MASTER

UCRL-50400
Volume 8 Revision 1 Part A

An Integrated System for Production of Neutronics and Photonics Computational Constants

Volume 8 Revision 1 Part A

SUPPLEMENTAL NEUTRON-INDUCED INTERACTIONS ($Z \leq 35$): GRAPHICAL, EXPERIMENTAL DATA

D. E. Cullen, R. J. Howerton, M. H. 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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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, *Production and Application of Neutron and Photon Calculational Constants*, comprises the following statement:

- Vol. 1 Rev. 3, *UCRL-50400, Production of Neutron, Neutron and Photon Calculational Constants*, to be published in September 1976.
- Vol. 2 Rev. 2, *Neutron-Induced Neutron and Photon Calculational Constants*, July 1976.
- Vol. 3 Rev. 2, *Neutron-Induced Neutron and Photon Calculational Constants*, July 1976.
- Vol. 4, *Enriched Neutron Data for Fuel Element Design*, April 1971.
- Vol. 5, Rev. 1, *UCRL-50400, Production of Neutron and Photon Calculational Constants*, July 1976.

Production of Neutron and Photon Data, September 1975.

- Vol. 6, Rev. 1, *Neutron and Photon Calculational Constants for Fuel Element Design*, April 1971.
- Vol. 7 Part A Rev. 1, *Neutron and Photon Calculational Constants for Fuel Element Design*, July 1976.
- Vol. 7 Part B Rev. 1, *Neutron and Photon Calculational Constants for Fuel Element Design*, July 1976.
- Vol. 8 Rev. 1 Part A, *Neutron and Photon Calculational Constants for Fuel Element Design*, July 1976.
- Vol. 8 Rev. 1 Part B, *Neutron and Photon Calculational Constants for Fuel Element Design*, July 1976.
- Vol. 9, *Neutron and Photon Calculational Constants for Fuel Element Design*, September 1970.
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Evaluated Nuclear Data Library,
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tions from the Library,* April 1976.
 - Vol. 15, Part C, *The LLL
Evaluated Nuclear Data Library
(ENDL): Translation of Eval-
uated Neutron-Induced Interaction
Data Into the ENDF/B Format,*
April 1976.
 - Vol. 16, *Tabular and Graphical
Presentation of IPI Results
in a Constants Derived from
the LLL Evaluated Nuclear Data
Library (ENDL),* April 1976.

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SUPPLEMENTAL NEUTRON-INDUCED INTERACTIONS ($Z \leq 35$): GRAPHICAL, EXPERIMENTAL DATA

Abstract

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

find the total, elastic, capture, and fission cross sections (along with the parameters $\bar{v}$, α , and η). Volume 8 contains all other reactions.

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 35; Part B contains the plots for $Z > 35$.

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 system 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 1.5 million data points) to publish tabulations; the resulting volumes would be

of relatively expensive and bulky hardware, to presenting the data in graphs^{1,2} and on microfiche,³ which significantly reduce expense

and bulk. Moreover, bulk reduction means that indexes⁴ and bibliographies can be added to help in data manipulation.

Graphical Data

The present ECSIL Library contains 1 603 671 points,⁵ of which 1 269 917 are cross sections.⁶ Of these points, 1 208 236 (over 95%) are total, elastic, capture, fission, $\bar{\nu}$, α , or γ containing them in col. 71. The remaining 61 435 points are in col. 8. Although vol. 7 contains the vast majority of data points, the division of data sets^{7,8} between the two volumes is more equitable: 532 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 ECSIL C-number order (see "ECSIL Conventions"). 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 ECSIL C-number order (see "ECSIL Conventions"). Within each reaction, they are listed by ascending incident energy.

⁵As compared with 985 158 in the 1975 ECSIL Library.

⁶As opposed to angular and energy distributions.

^{7,8}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 61 671 data points (almost twice as many). Also, this new edition is plotted with associated error bars and compared with the ENDL library.⁶ In general, we have 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 ^{16}O with natural oxygen).

We use only those reactions explicitly contained in ENDL.⁷ 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 8* lists data indexes that may be used to determine the data in the library for a given isotope or reaction.
 - *Volume 9* presents graphs of all total, elastic, capture, and fission integral cross sections. It also supplies data on $\bar{\nu}$ (neutrons/fission), α (capture/fission ratio), and η (neutrons/nonelastic event).
 - *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 11 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:

M. H. MacGregor
 L-71
 University of California
 Lawrence Livermore Laboratory
 P.O. Box 808
 Livermore, CA 94550

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routinely supplied us 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.

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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}
6414	C ₈ H ₈	40395	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	148gPm
7398	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 number	Cross-section type	Basic 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,u)
11	(n,n')	35	(n,Xu)
12	(n,2n)	36	Activation
13	(n,3n)	37	(n,2e)
14	(n,n'p)	38	—
15	(n,n'd)	39	—
16	(n,n't)	40	—
17	(n,n', ³ de)	41	Bound atom
18	(n,n',u)	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,X γ) gamma-ray production	48	ν , neutrons produced per nonelastic
		49	α , capture-to-fission ratio

Table 1. Reaction designator increments (C increment).

Increment number	Reaction property (unit(s))	Definition
(0)	Integrated cross sections (b) or related parameters	
(1)	Spectrometer-aided cross sections (b)	
(2, 3)	Angular distributions (b/deg)	$\sigma(\theta, E)$
(4, 5)	Energy distributions (b/MeV)	$\sigma(E, \theta)$
(6, 7)	Angular distributions integrated between fixed angular limits (b)	$\sigma(\theta_1, \theta_2, E)$
(8)	Differential energy distributions (b/MeV)	$\sigma(E, \theta) \cdot \Delta E$
(9)	Partial distributions integrated between fixed energy and angular limits (b)	$\sigma(\theta_1, \theta_2, E_1, E_2)$
(10)	Energy distributions integrated between fixed energy limits (b)	$\sigma(E_1, E_2, \theta)$
(11)	Legendre expansion of angular distributions $\sigma_0(\theta)$ (b/cm ² mbars)	$\sigma_0(\theta) = \sigma(\theta) \sum_{l=0}^{\infty} \frac{2l+1}{4\pi} P_l(\cos \theta)$
(12)	Resonance integrals (b)	$\int_{E_1}^{E_2} \sigma(E) \frac{dE}{E}$
(13, 14)	Polarization dimensions (b/cm ²)	$P(\theta, E)$
(15, 16)	Partial distributions integrated between fixed energy limits (b/cm ²)	$\sigma(E_1, E_2, \theta)$
(17, 18)	Partial distributions integrated between fixed angular limits (b/cm ²)	$\sigma(\theta_1, \theta_2, E)$
(19)	Polarization dimensions (b/cm ²)	$P(\theta, E)$
(20)	Miscellaneous quantities	See (1) to (19)

Note: (1) Distributions for all elements of a reaction are expressed in the center-of-mass (c.m.) reference frame; the angles are defined in the laboratory frame of reference.

$$-N\sigma$$

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	D_{observed}	944	$\bar{\Gamma}_n^k$		
942	$\bar{\Gamma}_c$	945	$\bar{D}_c$		
943	$\bar{\Gamma}_f$	946	$\bar{S}_c$		
		Resolved resonance parameters			
951	E_0 (energy only)	966	κ_n^0	981	$\sigma_a^0 \Gamma_f / \Gamma_t$
952	J_{α}^-	967	κ_n^0	982	$\sigma_a^0 \Gamma_f / \Gamma_t$
953	γ	968	κ_Y^0	983	$\sigma_a^0 \Gamma_f / \Gamma_t$
954	g	969	Γ_n / Γ_t	984	$\sigma_a^0 \Gamma_f / \Gamma_t$
955	γ_0	970	Γ_a / Γ_t	985	$\sigma_a^0 \Gamma_f / \Gamma_t$
956	Γ_t	971	Γ_Y / Γ_t	986	$\kappa_Y^0 \Gamma_n / \Gamma_t$
957	Γ_n	972	Γ_n / Γ_a	987	$2\kappa_n^0 \Gamma_n / \Gamma_t$
958	σ_n^0	973	Γ_f / Γ_t	988	$\Gamma_t^2 \sigma_0$
959	σ_Y	974	Γ_f / Γ_a	989	$\kappa_n^0 \sigma_n^0$
960	Γ_f	975	Γ_Y / Γ_f	990	$\kappa_n^0 \Gamma_n / \Gamma_t$
961	σ_a	976	$\sigma_t \sigma_0$	991	$\sigma_a^0 \Gamma_f / \Gamma_t$
962	σ_a	977	$\Gamma_f \sigma_0$	992	$\sigma_n^0 \Gamma_f / \Gamma_t$
963	σ_p	978	$\sigma_Y \sigma_0$	993	$\kappa(\Gamma_n)^2$
964	κ_n^1	979	$\sigma_n^0 \sigma_0$	994	$\kappa_n^0 \Gamma_Y$
965	κ_a^2	980	$\sigma_n^0 \Gamma_t$		

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

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)

^a 5 + 80 indicates relative distribution.

GRAPHS OF CROSS SECTIONS

07/04/76

Total Scattering
Cross Section

I-H -1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65	786 6.1100-5		2.0350-1	1.0000-2

07/04/76

Absorption
Cross Section

I-H -1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 2995	2.5300-8					
58 2995	2.5300-8		3.2600-1	6.0000-3	59 2781	2.5300-8
58 2995	2.5300-8		3.3600-1	6.0000-3	58 2782	2.5300-8
55 2940	2.5300-8		3.2900-1	9.0000-3	54 2783	2.5300-8
55 2931	2.5300-8		3.3500-1	4.0000-3	54 2730	2.5300-8
56 2930	2.5300-8		3.3700-1	1.0000-2	53 2785	2.5300-8
53 2787	2.5300-8		3.2900-1	4.0000-3	53 2784	2.5300-8
42 2787	2.5300-8		3.3000-1	2.0000-2	65 1565	2.5300-8
59 2792	2.5300-8		3.3000-1	8.0000-3	60 891	2.5300-8

07/04/76

Bound Atom
Cross Section

I-H -1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51	1584 7.3000-8		8.0000-1	

07/04/76

Free Atom
Cross Section

I-H -1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71	3.76 0.0000-0		2.0440-1	2.3000-2
67	2364 2.5300-8		2.1440-1	2.3000-2
65	786 3.3500-5		2.580-1	1.3000-2

I-H

I-H -1

07/04/76

Coherent Scattering
Cross Section

1-H -1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
55 2826	2.5300- 8		2.3600+ 0	1.5000- 1	62 2788	2.5300- 8		1.7500+ 0	2.0000- 2
51 2790	2.5300- 8		1.8000+ 0	2.0000- 2	47 2798	2.5300- 8		1.9600+ 0	1.2000- 1
53 2789	2.5300- 8		1.8100+ 0	5.0000- 2	51 1584	7.3000- 8		2.0000+ 0	1.6000- 1

07/04/76

Incoherent Scattering
Cross Section

1-H -1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 2791	2.5000- 8		6.8000+ 1	1.2000+ 1

07/04/76

(n,2n)
Cross Section

1-H -2

1-2

1-H -2 -1

07/04/76

(n,2n)
Cross Section

1-H -2

07/04/76

Nonelastic
Cross Section

1-H -2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69 3245	1.8550+ 1		1.5700- 1	4.1000- 2
69 3245	2.0500+ 1		1.4400- 1	3.7000- 2
69 3245	2.3000+ 1		1.2400- 1	3.6000- 2

07/04/76

Incoherent Scattering
Cross Section

1-H -2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 2795	2.5300- 8		2.2500+ 0	4.0000- 2

07/04/76

Nonelastic
Cross Section

1-H -3

07/04/76

Free Atom
Cross SectionH₂O

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 854	2.5000- 8		2.0390+ 1	7.2000- 2

1-5

H₂O -1

07/04/76

0.0 Scattering

D₂O

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 1528	2.520-10		1.3100 ± 1	
65 2508	2.5100-10		1.3090 ± 1	
65 2508	2.5200-10		1.3350 ± 1	

07/04/76

D₂O

Absorption
Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47 2528	2.5200-8		9.2000-4	2.2000-4
69 3932	2.5300-8		1.3110-3	5.2000-5

07/04/76

2-He-Nat

(n,d)

Cross Section

07/04/76

Total Scattering
Cross Section

2-He-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69 2998	2.5300- 8		7.7300- 1	9.0000- 3
63 777	2.5300- 8		7.2000- 1	3.0000- 2

07/04/76

(n,p)
Cross Section2-He-3
ENDL-7104

1-7

2-He-3 -1

07/04/76

(n,p)
Cross Section

2-He-3

07/04/76

(n,p)
Cross Section

2-He-3
ENDL-7104

EC51L-578 (601)

Barns

07/04/76

(n,d)
Cross Section

2-He-3

07/04/76

Absorption
Cross Section

2-He-3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
ENDS	5.4270	0.0000	5.4270	0.0000

1-10

2-He-3 -4

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07/04/76

07/04/76

2-Li-Nat

Cross Section

07/04/76

Absorption

3-Li-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
46 961	2.5300- 8		7.2300- 1	1.3000- 0
52 1584	2.5300- 8		7.1000- 1	7.0000- 1
60 591	2.5300- 8		7.0400- 1	4.0000- 1

07/04/76

Coherent Scattering

3-Li-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.1000 0		4.3000- 1	3.2000- 2

1-12

2-Li-Nat -2

07/04/76

Total Scattering
Cross Section

3-L1-6

07/04/76

(n,n')
Cross Section

3-L1-6

1-13

3-L1-6 -1

07/04/76

(n,n')

3-Li-6

Barns

07/04/76

(n,n'd)

3-Li-6

Barns

ECSIL-841 (63)

1-14

3-Li-6 -2

07/04/76

(n,n'd)
Cross Section

3-Li-6

07/04/76

(n,p)

3-L1-6

Cross Section

1-16

MeV

3-L1-6 -4

Barns

07/04/76

(n,t)
Cross Section

3-Li-6

1-17

3-Li-6 -5

07/04/76

(n,t)
Cross Section

3-LI-6

END OF

MeV

1-18

3-LI-6 -6

Barns

07/04/76

(n,t)

Cross Section

3-L1-6
ENDL-7106

MeV

1-19

3-L1-6 -7

Barns

07/04/76

(n,t)

3-L1-6

Cross Section

EC51L-495 (58)

Barcs

1-20

3-L1-6 -8

3-11-76

1000

3-11-8

EC5IL-1634 (65)

EC5IL-1020 (67)

EC5IL-147 (66)

Barns

3-L1-6

10.01

3-L1-6

Bar 5

3-L1-6

Nonelastic

3-L1-6

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	BARNS	DELTA BARNS
58	590	14000	1	5 0000-2
58	592	14000	1	5 0000-2
58	592	14000	1	5 0000-2

1-22

3-L1-6 -10

07/04/76

(n, n) Emission

3-Li-6

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 4374	1.4000+1		1.4700+0	0 1.6000+1
64 4623	1.4000+1	1.0000+1	1.4400+0	0 1.6000+1

07/04/76

(n, n')

3-Li-6

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
69 1632	4.8700+0	4.7000+2	2.0800+1	1.3000+1	2.1800+0	68 1632	7.5000+0	0 1.7000+1	4.9000+1	1.5000+1	2.1800+0
68 1632	5.7400+0	0 2.3000+1	1.7000+1	1.7000+1	1.6000+0	65 1627	1.4000+1		1.0000+1	2.5000+1	2.1800+0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL-MIN MEV	E-LVL-MAX MEV
65 1632	4.8300+1	4.7000+2	4.6000+1	4.0000+2	2.2000+0	4.8300+0
68 1632	5.7400+0	0 2.3000+1	4.0000+1	4.8000+2	2.2000+0	5.7400+0
66 1672	7.5000+0	0 1.7000+1	5.7000+1	5.7000+2	2.2000+0	7.5000+0

07/04/76

(n, 2n)

3-Li-6

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 558	1.0000+1		3.3000+2	1.5000+2	50 59+	1.4100+1		7.0010+2	6.0010+3
63 4335	1.4000+1		8.1000+2	3.7000+2	61 487	1.4100+1		5.0700+2	1.0000+2
61 4375	1.4000+1		1.4000+1	6.0010+2					

07/04/76

(n, n'd)

3-Li-6

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 558	1.0000+1		3.3000+2	1.5000+2	60 558	1.0000+1		3.3000+2	1.5000+2
63 4335	1.4000+1		8.1000+2	3.7000+2	61 487	1.4100+1		5.0700+2	1.0000+2

1-23

3-Li-6-111

Absorber

Material: Lead Delta A-SEC DELTA
Energy: 1000 MeV BARS
Reference: 1000 MeV 10000-0

Cross Section

Reference: Energy Delta A-SEC DELTA
MeV MeV BARS BARS
51 80 1000-0 10000-0 50000-0
52 80 1000-0 10000-0 50000-0
53 80 1000-0 10000-0 50000-0

Reference: Energy Delta A-SEC DELTA
MeV MeV BARS BARS
54 80 1000-0 10000-0 50000-0
55 80 1000-0 10000-0 50000-0
56 80 1000-0 10000-0 50000-0

Cross Section

Reference: Energy Delta A-SEC DELTA
MeV MeV BARS BARS
57 80 1000-0 10000-0 50000-0
58 80 1000-0 10000-0 50000-0
59 80 1000-0 10000-0 50000-0

Reference: Energy Delta A-SEC DELTA
MeV MeV BARS BARS
60 80 1000-0 10000-0 50000-0
61 80 1000-0 10000-0 50000-0
62 80 1000-0 10000-0 50000-0

07/04/76

(n,a)

3-L1-6

Cross Section

REFERENCE	ENERGY	DELTA	X-SEC	DELTA	REFERENCE	ENERGY	DELTA	X-SEC	DELTA
	MEV	MEV	BARNs	BARNs		MEV	MEV	BARNs	BARNs
64 3333	1.0000-1	5.0000-3	6.4000-1	2.0000-2	60 832	2.1500+0		2.1500-1	3.0000-2
54 109	1.5000+0		3.2000-1	6.0010-2	57 492	2.5000+0		1.7000-1	2.0000-2

07/04/76

Coherent Scattering

3-L1-6

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62	2801	2.5300-8	4.0000-1	

07/04/76

(n,n')

3-L1-7

Cross Section

07/04/76

(n,n')

3-Li-7

1-25

3-Li-7 -2

07/04/76

(n,n')

Cross Section

3-Li-7

ENDL-7107

07/04/76

(n,n')

Cross Section

3-Li-7

ENDL-7107

07/04/76

3-L1-7

(n,n')
Cross Section

Barns

07/04/76

(n,n't)
Cross Section3-L1-7
ENDL-7107

07/04/76

Nonelastic
Cross Section

3-L1-7

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 592	8.1030+ 0		4.5000- 1	2.0000- 1	65 1228	1.6700+ 1		4.2000- 1	3.0000- 2
58 592	1.1900+ 1		4.3000- 1	2.0000- 1	65 1228	1.8200+ 1		4.7000- 1	4.0000- 2
58 490	1.4000+ 1		5.2010- 1	6.0010- 2	65 1228	2.0700+ 1		3.0000- 1	3.0000- 2
58 592	1.4200+ 1		4.9000- 1	5.0000- 2					

07/04/76

Neutron Emission
Cross Section

3-L1-7

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 2335	1.4000+ 1		1.7000+ 0	2.0000- 1
64 1633	1.4100+ 1	1.0000- 1	1.6100+ 0	2.0000- 1

07/04/76

(n,n')

3-Li-7

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-L-L-MIN MEV	E-L-L-MAX MEV
68 1632	4.8300+ 0	4.7000- 2	1.0000- 1	2.4000- 2	4.6500+ 0	4.8300+ 0
68 1632	5.7400+ 0	2.3000- 1	2.2000- 1	3.4000- 2	4.6500+ 0	5.7400+ 0
68 1632	7.5000+ 0	1.7000- 1	3.1200- 1	3.7000- 2	4.6500+ 0	7.5000+ 0

07/04/76

(n,2n)

3-Li-7

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 593	1.0200+ 1		2.7000- 2	1.5000- 2
61 2375	1.4000+ 1		1.3000- 1	3.0000- 2
58 594	1.4100+ 1		5.6010- 2	5.0000- 3

07/04/76

(n,n't)

3-Li-7

Cross Section

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	1.0000- 1	2.2000- 2	61 2386	1.4000+ 1		3.3500- 1	1.2000- 2
68 1632	5.7400+ 0	2.3000- 1	3.3000- 1	3.8000- 2	51 487	1.4100+ 1		5.8000- 2	1.2000- 2
68 1632	7.5000+ 0	1.7000- 1	4.3000- 1	3.9000- 2					

07/04/76

(n,d)

3-Li-7

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 467	1.4100+ 1		5.0000- 3	5.0000- 3
63 842	1.4100+ 1	1.7000- 1	9.8010- 3	1.1000- 3
63 842	1.4900+ 1	2.5000- 1	1.4000- 2	1.5000- 3

1-31

3-Li-7 -7

07/04/76

(n.p.)
Cross Section

3-L1-7

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 1584	1.4100+ 1		5.6010+ 2	1.2000+ 2

07/04/76

(n.p.)
Cross Section

3-L1-7

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
66 3304	1.4700+ 1		2.2000+ 3	2.2000+ 3	0.0000+ 0

07/04/76

Bound Atom
Cross Section

3-L1-7

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000+ 0		2.0000+ 0	

07/04/76

Coherent Scattering
Cross Section

3-L1-7

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 2673	2.5300+ 0		5.5000+ 1	
51 1584	7.3000+ 0		8.0000+ 1	6.4000+ 2

5710 75

Nonelastic
Cross Section

4-6e-9

ECSIL-2595 (68)

ECSIL-3321 (73)

$\times 10^9$
Barns

ECSIL-24 (57)

