030+ 1
65 867 2.4000- 2			2.2000- 1 3.0000- 2 1.3000+ 1		F3	749 3.1000+ 0	1.8000-	2	1.4000+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA SECONDS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA SECONDS
F5	867 2.4000- 2		5.8000- 1 4.0000- 2 4.2000- 2 5.4000+ 1						
47	888 2.5300- 8		1.4460+ 2 2.6920+ 1 5.4000- 1						
66	3019 7.8000- 3		1.1900+ 0 2.2000- 1 5.4000+ 1						
57	23 2.1000- 2 4.0000- 3 9.5010- 1 2.2000- 1 5.4000+ 1								
66	3019 3.0000- 2		6.4000- 1 5.4000+ 1						
C6	3019 6.4000- 2		3.8300- 1 5.4000+ 1						
67	2602 2.8000+ 0 7.0000- 2 4.0000+ 0 5.2000+ 0 5.4000+ 1								
68	3375 2.9000+ 0 2.0000- 1 6.8000- 2 1.1000- 2 5.4000+ 1								
67	1591 3.0000+ 0 2.0000- 1 6.8000- 2 1.0000- 2 5.4000+ 1								
56	526 1.9500- 1 1.5000- 2 1.9500- 1 1.0000- 2 5.4010+ 1								
74	3565 2.4300- 2		5.2800- 1 3.2000- 2 5.4200+ 1 3.6667- 2						

07/04/76

Total
Cross Section

50-Sn-Nat

5-133

MeV

50-Sn-Nat -1

07/04/76

50-Sn-Nat

Total
Cross Section

Bars

MeV

5-134

50-Sn-Nat -2

07/04/76

Total
Cross Section

50-Sn-Nat

Mev

5-135

50-Sn-Nat -3

Barns

07/04/76

50-Sn-Nat

Total
Cross Section

5-136

MeV

50-Sn-Nat -4

Barns

07/04/76

Total
Cross Section

50-Sn-Nat

Barns

5-137

50-Sn-Nat -5

07/04/76

Total

50-Sn-Nat

Cross Section

5-138

50-Sn-Nat -6

Barns

07/04/76

Elastic Cross Section

50-Sn-Nat

07/04/76

(n, γ)
Cross Section

50-Sn-Nat

07/04/76

Total
Cross Section

50-Sn-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49 844	1.1500- 4	1.1500- 5	5.0710+ 0		55 296	4.1000+ 0	4.0000- 2	4.3000+ 0	2.0000- 1
49 844	3.0000- 4	3.0000- 5	4.8700+ 0		69 2025	8.9400+ 0	5.0000- 1	5.1100+ 0	1.5000- 1
48 189	1.0000- 3		5.1010+ 0	1.0000- 1	52 207	1.4000+ 1		4.0000+ 0	4.0000- 1
48 189	5.0000- 3		5.2010+ 0	1.0000- 1	52 81	1.4000+ 1		4.6800+ 0	9.0010- 2
48 189	1.0000- 2		5.5010+ 0	1.0000- 1	57 368	1.4800+ 1		4.0500+ 0	7.0010- 2

5-140

50-Sn-Nat -8

07/04/76

Tot.
Cross Section

50-Sn-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN		
60	673	1.7300+ 1	3.0000+ 1	4.3300+ 0	5.0000+ 2	49	286	9.0000+ 1	3.2000+ 0	6.0010+ 2	
60	673	2.1400+ 1	2.0000+ 1	3.9500+ 0	4.0000+ 2	50	12	9.5000+ 1	3.1800+ 0	3.0000+ 2	
60	673	2.5200+ 1	3.0000+ 1	3.5300+ 0	3.0000+ 2	55	1056	1.4000+ 3	2.0000+ 2	2.0000+ 0	6.6000+ 2
60	673	2.8800+ 1	3.0000+ 1	3.3800+ 0	4.0000+ 2	61	1556	5.0000+ 3	4.0000+ 2	1.9860+ 0	8.8000+ 2
50	281	4.2000+ 1	1.0000+ 0	3.2510+ 0	2.3000+ 2						