1-33

Mev

4-3e-9 -1

4-Be-9

711-3869
Cross Section

4-Be-9

711-3869
Cross Section

4-Be-9

76

4-Be-9

Cross Section

Mev

4-Be-9 -3

Barns

07/04/76

(n,2n)
Cross Section

4-Be-9

Barns

07/04/76

(n,d)
Cross Section

4-Be-9

Barns

1-36

MeV

4-Be-9 -4

07/04/76

(n,d)
Cross Section4-Be-9
ENDL-7109

07/04/76

(n,t)
Cross Section4-Be-9
ENDL-7109

1-37

4-Be-9 -5

07/04/76

(n,t)
Cross Section

4-Be-9

END 17114

07/04/76

(n,a)
Cross Section

4-Be-9

END 17114

1-38

4-Be-9 -6

07/04/76

(n, α)
Cross Section4-Be-9
ENDL-7109

Barns

1-39

4-Be-9 -7

07/04/76

Nonelastic
Cross Section

4-Be-9

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
55	122 4.0700+ 0	7.0010- 2	6.2010- 1	3.0000- 2	55	130 1.4100+ 1		3.7000- 1	8.0010- 2
55	296 4.1000+ 0	4.0000- 2	6.0010- 1	1.0000- 1	58	490 1.4100+ 1		5.5010- 1	4.0000- 2
56	151 5.6000+ 0	2.0000- 1	5.5010- 1	6.0010- 2	63	1271 1.4200+ 1	1.0000- 1	5.0000- 1	1.0000- 2
55	130 1.2700+ 1		4.9000- 1	8.0000- 2	57	319 1.4200+ 1	1.5000- 1	4.9000- 1	2.0000- 2
49	3103 1.4000+ 1		5.7000- 1		56	200 1.4500+ 1		6.4010- 1	2.700- 2
60	3104 1.4000+ 1		4.4000- 1	2.5000- 2	58	355 2.5500+ 1		3.8000- 1	5.0000- 2
53	277 1.4000+ 1		4.7000- 1	4.0000- 2	55	2056 1.4000+ 3	2.0000- 2	1.9000- 1	9.5000- 3
61	743 1.4080+ 1	4.0000- 2	5.0000- 1	3.5000- 2					

07/04/76

(n,n')
Cross Section

4-Be-9

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57	162 1.4000+ 1	1.0000+ 0	0.0000+ 0						

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
59	500 3.5000+ 0	8.5000- 2	2.3000- 1	4.0000- 2	2.4300+ 0	58	3105 1.4000+ 1		1.7400- 1	2.0000- 2	2.4300+ 0
59	500 4.1000+ 0	7.5000- 2	2.5000- 1	4.0000- 2	2.4300+ 0	66	2585 1.4000+ 1		1.5000- 1	2.0000- 2	2.4300+ 0
59	500 5.0000+ 0	2.9000- 1	3.4000- 1	5.0000- 2	2.4300+ 0	58	405 1.4000+ 1		1.7000- 1	3.0000- 2	2.4300+ 0
64	17 7.0000+ 0		4.5000- 1		2.4300+ 0	61	743 1.4080+ 1	4.0000- 2	2.0000- 1	4.5000- 2	2.4300+ 0

07/04/76

(n,2n)
Cross Section

4-Be-9

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
55	279 3.7000+ 0		3.2000- 1	8.0000- 2	57	162 1.4000+ 1	9.8010- 1	4.2000- 1	7.0010- 2
64	17 7.0000+ 0		6.1000- 1		61	650 1.4100+ 1		5.4010- 1	7.0010- 2
59	530 1.4000+ 1		4.7000- 1	1.4100- 1	59	539 1.4100+ 1	2.0000- 1	5.4010- 1	9.0010- 2
58	609 1.4000+ 1		5.5010- 1	6.0010- 2	58	7 1.4100+ 1		5.4010- 1	4.0000- 2
63	277 1.4000+ 1		4.5000- 1	4.0000- 2					

1-40

4-Be-9 -8

07/04/76

(n,n')
Cross Section

4-Be-9

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV
65	3105	1.4500+ 1	7.1000+ 2		6.7600+ 0	
66	3105	1.4500+ 1	3.0000+ 2		7.9+00+ 0	
66	3105	1.4500+ 1	7.1000+ 2		9.1000+ 0	2.9000+ 0

07/04/76

Absorption
Cross Section

4-Be-9

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
47	2936	2.5300+ 8	1.0200+ 2	5.0000+ 4
52	2806	2.5300+ 8	1.0000+ 2	1.0000+ 3

07/04/76

(n,X) γ
Cross Section

4-Be-9

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
54	113	3.2000+ 0	2.0000+ 1	0.0000+ 0
58	405	1.4000+ 1	0.0000+ 0	

07/04/76

(n,p)
Cross Section

4-Be-9

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63	502	1.4500+ 1	7.0000+ 4	3.5000+ 4

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs SECONDS
73	3492	1.4500+ 1	5.3000+ 5	5.0000+ 6
73	3492	1.4500+ 1	2.1000+ 4	1.3000+ 5

1-41

4-Be-9 -9

07/04/76

(n.t.)
Cross Section

4-Be-9

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58	44	4.000+ 1	5.0000+ 1	1.0000+ 2	73	3996	1.4700+ 1	2.0000+ 2	4.0000+ 3
59	45	4.000+ 1	2.0000+ 2		58	44	1.5000+ 1	5.0000+ 1	1.0000+ 2
58	45	4.000+ 1	1.0000+ 1	1.5000+ 3	58	44	1.5000+ 1	5.0000+ 1	1.3000+ 1

07/04/76

(n.d)
Cross Section

4-Be-9

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53	86	1.4100+ 1	1.0000+ 1	1.0000+ 2
61	650	1.4100+ 1	1.1000+ 2	4.0000+ 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
67	2367	1.4400+ 1	1.1700+ 2	1.8000+ 3	0.0000+ 0

07/04/76

Bound Atom
Cross Section

4-Be-9

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51	158+	7.3000+ 8	7.5000+ 0	

07/04/76

Coherent Scattering
Cross Section

4-Be-9

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51	158+	7.3000+ 8	7.7000+ 0	6.1600+ 1

1-42

4-Be-9 -10

07/04/76

Incoherent Scattering
Cross Section

4-Be-9

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 2663	2.5300- 8		4.0000- 3	1.0000- 3

07/04/76

Total Scattering
Cross Section

5-B -Nat

07/04/76

(n,n)
Cross Section5-B -Nat
5-B -11 ENCL-7111

07/04/76

Nonelastic
Cross Section

5-B -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 490	1.4100+ 1		7.4010- 1	7.0010- 2
52 82	1.4150+ 1	5.0000- 2	6.9010- 1	1.0000- 1
56 200	1.4500+ 1		6.4010- 1	4.0000- 2

1-44

5-B -Nat -2

07/04/76

(n, p)

5-B -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	E-VAL MEV
62 1050 1.4000+ 1			8.1000+ 2	3 2.1300+ 0	

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	E-VAL-MIN MEV	E-VAL-MAX MEV
62 1050 1.4000+ 1			8.1000+ 2	1.0000+ 0	2 4.0000+ 0	5 0.0000+ 0
62 1050 1.4000+ 1			7.1000+ 2	0.1000+ 0	3 6.0000+ 0	0 8.0000+ 0

07/04/76

Absorption
Cross Section

5-B -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
60 1050 2.5300+ 0			7.6000+ 2 1.5000+ 0		60 1050 2.5300+ 0			7.5600+ 2 0.0000+ 0	
61 2931 2.5300+ 0			7.5600+ 2 1.0000+ 1		64 776 2.5300+ 0			7.5900+ 2 2.0000+ 0	
61 2950 2.5300+ 0			7.6000+ 2 3.0000+ 0		63 463 2.5300+ 0			7.6000+ 2 1.0000+ 0	
63 2786 2.5300+ 0			7.5600+ 2 3.0000+ 0		60 805 2.5300+ 0			7.5400+ 2 3.0000+ 0	
60 800 2.5300+ 0			7.6000+ 2 4.0000+ 0		63 806 2.5300+ 0			7.4900+ 2 4.0000+ 0	
61 2608 2.5300+ 0			7.6400+ 2 3.0000+ 0		57 432 2.5300+ 0			7.7100+ 2 5.0000+ 0	
61 2608 2.5300+ 0			7.6000+ 2 3.0000+ 0		60 891 2.5300+ 0			7.5400+ 2 4.0000+ 0	

07/04/76

(n, X) γ

5-B -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	E-PHOTON MEV
66 1911 1.4000+ 1			8.0000+ 1 1.1000+ 1	4.0000+ 2 2.1000+ 0		68 2997 1.4000+ 1			8.0000+ 1 1.2000+ 1	4.0000+ 2 4.4000+ 0	
66 1911 1.4000+ 1			8.0000+ 1 3.3000+ 2	1.5000+ 2 0.0000+ 0		68 2997 1.4000+ 1			8.0000+ 1 2.0000+ 2	1.0000+ 2 5.0500+ 0	
66 2997 1.4000+ 1			8.0000+ 1 1.0000+ 2	0.1000+ 3 3.3900+ 0		68 2997 1.4000+ 1			8.0000+ 1 2.0000+ 2	1.0000+ 2 7.0000+ 0	
66 2997 1.4000+ 1			8.0000+ 1 1.6000+ 2	0.0000+ 3 3.0000+ 0		68 2997 1.4000+ 1			8.0000+ 1 5.0000+ 3	3.0000+ 3 8.5000+ 0	
66 2997 1.4000+ 1			8.0000+ 1 1.7000+ 2	0.0000+ 3 4.0000+ 0		68 2997 1.4000+ 1			8.0000+ 1 5.0000+ 3	3.0000+ 3 8.2000+ 0	

175

5-B -Nat -3

07-04-76

17.1

5-B -flat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
73 3986	1.4720 - 1		3.0000 ± 2.0000 - 3	

07/04/76

Coherent Scattering

5-B -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
64 2654	2.5300 - 8		3.6600 ± 0.50000 - 2	

07/04/76

Nonelastic

5-B -10

Cross Section

07/04/76

Total Scattering
Cross Section

5-B-10

Barns

07/04/76

(n,n')

5-B-10

ECSIL-3794 (70)

E-level = 0.717 Mev

Cross Section

Barns

1-47

5-B-10-2

07/04/76

(n,n')

5-B -10

Cross Section

1-48

5-B -10 -3

07-0-76

07-0-76
Cross Section

5-B-10

Barns

07-0-76

07-0-76
Cross Section

5-B-10

Barns

Barns

• •
I
1 11
1 2

5-10-65

5-B-10

1000 30000

1000

Bare

MeV

5-B-10-6

07/04/76

(n, α)

5-8 -10

Cross Section

ECSIL-3259, 67

ECSIL-802, 63

ECSIL-1020, 67

Barns

Mev

1-52

5-8 -10 -7

07/04/76

(n,α)

5-8 -10

Cross Section

140L 1110

Barns

Mev

1-53

5-8 -10 -8

07/04/76

(n, α)

5-B -10

Cross Section

I-54

Mev

5-B -10 -9

Jans

07/04/76

(n,α)

5-B -10

Cross Section

ENDL -7110

1-55

5-B -10 -10

07/04/76

Nonelastic
Cross Section

5-B -10

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57 319 1	4.200+ 1	1.5000- 1	5.6010- 1	7.0010- 2

07/04/76

Total Scattering
Cross Section

5-B -10

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69 2999	7.0200+ 0		1.2270+ 0	8.7000- 2
69 2999	7.5500+ 0	1.2000- 1	1.1760+ 0	8.3000- 2

07/04/76

(n,n')
Cross Section

5-B -10

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 3938	9.7200+ 0	4.0000- 2	2.3900- 1	2.7000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
69 2999	7.0200+ 0	1.3000- 1	3.2000- 2	9.0000- 3	2.1500+ 0	69 2999	7.0200+ 0	1.3000- 1	4.2000- 2	7.0000- 3	4.7700+ 0
69 2999	7.5500+ 0	1.2000- 1	2.5000- 2	7.0000- 3	2.1500+ 0	69 2999	7.5500+ 0	1.2000- 1	3.3000- 2	5.0000- 3	4.7700+ 0
70 3794	4.8200+ 0	9.8000- 2	1.7100- 2	1.4000- 3	3.5900+ 0	69 2999	7.0200+ 0	1.3000- 1	2.3000- 2	5.0000- 3	5.1700+ 0
69 2999	7.0200+ 0	1.3000- 1	3.8000- 2	7.0000- 3	3.5900+ 0	69 2999	7.0200+ 0	1.3000- 1	5.4000- 2	2.1000- 2	6.0000+ 0
69 2999	7.5500+ 0	1.2000- 1	2.8000- 2	5.0000- 3	3.5900+ 0	69 2999	7.5500+ 0	1.2000- 1	7.1000- 2	5.0000- 3	6.0000+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL-MIN MEV	E-LVL-MAX MEV
70 3938	9.7200+ 0	4.0000- 2	1.6000- 2	2.0000- 3	1.7400+ 0	2.1500+ 0
70 3938	9.7200+ 0	4.0000- 2	3.2000- 2	4.0000- 3	2.1500+ 0	3.5900+ 0
70 3938	9.7200+ 0	4.0000- 2	3.3000- 2	4.0000- 3	5.1100+ 0	5.1800+ 0
70 3938	9.7200+ 0	4.0000- 2	1.1600- 1	1.5000- 2	5.9200+ 0	6.1300+ 0
70 3938	9.7200+ 0	4.0000- 2	3.6500- 2		6.1300+ 0	6.5700+ 0

1-56

5-B -10 -11

07/04/76

RECORDING

5-B-10

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA MEV	X-SEC BARN
67 484 2.500	2	3.320	2.5000	3.320	2.5000
68 815 2.500	2	3.320	2.5000	3.320	2.5000

07/04/76

RECORDING

5-B-10

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA MEV	X-SEC BARN
69 866 1.0500	2	2.5000	2.0000	2.5000	2.0000
56 140 2.5000	2	3.320	2.5000	3.320	2.5000

07/04/76

(n,0)

5-B-10

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA MEV	X-SEC BARN
56 278 2.5000	2		4.4000	0	

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA MEV	X-SEC BARN
69 862 1.4400	1	0.0000	3.2600	0.0000	0.4780
69 326 1.4400	1	1.0000	2.1000	2.6000	1.4500
69 282 1.4400	1	1.9000	2.5600	3.4630	0

07/04/76

Coherent Scattering

5-B-10

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA MEV	X-SEC BARN
66 1018 0.0000	0		0.5000	1.8100	1

1-57

5-B 10-12

07/04/76

Nonelastic
Cross Section

5-B -11

07/04/76

(n,n')
Cross Section

5-B -11

1-58

5-B -11 -1

07/04/76

(n,n')

Cross Section

5-B -11

END

07/04/76

(n,X) γ

Cross Section

5-B -11

1-59

5-B -11 -2

07/04/76

(n,n')

5-B -11

Cross Section

07/04/76

(n,n')

5-B -11

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 3934	9.7200	0 4.0000	2 3.8500	1 2.9000

1-60

5-B -11 -3

1-0-11

Cross Section

REFERENCE	ENERGY	DELTA	X-SEC	DELTA	X-SEC	DELTA	X-SEC
	MEV	MEV	BAPIS	MEV	BAPIS	MEV	BAPIS
61-2774	1.4000	1.4000	3.5000-4	1.4000	3.5000-4	1.4000	3.5000-4
61-2775	1.4500	1.4500	3.2000-3	1.4500	3.2000-3	1.4500	3.2000-3
61-2776	1.5000	1.5000	3.0000-3	1.5000	3.0000-3	1.5000	3.0000-3
61-2777	1.5500	1.5500	2.8000-3	1.5500	2.8000-3	1.5500	2.8000-3
61-2778	1.6000	1.6000	2.6000-3	1.6000	2.6000-3	1.6000	2.6000-3
61-2779	1.6500	1.6500	2.4000-3	1.6500	2.4000-3	1.6500	2.4000-3
61-2780	1.7000	1.7000	2.2000-3	1.7000	2.2000-3	1.7000	2.2000-3
61-2781	1.7500	1.7500	2.0000-3	1.7500	2.0000-3	1.7500	2.0000-3
61-2782	1.8000	1.8000	1.8000-3	1.8000	1.8000-3	1.8000	1.8000-3
61-2783	1.8500	1.8500	1.6000-3	1.8500	1.6000-3	1.8500	1.6000-3
61-2784	1.9000	1.9000	1.4000-3	1.9000	1.4000-3	1.9000	1.4000-3
61-2785	1.9500	1.9500	1.2000-3	1.9500	1.2000-3	1.9500	1.2000-3
61-2786	2.0000	2.0000	1.0000-3	2.0000	1.0000-3	2.0000	1.0000-3
61-2787	2.0500	2.0500	0.8000-3	2.0500	0.8000-3	2.0500	0.8000-3
61-2788	2.1000	2.1000	0.6000-3	2.1000	0.6000-3	2.1000	0.6000-3
61-2789	2.1500	2.1500	0.4000-3	2.1500	0.4000-3	2.1500	0.4000-3
61-2790	2.2000	2.2000	0.2000-3	2.2000	0.2000-3	2.2000	0.2000-3
61-2791	2.2500	2.2500	0.1000-3	2.2500	0.1000-3	2.2500	0.1000-3
61-2792	2.3000	2.3000	0.0500-3	2.3000	0.0500-3	2.3000	0.0500-3
61-2793	2.3500	2.3500	0.0200-3	2.3500	0.0200-3	2.3500	0.0200-3
61-2794	2.4000	2.4000	0.0100-3	2.4000	0.0100-3	2.4000	0.0100-3
61-2795	2.4500	2.4500	0.0050-3	2.4500	0.0050-3	2.4500	0.0050-3
61-2796	2.5000	2.5000	0.0020-3	2.5000	0.0020-3	2.5000	0.0020-3
61-2797	2.5500	2.5500	0.0010-3	2.5500	0.0010-3	2.5500	0.0010-3
61-2798	2.6000	2.6000	0.0005-3	2.6000	0.0005-3	2.6000	0.0005-3
61-2799	2.6500	2.6500	0.0002-3	2.6500	0.0002-3	2.6500	0.0002-3
61-2800	2.7000	2.7000	0.0001-3	2.7000	0.0001-3	2.7000	0.0001-3
61-2801	2.7500	2.7500	0.0000-3	2.7500	0.0000-3	2.7500	0.0000-3
61-2802	2.8000	2.8000	0.0000-3	2.8000	0.0000-3	2.8000	0.0000-3
61-2803	2.8500	2.8500	0.0000-3	2.8500	0.0000-3	2.8500	0.0000-3
61-2804	2.9000	2.9000	0.0000-3	2.9000	0.0000-3	2.9000	0.0000-3
61-2805	2.9500	2.9500	0.0000-3	2.9500	0.0000-3	2.9500	0.0000-3
61-2806	3.0000	3.0000	0.0000-3	3.0000	0.0000-3	3.0000	0.0000-3
61-2807	3.0500	3.0500	0.0000-3	3.0500	0.0000-3	3.0500	0.0000-3
61-2808	3.1000	3.1000	0.0000-3	3.1000	0.0000-3	3.1000	0.0000-3
61-2809	3.1500	3.1500	0.0000-3	3.1500	0.0000-3	3.1500	0.0000-3
61-2810	3.2000	3.2000	0.0000-3	3.2000	0.0000-3	3.2000	0.0000-3
61-2811	3.2500	3.2500	0.0000-3	3.2500	0.0000-3	3.2500	0.0000-3
61-2812	3.3000	3.3000	0.0000-3	3.3000	0.0000-3	3.3000	0.0000-3
61-2813	3.3500	3.3500	0.0000-3	3.3500	0.0000-3	3.3500	0.0000-3
61-2814	3.4000	3.4000	0.0000-3	3.4000	0.0000-3	3.4000	0.0000-3
61-2815	3.4500	3.4500	0.0000-3	3.4500	0.0000-3	3.4500	0.0000-3
61-2816	3.5000	3.5000	0.0000-3	3.5000	0.0000-3	3.5000	0.0000-3
61-2817	3.5500	3.5500	0.0000-3	3.5500	0.0000-3	3.5500	0.0000-3
61-2818	3.6000	3.6000	0.0000-3	3.6000	0.0000-3	3.6000	0.0000-3
61-2819	3.6500	3.6500	0.0000-3	3.6500	0.0000-3	3.6500	0.0000-3
61-2820	3.7000	3.7000	0.0000-3	3.7000	0.0000-3	3.7000	0.0000-3
61-2821	3.7500	3.7500	0.0000-3	3.7500	0.0000-3	3.7500	0.0000-3
61-2822	3.8000	3.8000	0.0000-3	3.8000	0.0000-3	3.8000	0.0000-3
61-2823	3.8500	3.8500	0.0000-3	3.8500	0.0000-3	3.8500	0.0000-3
61-2824	3.9000	3.9000	0.0000-3	3.9000	0.0000-3	3.9000	0.0000-3
61-2825	3.9500	3.9500	0.0000-3	3.9500	0.0000-3	3.9500	0.0000-3
61-2826	4.0000	4.0000	0.0000-3	4.0000	0.0000-3	4.0000	0.0000-3
61-2827	4.0500	4.0500	0.0000-3	4.0500	0.0000-3	4.0500	0.0000-3
61-2828	4.1000	4.1000	0.0000-3	4.1000	0.0000-3	4.1000	0.0000-3
61-2829	4.1500	4.1500	0.0000-3	4.1500	0.0000-3	4.1500	0.0000-3
61-2830	4.2000	4.2000	0.0000-3	4.2000	0.0000-3	4.2000	0.0000-3
61-2831	4.2500	4.2500	0.0000-3	4.2500	0.0000-3	4.2500	0.0000-3
61-2832	4.3000	4.3000	0.0000-3	4.3000	0.0000-3	4.3000	0.0000-3
61-2833	4.3500	4.3500	0.0000-3	4.3500	0.0000-3	4.3500	0.0000-3
61-2834	4.4000	4.4000	0.0000-3	4.4000	0.0000-3	4.4000	0.0000-3
61-2835	4.4500	4.4500	0.0000-3	4.4500	0.0000-3	4.4500	0.0000-3
61-2836	4.5000	4.5000	0.0000-3	4.5000	0.0000-3	4.5000	0.0000-3
61-2837	4.5500	4.5500	0.0000-3	4.5500	0.0000-3	4.5500	0.0000-3
61-2838	4.6000	4.6000	0.0000-3	4.6000	0.0000-3	4.6000	0.0000-3
61-2839	4.6500	4.6500	0.0000-3	4.6500	0.0000-3	4.6500	0.0000-3
61-2840	4.7000	4.7000	0.0000-3	4.7000	0.0000-3	4.7000	0.0000-3
61-2841	4.7500	4.7500	0.0000-3	4.7500	0.0000-3	4.7500	0.0000-3
61-2842	4.8000	4.8000	0.0000-3	4.8000	0.0000-3	4.8000	0.0000-3
61-2843	4.8500	4.8500	0.0000-3	4.8500	0.0000-3	4.8500	0.0000-3
61-2844	4.9000	4.9000	0.0000-3	4.9000	0.0000-3	4.9000	0.0000-3
61-2845	4.9500	4.9500	0.0000-3	4.9500	0.0000-3	4.9500	0.0000-3
61-2846	5.0000	5.0000	0.0000-3	5.0000	0.0000-3	5.0000	0.0000-3
61-2847	5.0500	5.0500	0.0000-3	5.0500	0.0000-3	5.0500	0.0000-3
61-2848	5.1000	5.1000	0.0000-3	5.1000	0.0000-3	5.1000	0.0000-3
61-2849	5.1500	5.1500	0.0000-3	5.1500	0.0000-3	5.1500	0.0000-3
61-2850	5.2000	5.2000	0.0000-3	5.2000	0.0000-3	5.2000	0.0000-3
61-2851	5.2500	5.2500	0.0000-3	5.2500	0.0000-3	5.2500	0.0000-3
61-2852	5.3000	5.3000	0.0000-3	5.3000	0.0000-3	5.3000	0.0000-3
61-2853	5.3500	5.3500	0.0000-3	5.3500	0.0000-3	5.3500	0.0000-3
61-2854	5.4000	5.4000	0.0000-3	5.4000	0.0000-3	5.4000	0.0000-3
61-2855	5.4500	5.4500	0.0000-3	5.4500	0.0000-3	5.4500	0.0000-3
61-2856	5.5000	5.5000	0.0000-3	5.5000	0.0000-3	5.5000	0.0000-3
61-2857	5.5500	5.5500	0.0000-3	5.5500	0.0000-3	5.5500	0.0000-3
61-2858	5.6000	5.6000	0.0000-3	5.6000	0.0000-3	5.6000	0.0000-3
61-2859	5.6500	5.6500	0.0000-3	5.6500	0.0000-3	5.6500	0.0000-3
61-2860	5.7000	5.7000	0.0000-3	5.7000	0.0000-3	5.7000	0.0000-3
61-2861	5.7500	5.7500	0.0000-3	5.7500	0.0000-3	5.7500	0.0000-3
61-2862	5.8000	5.8000	0.0000-3	5.8000	0.0000-3	5.8000	0.0000-3
61-2863	5.8500	5.8500	0.0000-3	5.8500	0.0000-3	5.8500	0.0000-3
61-2864	5.9000	5.9000	0.0000-3	5.9000	0.0000-3	5.9000	0.0000-3
61-2865	5.9500	5.9500	0.0000-3	5.9500	0.0000-3	5.9500	0.0000-3
61-2866	6.0000	6.0000	0.0000-3	6.0000	0.0000-3	6.0000	0.0000-3
61-2867	6.0500	6.0500	0.0000-3	6.0500	0.0000-3	6.0500	0.0000-3
61-2868	6.1000	6.1000	0.0000-3	6.1000	0.0000-3	6.1000	0.0000-3
61-2869	6.1500	6.1500	0.0000-3	6.1500	0.0000-3	6.1500	0.0000-3
61-2870	6.2000	6.2000	0.0000-3	6.2000	0.0000-3	6.2000	0.0000-3
61-2871	6.2500	6.2500	0.0000-3	6.2500	0.0000-3	6.2500	0.0000-3
61-2872	6.3000	6.3000	0.0000-3	6.3000	0.0000-3	6.3000	0.0000-3
61-2873	6.3500	6.3500	0.0000-3	6.3500	0.0000-3	6.3500	0.0000-3
61-2874	6.4000	6.4000	0.0000-3	6.4000	0.0000-3	6.4000	0.0000-3
61-2875	6.4500	6.4500	0.0000-3	6.4500	0.0000-3	6.4500	0.0000-3
61-2876	6.5000	6.5000	0.0000-3	6.5000	0.0000-3	6.5000	0.0000-3
61-2877	6.5500	6.5500	0.0000-3	6.5500	0.0000-3	6.5500	0.0000-3
61-2878	6.6000	6.6000	0.0000-3	6.6000	0.0000-3	6.6000	0.0000-3
61-2879	6.6500	6.6500	0.0000-3	6.6500	0.0000-3	6.6500	0.0000-3
61-2880	6.7000	6.7000	0.0000-3	6.7000	0.0000-3	6.7000	0.0000-3
61-2881	6.7500	6.7500	0.0000-3	6.7500	0.0000-3	6.7500	0.0000-3
61-2882	6.8000	6.8000	0.0000-3	6.8000	0.0000-3	6.8000	0.0000-3
61-2883	6.8500	6.8500	0.0000-3	6.8500	0.0000-3	6.8500	0.0000-3
61-2884	6.9000	6.9000	0.0000-3	6.9000	0.0000-3	6.9000	0.0000-3
61-2885	6.9500	6.9500	0.0000-3	6.9500	0.0000-3	6.9500	0.0000-3
61-2886	7.0000	7.0000	0.0000-3	7.0000	0.0000-3	7.0000	0.0000-3
61-2887	7.0500	7.0500	0.0000-3	7.0500	0.0000-3	7.0500	0.0000-3
61-2888	7.1000	7.1000	0.0000-3	7.1000	0.0000-3	7.1000	0.0000-3
61-2889	7.1500	7.1500	0.0000-3	7.1500	0.0000-3	7.1500	0.0000-3
61-2890	7.2000	7.2000	0.0000-3	7.2000	0.0000-3	7.2000	0.0000-3
61-2891	7.2500	7.2500	0.0000-3	7.2500	0.0000-3	7.2500	0.0000-3
61-2892	7.3000	7.3000	0.0000-3	7.3000	0.0000-3	7.3000	0.0000-3
61-2893	7.3500	7.3500	0.0000-3	7.3500	0.0000-3	7.3500	0.0000-3
61-2894	7.4000	7.4					

07/04/76

17.07

5-B -11

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
14 539	1.4100+ 1	2.0000- 1	3.5000- 2	7.0010- 3
32 08	4.700+ 1	1.5000- 1	3.3000- 2	

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
73 39+2	1.4100+ 1	1.5000- 1	1.7700- 2	5.3100- 3	0.0000+ 0
73 39+2	1.4100+ 1	1.5000- 1	9.2000- 3	2.7600- 3	9.6000- 1

07/04/76

Coherent Scattering
Cross Section

5-B -11

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 1018	0.0000+ 0		5.3600+ 0	5.7000- 1
66 2621	2.5300- 8		4.6000+ 0	1.0000- 2

07/04/76

Nonelastic
Cross Section

6-C -Nat

2-2176

Crystalline
Cross Section

07 04 76

Total Scattering
Cross Section

B-C -Nat

07/04/76

Absorption
Cross Section

B-C -Nat

1-64

B-C -Nat -3

07/04/76

Neutron Elastic Cross Section

6-C -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS
55	122	1.0000- 0	5.0000- 2	4.0000- 2	57	319	1.4810- 1	5.5010- 1	2.0000- 2
55	151	2.5000- 0	4.0000- 2	5.0000- 2	55	202	1.4500- 1	1.2010- 1	2.0000- 2
55	122	4.0700- 0	4.0000- 2	4.0000- 2	57	159	1.4810- 1	1.0000- 1	2.0000- 2
55	296	4.1000- 0	4.0000- 2	8.0010- 2	65	1228	1.6200- 1	6.2000- 1	2.0000- 2
55	151	7.0000- 0	2.0000- 1	1.7000- 1	58	2746	1.6300- 1	9.5400- 1	3.0000- 2
55	130	1.2700- 1	5.6010- 1	1.0000- 1	59	3708	1.7870- 1	5.6000- 1	5.0000- 1
58	490	1.4000- 1	6.3000- 1	6.0000- 2	59	3708	1.8250- 1	3.4000- 1	5.0000- 1
55	790	1.4000- 1	6.3010- 1	5.0000- 2	65	1228	1.6800- 1	6.5000- 1	2.0000- 2
64	845	1.4100- 1	9.0010- 1	7.3010- 1	69	3708	1.9680- 1	2.1000- 1	5.0000- 1
55	117	1.4100- 1	6.0110- 1	6.0010- 3	59	356	2.1300- 1	4.9000- 1	4.0000- 2
55	130	1.4100- 1	5.1010- 1	8.0010- 2	58	356	2.5500- 1	4.4000- 1	4.0000- 2
52	82	1.4150- 1	5.0000- 2	7.6010- 1	59	356	2.9200- 1	4.5000- 1	4.0000- 2
57	24	1.4200- 1	7.0010- 2	5.5010- 1	55	2056	1.4000- 3	2.0000- 2	2.0000- 1

07/04/76

Total Scattering Cross Section

6-C -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS
65	786	3.3900- 5	4.7430- 0	2.0000- 3
65	786	6.1100- 5	4.7260- 0	2.4000- 3

07/04/76

Absorption Cross Section

6-C -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS
58	2810	2.5300- 8	3.4400- 3	6.0000- 5
58	2811	2.5300- 8	3.8000- 3	1.0000- 4
65	2608	2.5300- 8	3.7200- 3	1.5000- 4

1-65

6-C -Nat -4

07/04/76

Bound Atom Cross Section

5-C -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		5.2000+ 0	

07/04/76

Free Atom Cross Section

6-C -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71 3176	0.0000+ 0		4.7460+ 0	4.5000- 3

07/04/76

Coherent Scattering Cross Section

6-C -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		5.2000+ 0	4.1600- 1

07/04/76

(n,n')

Cross Section

6-C -12

07/04/76

(n,n')
Cross Section

6-C -12

07/04/76

(n,2n)
Cross Section

6-C -12

1-67

6-C -12 -2

6-C-12

(n,p) γ
Cross Section

Barns

6-C-12

(n,X) γ
Cross Section

Barns

6-C-12

MeV

6-C-12 -3

07/04/76

(n,p)
Cross Section

6-C -12
ENDL-7112

07/04/76

(n,α)

6-C -12

Cross Section

07/04/76

(n,n')

6-C -12

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	Y-SET BARNs	DELTA BARNs	LEVEL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	LEVEL MEV
65	849	0.1400	1	2.2500	2	5000	2	4.300	1	4.300	1
62	1060	0.1400	1	2.2500	2	5000	2	4.300	1	4.300	1
56	405	0.1400	1	2.2500	2	5000	2	4.300	1	4.300	1
64	1659	0.1400	1	2.2500	2	5000	2	4.300	1	4.300	1
64	1661	0.1400	1	2.2500	2	5000	2	4.300	1	4.300	1
65	1639	0.1400	1	2.2500	2	5000	2	4.300	1	4.300	1
64	845	0.1400	1	2.2500	2	5000	2	4.300	1	4.300	1
66	3732	0.1400	1	2.2500	2	5000	2	4.300	1	4.300	1
68	2745	0.1400	1	2.2500	2	5000	2	4.300	1	4.300	1
69	3708	0.1400	1	2.2500	2	5000	2	4.300	1	4.300	1

1-70

6-C -12 -5

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTO MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTO MEV
63 294	1.4200	1	1.9000	1	5.0000	2	66 1839	1.4000	1	1.2300	1
64 1839	1.4000	1	1.5000	2	2.6400	0	68 2957	1.4000	1	1.6300	1
67 2957	1.4000	1	2.4000	2	2.8000	0	60 1721	1.4000	1	2.3000	2
68 2957	1.4000	1	2.4000	2	2.8000	0	61 850	1.4000	1	1.3000	2
69 1721	1.4000	1	2.4000	2	2.8000	0	53 294	1.4200	1	2.0000	3
70 1721	1.4000	1	2.4000	2	2.8000	0	66 1839	1.4000	1	1.2300	1
71 1721	1.4000	1	2.4000	2	2.8000	0	60 1721	1.4000	1	1.3000	2
72 1721	1.4000	1	2.4000	2	2.8000	0	61 850	1.4000	1	1.3000	2
73 1721	1.4000	1	2.4000	2	2.8000	0	53 294	1.4200	1	2.0000	3
74 1721	1.4000	1	2.4000	2	2.8000	0	66 1839	1.4000	1	1.2300	1
75 1721	1.4000	1	2.4000	2	2.8000	0	60 1721	1.4000	1	1.3000	2
76 1721	1.4000	1	2.4000	2	2.8000	0	61 850	1.4000	1	1.3000	2
77 1721	1.4000	1	2.4000	2	2.8000	0	53 294	1.4200	1	2.0000	3
78 1721	1.4000	1	2.4000	2	2.8000	0	66 1839	1.4000	1	1.2300	1
79 1721	1.4000	1	2.4000	2	2.8000	0	60 1721	1.4000	1	1.3000	2
80 1721	1.4000	1	2.4000	2	2.8000	0	61 850	1.4000	1	1.3000	2
81 1721	1.4000	1	2.4000	2	2.8000	0	53 294	1.4200	1	2.0000	3
82 1721	1.4000	1	2.4000	2	2.8000	0	66 1839	1.4000	1	1.2300	1
83 1721	1.4000	1	2.4000	2	2.8000	0	60 1721	1.4000	1	1.3000	2
84 1721	1.4000	1	2.4000	2	2.8000	0	61 850	1.4000	1	1.3000	2
85 1721	1.4000	1	2.4000	2	2.8000	0	53 294	1.4200	1	2.0000	3
86 1721	1.4000	1	2.4000	2	2.8000	0	66 1839	1.4000	1	1.2300	1
87 1721	1.4000	1	2.4000	2	2.8000	0	60 1721	1.4000	1	1.3000	2
88 1721	1.4000	1	2.4000	2	2.8000	0	61 850	1.4000	1	1.3000	2
89 1721	1.4000	1	2.4000	2	2.8000	0	53 294	1.4200	1	2.0000	3
90 1721	1.4000	1	2.4000	2	2.8000	0	66 1839	1.4000	1	1.2300	1
91 1721	1.4000	1	2.4000	2	2.8000	0	60 1721	1.4000	1	1.3000	2
92 1721	1.4000	1	2.4000	2	2.8000	0	61 850	1.4000	1	1.3000	2
93 1721	1.4000	1	2.4000	2	2.8000	0	53 294	1.4200	1	2.0000	3
94 1721	1.4000	1	2.4000	2	2.8000	0	66 1839	1.4000	1	1.2300	1
95 1721	1.4000	1	2.4000	2	2.8000	0	60 1721	1.4000	1	1.3000	2
96 1721	1.4000	1	2.4000	2	2.8000	0	61 850	1.4000	1	1.3000	2
97 1721	1.4000	1	2.4000	2	2.8000	0	53 294	1.4200	1	2.0000	3
98 1721	1.4000	1	2.4000	2	2.8000	0	66 1839	1.4000	1	1.2300	1
99 1721	1.4000	1	2.4000	2	2.8000	0	60 1721	1.4000	1	1.3000	2
100 1721	1.4000	1	2.4000	2	2.8000	0	61 850	1.4000	1	1.3000	2

07/04/76

(n,p)

6-C -12

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
72 4028	1.4100	1	2.0000	1	8.0000
72 4028	1.4800	1	2.0000	1	1.2000

07/04/76

(n,a)

6-C -12

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
64 3021	1.4500	0	6.9000	2	1.3000	2	66 3022	1.6000	1	4.9000	2
71 3022	1.4400	1	7.5000	2	4.0000	2	66 3022	1.7000	1	5.4000	2

1-72

6-C -12 -7

07/04/76

(n,t)

6-C -13

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
73 2996	4700-1		6.1000-3	1.8000-3

07/04/76

(n,2n)

7-N -Nat

Cross Section

7-N -14 (NDL 7/113)

Barns

MeV

1-73

7-N -Nat -1

7-N -Nat

View
Cross Section

7-N -Nat -2

Bar 25

27-C-776

(n,X) γ
Cross Section

7-N -Nat

Bars

1-75

7-N -Nat -3
Mev

CSIL-2512

19.11.7

7-11-Nat

CSIL-2512

CSIL-2512 (69)

E-Photon = 3.895 Mev

CSIL-2512 (69)

E-Photon = 4.423 and 4.444 Mev

CSIL-2512 (69)

E-Photon = 4.91 Mev

Barns

07/04/76

$\ln(X)$ γ
Cross Section

7-N - Nat

ECSIL-2512 (69)

ECSIL-2512 (69)

ECSIL-2512 (69)

Barns

1-77

MeV

7-N - Nat - 5

7-11 -Nat

Co, X, γ

Cross Section

MeV

7-11 -Nat -B

Bars

07/04/76

(n,X) γ
Cross Section

7-N -Nat

07/04/76

(n,p)
Cross Section

7-N -Nat

1-79

7-N -Nat -7

07/04/76

(n,p)
Cross Section

7-N -Nat

07/04/76

(n,p)
Cross Section

7-N -Nat

07/04/76

(n,0)
Cross Section

7-N -Nat

07/04/76

Coherent Scattering
Cross Section

7-N -Nat

1

10

7-2-3

[illegible]

07:04:78

(n, n')

27

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
54	110-14105	1.3000	14.8000	

[The page contains extremely faint, illegible markings.]

07-04-76

n, p

7-N -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
52	79 1.4100+ 1		1.0000+ 1	

07-04-76

Bound Atom

7-N -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51	158+ 7.3000+ 8		1.0000+ 1	

07-04-76

Free Atom

7-N -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49	53 1.5000+ 5		9 9600+ 0	

07-04-76

Coherent Scattering

7-N -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51	2617 2.5300+ 8		1.0000+ 1	1.5000+ 0	51	2618 2.5300+ 8		9.1000+ 0	
51	2617 2.5300+ 8		9.7000+ 0	1.1000+ 0	64	265+ 2.5300+ 8		1.0600+ 1	3.0000+ 1
51	2616 2.5300+ 8		1.1000+ 1	3.0000+ 1	51	158+ 7.3000+ 8		5.1000+ 0	7.2800+ 1

1-8-

7-N -Nat -12

07/04/76

(n,n')
Cross Section7-N-14
ENDC 7113

1-85

Mev

7-N-14 -1

07/04/76

(n,n')

7-N-14

Cross Section

07/04/76

(n,2n)

7-N-14

Cross Section

1-86

MeV

7-N-14

07/04/76

(n,2n)

7-N-14

Cross Section

ECSIL-843 (64)

ECSIL-1720 (60)

Barns

1-87

7-N-14-3

07/04/76

(n,2n)

7-N -14

Cross Section

07/04/76

(n,X) Charged Particle

7-N -14

Cross Section

1-88

Mev

7-N -14 -4

07/04/76

(n,p)

7-N-14

Cross Section

ENDL-7113

Mev

1-89

7-N-14 -5

07/04/76

(n,p)

7-N-14

Cross Section

Barns

07/04/76

(n,t)

7-N-14

Cross Section

Barns

1-90

7-N-14-S

07/04/76

(n,t)
Cross Section

7-N -14
ENDL-7113

07/04/76

(n, α)
Cross Section

7-N -14

1-92

MeV

7-N -14 -8

07/04/76

(7.0)

7-N -14

Cross Section

END: 7113

1-93

Mev

7-N -14 -9

Baras

07/04/76

(n,α)

7-N -14

Cross Section

07/04/76

Nonelastic
Cross Section

7-N -14

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 3717	5.9000 ± 0.2	0.0000 - 1.2	4.600 - 1.1	5.000 - 2
72 3717	6.9000 ± 0.2	0.0000 - 1.2	7.400 - 1.1	6.000 - 2

1-94

7-N -14 -10

07/04/76

(n,n')
Cross Section

7-N-14

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/MS	DELTA BARN/MS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/MS	DELTA BARN/MS
71 3447	1.4700	1.4700	3.8249	3.5107	74 3447	1.4700	1.4700	3.8249	3.5107
74 3447	1.4700	1.4700	3.8249	3.5107	74 3447	1.4700	1.4700	3.8249	3.5107
74 3447	1.4700	1.4700	3.8249	3.5107	74 3447	1.4700	1.4700	3.8249	3.5107

07/04/76

(n,n')
Cross Section

7-N-14

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/MS	DELTA BARN/MS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/MS	DELTA BARN/MS
67 2003	1.4700	1.4700	3.8249	3.5107	67 2003	1.4700	1.4700	3.8249	3.5107
67 2003	1.4700	1.4700	3.8249	3.5107	67 2003	1.4700	1.4700	3.8249	3.5107
67 2003	1.4700	1.4700	3.8249	3.5107	67 2003	1.4700	1.4700	3.8249	3.5107
67 2003	1.4700	1.4700	3.8249	3.5107	67 2003	1.4700	1.4700	3.8249	3.5107

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/MS	DELTA BARN/MS	DELTA HALF-LIFE MINUTES
73 3968	1.4600	1.4600	3.7000	3.4000	9.8900

07/04/76

(n,n')
Cross Section

7-N-14

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/MS	DELTA BARN/MS
66 1675	1.4700	1.4700	3.8249	3.5107

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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

2-2000 2-2000
5:48:29 5:48:29
24732 235-X

92/04/76

Total Scattering
Cross Section

8-0-8
-Nat

EC511-571 (60)

Subject

10-15

(n,X) γ
Cross Section

2-3-1961

FC511-2512 (69)

E-Peak = 2.743 Mev

FC511-2512 (69)

E-Peak = 3.68 Mev

FC511-2512 (69)

E-Peak = 3.85 Mev

10-15

Mev

2-3-1961

Barons

100 MeV

3.0 MeV

Exposition = 6.92 MeV

Exposition = 7.17 MeV

Baras

110

B-0 - Nat: 3

07/04/76

(n, α)
Cross Section

8-0 -Nat

1-100

Mev

8-0 -Nat -4

U7/04/76

(n,α)
Cross Section

B-O - Nat
Thick 2134

ECSIL-782 (63)

Extrapolated = 3.68 and 3.85 Mev

07/04/76

Coherent Scattering
Cross Section

B-O -Nat

07/04/76

Nonelastic
Cross Section

B-O -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
56 200	1.4500+ 1		8.5010- 1	3.0000- 2
67 1656	1.4800+ 1	1.0000- 1	8.5000- 1	4.0000- 2

07/04/76

(n,X) γ
Cross Section

B-O -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53 294	1.4200+ 1		5.2000- 1	1.3000- 1
64 1730	1.4800+ 1	4.0000- 1	4.9930- 1	1.0000- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	E-PHOTON MEV
66 1839	1.4000+ 1		8.4000- 3	3.5000- 3	1.7500+ 0	0
64 1730	1.4000+ 1	4.0000- 1	7.0000- 3	6.0000- 4	1.7600+ 0	1.9600+ 0
66 1839	1.4000+ 1		7.0000- 3	1.1000- 2	2.2800+ 0	0
66 1839	1.4000+ 1		1.4200- 1	2.5000- 2	2.7000+ 0	0