07/04/76

Elastic
Cross Section

50-Sn-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
60	596	2.2000+ 1	6.9010+ 0		72	3546	8.8160+ 1	2.0000+ 1	6.8800+ 0
63	1699	3.0000+ 1	2.5000+ 2	7.0560+ 0	54	103	1.0000+ 0	8.0000+ 2	6.1000+ 0
64	870	5.0000+ 1	5.0000+ 2	6.6300+ 0	65	889	6.0400+ 0	2.3000+ 1	1.9000+ 0
63	1750	6.5000+ 1	6.8700+ 0	1.8000+ 1	58	403	1.4500+ 1	2.5900+ 0	10+ 1
64	870	6.0000+ 1	5.0000+ 2	6.6600+ 0					

07/04/76

(n,γ)
Cross Section

50-Sn-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN		
63	1	3.0000- 2	8.0010- 3	8.8010- 2	1.6000- 2	61	677	6.5000- 2	2.0000- 2	5.1010- 2	1.0000- 2
61	677	3.0000- 2	7.0010- 3	8.8010- 2	1.5000- 2	63	1	6.5000- 2	2.1000- 2	5.1010- 2	1.1000- 2
63	799	3.0000- 2	3.0000- 3	1.2400- 1	3.0000- 2	58	363	2.0000- 1	6.8000- 2	9.0000- 3	

07/04/76

Neutrons/Nonelastic Event

50-Sn-Nat

REFERENCE	ENERGY MEV	DELTA MEV	RATIO	DELTA
58	877	1.4000+ 1	1.8100+ 0	2.0000+ 1

5-131

50-Sn-Nat

07/04/76

Total
Cross Section

50-Sn-112

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200+ 1		4.4100+ 0	3.0000- 2

07/04/76

(n,γ)
Cross Section

50-Sn-112

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE DAYS
47 888	2.5300- 8		1.1000+ 0	2.2000- 1	1.0500+ 2

07/04/76

(n,γ)
Cross Section

50-Sn-116

07/04/76

50-Sn-116

Total
Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200 ± 1		4.4300 ± 0.8	0.0000 ± 2

07/04/76

50-Sn-116

(n,γ)
Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 938	3.0000 ± 2	1.6000 ± 2	9.2000 ± 2	1.9000 ± 2

07/04/76

50-Sn-117

(n,γ)
Cross Section

50-Sn-117 -1

07/04/76

Total
Cross Section

50-Sn-117

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS
67 1869	1.4200+ 1		4.6400+ 0	5.0000- 2

07/04/76

(n, γ)
Cross Section

50-Sn-117

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS
62 938	3.0000- 2	1.6000- 2	3.9000- 1	8.2000- 2

07/04/76

(n, γ)
Cross Section

50-Sn-118

07/04/76

Total
Cross Section

50-Sn-118

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1643	4.0000- 0	5.0000- 2	4.2100+ 0	1.3000- 1
67 1669	1.4200+ 1		4.7500+ 0	7.0000- 2

07/04/76

Elastic
Cross Section

50-Sn-118

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 1643	4.0000+ 0	5.0000- 2	1.9400+ 0	1.4000- 1

07/04/76

(n,γ)
Cross Section

50-Sn-118

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 938	3.0000- 2	1.6000- 2	5.9000- 1	1.2000- 2

07/04/76

(n,γ)
Cross Section

50-Sn-119

07/04/76

Total
Cross Section

50-Sn-119

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200+ 1		4.4600+ 0	1.0000- 1

07/04/76

(n,γ)
Cross Section

50-Sn-119

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 938	3.0000- 2	1.6000- 2	2.4300- 1	5.1000- 2

07/04/76

(n,γ)
Cross Section

50-Sn-120

07/04/76

Total
Cross Section

50-Sn-120

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57 1869	1.4200- 1		4.6600- 3	4.0000- 2

07/04/76

(n,γ)
Cross Section

50-Sn-120

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 938	3.0000- 2	1.6000- 2	3.5000- 1	7.0000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs HOURS
68 2856	2.4000- 2		7.7000- 2	1.1000- 2 2.7000- 1

07/04/76

(n,γ)
Cross Section

50-Sn-122

E-147

50-Sn-122

07/04/76

Total
Cross Section

50-Sn-122

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200+ 1		4.6900+ 0	4.0000- 2

07/04/76

(n,γ)
Cross Section

50-Sn-122

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 938	3.0000- 2	1.6000- 2	2.3000- 1	5.6000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs MINUTES	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs MINUTES
59 1044	2.5000+ 0		7.3000- 3	4.0000+ 1	58 1044	4.0000+ 0		5.7000- 3	4.0000+ 1
58 1044	3.1000+ 0		6.5000- 3	4.0000+ 1	68 2856	2.4000- 2		1.9500- 1	5.0000- 2