07/04/76

(n,X) γ
Cross Section

B-0 -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/S	DELTA BARN/S	E-PHOTON MEV	E-PHOTON MEV
64 1730	1.4800+ 1	4.0000- 1	4.3700- 2	7.9000- 3	2.7400+ 0	
53 294	1.4200+ 1		8.6000- 2	2.3000- 2	3.0000+ 0	
64 1730	1.4200+ 1		8.6000- 2	3.0000- 2	3.0000+ 0	
69 2512	9.3700+ 0	3.1000- 1	3.6000- 2	3.0600- 2	3.0850+ 0	
69 2512	1.3440+ 1	5.3000- 1	4.4000- 2	3.7400- 2	3.0850+ 0	
69 2512	1.5250+ 1	1.2800+ 0	1.2000- 2	1.2000- 2	3.0850+ 0	
64 1730	1.4800+ 1	4.0000- 1	2.0600- 2	3.7000- 3	3.0900+ 0	
68 2997	1.4000+ 1	8.0000- 1	4.8000- 2	2.5000- 2	3.1000+ 0	
64 1730	1.4800+ 1	4.0000- 1	6.3600- 2	1.1400- 2	3.6800+ 0	
60 1721	1.4000+ 1		4.5000- 1	9.0000- 2	3.8000+ 0	
53 294	1.4200+ 1		1.3000- 1	4.5000- 2	3.8000+ 0	
68 2997	1.4000+ 1	8.0000- 1	8.5000- 2	3.0000- 2	3.8500+ 0	
64 1730	1.4800+ 1	4.0000- 1	4.9800- 2	9.0000- 3	3.8500+ 0	
69 2512	1.3440+ 1	5.3000- 1	4.6000- 2	2.3000- 2	4.1400+ 0	
69 2512	1.5250+ 1	1.2800+ 0	8.0000- 3	8.0000- 3	4.1400+ 0	
64 1730	1.4800+ 1	4.0000- 1	2.1800- 2	3.9200- 3	4.4300+ 0	
60 1721	1.4000+ 1		7.3000- 2	1.4000- 2	4.6000+ 0	
69 2512	1.3440+ 1	5.3000- 1	2.2000- 2	1.1000- 2	4.9300+ 0	
69 2512	1.5250+ 1	1.2800+ 0	7.0000- 3	7.0000- 3	4.9300+ 0	
60 1721	1.4000+ 1		1.0000- 1	2.0000- 2	5.0000+ 0	
53 294	1.4200+ 1		5.6000- 2	2.0000- 2	5.2000+ 0	
68 2997	1.4000+ 1	8.0000- 1	1.4200- 1	3.0000- 2	6.1000+ 0	
66 1839	1.4000+ 1		2.6000- 1	4.2000- 2	6.1000+ 0	
60 1721	1.4000+ 1		2.5000- 1	5.0000- 2	6.1000+ 0	
54 302	1.4000+ 1		2.0000- 2		6.1300+ 0	
56 140	7.0600+ 0	3.0000- 2	1.0400- 1	2.5000- 2	6.1400+ 0	
64 1730	1.4800+ 1	4.0000- 1	1.7210- 1	3.1000- 2	6.1400+ 0	
60 1721	1.4000+ 1		6.0000- 2	1.2000- 2	6.9130+ 0	7.1200+ 0
54 302	1.4000+ 1		5.0000- 2		6.9130+ 0	7.1200+ 0
64 1730	1.4800+ 1	4.0000- 1	4.4800- 2	2.91000- 3	6.9200+ 0	
68 2997	1.4000+ 1	8.0000- 1	3.8000- 2	1.5000- 2	7.0000+ 0	
64 1730	1.4800+ 1	4.0000- 1	3.8200- 2	6.9000- 3	7.1230+ 0	
68 2997	1.4000+ 1	8.0000- 1	4.6000- 3	2.0000- 3	7.7000+ 0	
64 1730	1.4800+ 1	4.0000- 1	4.5000- 3	1.0000- 3	8.8800+ 0	

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/S	DELTA BARN/S	E-PHN-MIN MEV	E-PHN-MAX MEV
64 1730	1.4800+ 1	4.0000- 1	3.7700- 2	6.8000- 3	1.5000+ 0	

1-103

B-0 Nat -7

07/04/76

(n,p)

8-O -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 88	1.4700- 1	1.5000- 1	3.9200- 2	5.0000- 3

07/04/76

Bound Atom

8-O -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 156	7.3000- 8		4.2000- 0	

07/04/76

Free Atom

8-O -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49 53	1.5000- 5		3.7300- 0	

07/04/76

Coherent Scattering

8-O -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 265	2.5300- 8		4.2300- 0	7.0000- 2
62 1275	4.2000- 8		4.2300- 0	
51 158	7.3000- 8		4.2000- 0	3.3600- 1

07/04/76

(n, n')
Cross Section

B-0 -16

ECSIL-4078 (59)

ENDL-7119

Barns

I-105

B-0 -16 -1

07/04/76

(n,2n)

8-0 -16

Cross Section

EC51L-808 (61)

1-106

8-0 -16 -2

07/04/76

8-0 -16

(n,p)
Cross Section

1-107

MeV

8-0 -16 -3

07/04/76

8-0 -15

(n,p)
Cross Section

8-0 -15

1-108

8-0 -16 -4

07/04/76

(n, σ)

8-0-16

Cross Section

MeV

1-109

8-0-16-5

52500

07/04/76

(n,a)
Cross Section

8-0 -16

07/04/76

(n,n')
Cross Section

8-0 -16

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53 289	1.4100+ 1		5.0000- 1	
71 3713	1.5100+ 1	4.0000- 1	3.1000- 1	5.0000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV
72 3222	7.5400+ 0	6.0000- 2	4.2910- 1	1.1760- 1	6.0520+ 0	6.1310+ 0
72 3222	8.0400+ 0	5.0000- 2	1.1430- 1	1.7150- 2	6.0520+ 0	6.1310+ 0
72 3222	8.5600+ 0	5.0000- 2	3.0840- 1	3.8550- 2	6.0520+ 0	6.1310+ 0
66 1681	1.4100+ 1		9.6000- 2	1.0000- 2	6.1000+ 0	
66 1681	1.4100+ 1		5.8000- 2	7.0000- 3	7.0000+ 0	
66 1681	1.4100+ 1		1.8000- 2	5.0000- 3	8.9000+ 0	

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
69 4078	1.4600+ 1		1.6400- 1	2.0000- 2	6.1000+ 0
69 4078	1.4600+ 1		1.9400- 1	2.4000- 2	6.1000+ 0

1-110

8-0 -16 -6

07/04/76

(n,n')
Cross Section

8-0 -16

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHON-MIN MEV	E-PHON-MAX MEV
69 4078	1.4600+ 1		6.2000- 2	1.1000- 2	6.9000+ 0	7.1000+ 0

07/04/76

(n,X) y
Cross Section

8-0 -16

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHON MEV
61 850	1.4000+ 1		4.5000- 1		3.8000+ 0	61 850	1.4000+ 1		2.5000- 1		6.1010+ 0
61 850	1.4000+ 1		7.0010- 2		4.6000+ 0	61 850	1.4000+ 1		6.0010- 2		7.1010+ 0
61 850	1.4000+ 1		1.0000- 1		5.0000+ 0						

07/04/76

(n,p)
Cross Section

8-0 -16

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
54 102	1.0000+ 1	1.0000+ 0	0.0000+ 0		60 695	1.4700+ 1	1.0000- 1	3.9200- 2	1.6000- 3
52 79	1.4100+ 1		3.5000- 2		66 2142	1.4800+ 1		2.9000- 2	2.0000- 3
61 542	1.4400+ 1		3.4000- 2	4.0000- 3	65 907	1.4800+ 1	1.0000- 1	4.0100- 2	2.7000- 3
53 27	1.4500+ 1		4.9000- 2	2.4500- 2					

07/04/76

(n,d)
Cross Section

8-0 -16

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
52 79	1.4100+ 1		1.5000- 2	

07/04/76

(n,p)

8-0 -16

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-VAL MEV
56	79 1.4100+ 1				3.1000- 1					
65 1920	1.4100+ 1	3.5000- 2	2.7000- 2	6.0000- 3	0.0000+ 0	67 2365	1.4100+ 1			
67 2365	1.4100+ 1		2.5900- 2	2.2000- 3	0.0000+ 0	67 2365	1.4100+ 1			
73 3942	1.4100+ 1	1.5300- 1	1.7300- 2	3.4000- 3	0.0000+ 0					

07/04/76

(n,p)

8-0 -17

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
70 3165	1.4100+ 1				
			2.1500- 2	1.7000- 3	4.1700+ 0

07/04/76

(n,p)

8-0 -17

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
56 2822	2.5300- 8			
61 2819	2.5300- 8			
			2.4000- 1	1.5000- 1
			2.3500- 1	5.0000- 3

1-112

8-0 -17 -1

07/04/76

Total Scattering
Cross Section

8-C -18

07/04/76

Total Scattering
Cross Section

9-F -19

1-113

9-F -19 -1

07/04/76

9-F-19

(n,n')
Cross Section

Barns

9-F-19-2

07/04/76

9-F-19

(n,n')
Cross Section

9-F-19-3

1-115

Barns

07/04/76

9-F -19

(n,2n)
Cross Section

Barns

MeV

1-116

9-F -19 -4

07/04/76

(n,2n)

9-F-19

Cross Section

1.0E-19

ECSIL-340 (63)

ECSIL-843 (65)

ECSIL-1686 (67)

1-117

MeV

9-F-19-5

1000

07/04/76

9-F -19

(n,2n)
Cross Section

Barns

MeV

1-118

9-F -19 -6

07/04/76

(n,2n)
Cross Section

9-F -19

07/04/76

(n,2n)
Cross Section

9-F -19

1-119

9-F -19 -7

07/04/76

(n,2n)

9-F-19

Cross Section

ECSIL-1672 (70)

ECSIL-2596 (68)

Relative

1-120

9-F-19-8

07/04/76

9-F-19

(X) γ
Cross Section

ECSIL-128 (55)

ECSIL-128 (55)

ECSIL-816 (57)

Barns

9-F-19 -9

9-F-19

9-F-19

9-F-19

9-F-19

Barns

1-122

9-F-19 -10

07/04/76

(n,p)

9-F -19

Cross Section

MeV

1-123

9-F -19 -11

Bates

07/04/76

(n,p)
Cross Section

9-F -19

1-124

9-F -19 -12

07/04/76

9-F -19

(n,0)

Cross Section

b7c, b7d

1-125

MeV

9-F -19 -13

07/04/76

9-F -19

(n, α)
Cross Section

1-126

9-F -19 -14

Barns

07/04/76

(n,α)
Cross Section9-F -19
145. 118

07/04/76

Nonelastic
Cross Section

9-F -19

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57	319 1.4200+ 1	1.5000- 1	8.3010- 1	5.0000- 2

07/04/76

(n,n')
Cross Section

9-F -19

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
59	3400 2.8000+ 0		4.2000- 1	2.0000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
50	696 5.6500- 1		5.4010- 1	1.7000- 1	1.0900- 1
60	65 5.6500- 1		1.3500+ 0	2.5000- 1	1.9700- 1

07/04/76

(n,2n)

9-F -19

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 2009	1.4000+ 1		6.3000- 2	9.4500- 3	69 2354	1.4600+ 1	2.0000- 1	4.7000- 2	4.0000- 2
58 7	1.4100+ 1		6.2010- 2	9.0010- 3	65 1672	1.4600+ 1	1.0000- 1	5.3000- 2	4.0000- 3
62 108	1.4130+ 1	1.0000- 1	3.6900- 2	2.3000- 3	67 1921	1.4700+ 1	1.0000- 1	4.1000- 2	1.5000- 3
65 1777	1.4200+ 1	2.0000- 1	4.2600- 2	5.9640- 3	66 2596	1.4700+ 1	7.5000- 2	4.9400- 2	2.0000- 3
61 676	1.4430+ 1	3.0000- 1	5.1910- 2	3.8000- 3	66 2058	1.4800+ 1	1.0000- 1	4.6300- 2	4.6000- 3
53 27	1.4500+ 1		6.0610- 2	1.8000- 2					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs MINUTES
73 3988	1.4600+ 1		4.0700- 2	3.5000- 3 1.0810+ 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
72 3957	1.4700+ 1		2.7000- 3	3.0000- 4	9.3700- 1

07/04/76

(n,X) γ

9-F -19

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
55 128	1.0000- 1	2.0000- 2	0.0000- 0		1.1100- 1	57 816	1.4500+ 0	7.0000- 2	0.0000+ 0	8.0000- 3	1.3600+ 0
56 140	2.5600+ 0	3.0000- 2	1.9350- 1	3.8000- 2	1.1100- 1	57 816	1.4800+ 0	7.0000- 2	0.0000+ 0	8.0000- 3	1.3600+ 0
55 128	2.0000- 1	2.0000- 2	0.0000- 0		1.9600- 1	57 816	1.5000+ 0	7.0000- 2	0.0000+ 0	8.0000- 3	1.3600+ 0
55 128	2.5000- 1	2.0000- 2	0.0000- 0		1.9600- 1	57 816	1.5600+ 0	7.0000- 2	0.0000+ 0	8.0000- 3	1.3600+ 0
56 140	2.5600+ 0	3.0000- 2	5.3700- 1	7.2000- 2	1.9700- 1	52 284	2.5000+ 0		5.2800- 1	1.8000- 1	1.3600+ 0
56 140	2.5600+ 0	3.0000- 2	5.0000- 2	1.3000- 2	1.2340+ 0	56 140	2.5600+ 0	3.0000- 2	5.7000- 2	1.6000- 2	1.4500+ 0
57 816	1.3200+ 0	7.0000- 2	0.0000- 0	8.0000- 3	1.2400+ 0	56 140	2.5600+ 0	3.0000- 2	2.1000- 2	1.0000- 2	1.5600+ 0
57 816	1.3400+ 0	7.0000- 2	0.0000- 0	8.0000- 3	1.2420+ 0	57 816	3.1000+ 0	7.0000- 2	0.0000+ 0	1.5000- 3	2.5900+ 0
57 816	1.3600+ 0	7.0000- 2	0.0000- 0	8.0000- 3	1.2400+ 0	68 2997	1.4000+ 1	8.0000- 1	4.9000- 2	2.5000- 2	2.6000+ 0
57 816	1.4200+ 0	7.0000- 2	0.0000- 0	8.0000- 3	1.2400+ 0	68 2997	1.4000+ 1	8.0000- 1	1.7000- 2	8.0000- 3	3.1000+ 0
57 816	1.4400+ 0	7.0000- 2	0.0000- 0	8.0000- 3	1.2400+ 0	68 2997	1.4000+ 1	8.0000- 1	3.5000- 2	2.5000- 2	4.2000+ 0
56 140	2.5600+ 0	3.0000- 2	3.0700- 1	3.2000- 2	1.3580+ 0	68 2997	1.4000+ 1	8.0000- 1	2.2000- 2	1.0000- 2	5.2600+ 0
57 816	1.3200+ 0	7.0000- 2	0.0000- 0	8.0000- 3	1.3600+ 0	68 2997	1.4000+ 1	8.0000- 1	2.5000- 2	1.0000- 2	6.1000+ 0
57 816	1.3400+ 0	7.0000- 2	0.0000- 0	8.0000- 3	1.3600+ 0	68 2997	1.4000+ 1	8.0000- 1	4.0000- 3	3.0000- 3	7.7000+ 0
57 816	1.3600+ 0	7.0000- 2	0.0000- 0	8.0000- 3	1.3600+ 0						

1-128

9-F -19 -16

07/04/76

(n,p)

9-F -19

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53	27 1.4500+ 1		1.3500- 1	4.7000- 2	62	88 1.4700+ 1	1.5000- 1	1.4000- 2	3.5000- 3
67	1921 1.4700+ 1	1.0000- 1	1.6400- 2	7.0000- 4	66	2142 1.4800+ 1		5.1000- 2	1.0000- 2
66	1675 1.4700+ 1		2.1000- 2	3.0000- 3	66	907 1.4800+ 1	1.0000- 1	2.7300- 2	2.8000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV
61	742 7.6700+ 0		2.4000- 2	1.0000- 2	0.0000+ 0	9.6000- 2

07/04/76

(n,a)

9-F -19

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65	1685 6.0000+ 0	4.6000- 1	1.2100- 1	1.4000- 2
66	2142 1.4800+ 1		2.4000- 2	5.0000- 3

07/04/76

Bound Atom

9-F -19

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51	158+ 7.3000- 8		3.5000+ 0	

07/04/76

Free Atom

9-F -19

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
49	53 1.5000- 5		6.8000- 1	

07/04/76

Coherent Scattering
Cross Section

9-F-19

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 2654	2.5300- 8		3.9400+ 0	1.4000- 1
51 1584	2.5300- 8		3.8000+ 0	3.0400- 1

07/04/76

Total Scattering
Cross Section

10-Ne-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69 2998	2.5300- 8		2.4200+ 0	3.0000- 2
63 777	2.5300- 8		2.3800+ 0	4.0000- 2

07/04/76

Absorption
Cross Section

10-Ne-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 822	2.5300- 8		3.8000- 2	7.0000- 3

07/04/76

(n,p)
Cross Section

10-Ne-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 1689	1.4100+ 1	1.0000- 1	1.4200- 1	2.8000- 2

1-130

10-Ne-Nat -1

07/04/76

(n,σ)

10-Ne-20

Cross Section

Barns

1-131

MeV

10-Ne-20 -1

07/04/76

(n,p)

10-Ne-20

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
71 3186	1.4300+ 1		1.0000- 3		0.0000+ 0

07/04/76

(n,o)

10-Ne-20

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 3960	1.4100+ 1		2.7400- 1	4.0000- 3
71 3186	1.4300+ 1		1.2400- 2	4.0000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
66 1920	1.4100+ 1	3.5000- 2	5.5000- 3	9.0000- 4	0.0000+ 0	71 3186	1.4300+ 1		2.0000- 3	4.0000- 4	3.9000+ 0
71 3186	1.4300+ 1		6.6000- 3	2.4000- 3	0.0000+ 0	71 3186	1.4300+ 1		1.3000- 3	3.0000- 4	4.6300+ 0
71 3186	1.4300+ 1		1.6000- 3	4.0000- 4	8.3000- 1	71 3186	1.4300+ 1		4.0000- 4		5.5500+ 0
66 1920	1.4100+ 1	3.5000- 2	4.0000- 3	6.0000- 4	8.7100- 1	71 3186	1.4300+ 1		1.0000- 4		5.9000+ 0
71 3186	1.4300+ 1		1.5000- 3	4.0000- 4	3.1800+ 0						

07/04/76

(n,2a)

10-Ne-20

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
71 3186	1.4300+ 1		4.1800- 2	6.1000- 3	0.0000+ 0

07/04/76

(n,a)

10-Ne-21

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 2824	2.5300- 8		9.6000+ 1	3.3000+ 1

1-132

10-Ne-21 -1

07/04/76

Absorption
Cross Section

11-Na-22

REFERENCE	ENERGY MEV	DELTA MEV	K-SEC BARNs	DELTA BARNs
75 3892	2.5300 ± 8		5.1100 ± 4	3.1000 ± 3

07/04/76

Total Scattering
Cross Section

11-Na-23

2-1

11-Na-23 -1

07/04/76

Total Scattering
Cross Section

11-Na-23

Barns

07/04/76

 (n,n')
Cross Section

11-Na-23

Barns

2-2

11-Na-23 -2

07/04/76

11-Na-23

(n,n')

Cross Section

07/04/76

(n,n')
Cross Section

11-Na-23

11-Na-23 -4

07/04/76

(n,n')

11-Na-23

Cross Section

07/04/76

(n,n')
Cross Section

11-Na-23

07/04/76

(n,2n)

11-Na-23

Cross Section

END-7:16

Barns

Mev

11-Na-23 -7

2-7

07/04/76

 $(n, 2n)$
Cross Section

11-Na-23

07/04/76

 $(n, n'\alpha)$
Cross Section

11-Na-23

2-8

11-Na-23 -8

07/04/76

(n,n' α)
Cross Section

11-Na-23

07/04/76

(n,X) γ
Cross Section

11-Na-23

2-9

11-Na-23 9

07/04/76

(n,X) γ
Cross Section

11-Na-23

07/04/76

(n,X) γ
Cross Section

11-Na-23

07/04/76

11-Na-23

(n,p)
Cross Section

MeV

2-12

11-Na-23 -12

Barns

07/04/76

(n,p)
Cross Section

11-Na-23

07/04/76

(n, α)

11-Na-23

Cross Section

Barns

MeV

2-14

11-Na-23 -14

07/04/76

(n, α)
Cross Section

11-Ne-23

Barns

2 15

MeV

11-Ne-23 -15

07/04/76

(n,X) α
Cross Section

11-Na-23

07/04/76

Nonelastic
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
56	353 1.0200+ 0		4.0000- 1	2.0000- 1	55	790 2.5000+ 0	1.5000- 1	5.3010- 1	2.6000- 1
56	34 2.5000+ 0		5.3000- 1	2.6000- 1	55	790 4.1000+ 0		5.7010- 1	
61	8+8 2.5000+ 0		3.4000- 1	7.0010- 2					

2-16

11-Na-23 -16

07/04/76

Total Scattering
Cross Section

11-Na-23

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63	879 9.8000+ 1	5.0000+ 2	3.5200+ 0	1.0560+ 1

07/04/76

Neutron Nonelastic Emission
Cross Section

11-Na-23

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61	883 1.4000+ 1		4.5000+ 1	1.0000+ 1

07/04/76

(n,n')

11-Na-23

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
75	3837 4.6870- 1		0.0000+ 0	1.2700- 2
71	3793 5.0000+ 0	2.5000+ 2	8.0500+ 1	5.3000+ 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV
62	714 3.9700+ 0	3.0000+ 2	1.4400+ 0	4.0000+ 2	0.0000+ 0	4.4000+ 1
71	3793 5.0000+ 0	2.5000+ 2	2.4000+ 1	1.6000+ 2	4.3900+ 1	
62	714 3.9700+ 0	3.0000+ 2	1.8000+ 1	1.5000+ 2	2.0800+ 0	
71	3793 5.0000+ 0	2.5000+ 2	1.0500+ 1	1.0000+ 3	2.0800+ 0	
62	714 3.9700+ 0	3.0000+ 2	7.0000+ 2	8.0000+ 3	2.3900+ 0	
71	3793 5.0000+ 0	2.5000+ 2	3.8000+ 2	4.0000+ 3	2.3900+ 0	
72	3228 6.3700+ 0	1.3000+ 1	3.5410+ 2	4.3200+ 3	2.3900+ 0	
72	3228 6.3700+ 0	1.0000+ 1	3.3430+ 2	4.0780+ 3	2.3900+ 0	
71	3793 5.0000+ 0	2.5000+ 2	1.5750+ 2	1.8270+ 3	2.3900+ 0	
62	714 3.9700+ 0	3.0000+ 2	1.4000+ 1	1.3000+ 2	2.6400+ 0	2.7100+ 0
72	3228 6.3700+ 0	1.3000+ 1	1.1000+ 1	1.0010+ 2	2.6400+ 0	2.7100+ 0
72	3228 6.3700+ 0	1.0000+ 1	1.5.6710+ 2	5.6710+ 3	2.6400+ 0	2.7100+ 0
72	3228 6.3700+ 0	1.0000+ 1	2.4.3390+ 2	4.1220+ 3	2.6400+ 0	2.7100+ 0
71	3793 5.0000+ 0	2.5000+ 2	1.1000+ 1	1.1000+ 2	2.6800+ 0	
62	714 3.9700+ 0	3.0000+ 2	1.0000+ 1	9.2000+ 3	2.9800+ 0	
71	3793 5.0000+ 0	2.5000+ 2	1.0000+ 1	9.0000+ 3	2.9800+ 0	

07/04/76

(n,n')

11-Na-23

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV
72 3228 6.3700+	0 1.3000-	1 8.0280-	2 7.4660-	3 2.9800+	0	
72 3228 6.5200+	0 1.0000-	1 5.8960-	2 5.7780-	3 2.9800+	0	
72 3228 6.5200+	0 8.0000-	2 3.8180-	2 3.5130-	3 2.9800+	0	
71 3793 5.0000+	0 2.5000-	2 8.7000-	2 9.0000-	3 3.6800+	0	
72 3228 6.3700+	0 1.3000-	1 1.1680-	1 1.1680-	2 3.8500+	0 3.9200+	0
72 3228 7.6000+	0 1.0000-	1 6.8820-	2 6.6070-	3 3.8500+	0 3.9200+	0
72 3228 6.5200+	0 8.0000-	2 5.4280-	2 5.2650-	3 3.8500+	0 3.9200+	0
71 3793 5.0000+	0 2.5000-	2 1.2500-	1 1.3000-	2 3.8800+	0	
72 3228 6.3700+	0 1.3000-	1 2.7270-	2 3.9270-	3 4.4300+	0	
72 3228 7.6000+	0 1.0000-	1 1.8560-	2 1.7630-	3 4.4300+	0	
72 3228 6.5200+	0 8.0000-	2 1.6640-	2 2.1630-	3 4.4300+	0	
72 3228 6.3700+	0 1.3000-	1 6.9720-	2 8.7610-	3 4.7700+	0	
72 3228 7.6000+	0 1.0000-	1 6.4970-	2 6.1070-	3 4.7700+	0	
72 3228 6.5200+	0 8.0000-	2 3.0740-	2 3.2280-	3 4.7700+	0	
72 3228 7.6000+	0 1.0000-	1 3.3930-	2 5.1570-	3 5.3800+	0	
72 3228 6.5200+	0 8.0000-	2 3.5580-	2 4.2700-	3 5.3800+	0	
72 3228 7.6000+	0 1.0000-	1 6.7000-	2 7.7050-	3 5.3800+	0 5.5300+	0
72 3228 6.5200+	0 8.0000-	2 5.6570-	2 5.9400-	3 5.3800+	0 5.5300+	0
72 3228 7.6000+	0 1.0000-	1 2.4570-	2 4.6930-	3 5.5300+	0	
72 3228 6.5200+	0 8.0000-	2 2.0170-	2 3.1750-	3 5.5300+	0	

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
59 572 3.4700+	0 1.0000-	1 3.7000-	1 1.2000-	1 4.3900-	1	59 572 4.0000+	0 1.0000-	1 2.8000-	1 9.0010-	2 4.3900-	1
59 572 3.7500+	0 1.0000-	1 2.7000-	1 9.0010-	2 4.3900-	1	59 618 2.0700+	0	0.0000+	0 3.0000-	3 2.0800+	0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL-MIN MEV	E-LVL-MAX MEV
72 3228 5.4400+	0 1.7000-	1 2.3430-	1 2.1730-	2 2.3900+	0 2.9800+	0
72 3228 6.3700+	0 1.3000-	1 2.1310-	1 1.7470-	2 2.3900+	0 2.9800+	0
72 3228 7.6000+	0 1.0000-	1 1.1230-	1 9.8790-	3 2.3900+	0 2.9800+	0
72 3228 7.6000+	0 1.0000-	1 6.0530-	2 1.0600-	2 5.7400+	0 5.7800+	0
72 3228 6.5200+	0 8.0000-	2 3.9350-	2 4.7610-	3 5.7400+	0 5.7800+	0

07/04/76

(n,2n)

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
55	119 1.4100+ 1	2.0000- 1	1.3800- 2	2.2000- 3	72	3427 1.4500+ 1	2.0000- 1	3.7400- 2	4.0000- 3
72	3427 1.4200+ 1	2.0000- 1	2.1100- 2	2.2000- 3	73	3989 1.4800+ 1		1.6500- 2	3.0000- 3
69	2354 1.4600+ 1	2.0000- 1	4.9500- 2	1.0000- 2					

07/04/76

Absorption

11-Na-23

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58	1162 2.5300- 0		5.3600- 1	0.0000- 3
60	891 2.5300- 0		4.7000- 1	6.0000- 2

07/04/76

(n,X) γ

11-Na-23

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
61	11 4.0000- 1	2.0000- 2	0.0000+ 0	4.3900- 1		61	11 2.5000+ 0	2.0000- 2	0.0000+ 0	2.3700+ 0	
65	1594 1.4100+ 1		4.6300- 1	5.6000- 2	4.4000- 1	61	11 2.8000+ 0	2.0000- 2	0.0000+ 0	2.6400+ 0	
61	11 1.9000+ 0	2.0000- 2	0.0000+ 0	1.6100+ 0		61	11 3.0500+ 0	2.0000- 2	0.0000+ 0	2.9600+ 0	
61	11 2.0000+ 0	2.0000- 2	0.0000+ 0	2.0500+ 0							

07/04/76

(n,p)

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
60	586 1.4000+ 1		9.0000- 3	4.0000- 3	67	3371 1.4700+ 1	0.0000- 1	4.0000- 2	9.2000- 3
61	361 1.4000+ 1		5.7010- 2	2.0000- 2	66	2142 1.4800+ 1		4.5000- 2	5.0000- 3
53	27 1.4500+ 1		3.3900- 2	1.5000- 2	66	907 1.4800+ 1	1.0000- 1	4.1800- 2	3.8000- 3
67	1921 1.4700+ 1	1.0000- 1	4.1000- 2	1.2000- 3	65	1697 1.4800+ 1		4.5000- 2	5.0000- 3
66	1675 1.4700+ 1		3.9000- 2	4.0000- 3	61	660 1.4800+ 1		2.9000- 2	3.0000- 3

2-19

11-Na-23 -19

07/04/76

(n,p)

11-Na-23

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
65 1717	8.0000+ 0		1.5000- 2	2.0000- 3	0.0000+ 0	65 1717	8.8000+ 0		1.2600- 2	2.0000- 3	1.7000+ 0
65 1717	8.0000+ 0		1.2000- 2	2.0000- 3	0.0000+ 0	65 1717	8.0000+ 0		5.0000- 3	1.5000- 3	1.8300+ 0
65 1717	8.0000+ 0		5.4000- 3	1.0000- 3	1.0200+ 0	65 1717	8.8000+ 0		6.0000- 3	1.5000- 3	1.8300+ 0
65 1717	8.8000+ 0		5.4000- 3	1.0000- 3	1.0200+ 0	65 1717	8.8000+ 0		4.0000- 3	2.5000- 3	2.3100+ 0
65 1717	8.8000+ 0		5.7500- 3	1.5000- 3	1.7000+ 0	65 1717	8.8000+ 0		4.5000- 3	1.5000- 3	2.5200+ 0

07/04/76

(n,a)

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
60 586	1.4000+ 1		2.9000- 2	9.0000- 3	67 3371	1.4700+ 1	1.0000- 1	1.4100- 1	2.1000- 2
62 585	1.4050+ 1		1.4700- 1	1.8000- 2	61 660	1.4800+ 1		2.2200- 1	2.2000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
65 1717	8.0000+ 0		5.0000- 3	2.0000- 3	0.0000+ 0	65 1717	8.0000+ 0		2.5500- 3	6.0000- 4	9.9000- 1
65 1717	8.8000+ 0		1.3000- 2	3.0000- 3	0.0000+ 0	65 1717	8.8000+ 0		4.5000- 3	1.0000- 3	9.9000- 1
65 1717	8.0000+ 0		9.0000- 3	2.0000- 3	6.6000- 1	65 1717	8.0000+ 0		1.3000- 3	3.0000- 4	1.0600+ 0
65 1717	8.8000+ 0		1.9200- 2	3.0000- 3	6.6000- 1	65 1717	8.8000+ 0		4.5000- 3	1.0000- 3	1.0600+ 0
65 1717	8.0000+ 0		3.4000- 3	1.0000- 3	8.3000- 1	65 1717	8.0000+ 0		1.3500- 3	3.0000- 4	1.3100+ 0
65 1717	8.8000+ 0		7.2000- 3	2.0000- 3	8.3000- 1	65 1717	8.8000+ 0		3.6000- 3	8.0000- 4	1.3100+ 0

07/04/76

Bound Atom

11-Na-23

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		3.5000+ 0	

2-20

11-Na-23 -20

07/04/76

Coherent Scattering
Cross Section

11-Na-23

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
5: 1584	7.3000 ± 8		1.5000 ± 0	1.2000 ± 1

07/04/76

Nonelastic
Cross Section

12-Mg-Nat

C7/04/76

Total Scattering
Cross Section

12-Mg-Nat

Barns

07/04/76

(n,n')
Cross Section

¹²Mg-Nat

Baras

2-23

MeV

¹²Mg-Nat -3

07/04/76

(n,n')

¹²Mg-Nat

Cross Section

Barns

07/04/76

 (n,n')
Cross Section

12-Mg-Nat

07/04/76

 $(n,X) \gamma$
Cross Section

12-Mg-Nat

07/04/76

Activation
Cross Section

12-Mg-Nat

07/04/76

Nonelastic
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
56	34 2.5000+ 0		7.7010- 1	2.5000- 1	57	319 1.4200+ 1	1.5000- 1	9.9010- 1	2.0000- 2
55	790 2.5000+ 0	1.5000- 1	7.7010- 1	2.5000- 1	56	200 1.4500+ 1		9.5010- 1	4.0000- 2
55	790 4.1000+ 0		7.8010- 1	2.0000- 1	58	356 2.1000+ 1		7.8010- 1	5.0000- 2
55	790 1.4000+ 1		1.0800+ 0	9.0010- 2	58	356 2.5500+ 1		7.8010- 1	5.0000- 2
57	199 1.4100+ 1		9.6010- 1	8.6010- 2	58	356 2.9200+ 1		7.6010- 1	5.0000- 2

07/04/76

Total Scattering
Cross Section

12-Mg-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
46	197 2.5000+ 0	1.5000- 1	1.6000+ 0	2.0000- 1

07/04/76

(n,n')

12-Mg-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	E-PHOTON MEV
70 3229	8.5600	0	8.0000-2	4.2500-2	6.9292-3	4.1230+0
70 3229	8.5600	0	8.0000-2	6.1247-2	7.2246-2	4.2330+0
70 3229	8.5600	0	4.0000-2	5.3150-2	7.0689-2	5.2263+0
70 3229	7.6000	0	1.0000-1	6.5420-2	9.8784-3	5.2280+0
70 3229	8.5600	0	8.0000-2	7.4590-2	6.7877-3	5.2250+0
70 3229	7.5500	0	4.0000-2	5.8470-2	1.9763-2	6.0000+0
70 3229	7.6000	0	1.0000-1	4.3030-2	7.0139-3	6.0000+0
70 3229	8.5600	0	8.0000-2	5.6920-2	5.9058-3	6.0000+0
70 3229	8.5600	0	8.0000-2	4.5520-2	7.4198-3	6.0000+0
70 3229	8.5600	0	8.0000-2	3.6600-2	5.3070-3	6.4360+0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
61 850	1.4000-1		2.8000-1	8.4000-2	4.1000+0	61 850	1.4000-1		3.0000-2	9.0000-3	6.1000+0
61 850	1.4000-1		7.0000-2	2.1000-2	4.8000+0	61 850	1.4000-1		3.0000-2	9.0000-3	6.9000+0
61 850	1.4000-1		1.0000-1	3.0000-2	5.3000+0						

07/04/76

Absorption

12-Mg-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 2569	2.5300-8		6.5000-2	5.0000-3	58 364	2.5000-2	4.0000-2	1.9000-2	3.0000-3
65 149	2.5300-8		6.4200-2	1.5000-3	58 364	2.2000-1	2.0000-2	1.3000-2	1.0000-2
58 1162	2.5300-8		7.3000-2	2.0000-3	58 364	8.3000-1	4.0000-2	1.0000-2	4.0000-3

07/04/76

(n,X) y

12-Mg-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
56 140	2.5600-0	1.0000-2	4.8500-1	4.2000-2	1.3680+0	56 140	2.5600-0	3.0000-2	1.9000-2	4.0000-3	1.6160+0
60 833	1.4000-1		5.5000-1	1.0000-1	1.3680+0	56 140	2.5600-0	3.0000-2	1.7000-2	3.0000-3	1.8200+0
52 284	2.5000-0		7.5600-1	2.3000-1	1.4000+0						

2-27

12-Mg-Nat

07/04/76

(n,X) γ
Cross Section

12-Mg-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHY-MIN MEV	E-PHY-MAX MEV
63 1183	1.5300+ 1	1.63000- 1	7.3500- 1		0.1000+ 0	0.0000+ 1

07/04/76

(n,p)
Cross Section

12-Mg-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 688	1.4400+ 1	2.0000- 1	8.6010- 2	9.0010- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
59 829	1.4500+ 1		8.0010- 2		2.0000- 2

07/04/76

Bound Atom
Cross Section

12-Mg-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		4.2000+ 0	

07/04/76

Coherent Scattering
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 2877	2.5300- 8		2.9000+ 0		51 2632	2.5300- 8		3.7000+ 0	1.5000- 1
52 2631	2.5300- 8		3.4000+ 0	1.4000- 1	51 1584	7.3000- 8		2.4000+ 0	1.9200- 1
63 2830	2.5300- 8		3.3500+ 0	8.0000- 2					

2-28

12-Mg-Nat -8

07/04/76

Incoherent Scattering
Cross Section

12-Mg-Nat

REFERENCE	ENERGY MeV	DELTA MeV	X-SEC BARNs	DELTA BARNs
57 2833	2.5300 - 8		9.0500 - 2	2.0000 - 2
52 2834	2.5300 - 8		1.1000 - 1	

07/04/76

12-Mg-24

(n,n')
Cross Section

2-29

Mev

12-Mg-24 - 1

Barns

07/04/76

(n,n')
Cross Section

12-Mg-24

07/04/76

(n,2n)
Cross Section

12-Mg-24

2-30

12-Mg-24 -2

07/04/76

 $(n, 2n)$
Cross Section

12-Mg-24

07/04/76

 $(n, X) \gamma$
Cross Section

12-Mg-24

2-31

12-Mg-24 -3

07/04/76

(n,p)

12-Mg-24

Cross Section

Barns

2-32

MeV

12-Mg-24 -4

07/04/76

12-Mg-24

(n,p)
Cross Section

MeV

12-Mg-24 - 5

2-33

Barns

07/04/76

(n,p)

12-Mg-24

Cross Section

Barns

07/04/76

(n,n')

Cross Section

12-Mg-24

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
64 845	4.100-1	9.0000-1	1.6600-1	2.5000-2	1.3700+0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
64 1859	4.000+1		5.9000-1	9.0000-2	1.3700+0
65 1694	4.100+1		6.1900-1	6.0000-2	1.3700+0

07/04/76

(n,X) γ

Cross Section

12-Mg-24

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
61 656	2.9000+0	3.0000-2	6.7000-1	4.5000-2	1.3680+0
64 1729	1.4000+1		5.9000-1	9.5000-2	1.3680+0
64 1666	4.100+1		6.1900-1	3.2000-2	1.3700+0

2-35

12-Mg-24

07-04-76

(n,p)

12-Mg-24

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
59	533	1.3000-1	2.1900-1	2.6000-2	58	2596	1.4700+1	7.5000-2	1.7970-1
61	361	1.4000+1	1.1600-1	1.6000-2	67	1921	1.4700+1	1.0000-1	1.8200-1
53	27	1.4500+1	1.9100-1	3.4000-2	60	626	1.5000+1		2.0300-1
69	235	1.4600+1	2.0000-1	1.9400-1					1.11000-3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV	E-LVL MEV
60	649	1.4000+1		2.8000-2	2.0000-3	1.3400+0	1.8400+0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
71	3200	1.4800+1		1.3800-1	1.4000-2

07/04/76

(n,n')

12-Mg-25

Cross Section

2-36

Mev

12-Mg-25 -1

Barns

07/04/78

20

12-29-25

550,000
Sec. 10

(99) 2891-71503

07, 04, 76

(n, p)

12-Mg-25

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
61	361.1-400.0	6.7010-2	1.0000-2	
53	271.4500-1	4.9500-2	1.8000-2	
E7 192	1.1-70C	1.5000-1	6.6000-2	3.0000-3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	E-LVL MEV
			5.6900-2	4.8000-1	9.8000-1
			73.3987	1.4600-1	

2-37

12-Mg-25 -2

07/04/76

(n,n')

12-Mg-26

Cross Section

07/04/76

(n,n')

12-Mg-26

Cross Section

2-36

Mev

12-Mg-26 -1

07/04/76

(n,p)
Cross Section

12-Mg-26

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 361	1.4000+ 1		2.7000- 2	7.0010- 3
58 443	1.4800+ 1		2.0000- 2	5.0000- 3

07/04/76

(n,p)
Cross Section

12-Mg-26

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1921	1.4700+ 1	1.0000- 1	8.0000- 2	3.0000- 3
66 2142	1.4800+ 1		8.3000- 2	7.0000- 3
58 443	1.4800+ 1		3.5000- 2	5.0000- 3

07/04/76

Nonelastic
Cross Section

13-Al-27

2-39

13-Al-27 -1

07-04-76

13-A1-27

Nonelastic
Cross Section

Barns

MeV

2-40

13-A1-27 -2

07:04/76

17-4-77

Inelastic
Cross Section

Bar 5

07 04/76

Total Scattering
Cross Section

13-A1-27

ECSIL-231 (56)

ECSIL-3058 (64)

Barns

2-42

13-A1-27 -4

07/04/76

(n,n')

13-A1-27

Cross Section

Barns

07/04/76

(n,n')

13-A1-27

Cross Section

Barns

2-44

MeV

13-A1-27 -6

07/04/76

(n,n')
Cross Section

13-A1-27

Barns

07/04/76

(n,n*)
Cross Section

13-A1-27

2-46

13-A1-27 -8

07/04/76

(n,n')

13-A1-27

Cross Section

Barns

07/04/76

(n,n')

13-A1-27

Cross Section

2-48

13-A1-27 -10

07/04/76

(n,n')

13-A1-27

Cross Section

Bates

07/04/76

13-A1-27

(n,n')

Cross Section

2-50

MeV

13-A1-27 -12

Barns

07/04/76

(n,n')
Cross Section

13-AI-27

07/04/76

(n,2n)

13-A1-27

Cross Section

Barns

2-52

MeV

13-A1-27 -14

07/04/76

(n,X) γ
Cross Section

13-A1-27

Barns

2-53

MeV

13-A1-27 -15

07/04/76

(n,X) γ
Cross Section

13-A1-27

07/04/76

(n,p)
Cross Section

13-A1-27

2-54

13-A1-27 -16

07/04/76

(n,p)

13-AI-27

Cross Section

Barns

07/04/76

(n,p)
Cross Section

13-A1-27

2-56

13-A1-27 -18

Barns

07/04/76

(n,p)
Cross Section

13-A1-27

2-57

13-A1-27 -19

07/04/76

(n,p)

13-A1-27

Cross Section

FNU-7113

Barns

07/04/76

(n, α)

13-A1-27

Cross Section

FNU-7113

Barns

2-58

13-A1-27 -20

07/04/76

(n, α)

13-A1-27

Cross Section

Barns

2-59

MeV

13-A1-27 -21

07/04/76

(n, α)
Cross Section

13-A1-27

07/04/76

(n, a)

13-A1-27

Cross Section

Bars

07/04/76

(n,α)
Cross Section

13-A1-27

Barns

2-62

MeV

13-A1-27 24

07/04/76

(n.o)

13-A1-27

Cross Section

Bar 25

2-63

Mev

13-A1-27 -25

07/04/76

(n, α)
Cross Section

13-AI-27

2-64

13-AI-27 -26

07/04/76

(n,0)

13-AI-27

Cross Section

Relative

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07/04/76

Nonelastic
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
61 706	1.4300+ 1		8.6010- 1	4.0000- 2	61 706	1.6100+ 1		9.2010- 1	4.0000- 2
56 200	1.4500+ 1		1.0200- 0	2.0000- 2	58 356	2.5500+ 1		8.1010- 1	5.0000- 2
67 1656	1.4800+ 1	1.0000- 1	9.4000- 1	3.0000- 1	55 2056	1.4000+ 3	2.0000- 2	4.1000- 1	2.0500- 2
61 706	1.5400+ 1		9.6010- 1	4.0000- 2	61 1566	5.0000- 3	4.0000+ 2	3.8100- 1	2.7600- 2

07/04/76

Total Scattering
Cross Section

13-A1-27

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 879	9.8000- 1	5.0000- 2	2.9200+ 0	8.7600- 2

07/04/76

(n,n')