07/04/76

(n,γ)
Cross Section

50-Sn-124

07/04/76

(n,y)
Cross Section

50-Sn-124

07/04/76

Total
Cross Section

50-Sn-124

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200 ± 1		4.7100 ± 0	6.0000 ± 2

07/04/76

(n,y)
Cross Section

50-Sn-124

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200 ± 1		4.7100 ± 0	6.0000 ± 2
67 1869	1.4200 ± 1		4.7100 ± 0	6.0000 ± 2
67 1869	1.4200 ± 1		4.7100 ± 0	6.0000 ± 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
67 1869	1.4200 ± 1		4.7100 ± 0	6.0000 ± 2	9.5000 ± 0

07-04-76

51-Sb-Na:

Total
Cross Section

Barms

07 04/76

51-Sb-Nat

Total
Cross Section

6-2

51-Sb-Nat -2

Barns

07/04/76

51-Sb-Nat

Total
Cross Section

Bars

07/04/76

07/04/76

51-Sb-Nat

Total
Cross Section

6-4

neV

51-Sb-Nat -4

Barns

07/04/76

Total
Cross Section

51-Sb-Nat

Barns

6-5

MeV

51-Sb-Nat

07/04/76

51-Sb-Nat

Total
Cross Section

Rev

5-6

51-Sb-Nat -6

Bars

07/04.76

Total
Cross Section

Si-Sb-NaI

Barns

6.7

6.8

6.9 Sb-NaI

07/04/76

Elastic
Cross Section

51-Sb-Nat

07/04/76

(n, γ)
Cross Section

51-Sb-Nat

6-8

51-Sb-Nat -8

07/04/76

(n, γ)
Cross Section

51-Sb-Nat

Barns

6-9

$\times 10^2$
MeV

51-Sb-Nat -9

07/04/76

(n, γ)

51-Sb-Nat

Cross Section

07/04/76

Total

51-Sb-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49	844	3.0000-4	3.0000-5	5.4610+0	57	22	1.0360+1	1.1000-1	4.6900+0
61	637	3.6600+0	2.0000-1	4.7800+0	57	22	1.2300+1	9.0010-2	4.7300+0
60	576	4.1000+0	1.0000-1	4.4000+0	52	207	1.4000+1		4.6300+0
57	22	7.0100+0	1.7000-1	4.2800+0	52	81	1.4000+1		4.7100+0
57	22	8.6800+0	1.5000-1	4.4800+0	57	22	1.4370+1	7.0010-2	4.6800+0
									5.0000-2

6-10

51-Sb-Nat -10

07/04/76

Total
Cross Section

51-Sb-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs		
60	573	1.7500+ 1	3.0000- 1	4.3800+ 0	5.0000- 2	60	573	2.5200+ 1	3.0000- 1	3.6300+ 0	4.0000- 2
60	673	2.1400+ 1	2.0000- 1	3.9600+ 0	5.0000- 2	60	673	2.8800- 1	3.0000- 1	3.4100+ 0	4.0000- 2

07/04/76

Elastic
Cross Section

51-Sb-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
54	1255 3.0000- 1		6.0900+ 0	3.7000- 1	54	103 1.0000+ 0	8.0000- 2	6.2000+ 0	9.3000- 1
64	1255 5.0000- 1		6.6100+ 0	3.1000- 1	65	1509 2.0000+ 0	5.0000- 2	5.2000+ 0	
64	1255 6.0000- 1		6.5600+ 0	3.1000- 1	60	576 4.1000+ 0	1.0000- 1	2.1000+ 0	3.0000- 1
72	3546 8.7000- 1	2.0000- 1	5.9748+ 0		69	3660 8.9500+ 0	9.0000- 2	1.7500+ 0	1.0000- 1

07/04/76

(n,γ)
Cross Section

51-Sb-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 639	2.4000- 2	2.2000- 3	5.7800- 1	4.5000- 2	56 9	4.0000- 1	9.0010- 2	1.4700- 1	1.3000- 2
63 1	3.0000- 2	8.0010- 3	4.3600- 1	3.9000- 2	71 3821	4.0000- 1		1.3000- 1	
63 1	6.5000- 2	2.1000- 2	2.4500- 1	2.2000- 2	71 3821	4.0000- 1		6.5000- 2	5.0000- 3
58 363	2.0000- 1		2.5500- 1	3.3000- 2					