13-A1-27

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69 3400	2.8000+ 0		5.1000- 1	2.0000- 2
63 836	7.0000+ 0		8.1010- 1	8.0010- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV	E-LVL MEV	E-LVL MEV	E-LVL MEV
63 828	1.2000+ 0		5.0000- 2	3.0000- 2	8.4210- 1				
63 828	1.2000+ 0		1.3000- 1	5.0000- 2	1.0130+ 0				
62 1012	1.6100+ 0	4.0000- 2	2.4000- 1	1.6000- 2	1.0130+ 0				
62 1012	1.7900+ 0	4.0000- 2	1.6500- 1	1.0000- 2	1.0130+ 0				
62 1012	2.0100+ 0	4.0000- 2	2.2300- 1	1.3000- 2	1.0130+ 0				
63 820	2.7600+ 0		3.1000- 1	4.0000- 2	1.0130+ 0				
68 2371	3.5000+ 0		1.2000- 1		1.0130+ 0				
70 3230	4.4600+ 0	7.0000- 2	1.3507- 1	1.9990- 2	1.0130+ 0				
70 3230	5.0000+ 0	5.0000- 2	8.0890- 2	7.5228- 3	1.0130+ 0				
70 3230	5.1800+ 0	5.0000- 2	1.0397- 1	1.8195- 2	1.0130+ 0				
63 820	2.7600+ 0		1.5000- 1	2.0000- 2	1.9100+ 0				
70 3230	6.4400+ 0	1.3000- 1	1.1073- 1	9.1664- 3	2.2090+ 0	2.7320+ 0			
62 1012	2.8100+ 0	3.0000- 2	1.6600- 1	9.0000- 3	2.2100+ 0				

2-66

13-A1-27 -28

07/04/76

(n,n')

13-A1-27

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV	E-LVL MEV	E-LVL MEV
62 1012	3.0100+ 0	3.0000- 2	2.0000- 1	6.0000- 3	2.2100+ 0			
62 1012	3.9900+ 0	3.0000- 2	1.9300- 1	8.0000- 3	2.2100+ 0			
67 3397	2.9600+ 0		1.2900- 1	2.8000- 2	2.2120+ 0			
67 3357	3.3600+ 0		1.1300- 1	1.9000- 2	2.2120+ 0			
68 2371	3.5000+ 0		2.0700- 1		2.2130+ 0			
61 1751	4.2000+ 0		1.5000- 1	3.6000- 2	2.7290+ 0	2.9760+ 0	2.9990+ 0	
68 2371	3.5000+ 0		8.7000- 2		2.7300+ 0			
62 1012	3.9900+ 0	3.0000- 2	1.2700- 1	8.0000- 3	2.7300+ 0			
61 1751	4.5000+ 0		2.5000- 1	3.0000- 2	2.9760+ 0	2.9990+ 0		
61 1751	4.8000+ 0		2.9000- 1	3.0000- 2	2.9760+ 0	2.9990+ 0		
68 2371	3.5000+ 0		1.6000- 2		2.9800+ 0			
62 1012	3.9900+ 0	3.0000- 2	2.2600- 1	9.0000- 3	2.9800+ 0	3.0000+ 0		
68 2371	3.5000+ 0		6.2000- 2		3.0020+ 0			
70 3230	6.0000+ 0	1.3000- 1	8.6830- 2	8.9435- 3	3.6780+ 0	3.9560+ 0	4.0550+ 0	
70 3230	6.4400+ 0	1.3000- 1	9.4610- 2	8.9879- 3	3.6780+ 0	3.9560+ 0	4.0550+ 0	
70 3230	7.6000+ 0	1.0000- 1	4.6840- 2	4.1589- 3	3.6780+ 0	3.9560+ 0	4.0550+ 0	
70 3230	7.5400+ 0	4.0000- 2	8.9900- 3	2.8139- 3	3.9560+ 0			
70 3230	7.5400+ 0	4.0000- 2	9.0700- 3	2.1224- 3	3.4.0550+ 0			
70 3230	7.5400+ 0	4.0000- 2	1.6750- 2	3.8022- 3	3.4.4090+ 0			
70 3230	6.0000+ 0	1.3000- 1	7.3950- 2	1.8709- 2	3.4.4090+ 0	4.5080+ 0	4.5800+ 0	4.8110+ 0
70 3230	6.4400+ 0	1.3000- 1	1.5385- 1	1.8616- 2	3.4.4090+ 0	4.5080+ 0	4.5800+ 0	4.8110+ 0
70 3230	7.5400+ 0	4.0000- 2	5.5790- 2	1.3613- 2	3.4.5080+ 0	4.5800+ 0		
70 3230	8.5600+ 0	8.0000- 2	6.7690- 2	1.3132- 2	3.4.5080+ 0	4.5800+ 0		
70 3230	7.5400+ 0	4.0000- 2	4.5710- 2	5.5309- 3	3.5.1550+ 0	5.2460+ 0		
70 3230	8.5600+ 0	8.0000- 2	3.3430- 2	6.0508- 3	3.5.1550+ 0	5.2460+ 0		
70 3230	8.5600+ 0	8.0000- 2	1.1639- 1	1.1820- 2	3.5.4100+ 0	5.4340+ 0	5.4910+ 0	5.5500+ 0
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07/04/76

(n,n')

13-AI-27

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHN-MIN	E-PHN-MAX
69 4078	1.4000+ 1		1.1000+ 1	1.1000+ 1	6.4000+ 1	8.2100+ 0

07/04/76

(n,n'p)

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
57 217	1.4000+ 1		7.0010- 2	9.8010- 3	62 688	1.4400+ 1	2.0000- 1	1.7000- 2	6.0010- 3
61 361	1.4000+ 1		5.3010- 2	1.1000- 2	61 658	1.4800+ 1		1.5700- 1	

07/04/76

Absorption

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
61 2569	2.5300- 8		2.3900- 1	1.4000- 2	58 3458	2.5300- 8		2.3400- 1	5.0000- 3
60 2932	2.5300- 8		2.2000- 1	1.3000- 2	58 364	2.5000- 2	4.0000- 3	1.7000- 2	3.0000- 3
66 1491	2.5300- 8		2.2900- 1	3.0000- 3	58 364	2.2000- 1	2.0000- 2	6.0000- 3	3.0000- 3
58 1162	2.5300- 8		2.4600- 1	3.0000- 3	58 364	8.3000- 1	4.0000- 2	1.6000- 2	

07/04/76

(n,X) γ

13-AI-27

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53 294	1.4200+ 1		1.7000+ 0	

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	E-PHOTON MEV
56 140	2.5600+ 0	3.0000- 2	1.5000- 3	4.0000- 4	1.6600- 1	
56 1839	1.4000+ 1		1.0200- 1	1.3000- 2	8.4000- 1	
56 140	2.5600+ 0	3.0000- 2	1.5000- 3	4.0000- 4	1.6600- 1	
56 140	2.5600+ 0	3.0000- 2	6.4000- 2	7.0000- 3	8.4200- 1	

2-68

13-AI-27 -30

07-04/76

(n,X) γ
Cross Section

13-A1-27

REFERENCE	ENERGY MEV	DELTA MEV	K-SEC BAPNS	DELTA BAPNS	E-PHOTON MEV	E-PHOTON MEV
65 1713 3.5700+ 0 1.0000- 1 1.1970- 1 3.2300- 2 8.4200- 1						
65 1713 4.0700+ 0 1.0000- 1 1.2510- 1 2.8700- 2 8.4200- 1						
65 1713 4.5700+ 0 1.0000- 1 1.1050- 1 2.2100- 2 8.4200- 1						
54 111 1.0150+ 0 2.0000- 2 0.0000+ 0 8.4700- 1						
54 111 1.0300+ 0 2.0000- 2 0.0000+ 0 8.4700- 1						
65 1839 1.4000+ 1 9.2000- 2 1.2000- 2 1.0100+ 0						
56 140 2.5600+ 0 3.0000- 2 1.4200- 1 1.3000- 2 1.0130+ 0						
68 2371 3.5000+ 0 2.0000- 1 2.0000- 1 1.0130+ 0						
65 1713 3.5700+ 0 1.0000- 1 2.2750- 1 4.3200- 2 1.0130+ 0						
65 1713 4.0700+ 0 1.0000- 1 2.4580- 1 4.6700- 2 1.0130+ 0						
65 1713 4.5700+ 0 1.0000- 1 2.3440- 1 4.6900- 2 1.0130+ 0						
63 1723 1.4100+ 1 6.0000- 1 5.5000- 2 1.0130+ 0						
54 111 1.0380+ 0 2.0000- 2 0.0000+ 0 1.0250+ 0						
68 2371 3.5000+ 0 8.7000- 2 1.7170+ 0						
65 1713 3.5700+ 0 1.0000- 1 6.8000- 2 1.8500- 2 1.7200+ 0						
65 1713 4.0700+ 0 1.0000- 1 1.0090- 1 2.0200- 2 1.7200+ 0						
65 1713 4.5700+ 0 1.0000- 1 6.4600- 2 1.2900- 2 1.7200+ 0						
63 23 1.4100+ 1 6.0000- 1 1.6300- 1 1.7200+ 0						
53 294 1.4200+ 1 1.7600- 1 1.7200+ 0						
66 1839 1.4000+ 1 1.5500- 1 2.0000- 2 1.7500+ 0						
66 2997 1.4000+ 1 8.0000- 1 1.1000- 1 4.0000- 2 2.2000+ 0						
66 1839 1.4000+ 1 1.4800- 1 1.9000- 2 2.2000+ 0						
56 140 2.5600+ 0 3.0000- 2 8.7000- 2 8.0000- 3 2.2100+ 0						
65 1713 3.5700+ 0 1.0000- 1 2.1430- 1 3.6400- 2 2.2100+ 0						
65 1713 4.0700+ 0 1.0000- 1 2.1160- 1 3.6000- 2 2.2100+ 0						
65 1713 4.5700+ 0 1.0000- 1 1.9140- 1 3.8300- 2 2.2100+ 0						
63 1723 1.4100+ 1 6.0000- 1 1.0300- 1 2.2100+ 0						
68 2371 3.5000+ 0 2.1300- 1 2.2130+ 0						
65 1713 3.5700+ 0 1.0000- 1 3.0100- 2 6.9000- 3 2.7300+ 0						
65 1713 4.0700+ 0 1.0000- 1 4.4200- 2 8.8000- 3 2.7300+ 0						
66 1839 1.4000+ 1 4.0000- 2 1.0000- 2 2.7600+ 0						
68 2997 1.4000+ 1 8.0000- 1 2.5000- 2 1.5000- 2 2.8000+ 0						
66 2371 3.5000+ 0 1.6000- 2 2.9800+ 0						
65 1713 3.5700+ 0 1.0000- 1 1.1110- 1 2.0000- 2 2.9800+ 0 3.0000+ 0						
65 1713 4.0700+ 0 1.0000- 1 1.0240- 1 3.1000- 2 2.9800+ 0 3.0000+ 0						
65 1713 4.5700+ 0 1.0000- 1 1.6580- 1 2.8200- 2 2.9800+ 0 3.0000+ 0						
66 2997 1.4000+ 1 8.0000- 1 1.0200- 1 3.0000- 2 3.0000+ 0						
63 1723 1.4100+ 1 6.0000- 1 7.9000- 2 3.0000+ 0						
68 2371 3.5000+ 0 6.2000- 2 3.0020+ 0						

07-04-76

(n,X) γ
Cross Section

13-A1-27

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	E-PHOTON MEV
66 1839	1.4000+1		1.3100-1	2.0000-2	3.0400-0	0
66 1639	1.4000+1		7.4000-2	1.6000-2	3.8000+0	0
61 050	1.4000+1		2.9000-1	8.7000-2	3.8000+0	0
60 1721	1.4000+1		2.9000-1	5.8000-2	3.0000+0	0
68 2997	1.4000+1	8.0000-1	1.8000-2	1.0000-2	4.0000+0	0
53 294	1.4000+1		2.4000-2		4.5000+0	0
61 050	1.4000+1		1.6000-1	4.8000-2	4.9000+0	0
60 1721	1.4000+1		1.6000-1	3.2000-2	4.9000+0	0
66 1839	1.4000+1		1.1300-1	2.0000-2	5.1000+0	0
61 050	1.4000+1		9.0000-2	2.7000-2	5.4000+0	0
60 1721	1.4000+1		9.0000-2	1.8000-2	5.4000+0	0
53 294	1.4000+1		5.4000-2		5.4000+0	0
61 050	1.4000+1		4.0000-2	1.2000-2	6.3000+0	0
60 1721	1.4000+1		4.0000-2	8.0000-3	6.3000+0	0
66 1839	1.4000+1		4.7000-2	1.1000-2	6.4000+0	0
61 050	1.4000+1		3.0000-2	9.0000-3	6.9000+0	0
60 1721	1.4000+1		3.0000-2	6.0000-3	6.9000+0	0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHN-MIN MEV	E-PHN-MAX MEV
63 1723	1.4100+1	1.6000-1	2.2000+0		2.0000+0	1.0000+1

07/04/76

(n,p)
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
51 430	0.6350+0		0.0000+0		68 2695	1.4400+1	3.0000-1	6.8000-2	8.0000-3
61 361	1.4000+1		9.7000-2	1.1000-2	63 598	1.4400+1	2.0000-1	9.3010-2	1.0000-2
67 217	1.4000+1		7.0000-2	1.0000-2	69 2050	1.4500+1	2.0000-1	8.1900-2	7.0000-3
61 361	1.4000+1	1.7000-1	9.0000-2	1.6000-2	53 27	1.4500+1		5.24+10	9.4010-3
61 361	1.4000+1		8.1000-2	4.0000-3	63 372	1.4600+1		7.0010-2	
61 361	1.4000+1	1.0000-1	7.9000-2	1.5000-2	64 1848	1.4700+1	1.5000-1	6.6000-2	1.0000-3
61 361	1.4000+1		7.9000-2	1.5000-3	52 24	1.4700+1	1.5000-1	8.2010-2	1.0000-2
61 361	1.4000+1	1.8000-1	6.7000-2	1.0000-3	65 917	1.4800+1	1.0000-1	9.7000-2	1.0000-2
61 361	1.4000+1		6.7000-2	1.0000-3	61 641	1.4800+1		7.7000-2	5.0000-3
61 361	1.4000+1	1.7000-1	7.4000-2	1.7000-3	59 662	1.4800+1	9.0000-1	5.3010-2	5.0000-3

2-70

13-A1-27 -32

07/04/76

(n,p)

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
70 3150	1.4800+ 1	2.5000- 1	7.3000- 2	5.0000- 3	70 3638	1.4800+ 1	2.5000- 1	7.3000- 2	5.0000- 3
71 3200	1.4800+ 1		7.5000- 2	6.0000- 3	50 628	1.5000+ 1		5.9010- 2	6.0010- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV
57 1914	7.9000+ 0	8.0000- 2	7.1000- 3	7.0000+ 4	0.0000+ 0	3.1000- 2
67 1914	7.9000+ 0	9.0000- 2	9.8000- 3	1.0000- 3	3.1000- 2	9.8000- 1
73 3967	1.4600+ 1		7.4470- 2	4.2000- 3	0.4200- 1	
67 1914	7.9000+ 0	8.0000- 2	2.4500- 2	2.5000- 3	1.6900+ 0	1.9400+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
59 619	1.4000+ 1	5.0000- 1	1.1500- 1	1.0000- 2	9.5010- 0
61 830	1.4100+ 1		8.5010- 2	2.8000- 3	1.0000+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
64 1859	1.4000+ 1		7.7000- 2		8.4000- 1

07/04/76

(n,X) p

13-AI-27

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57 847	1.3200+ 1	2.0000- 1	1.4000- 1	7.6000- 2
61 658	1.4800+ 1		2.7300- 1	2.0000- 2

07/04/76

(n,t)

13-AI-27

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
73 3996	1.4700+ 1		1.7300- 3	2.5000- 4

07/04/76

(n, He-3)

13-A1-27

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60	567 1.4800+ 1	9.0010- 1	5.0000- 4	

07/04/76

(n, a)

13-A1-27

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65	899 1.4100+ 1		1.1900- 1	1.0000- 2	70	3197 1.4700+ 1		1.1000- 1	1.5000- 2
71	3200 1.4800+ 1		1.2000- 1	1.4000- 2	59	235 1.4700+ 1		1.1610- 1	9.0000- 3
64	829 1.4300+ 1	1.0000- 1	1.1700- 1	1.6000- 4	68	2711 1.4800+ 1	2.0000- 1	1.1600- 1	1.8000- 3
64	829 1.4300+ 1	1.5000- 1	1.1000- 1	1.3000- 3	59	882 1.4800+ 1	9.0010- 1	1.1400- 1	7.0010- 3
67	512 1.4600+ 1		1.1800- 1		54	843 1.4800+ 1	7.0010- 1	1.1600- 1	9.8010- 3
62	102 1.4600+ 1	3.0000- 1	1.1500- 1	1.2000- 3	71	3200 1.4800+ 1		1.1100- 1	9.0000- 3
67	1902 1.4700+ 1		1.2000- 1	1.0000- 2	60	568 1.4800+ 1		1.1600- 1	9.0010- 3
62	2381 1.4700+ 1	2.0000- 1	1.2100- 1	1.6000- 3					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
71	3200 1.4800+ 1		6.5000- 2	6.0000- 3	1.9600- 2
59	829 1.4500+ 1		4.0000- 2	2.0000- 2	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
59	819 1.4700+ 1	1.5000- 1	1.1100- 1	9.0010- 3	1.5000+ 1	52	84 1.4100+ 1		1.3500- 1	9.4500- 3	1.5050+ 1
53	27 1.4500+ 1		1.6310- 2	1.6000- 2	1.5000+ 1	54	1348 1.4700+ 1	1.5000- 1	1.1200- 1	2.0000- 3	1.5350+ 1

07/04/76

(n, X) a

13-A1-27

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58	537 1.4800+ 1		9.2000- 2	1.5000- 2

2-710

13-A1-27 -34

07/04/76

Bound Atom
Cross Section

13-A1-27

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		1.5000+ 0	
65 1753	9.4100- 6		1.5150+ 0	1.1000- 3

07/04/76

Free Atom
Cross Section

13-A1-27

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 1753	9.4100- 6		1.4080+ 0	1.1000- 3

07/04/76

Coherent Scattering
Cross Section

13-A1-27

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		1.5000+ 0	1.2000- 1
65 1753	9.4100- 6		1.5040+ 0	1.5000- 3

07/04/76

Incoherent Scattering
Cross Section

13-A1-27

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 2663	2.5300- 8		1.0000- 2	1.0000- 3

07/04/76

Total Scattering
Cross Section $^{14}\text{Si-Nat}$

Barns

07/04/76

(n,n')
Cross Section $^{14}\text{Si-Nat}$

Barns

2-74

 $^{14}\text{Si-Nat} - 1$

07/04/76

(n,n')
Cross Section

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

ECSIL-2862 (69)

E-level = 1.772 Mev

07/04/76

14-Si-Nat

(n,X) γ
Cross Section

Backs

14-Si-Nat -3

Mev

2-76

07/04/76

1-Si-Nat

(n, X) γ
Cross Section

Mev

14-Si-Nat -4

2-77

Barns

07/04/76

Nonelastic
Cross Section

14-Si-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/S	DELTA BARN/S
56	200	1.4500+ 1	1.0600+ 0	6.0020+ 2

07/04/76

(n,n')
Cross Section

14-Si-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/S	DELTA BARN/S	E-LVL MEV	E-LVL MEV
72	3440	9.6000+ 0	5.0000- 1	2.1500- 1	3.5000- 2	2.0000+ 0
69	2862	5.0000+ 0	1.2000- 1	6.8700- 2	3.4000- 3	4.6100+ 0
69	2862	6.6700+ 0	1.9000- 1	7.7600- 2	5.9000- 3	4.6100+ 0
69	2862	7.5000+ 0	1.6000- 1	9.0500- 2	1.0400- 2	4.6100+ 0
69	2862	7.5000+ 0	1.6000- 1	1.3700- 1	9.9000- 3	4.6100+ 0
69	2862	6.0000+ 0	1.2000- 1	5.7200- 2	5.5000- 3	4.9700+ 0
69	2862	6.6700+ 0	1.9000- 1	5.4600- 2	6.1000- 3	4.9700+ 0
69	2862	7.5000+ 0	1.6000- 1	4.3100- 2	5.3000- 3	4.9700+ 0
69	2862	7.5000+ 0	1.6000- 1	4.8800- 2	4.3000- 3	6.2700+ 0

07/04/76

(n,X) γ
Cross Section

14-Si-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/S	DELTA BARN/S	E-PHOTON MEV
63	1723	1.4100+ 1	6.0000- 1	5.1000- 1	1.7800+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/S	DELTA BARN/S	E-PHN-MIN MEV	E-PHN-MAX MEV
63	1723	1.4100+ 1	6.0000- 1	1.2780+ 0	2.0000+ 0	1.0000+ 1

2-78

14-Si-Nat -5

07/04/76

(n.p)
Cross Section

14-Si-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 688	1.4400+ 1	2.0000- 1	1.6000- 1	1.6000- 2

07/04/76

Free Atom
Cross Section

14-Si-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 1759	9.4200- 6		2.0220+ 0	3.0000- 3

07/04/76

Coherent Scattering
Cross Section

14-Si-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 3240	2.5000- 8		2.1630+ 0	1.0420- 3
51 2564	2.5300- 8		2.0000+ 0	2.0000- 1
73 3620	2.5300- 8		2.1619+ 0	1.6683- 3

07/04/76

Incoherent Scattering
Cross Section

14-Si-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 1759	9.4200- 6		1.5000- 2	1.3000- 3

07/04/76

14-Si-28

(n,n')

Cross Section

Barns

2-80

MeV

14-Si-28 -1

07/04/76

(n,n')

14-51-28

Cross Section

2-81

Mev

14-51-28 -2

07/04/76

(n,n')

14-SI-28

Cross Section

EC51L-3231 (70)

E-level = 4.975 Mev

Bars

2-82

14-SI-28 -3

07/04/76

(n,2n)
Cross Section

14-SI-28

07/04/76

(n,X) γ
Cross Section

14-Si-28

07/04/76

(n,X) y
Cross Section

14-Si-28

07/04/76

(n,p)
Cross Section

14-Si-28

2-85

14-Si-28 -6

07/01/76

(n,p)

14-Si-28

Cross Section

Barns

2-86

MeV

14-Si-28 -7

07/04/76

(n,p)
Cross Section

14-SI-28

14-SI-28 - 8

2-87

Barres

07/04/76

(n,p)

14-Si-28

Cross Section

07/04/76

(n,p)

14-Si-28

Cross Section

ECSIL-1934 (65)

ECSIL-2370 (69)

ECSIL-450 (84)

Barns

07/04/76

(n,p)