07/04/76

Neutrons/Nonelastic Event

51-Sb-Nat

REFERENCE	ENERGY MEV	DELTA MEV	RATIO	DELTA
58 877	1.4000+ 1		1.8200+ 0	2.0000- 1

07/04/76

(n, γ)

51-Sb-121

Cross Section

07/04/76

Total

51-Sb-121

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200 ± 1		6600 ± 0.20000 - 2	

51-Sb-121 -1

07/04/76

(n,y)

51-Sb-121

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 2632	2.5300- 8		6.3000- 3	9.0000- 4	70 5773	2.5000- 2	5.0000- 3	1.0000- 1	2.0000- 2
70 3969	2.5000- 2	5.0000- 3	1.0000- 1	1.5000- 4	67 1941	3.0000- 2	2.0000- 1	3.0000- 2	7.0000- 3
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 3019	7.8000- 3		7.2000- 1	2.9000- 0	66 3019	6.4000- 2		2.8000- 1	2.8000- 0
57 23 2.1000- 2	4.0000- 3	3.7100- 1	2.5000- 1	2.8000- 0	59 5976	1.9500- 1	1.0000- 1	2.4000- 1	4.0000- 2
57 305	2.4000- 2	5.0000- 3	5.5000- 1	1.0000- 1	69 2896	2.4000- 2		7.0000- 1	2.8000- 0
66 3019	3.0000- 2		3.4000- 1	2.8000- 0					

07/04/76

(n,y)

51-Sb-123

Cross Section

b-13

MEV

2 5 6 7 8 9 10

Barns

07/04/76

Total
Cross Section

51-Sb-123

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1869	1.4200- 1		4.6800- 0	3.0000- 2

07/04/76

(n, γ)
Cross Section

51-Sb-123

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57 355	2.4000- 2	5.0000- 3	4.5600- 1	4.6000- 2
67 1695	1.4700- 1		1.5000- 2	3.0000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
65 2856	2.4000- 2		3.1000- 3	1.5000- 3	1.3000- 0
68 2856	2.4000- 2		5.4000- 3	1.3000- 3	1.3000- 0
68 2856	2.4000- 2		5.7500- 1	5.0000- 2	1.3000- 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE DAYS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE DAYS
66 3019	7.8000- 3		5.2000- 1		6.0000- 1	57 23	2.1000- 2	4.0000- 3	2.2000- 1	1.0000- 1	6.0010- 1
66 3019	3.0000- 2		2.3000- 1		6.0090- 1	59 526	1.9500- 1	1.5000- 2	2.2000- 1	3.0000- 2	6.0010- 1
66 3019	6.4000- 2		1.8000- 1		6.0000- 1						

07/04/76

52-Te-Nat

Total
Cross Section

ECSIL-2039 (56)

ECSIL-2042 (55)

6-15

MeV

52-Te-Nat - 1

Baras

07/04/76

Total
Cross Section

52-Te-Nat

6-16

52-Te-Nat -2

07/04/76

Total
Cross Section

52-Te-Nat

6-17

52-Te-Nat -3

07/04/76

Total
Cross Section

52-Te-Nat

6-18

MeV

52-Te-Nat -4

Barns

07/04/76

Total
Cross Section

52-Te-Nat

0-10

52-Te-Nat -5

07/04/76

52-Te-Nat

Total
Cross Section

6-20

 MeV
 52-Te-Nat -6

Barns

07/04/76

52-Te-Nat

Total
Cross Section

MeV

6-71

52-Te-Nat -7

07/04/76

Elastic
Cross Section

52-Te-Nat

07/04/76

Total
Cross Section

52-Te-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49	844	1.1500- 4	1.1500- 5	5.1710+ 0	52	8.14000+ 1		4.8500+ 0	1.0000- 1
49	844	3.0000- 4	3.0000- 5	5.0510+ 0	70	330	1.4500+ 1	4.8100+ 0	5.0000- 2
61	637	3.6600+ 0	2.0000- 1	4.5900+ 0					
				2.3000- 1					

07/04/76

Elastic
Cross Section

52-Te-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 1699	3.0000- 1	2.5000- 2	6.2100+ 0	2.5000- 1	64 886	8.0000- 1	5.0000- 2	5.9400+ 0	2.0000- 1
64 886	5.0000- 1	5.0000- 2	5.5900+ 0	2.1000- 1	54 103	1.0000+ 0	8.0000- 2	5.9000+ 0	8.8500- 1
63 1750	6.5000- 1		6.2500+ 0	2.0000- 1					

6-22

52-Te-Nat -8

07/04/76

(n, γ)

52-Te-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNS	DELTA BARNS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNS	DELTA BARNS
51 2398	2.5000- 8		4.4300+ 0	1.5000- 1	58 1044	2.5000+ 0		1.2400- 2	3.3000- 3
60 633	2.5000- 2	1.0000- 3	2.4000- 1	3.0000- 2	58 1044	3.1000+ 0		1.0100- 2	3.0000- 3
63 1	3.0000- 2	8.0010- 3	9.7010- 2	8.7010- 3	56 1044	4.0000+ 0		7.2000- 3	2.1000- 3
63 1	6.5000- 2	2.1000- 2	3.5000- 2	3.2000- 3					

07/04/76

(n, γ)

52-Te-122

Cross Section

07/04/76

Total

52-Te-122

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNS	DELTA BARNS
67 1969	1.4200+ 1		4.6500+ 0	4.0000- 2

6-22

52-Te-122 -1

07/04/76

(n, γ)
Cross Section

52-Te-122

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 3971	2 5000- 2		1.7700- 1	1.6000- 2

07/04/76

(n, γ)
Cross Section

52-Te-123

6-24

52-Te-123 -1

07/04/76

52-Fe-124

(n, γ)
Cross Section

ECSIL-2202 (65)

07/04/76

(n, γ)
Cross Section

52-Te-124

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs	DELTA HALF-LIFE DAYS
59 2672	2.5300- 8		4.0000- 2	2.5000- 2	5.8000+ 1

07/04/76

(n, γ)
Cross Section

52-Te-125

6-26

52-Te-125 -1

07/04/76

Total

52-Te-126

Cross Section

REF ID: A600001
 6" 1809 1.4200-1
 1-SEC DELTA
 BARNs
 0.0000-2

07/04/76

(n,γ)

52-Te-126

Cross Section

6-27

Rev

52-Te-126

Barns

07/04/76

52-Fe-128

(n,γ)
Cross Section

ECSIL-1807 (67)

ECSIL-2994 (69)

Barns

07/04/76

52-Fe-128

(n,γ)
Cross Section

REFERENCE ENERGY DELTA X-SEC DELTA
 MEV MEV BARNES
 67 1869 1.4200 ± 1 4.7600 ± 0 3.0000 ± 2

07 04 76

(n, γ)

52-Te-128

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		1.4800- 1	2.9600- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs MINUTES
66 1788	2.4000- 2		1.4500- 1	2.5000- 2 7.2000+ 1

07/04/76

Total

52-Te-130

Cross Section

6-30

52-Te-130 -1

07/04/76

(n, γ)
Cross Section

52-Te-130

07/04/76

Total
Cross Section

52-Te-130

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67-1860	1.4200 ± 1		4.8100 ± 0	2.0000 ± 2

6-71

52-Te-130 -2

07.04/76

(n,γ)

52-Te-130

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		2.3000- 1	4.6000- 2	67 1807	1.2500- 1	2.3000- 2	6.0000- 3	3.3000- 3
67 1807	3.0000- 2	1.0000- 2	1.0000- 2	6.9000- 3	49 212	2.0000- 1	2.8000- 2	3.4000- 2	1.7000- 2
67 1807	3.0000- 2	1.0000- 2	1.7800- 2	7.1000- 3	49 212	9.0000- 1	1.3000- 2	2.6500- 2	8.0010- 3
67 1807	3.0000- 2	1.9000- 2	1.2100- 2	3.6000- 3					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
68 2392	2.4000- 2		7.2000- 2	1.2000- 2	2.5000+ 1
68 2345	3.0000+ 0	2.0000- 1	2.1660- 2	1.0100- 3	2.5000+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE DAYS
68 2392	2.4000- 2		2.2000- 2	8.0000- 3	1.2000+ 0

07.04/76

(n,γ)

52-Te-123m

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
75 3563	2.5000- 4		1.0000+ 0		1.7460+ 0
75 3563	2.5000- 8		2.3000- 1		2.6740+ 0