14-Si-28

Cross Section

2-90

14-Si-28 -11

07/04/76

(n,p)
Cross Section

14-Si-28

07/04/76

(n,p)
Cross Section

14-Si-28

2-91

14-Si-28 -12

07/04/76

(n, α)

14-SI-28

Cross Section

2-92

Mev

14-SI-28 -13

Bar 25

07/04/76

(n, α)
Cross Section

14-Si-28

Barns

07/04/76

(n, α)

14-Si-28

Cross Section

2-94

14-Si-28 -15

17/04/76

14-SI-28

(n, σ)
Cross Section

Bar 25

2-95

14-SI-28 -16

07/04/76

(n, α)
Cross Section

14-Si-28

2-96

Mev

14-Si-28 -17

Barns

07/04/76

(n, α)
Cross Section

14-SI-28

2-97

Mev

14-SI-28 -18

07/04/76

(n, p)

14-Si-28

Cross Section

ECSIL-800 (63)

E-level = 1.61 Mev

ECSIL-460 (64)

E-level = 1.61 Mev

ECSIL-468 (63)

E-level = 1.61 Mev

Barns

2-98

14-Si-28 -19

07/04/76

(n,0)
Cross Section

14-S1-28

Baras

2-99

14-S1-28 -20

07/04/76

(n, α)

14-Si-28

Cross Section

07/04/76

(n, α)

14-Si-28

Cross Section

2-100

14-Si-28 -21

EC51L-926 (63)

07/04/76

Nonelastic
Cross Section

14-Si-28

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 845	1.4100+ 1	9.0020- 1	7.5020- 1	7.0020- 2

07/04/76

(n,n')

Cross Section

14-Si-28

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV	E-LVL MEV
64 845	1.4100+ 1	9.0000- 1	1.0900- 1	1.8000- 2	1.7800+ 0		
70 3231	6.3700+ 0	1.3000- 1	1.5584- 1	1.9792- 2	4.6140+ 0	4.9750+ 0	
70 3231	7.5500+ 0	4.0000- 2	1.1672- 1	2.1360- 2	4.6140+ 0	4.9750+ 0	
70 3231	7.6000+ 0	1.0000- 1	6.4640- 2	1.7000- 2	6.2720+ 0		
70 3231	8.5600+ 0	8.0000- 2	8.7470- 2	9.1843- 3	6.2720+ 0		
70 3231	8.5600+ 0	8.0000- 2	8.0410- 2	8.8451- 3	6.2720+ 0	6.6100+ 0	
70 3231	8.5600+ 0	8.0000- 2	3.3400- 2	5.7114- 3	6.6900+ 0		
70 3231	8.5600+ 0	8.0000- 2	2.0465- 1	3.9293- 2	6.6900+ 0	6.8780+ 0	6.8870+ 0
70 3231	8.5600+ 0	8.0000- 2	1.1549- 1	2.9450- 2	6.8780+ 0	6.8870+ 0	

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
64 1859	1.4000+ 1		3.7000- 1	6.0000- 2	1.7800+ 0

07/04/76

(n,n'p)

Cross Section

14-Si-28

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 361	1.4000+ 1		2.7000- 2	2.2000- 2

07-04-76

(n,X) γ
Cross Section

14-Si-28

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
65 1713 7.0000+ 0	1.0000- 1	5.1000- 1	1.0000- 1	1.0000- 1	1.7700+ 0	70 1497 7.0000+ 0	1.0000- 1	5.0000- 2	8.3000- 3	4.4900+ 0	0
65 1713 3.5000+ 0	1.0000- 1	4.5570- 1	9.1000- 2	1.7700+ 0	0	70 1497 7.6700+ 0	1.0000- 1	4.8000- 2	7.0000- 3	4.4900+ 0	0
65 1713 4.0000+ 0	1.0000- 1	6.2800- 1	1.2600- 1	1.7700+ 0	0	70 1497 7.5000+ 0	1.0000- 1	4.0000- 2	8.0000- 3	5.1100+ 0	0
61 11 1.7500+ 0	2.0000- 2	0.0000+ 0		1.7600+ 0	0	70 1497 7.6700+ 0	1.0000- 1	3.0000- 2	5.0000- 3	5.1100+ 0	0
65 1694 1.4100+ 1		4.7100- 1	7.0000- 2	1.7800+ 0	0	70 1497 7.5000+ 0	1.0000- 1	2.0000- 2	5.0000- 3	6.8800+ 0	0
70 1497 7.2000+ 0	1.0000- 1	4.8000- 2	9.0000- 3	4.4900+ 0	0	70 1497 7.6700+ 0	1.0000- 1	1.6000- 2	4.0000- 3	6.8800+ 0	0

07/04/76

(n,p)
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
61 361 1.4000+ 1			2.4300- 1	2.2000- 2	67 1921 1.4700+ 1	1.0000- 1	2.2200- 1	1.2000- 2	
68 2695 1.4400+ 1	3.0000- 1		2.5200- 1	1.5000- 2	66 907 1.4800+ 1	1.0000- 1	2.2200- 1	1.2000- 2	
53 27 1.4500+ 1			2.2000- 1	5.1020- 2	65 1697 1.4800+ 1			1.8000- 1	1.8000- 2
70 3258 1.4500+ 1			2.1320- 1	1.8300- 2					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV
61 1760 1.4000+ 1	2.0000- 1	1.1500- 2	1.0000- 3	0.0000+ 0		
67 1914 7.7000+ 0	8.0000- 2	1.4000- 1	1.4000- 2	0.0000+ 0	3.1000- 2	
67 1914 8.2000+ 0	8.0000- 2	6.5000- 2	7.0000- 3	0.0000+ 0	3.1000- 2	
67 1914 9.1000+ 0	8.0000- 2	6.7000- 2	7.0000- 3	0.0000+ 0	3.1000- 2	
61 1760 1.4000+ 1	2.0000- 1	1.5400- 2	2.0000- 3	1.3000+ 0		
73 3987 1.4600+ 1		2.6210- 1	2.2000- 2	1.7800+ 0		
61 1760 1.4000+ 1	2.0000- 1	2.9400- 2	3.0000- 3	2.4000+ 0		
61 1760 1.4000+ 1	2.0000- 1	4.9600- 2	5.0000- 3	4.0000+ 0		

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
64 1859 1.4000+ 1			3.0000- 1		1.7800+ 0

2-102

14-Si-28 -23

CT/24/76

(n,p)

¹⁴Si-29

Cross Section

Barns

07/04/76

(n,α)
Cross Section

14-Si-29

14-5-29

14-5-29

14-5-29

Cross Section

Energy = 1.83 Mev

EC51L 926 (63)

Relative

Energy = 1.83 Mev

EC51L 926 (63)

14-5-29

(n,X) γ

14-5-29

Cross Section

REFERENCE	ENERGY	DELTA	W-SEC	DELTA	E-Photon
	MeV	MeV	BARNs	BARNs	MeV
1	1.83	1.83	1.83	1.83	1.83
2	1.83	1.83	1.83	1.83	1.83
3	1.83	1.83	1.83	1.83	1.83
4	1.83	1.83	1.83	1.83	1.83
5	1.83	1.83	1.83	1.83	1.83
6	1.83	1.83	1.83	1.83	1.83
7	1.83	1.83	1.83	1.83	1.83
8	1.83	1.83	1.83	1.83	1.83
9	1.83	1.83	1.83	1.83	1.83
10	1.83	1.83	1.83	1.83	1.83
11	1.83	1.83	1.83	1.83	1.83
12	1.83	1.83	1.83	1.83	1.83
13	1.83	1.83	1.83	1.83	1.83
14	1.83	1.83	1.83	1.83	1.83
15	1.83	1.83	1.83	1.83	1.83
16	1.83	1.83	1.83	1.83	1.83
17	1.83	1.83	1.83	1.83	1.83
18	1.83	1.83	1.83	1.83	1.83
19	1.83	1.83	1.83	1.83	1.83
20	1.83	1.83	1.83	1.83	1.83
21	1.83	1.83	1.83	1.83	1.83
22	1.83	1.83	1.83	1.83	1.83
23	1.83	1.83	1.83	1.83	1.83
24	1.83	1.83	1.83	1.83	1.83
25	1.83	1.83	1.83	1.83	1.83
26	1.83	1.83	1.83	1.83	1.83
27	1.83	1.83	1.83	1.83	1.83
28	1.83	1.83	1.83	1.83	1.83
29	1.83	1.83	1.83	1.83	1.83
30	1.83	1.83	1.83	1.83	1.83
31	1.83	1.83	1.83	1.83	1.83
32	1.83	1.83	1.83	1.83	1.83
33	1.83	1.83	1.83	1.83	1.83
34	1.83	1.83	1.83	1.83	1.83
35	1.83	1.83	1.83	1.83	1.83
36	1.83	1.83	1.83	1.83	1.83
37	1.83	1.83	1.83	1.83	1.83
38	1.83	1.83	1.83	1.83	1.83
39	1.83	1.83	1.83	1.83	1.83
40	1.83	1.83	1.83	1.83	1.83
41	1.83	1.83	1.83	1.83	1.83
42	1.83	1.83	1.83	1.83	1.83
43	1.83	1.83	1.83	1.83	1.83
44	1.83	1.83	1.83	1.83	1.83
45	1.83	1.83	1.83	1.83	1.83
46	1.83	1.83	1.83	1.83	1.83
47	1.83	1.83	1.83	1.83	1.83
48	1.83	1.83	1.83	1.83	1.83
49	1.83	1.83	1.83	1.83	1.83
50	1.83	1.83	1.83	1.83	1.83
51	1.83	1.83	1.83	1.83	1.83
52	1.83	1.83	1.83	1.83	1.83
53	1.83	1.83	1.83	1.83	1.83
54	1.83	1.83	1.83	1.83	1.83
55	1.83	1.83	1.83	1.83	1.83
56	1.83	1.83	1.83	1.83	1.83
57	1.83	1.83	1.83	1.83	1.83
58	1.83	1.83	1.83	1.83	1.83
59	1.83	1.83	1.83	1.83	1.83
60	1.83	1.83	1.83	1.83	1.83
61	1.83	1.83	1.83	1.83	1.83
62	1.83	1.83	1.83	1.83	1.83
63	1.83	1.83	1.83	1.83	1.83
64	1.83	1.83	1.83	1.83	1.83
65	1.83	1.83	1.83	1.83	1.83
66	1.83	1.83	1.83	1.83	1.83
67	1.83	1.83	1.83	1.83	1.83
68	1.83	1.83	1.83	1.83	1.83
69	1.83	1.83	1.83	1.83	1.83
70	1.83	1.83	1.83	1.83	1.83
71	1.83	1.83	1.83	1.83	1.83
72	1.83	1.83	1.83	1.83	1.83
73	1.83	1.83	1.83	1.83	1.83
74	1.83	1.83	1.83	1.83	1.83
75	1.83	1.83	1.83	1.83	1.83
76	1.83	1.83	1.83	1.83	1.83
77	1.83	1.83	1.83	1.83	1.83
78	1.83	1.83	1.83	1.83	1.83
79	1.83	1.83	1.83	1.83	1.83
80	1.83	1.83	1.83	1.83	1.83
81	1.83	1.83	1.83	1.83	1.83
82	1.83	1.83	1.83	1.83	1.83
83	1.83	1.83	1.83	1.83	1.83
84	1.83	1.83	1.83	1.83	1.83
85	1.83	1.83	1.83	1.83	1.83
86	1.83	1.83	1.83	1.83	1.83
87	1.83	1.83	1.83	1.83	1.83
88	1.83	1.83	1.83	1.83	1.83
89	1.83	1.83	1.83	1.83	1.83
90	1.83	1.83	1.83	1.83	1.83
91	1.83	1.83	1.83	1.83	1.83
92	1.83	1.83	1.83	1.83	1.83
93	1.83	1.83	1.83	1.83	1.83
94	1.83	1.83	1.83	1.83	1.83
95	1.83	1.83	1.83	1.83	1.83
96	1.83	1.83	1.83	1.83	1.83
97	1.83	1.83	1.83	1.83	1.83
98	1.83	1.83	1.83	1.83	1.83
99	1.83	1.83	1.83	1.83	1.83
100	1.83	1.83	1.83	1.83	1.83

2-106

14-5-29 -4

07/04/76

(n,p)

14-Si-29

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 2695	1.4400	1	3.0000	1	1.3000	1	1.6000	2	
53 27	1.4500	1	1.0100	1	3.0000	2			
					70 3258	1.4500	1	1.1250	1
					67 1921	1.4700	1	2.2700	2
								1.0000	3

07/04/76

(n,X) γ

14-Si-30

Cross Section

07/04/76

(n,X) γ

14-Si-30

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
61 11	2.3000	0	2.0000	2	0.0000
					2.2000

07-04-76

(n,p)

14-SI-30

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53 3759	1.4500 ± 1		5.0000 - 3	5.0000 - 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE SECONDS
53 2033	1.4500 ± 1		1.8000 - 1	0.0000 - 2
68 2695	1.4500 ± 1	0.0000 - 3	7.0000 ± 1	7.2500 ± 1
71 3199	1.5000 ± 1	2.5000 - 4	2.0000 - 4	7.2500 ± 1

07/04/76

(n,p)

14-SI-30

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 2140	1.4500 ± 1	3.0000 - 2	6.8000 ± 1	0.0000 - 3
53 3759	1.4500 ± 1		4.5000 - 2	5.0000 - 3
72 3258	1.4500 ± 1	7.3800 - 2	1.0300 - 2	

07/04/76

Total Scattering

15-P -31

Cross Section

2-108

MeV

15-P -31 -1

Barns

07/04/76

Total Scattering
Cross Section

15-P -31

07/04/76

(n,n')
Cross Section

15-P -31

2-109

15-P -31 -2

07/04/76

15-P -31

(n,n')

Cross Section

Bars

2-110

15-P -31 -3

07/04/76

(n,2n)

15-P -31

Cross Section

ECSE 917 (R8)

Barns

07/04/76

15-P -31

(n,p)
Cross Section

Barns

MeV

2-112

15-P -31 -5

07/04/76

(n,p)
Cross Section

15-P -31

2-113

15-P -31 -6

Barns

07/04/76

(n, α)

15-P -31

Cross Section

2-114

Mev

15-P -31 -7

07/04/76

(n, α)
Cross Section

15-P -31

END 7121

Barns

2-115

MeV

15-P -31 -8

07/04/76

Nonelastic
Cross Section

15-P -31

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
56 34	2.5000+ 0		7.0020- 1	2.0000- 1
55 790	2.5000+ 0	1.5000- 1	7.0020- 1	2.0000- 1
55 200	1.4500+ 1		1.1300+ 0	3.0000- 2

07/04/76

(n,2n)
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
63 373	1.4100+ 1		2.5000- 2	5.0000- 3	64 1763	1.4800+ 1	1.0000- 1	8.5000- 3	1.2000- 3
62 108	1.4130+ 1	1.0000- 1	5.1020- 3	4.5000- 4	66 3279	1.4800+ 1	1.0000- 1	1.1000- 2	3.0000- 3
61 576	1.4400+ 1	3.0000- 1	1.0900- 2	9.0020- 4	65 3379	1.4800+ 1	1.0000- 1	1.1700- 2	3.0000- 4
67 1921	1.4700+ 1	1.0000- 1	8.4000- 3	3.0000- 4	65 3379	1.4800+ 1	1.0000- 1	1.1200- 2	4.0000- 4
62 88	1.4700+ 1	1.5000- 1	6.9020- 3	1.2000- 3	59 602	1.6950+ 1	3.4000- 1	4.3600- 2	5.2020- 3
59 602	1.4740+ 1	2.7000- 1	8.7020- 3	2.7000- 3	59 602	1.7980+ 1	2.4000- 1	7.4020- 2	7.4020- 3
67 2358	1.4800+ 1	1.0000- 1	1.6000- 2	1.6000- 3					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs MINUTES
73 3988	1.4600+ 1		1.2600- 2	1.2000- 3
				2.4900+ 0

07/04/76

(n,n'p)
Cross Section

15-P -31

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 361	1.4000+ 1		1.6300- 1	1.4000- 2
62 686	1.4400+ 1	2.0000- 1	7.0020- 2	1.4000- 2

2-116

15-P -31 -9

07/04/76

(n,p)

15-P -31

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 381	1.4000+ 1		1.6400- 1	1.4000- 2	67 1921	1.4700+ 1	1.0000- 1	6.4000- 2	2.0000- 3
52 84	1.4100+ 1		9.1000- 2	9.1000- 3	68 85	1.4700+ 1	1.5000- 1	8.2020- 2	1.0000- 2
62 688	1.4400+ 1	2.0000- 1	1.5500- 1	1.6000- 2	65 3379	1.4800+ 1	1.0000- 1	8.5000- 2	3.0000- 3
53 27	1.4500+ 1		6.4220- 2	8.3020- 3					

07/04/76

(n,He-3)

15-P -31

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71 3816	1.4000+ 1		2.2200- 4	1.0000- 4
60 667	1.4800+ 1	9.0020- 1	7.0020- 4	

07/04/76

(n,a)

15-P -31

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 1764	1.4500+ 1	4.0000- 1	1.4200- 1	1.7000- 2	62 88	1.4700+ 1	1.5000- 1	1.5300- 1	2.0000- 2
53 27	1.4550+ 1		1.4600- 1	2.9000- 2	65 3379	1.4800+ 1	1.0000- 1	1.2900- 1	3.0000- 3
67 1921	1.4700+ 1	1.0000- 1	9.6800- 2	3.5000- 3					

07/04/76

Coherent Scattering

15-P -31

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
52 2937	2.5300- 8		3.1400+ 0	9.0000- 2
61 2673	2.5300- 8		3.5400+ 0	

07-Cu-76

Total Scattering
Cross Section

16-S -Nat -1

EC51L-231 (56)

Barns

EC51L-571 (60)

2-118

16-S -Nat -1

07/04/76

(n,n')
Cross Section

16-S -Nat

Barns

2-119

Mev

16-S -Nat -2

07/04/76

(n,p)
Cross Section

16-S -Nat

07/04/76

Nonelastic
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
56	74	2.5000+ 0	5.4020- 1	2.1000- 1	57	199	1.4100+ 1	1.0800+ 0	8.0020- 2
55	790	2.5000+ 0	1.5000- 1	5.4020- 1	57	319	1.4200+ 1	1.1400+ 0	4.0000- 2
59	559	3.8600+ 0	2.0000- 1	7.8020- 1	56	200	1.4500+ 1	1.1500+ 0	3.0000- 2
56	151	7.0000+ 0	2.0000- 1	1.1400+ 0					

2-120

16-S -Nat -3

07/04/76

(n,n')

16-S -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS	E-LVL MEV	E-LVL MEV
72 3440	9.6000	0 5.0000	1 1.1200	1 2.6000	2 2.0000	0
62 1060	1.4000	1	5.4000	2 9.0000	3 2.2400	0
70 3 75	6.3700	0 1.3000	1 5.6850	2 7.0494	3 4.2900	0
70 3 75	7.6000	0 1.0000	1 5.6160	2 5.3914	3 4.2900	0
70 3 75	8.5200	0 8.0000	2 4.0140	2 4.4154	3 4.2900	0
70 3 75	6.3000	0 8.0000	2 9.3840	2 1.1624	2 4.2900	0 4.4600
70 3 75	6.3700	0 1.3000	1 1.2021	1 1.0939	2 4.2900	0 4.4600
70 3 75	8.5200	0 8.0000	2 8.2080	2 7.0589	3 4.2900	0 4.4600
70 3 75	6.3700	0 1.3000	1 3.6740	2 5.3273	3 4.4500	0
70 3 75	7.6000	0 1.0000	1 4.7390	2 4.6442	3 4.4600	0
70 3 75	8.5200	0 8.0000	2 3.4750	2 3.9962	3 4.4600	0
70 3 75	6.3700	0 1.3000	1 2.9770	2 3.6617	3 4.7000	0
70 3 75	7.6000	0 1.0000	1 1.8610	2 3.5731	3 4.7000	0
70 3 75	8.5200	0 8.0000	2 2.8040	2 2.6358	3 4.7000	0
70 3 75	6.3700	0 1.3000	1 5.7130	2 1.4625	2 5.0100	0
70 3 75	7.6000	0 1.0000	1 5.2220	2 6.0053	3 5.0100	0
70 3 75	8.5200	0 8.0000	2 6.8990	2 5.6641	3 5.0100	0
70 3 75	8.5200	0 8.0000	2 3.5430	2 4.1807	3 5.4100	0
70 3 75	7.6000	0 1.0000	1 8.8000	2 9.9440	3 3.4100	0 5.5500
70 3 75	8.5200	0 8.0000	2 7.5090	2 6.6332	3 5.4100	0 5.5500
70 3 75	8.5200	0 8.0000	2 4.3670	2 5.1094	3 5.5500	0
70 3 75	7.6000	0 1.0000	1 3.3750	2 4.9950	3 5.8000	0
70 3 75	8.5200	0 8.0000	2 1.9550	2 2.3863	3 5.8000	0
70 3 75	8.5200	0 8.0000	2 5.0420	2 5.9496	3 6.2300	0
70 3 75	8.5200	0 8.0000	2 6.8230	2 7.9829	3 6.2300	0 6.4400
70 3 75	8.5200	0 8.0000	2 2.1280	2 3.5325	3 6.4400	0
70 3 75	8.5200	0 8.0000	2 3.9330	2 6.5681	3 6.6200	0 6.6700
70 3 75	8.5200	0 8.0000	2 2.6160	2 5.7290	3 6.7600	0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS	E-LVL-MIN MEV	E-LVL-MAX MEV
62 1060	1.4000	1	8.2000	2 1.2000	2 3.5000	0 6.0000
62 1060	1.4000	1	4.8000	2 9.0000	3 6.0000	0 6.0000

07/04/76

(n,p)

16-S -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 688	1.4400+ 1	2.0000- 1	7.3020- 2	1.5000- 2

07/04/76

Absorption

16-S -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 2586	2.5300- 8		5.1500- 1	1.0000- 2	58 364	2.2000- 1	2.0000- 2	1.9000- 2	
52 364	2.5000- 2	4.0000- 3	2.2000- 2		58 364	2.3000- 1	4.0000- 2	2.1000- 2	