6-32

52-Te-123m -1

07/04/76

Total
Cross Section

53-1 -127

07/04/76

Total
Cross Section

53-1 -127

6-34

53-1 -127 -2

07/04/76

53-I -127

Total
Cross Section

Barns

6-35

MeV

53-I -127 -3

07/04/76

53-1 -127

Total
Cross Section

Barns

MeV

6-36

53-1 -127 -4

07/04/76

Total
Cross Section

53-1 -127

07/04/76

(n,γ)
Cross Section

53-1 -127

6-37

53-1 -127 -5

U7 04/76

53-1 -127

(n, γ)
Cross Section

6-38

53-1 -127 -6

07/04/76

(n,γ)
Cross Section

E3-1 -127

ECSIL-677 (61)

ECSIL-731 (61)

ECSIL-524 (59)

Barns

b-39

NeV

100 127 128

07/04/76

53-1 -127

(n,γ)

Cross Section

6-40

MeV

53-1 -127 -8

Bar 3

07/04/76

(n,γ)

53-1 -127

Cross Section

07/04/76

Total

53-1 -127

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49 844	1.1500- 4	1.1500- 5	4.1900+ 0		52 81	1.4000+ 1		4.7400+ 0	1.0000- 1
49 844	3.0000- 4	3.0000- 5	4.6400+ 0		70 3300	1.4500+ 1		4.8400+ 0	5.0000- 2
47 45	1.0000- 2		6.5010+ 0	5.0000- 1	71 3815	1.4700+ 1		4.8900+ 0	5.0000- 2
67 1643	4.0000+ 0	5.0000- 2	4.8000+ 0	2.0000- 1	61 233	2.8400+ 1		3.8000+ 0	1.0000- 1
70 3968	1.3360+ 1	5.0000- 2	4.7200+ 0	2.8000- 1	50 281	4.2000+ 1	1.0000+ 0	3.5100+ 0	6.0010- 2
70 3968	1.3480+ 1	5.0000- 2	4.6700+ 0	1.0000- 1					

07/04/76

Elastic

53-1 -127

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 3546	8.8930	1 2.0000- 1	5.2915+ 0	
65 1509	2.0000+ 0	5.0000- 2	5.0000+ 0	
64 1643	4.0000+ 0	5.0000- 2	2.5700+ 0	1.8000- 1

6-41

53-1 -127 -9

07/04/76

(n, γ)

53-1 -127

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		6.2500+ 0	1.2500+ 0	59 526	1.9500+ 1	5.0000- 2	1.7500- 1	1.5000- 2
75 3909	2.3700- 2		7.6000+ 1	2.0000- 2	60 674	4.0000- 1	9.0010- 2	1.7600- 1	1.5000- 2
65 2206	2.4000- 2		8.3200+ 1	2.6000- 2	71 3821	4.0000- 1		1.5000- 1	
63 639	2.4000- 2	2.2000- 3	7.6800+ 1	9.0000- 2	71 3821	4.0000- 1		6.7000- 2	5.0000- 3
57 305	2.4000- 2	5.0000- 3	8.2010- 1	6.0010- 2	58 363	2.7000+ 0		4.7000- 2	2.0000- 3
74 3565	2.4300- 2		7.6700+ 1	5.0000- 2	68 3375	2.9000+ 0	2.0000- 1	4.2800- 2	5.0000- 3
62 697	2.5000- 2	5.0000- 3	6.3510- 1	1.8000- 1	67 1991	3.0000+ 0	2.0000- 1	3.1800- 2	6.0000- 3
59 545	2.5000- 2	5.0000- 3	7.9010- 1	1.2000- 1	58 363	4.0000+ 0		2.3000- 2	1.0000- 3
63	3.0000- 2	8.0010- 3	7.3310- 1	6.6010- 2	70 2232	1.4100+ 1	6.7500- 1	1.1000- 3	1.6000- 4
63	1.65000- 2	2.1000- 2	4.4000- 1	4.0000- 2	72 3963	1.4400+ 1		7.0000- 3	5.0000- 4
67 1807	1.2500- 1	2.3000- 2	2.3470- 1	1.7400- 2	57 521	1.4500+ 1		2.5000- 3	5.0000- 4
67 1807	1.5000- 1	2.1000- 2	1.8360- 1	2.8800- 2	68 2483	1.4700+ 1		7.2000- 3	1.2000- 3
67 1807	1.8200- 1	2.1000- 2	2.0250- 1	2.8100- 2					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
63 3824	2.6000+ 0		2.8300- 2	6.0000- 3	2.4650+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
70 4008	1.4800+ 1	8.0000- 2	2.7400- 3	1.9180- 4	2.4900+ 1

07/04/76

Total

53-1 -129

Cross Section

C7/04/76

54-Xe-Nat

Total
Cross Section

6-43

Mev

54-Xe-Nat -1

Baras

07704776

Total
Cross Section

54-Xe-Nat

07/04/76

Total
Cross Section

54-Xe-Nat

ECSIL-3650 (64)

ECSIL-3650 (64)

ECSIL 3650 (64)

Barns

6-45

MeV

54-Xe-Nat - 3

07/04/76

Total
Cross Section

⁵⁴Xe-Nat

ECSIL-3650 (64)

ECSIL-3650 (64)

ECSIL-3650 (64)

5-46

⁵⁴Xe-Nat -4

Barns

07/04/76

Total
Cross Section

54-Xe-Nat

Barns

0-117

MeV

54-Xe-Nat 5

07/04/76

Total
Cross Section

54-Xe-Nat

Barns

6-48

eV

54-Xe-Nat -6

07/04/76

Total
Cross Section

$^{54}\text{-Xe-Nat}$

5-4-3

Mev

$^{54}\text{-Xe-Nat}$ -7

Barns

07/04/76

Total

Cross Section

54-Xe-Nat

6-50

Mev

54-Xe-Nat -8

Barns

07/04/76

Total
Cross Section

54-Xe-Nat

Barns

4 Xe-Nat -9

07/04/76

Total

54-Xe-Nat

Cross Section

Pars

EC51L-570 (60)

07/04/76

(n,γ)

54-Xe-124

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 2210	2.5300- 8		1.1100+ 2	1.1000+ 1

6-52

54-Xe-124 -1

07/04/76

(n,γ)

54-Xe-126

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 2211	2.5300 ± 8		2.2000 ± 0	2.2000 ± 1

07/04/76

Total
Cross Section

54-Xe-135

07/04/76

(n,γ)

54-Xe-136

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
48 2688	2.5300 ± 8		1.5000 ± 1	8.000 ± 2
65 2211	2.5300 ± 8		2.8100 ± 1	2.8000 ± 2
48 3277	1.0300 ± 0		1.0000 ± 3	

6-53

54-Xe-136 -1

07/04/76

Total
Cross Section

55-Cs-133

ECSIL-1989 (65)

(Expanded Below)

ECSIL-814 (65)

ECSIL-814 (65)

6-54

55-Cs-133 -1

07/04/76

Total
Cross Section

55-Cs-133

Barns

6-55

Mev

55-Cs-133 -2

07/04/76

Total
Cross Section

55-Cs-133

Barns

6-56

Mev

55-Cs-133 -3

07/04/76

Total
Cross Section

55-Cs-133

07/04/76

Elastic
Cross Section

55-Cs-133

6-57

55-Cs-133 -4

07/04/76

(n, γ)
Cross Section

55-Cs-133

6-58

MeV

55-Cs-133 -5

07/04/76

(n,γ)

55-Cs-133

Cross Section

07/04/76

Total

55-Cs-133

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 2074	1.4080+ 1		4.9600+ 0	2.1000- 1
71 3815	1.4700+ 1		5.0100+ 0	7.0000- 2

07/04/76

Elastic

55-Cs-133

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 3546	8.7720- 1	2.0000- 1	6.3177+ 0	

55-Cs-133 -6

07/04/76

(n.y)

55-Cs-133

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 888	2.5300- 8		2.5620+ 1	5.1230+ 0
71 3821	4.0000- 1		1.5000- 1	
71 3821	4.0000- 1		6.0000- 2	1.5000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
63 3824	2.6000+ 0		6.3000- 3	1.2000- 3	2.7500+ 0
57 23	2.1000- 2	4.0000- 3	6.0010- 4	3.0000- 4	3.1000+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE YEARS
57 23	2.1000- 2	4.0000- 3	8.8010- 1	3.0000- 1	2.3000+ 0

07/04/76

(n.y)

55-Cs-135

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 1163	2.5300- 8		9.7000+ 0	5.0000- 1

6-60

55-Cs-135 -1

GROUP 789-739-1977