07/04/76

(n,X) γ

16-S -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
55 140	2.5600+ 0	3.0000- 2	1.2000- 2	2.0000- 3	7.7000- 2	63 1723	1.4100+ 1	6.0000- 1	5.6000- 1		2.2400+ 0
56 140	2.5600+ 0	3.0000- 2	1.7300- 1	1.6000- 2	2.2300+ 0	51 284	2.9000+ 0		3.8000- 1	1.0000- 1	2.3500+ 0
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHN-MIN MEV	DELTA BARNs	E-PHN-MAX MEV				
63 1723	1.4100+ 1	6.0000- 1	6.4500- 1		2.0000+ 0	1.0000+ 1					

07/04/76

(n,p)

16-S -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 688	1.4400+ 1	2.0000- 1	2.0600- 1	2.1000- 2

2-122

16-S -Nat -5

07/04/76

Bound Atom Cross Section

16-S -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000 ± 8		1.2000 ± 0	

07/04/76

Coherent Scattering Cross Section

16-S -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000 ± 8		1.2000 ± 0 9 6000 ± 2	

07/04/76

(n,n')

Cross Section

16-S -32

2-123

16-S -32 -1

07/04/76

 (n,n')
Cross Section

16-S -32

07/04/76

 $(n,2n)$
Cross Section

16-S -32

07/04/76

(n,2n)
Cross Section

16-S -32

07/04/76

Absorption
Cross Section

16-S -32

2-125

16-S -32 -3

07/04/76

(n,p)

16-S -32

Cross Section

2 16

16-S -32 -4

07 04 76

10.0
Cross Section

16-S -32

2-127

16-S -32 -5

07/04/76

(n,t)

16-S -32

Cross Section

EX-7122

2-128

16-S -32 -6

07/04/76

(n, σ)

16-S -32

Cross Section

07/04/76

Nonelastic
Cross Section

16-S -32

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 845	1.4100+ 1	9.0020- 1	7.4020- 1	8.0020- 2

07/04/76

(n,n')

Cross Section

16-S -32

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 1756	4.0000+ 0	2.7500- 1	3.9000- 1	4.6800- 2
60 1756	4.9000+ 0	3.4000- 1	4.1000- 1	4.9200- 2
60 1756	5.8000+ 0	2.4000- 1	2.3000- 1	2.7600- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVI MEV
64 845	1.4100+ 1	9.0000- 1	6.4000- 2	1.0000- 2	2.2400+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
65 1694	1.4100+ 1		3.3200- 1	5.0000- 2	2.2400+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL-MIN MEV	E-LVL-MAX MEV
64 845	1.4100+ 1	9.0000- 1	5.0000- 2	2.0000- 2	4.0000+ 0	6.0000+ 0

07/04/76

(n,2n)

Cross Section

16-S -32

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 1768	1.6900+ 1	2.6000- 1	1.4500- 4	1.4000- 5
66 1768	1.8100+ 1	2.8000- 1	2.8000- 4	2.7000- 5
66 1768	1.9200+ 1	3.0000- 1	5.6000- 4	4.7000- 5

2-130

16-S -32 -8

07/04/76

Exotic
Track Section

16-S -32

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 36	1.4000+ 1		1.7500+ 1	2.5000+ 2

07/04/76

Absorption
Cross Section

16-S -32

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
64 998	1.7000+ 2		0.0000+ 0	0.0000+ 4	64 998	5.0000+ 2		0.0000+ 0	
64 998	7.9500+ 2		0.0000+ 0		64 998	5.2000+ 2		0.0000+ 0	
64 998	6.0000+ 2		0.0000+ 0		64 998	5.4000+ 2		0.0000+ 0	
64 998	4.7500+ 2		0.0000+ 0						

07/04/76

(n,p)
Cross Section

16-S -32

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 163	1.5000+ 1	1.0000+ 1	1.0000+ 0	1.0000+ 3	67 1921	1.4700+ 1	1.0000+ 1	2.1500+ 1	6.0000+ 3
61 343	1.4000+ 1		2.0000+ 1	4.0000+ 2	65 2354	1.4790+ 1		1.0600+ 1	1.5000+ 2
61 361	1.4000+ 1		3.6000+ 1	2.5000+ 2	65 2354	1.4800+ 1		1.0900+ 1	1.5000+ 2
63 27	1.4000+ 1		3.5000+ 1	4.4000+ 2	60 2711	1.4800+ 1	2.0000+ 1	1.0400+ 1	1.5000+ 2
63 2354	1.4000+ 1	2.0000+ 1	2.1400+ 1	1.0000+ 2	65 1697	1.4800+ 1		3.5200+ 1	4.0000+ 2
63 224	1.4000+ 1		2.8900+ 1	1.9000+ 2	68 4071	1.4800+ 1		2.3000+ 1	4.0000+ 2
63 224	1.4000+ 1		2.3200+ 1	1.5000+ 2					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL-MIN MEV	E-LVL-MAX MEV
60 849	1.4000+ 1		5.7000+ 2	2.0000+ 3	3.4500+ 0	5.5300+ 0

2-131

16-S -32 -9

07/04/76

(n,y) p
Cross Section

16-S -32

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS
63 224	1.4600+ 1		3.8000- 1	1.9100- 2

07/04/76

(n,t)
Cross Section

16-S -32

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS
61 661	1.4600+ 1		4.0000- 6	1.0000- 6	66 3369	1.4700+ 1	2.0000- 1	6.7000- 6	1.9000- 6
64 3613	1.4600+ 1		1.5400- 4	7.0000- 5	65 1697	1.4800+ 1		2.2000- 3	2.0000- 4
62 1770	1.4700+ 1	3.0000- 1	2.0000- 5	5.0000- 6					

07/04/76

(n,a)
Cross Section

16-S -32

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS
65 1767	3.5000- 8		3.2000- 3	7.0000- 4
65 1771	3.6000+ 0		1.7000- 1	7.0000- 2
58 537	1.4800+ 1		1.0900- 1	1.6900- 2

07/04/76

(n,a)
Cross Section

16-S -33

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS
65 1767	3.5000- 8		1.4800- 1	3.9000- 2

2-132

16-S -33 -1

Barns

2-133

07/04/76

(n,p)

16-S -34

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53	27 1.4500+ 1		8.5220- 2	3.8000- 2
66	2142 1.4800+ 1		3.2000- 2	8.0000- 3

07/04/76

(n,a)

16-S -34

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57	163 4.8200+ 0	6.0020- 2	0.0000+ 0		67	1921 1.4700+ 1	1.0090- 1	1.6300- 1	1.2000- 2
53	27 1.4500+ 1		1.3800- 1	3.5000- 2	65	1697 1.4800+ 1		1.6500- 1	2.3000- 2
69	235+ 1.4600+ 1	2.0000- 1	1.3700- 1	1.0000- 2					

07/04/76

(n,n')

17-CI-Nat

Cross Section

07/04/76

(n,n')
Cross Section

17-Cl-Nat

ENDL 7123

07/04/76

Nonelastic
Cross Section

17-Cl-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
56 34	2.5000+ 0		6.0020- 1	3.0000- 1
55 790	2.5000+ 0	5000- 1	6.0020- 1	3.0000- 1
55 790	4.1000+ 0		9.0020- 1	3.0000- 1

07/04/76

(n,n')
Cross Section

17-Cl-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	E-PHOTON MEV
66 1775	2.5400+ 0	7.0000- 2	1.7000- 1	1.8000- 2	1.2200+ 0	0
56 1775	3.0900+ 0	7.0000- 2	1.7200- 1	1.8000- 2	1.2200+ 0	0
66 1775	4.0300+ 0	7.0000- 2	1.5900- 1	1.6000- 2	1.2200+ 0	0
66 1775	2.5400+ 0	7.0000- 2	4.1000- 2		1.7260+ 0	0
66 1775	3.0900+ 0	7.0000- 2	6.1000- 2		1.7260+ 0	0
66 1775	4.0300+ 0	7.0000- 2	6.8000- 2		1.7260+ 0	0
66 1775	2.5400+ 0	7.0000- 2	1.7400- 1		1.7620+ 0	0
66 1775	3.0900+ 0	7.0000- 2	2.5000- 1		1.7620+ 0	0

07/04/76

(n,n')

17-Cl-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	E-PHOTON MEV	E-PHOTON MEV
66 1775	4.0300*	0 7.0000- 2	2.5700- 1		1.7620* 0	
66 1775	4.0900*	0 7.0000- 2	5.3000- 2		2.6450* 0	
66 1775	4.0200*	0 7.0000- 2	5.4000- 2		2.6450* 0	
66 1775	4.0500*	0 7.0000- 2	3.0000- 2		2.6950* 0	
66 1775	4.0300*	0 7.0000- 2	5.5000- 2		2.6950* 0	
66 1775	4.0300*	0 7.0000- 2	1.1600- 1		3.0060* 0	
66 1775	4.0300*	0 7.0000- 2	7.2000- 2	7.0000- 3	3.0900* 0	3.1100* 0
66 1775	4.0300*	0 7.0000- 2	6.1000- 2		3.1630* 0	
66 1775	4.2300*	0 7.0000- 2	2.9000- 2		3.7100* 0	

07/04/76

Absorption

17-Cl-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	E-PHOTON MEV	E-PHOTON MEV
61 2934	2.5300- 8		3.1000* 1	2.0000* 0		
6C 831	2.5300- 8		3.3600* 1	3.0000- 1		

07/04/76

(n,X) γ

17-Cl-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	E-PHOTON MEV	E-PHOTON MEV
84 834	2.9700*	0 2.5000- 2	1.6400- 1		6.5000- 1	
84 834	2.9700*	0 2.5000- 2	9.3000- 2		1.2000* 0	
84 834	2.9700*	0 2.5000- 2	8.9000- 2		1.7400* 0	

2-136

17-Cl-Nat -3

07/04/76

Bound Atom
Cross Section

17-Cl-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		1.5000- 1	

07/04/76

Coherent Scattering
Cross Section

17-Cl-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		1.2200- 1	9.7600- 1

07/04/76

(n,2n)
Cross Section

17-Cl-35

2-137

MeV

17-Cl-35 -1

07/04/76

(n,2n)
Cross Section

17-Cl-35

07/04/76

(n,p)
Cross Section

17-Cl-35

2-138

17-Cl-35 -2

07/04/76

(n,p)
Cross Section

17-CI-35

10^{10} 10^9 10^8 10^7 10^6 10^5 10^4 10^3 10^2 10^1 10^0
MeV

07/04/76

(n, α)
Cross Section

17-CI-35

10000
1000
100
10
1

4 5.0 5.5 6.0 6.5 7.0
MeV

2-139

17-CI-35 -3

07/04/76

(n,a)

17-CI-35

Cross Section

07/04/76

(n,n')

17-CI-35

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
66 1775	2.5400+ 0	7.0000- 2	2.2500- 1	1.2200+ 0	0	66 1775	3.0900+ 0	7.0000- 2	7.0000- 2	2.6450+ 0	0
66 1775	3.0900+ 0	7.0000- 2	2.2800- 1	1.2200+ 0	0	66 1775	4.0300+ 0	7.0000- 2	1.2500- 1	3.6000- 2	2.6450+ 0
66 1775	4.0300+ 0	7.0000- 2	2.1000- 1	1.2200+ 0	0	66 1775	3.0900+ 0	7.0000- 2	4.0000- 2	1.2000- 2	2.6950+ 0
66 1775	2.5400+ 0	7.0000- 2	2.3700- 1	1.7620+ 0	0	66 1775	4.0300+ 0	7.0000- 2	7.3000- 2	2.3000- 2	2.6950+ 0
66 1775	3.0900+ 0	7.0000- 2	3.3100- 1	1.7620+ 0	0	66 1775	4.0300+ 0	7.0000- 2	1.5400- 1	3.0060+ 0	0
66 1775	4.0300+ 0	7.0000- 2	3.4000- 1	1.7620+ 0	0	66 1775	4.0300+ 0	7.0000- 2	8.1000- 2	3.1630+ 0	0

07/04/76

(n,2n)

17-CI-35

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 676	1.4400+ 1	3.0000- 1	5.4000- 3	4.0000- 4
61 703	1.4800+ 1	2.5000- 1	1.2000- 2	2.0000- 3
58 331	1.4800+ 1	0	8.4000- 3	2.5000- 3

2-140

17-CI-35 -4

07/04/76

(n,p)

17-C-35

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs	DELTA MEV	DELTA HALF-LIFE BARNs	DELTA HALF-LIFE MINUTES
66 2359	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
67 1981	1.4800	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
67 1981	1.4700	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
69 2361	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000
73 3988	1.4600	1.5000	1.5000	1.5000	1.5000	1.5000	1.5000

07/04/76

(n,p)

17-C1-35

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA MEV	DELTA HALF-LIFE BARNs	DELTA MEV	DELTA HALF-LIFE BARNs	DELTA HALF-LIFE MINUTES
69 3216	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300
44 2874	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300
49 2873	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300
64 3685	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600
64 3685	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600

07/04/76

(n,p)

17-C1-35

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA MEV	DELTA HALF-LIFE BARNs	DELTA MEV	DELTA HALF-LIFE BARNs	DELTA HALF-LIFE MINUTES
61 2935	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300
63 3216	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300	2.5300
53 2714	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600
58 5311	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600	1.4600

2-141

17-C1-35 -5

07/04/76

(r, p)

17-Cl-35

Cross Section

REFERENCE	ENERGY	DELTA	K-SEC	DELTA HALF-LIFE
	MeV	MeV	6.2-7.5	DAYS
64 3695	1.4600 ± 1	2.0000 ± 1	2.1000 ± 1	2.1400 ± 1
64 3695	1.4600 ± 1	2.0000 ± 1	1.1750 ± 1	2.0000 ± 1

07/04/76

(n, p)

17-Cl-37

Cross Section

ECSIL-1779 (66)

ECSIL-36 (56)

Barns

2-142

MeV

17-Cl-37 -1

07/04/76

(n.p.)

17-CI-37

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	DIFFERENCE	DELTA MEV	DELTA MEV	X-SEC BARN	DELTA BARN	E-PHOTO MEV
66	3707	4700	1.0000	2.1300	2.1300	2.1300	2.1300	1.7600
66	3707	4700	1.0000	2.1300	2.1300	2.1300	2.1300	3.7100

07/04/76

(n.p.)

17-CI-37

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	DIFFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
67	3307	4700	1.0000	2.1300	2.1300	58	531	4700	2.5400
53	27	4500	1.0000	3.3400	2.6800	55	707	4700	2.1300
67	1521	4700	1.0000	2.5400	2.1300	67	3307	4700	2.5400
65	1697	4600	1.0000	4.0000	2.4000				

07/04/76

(n.p.)

17-CI-37

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
57	27	4500	1.0000	2.5400
66	1521	4700	1.0000	2.1300
58	531	4700	1.0000	2.5400

Total Scattering Cross Section

DELTA X-SEC DELTA
BARNs BARNs
E-1000-3 E-1000-3
E-2000-1 E-2000-2

Absorption Cross Section

DELTA X-SEC DELTA
BARNs BARNs
E-1000-3 E-1000-3
E-2000-1 E-2000-2

18-Ar-Nat

07/04/76

(n,p)
Cross Section

18-Ar-36

REFERENCE	ENERGY MEV	DELTA MEV	A-SEC BARNs	DELTA BARNs
46-171	2.5000 ± 0.1	5000 ± 1	1.0000 ± 4	

07/04/76

(n,p)
Cross Section

18-Ar-36

27-0-76

17.8

Scint Detector

18-4-36

2-1-36

Mev

18-4-36-2

Barns

07/04/76

18-Ar-36

Barns

Mev

18-Ar-35 -3

07/04/76

(n,0)
Cross Section

18-Ar-36

Barns

07/04/76

Total Scattering
Cross Section

18-Ar-36

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57 2029	7.5600- 8		7.3000+ 1	9.0000+ 0

07/04/76

(n,α)
Cross Section

18-Ar-36

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 2619	2.5300- 8		5.5200- 3	1.1000- 4

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
53 96	3.2300+ 0	1.0000- 1	3.0000- 3	3.0000- 3	9.0000- 1
53 96	3.7600+ 0	1.0000- 1	2.2000- 2	1.3000- 2	9.0000- 1
53 96	4.4000+ 0	1.0000- 1	4.1000- 2	2.5000- 2	9.0000- 1

07/04/76

Coherent Scattering
Cross Section

18-Ar-36

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69 3707	4.9632- 9		7.4000+ 1	2.0000+ 0

07/04/76

(n,p)
Cross Section

18-Ar-38

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69 2747	1.4400+ 1	3.0000- 1	7.5000- 2	2.0000- 2
69 1945	1.4800+ 1	2.0000- 1	1.1000- 1	2.2000- 2

07/04/76

(n, α)
Cross Section

18-Ar-40

2-150

Mev

18-Ar-40 -1

07/04/76

(n,c)

18-Ar-40

Cross Section

12-Ar-40 ENO 1124

E-level = 1.39 Mev

E-level = 2.3 Mev

07/04/76

Total Scattering
Cross Section

18-Ar-40

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57 2029	7.0200-	8	3.6000-	1

07/04/76

(n,n'p)
Cross Section

18-Ar-40

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 1945	1.4800+	1 2.0000-	1 1.7000-	3 2.0000- 4

07/04/76

(n,X) γ
Cross Section

18-Ar-40

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	
65 1731	3.5000+ 0	1 1.0000-	1 1.0560-	1 2.1100-	2 6.8000-	1	65 1731	3.5000+ 0	1 1.0000-	1 3.7400-	2 8.2000-	2 1.7700+ 0
65 1731	3.5000+ 0	1 1.0000-	1 8.9200-	2 1.7800-	2 1.0800+ 0		65 1731	3.5000+ 0	1 1.0000-	1 8.6700-	2 1.7300-	2 2.5200+ 0
65 1731	3.5000+ 0	1 1.0000-	1 8.2220-	1 1.6440-	1 1.4500+ 0							

07/04/76

(n,p)
Cross Section

18-Ar-40

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69 2747	1.4400+	1 3.0000-	1 1.5700-	2 2.0000- 3
68 1791	1.4700+	1 5.0000-	1 2.6000-	2 2.0000- 3
68 1945	1.4800+	1 2.0000-	1 1.5000-	2 2.0000- 3

07/04/76

(n.d)

18-Ar-40

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 1781	1.4700+ 1	5.0000- 1	2.9000- 3	5.0000- 4

07/04/76

(n.a)

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
57 1780	1.4100+ 1	3.1000- 2	4.6500- 3		65 1781	1.4700+ 1	5.0000- 1	2.4000- 2	2.0000- 3
69 2747	1.4400+ 1	3.0000- 1	1.0500- 2	1.0000- 3	68 1945	1.4800+ 1	2.0000- 1	1.0000- 2	1.5000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
71 3202	1.4400+ 1		2.1000- 3	4.0000- 4	0.0000+ 0
62 477	7.3000+ 0		0.0000+ 0		1.3800+ 0
62 477	7.4000+ 0		0.0000+ 0		1.3800+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL-MIN MEV	E-LVL-MAX MEV
71 3202	1.4400+ 1		3.0000- 4	1.0000- 4	4.9000- 1	6.9000+ 1
71 3202	1.4400+ 1		3.1000- 3	6.0000- 4	1.3000+ 0	1.4800+ 0
71 3202	1.4400+ 1		3.5000- 3	7.0000- 4	2.1500+ 0	2.2500+ 0
71 3202	1.4400+ 1		3.0000- 4	3.0000- 4	2.7400+ 0	2.9200+ 0
71 3202	1.4400+ 1		1.0000- 4	1.0000- 4	3.3000+ 0	3.7000+ 0

07/04/76

Activation

18-Ar-40

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	ACTIVATE
69 2747	1.4400+ 1	3.0000- 1	1.0500- 2	1.0000- 3	17-CL-39

07/04/76

Total Scattering
Cross Section

19-K -Nat

ECSIL-231 (56)

07/04/76

(n,X) γ

19-K -Nat

Cross Section

ECSIL-2010 (58)

2-154

MeV

19-K -Nat -1

07/04/76

07/04/76

07/04/76

Cross Section

ECSTL-2010 (68) 1.655 and 1.686 Mev

Hartley

Mev

07/04/76

07/04/76

07/04/76

Cross Section

REFERENCE	ENERGY MeV	DELTA MeV	X SEC BPMs	DELTA BPMs	E-REACT MeV	REFERENCE	ENERGY MeV	DELTA MeV	X SEC BPMs	DELTA BPMs	E-REACT MeV
ECSTL-2010	1.655	0.005	1.655	1.655	1.655	ECSTL-2010	1.686	0.005	1.686	1.686	1.686
ECSTL-2010	1.655	0.005	1.655	1.655	1.655	ECSTL-2010	1.686	0.005	1.686	1.686	1.686
ECSTL-2010	1.655	0.005	1.655	1.655	1.655	ECSTL-2010	1.686	0.005	1.686	1.686	1.686
ECSTL-2010	1.655	0.005	1.655	1.655	1.655	ECSTL-2010	1.686	0.005	1.686	1.686	1.686
ECSTL-2010	1.655	0.005	1.655	1.655	1.655	ECSTL-2010	1.686	0.005	1.686	1.686	1.686
ECSTL-2010	1.655	0.005	1.655	1.655	1.655	ECSTL-2010	1.686	0.005	1.686	1.686	1.686
ECSTL-2010	1.655	0.005	1.655	1.655	1.655	ECSTL-2010	1.686	0.005	1.686	1.686	1.686
ECSTL-2010	1.655	0.005	1.655	1.655	1.655	ECSTL-2010	1.686	0.005	1.686	1.686	1.686
ECSTL-2010	1.655	0.005	1.655	1.655	1.655	ECSTL-2010	1.686	0.005	1.686	1.686	1.686
ECSTL-2010	1.655	0.005	1.655	1.655	1.655	ECSTL-2010	1.686	0.005	1.686	1.686	1.686

07/04/76

07/04/76

07/04/76

Cross Section

REFERENCE ENERGY DELTA X SEC DELTA
BPMs MeV BPMs MeV
ECSTL-2010 1.655 0.005 1.655 1.655

2-155

07/04/76

Bound Atom
Cross Section

19-K -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		2.0000+ 0	

07/04/76

Coherent Scattering
Cross Section

19-K -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 2877	2.5300- 8		1.4500+ 0	
51 1584	7.3000- 8		1.5000+ 0	1.2000- 1

07/04/76

(n,2n)
Cross Section

19-K -39

2-156

19-K -39 -1

07/04/76

(n,2n)
Cross Section

19-K -39

2-157

19-K -39 -2

07/04/76

 $(n,n'\alpha)$
Cross Section

19-K -39

2-153

19-K -39 -3

CM/C4/76

19-K -39

(r,x) γ
Cross Section

Bar 25

Mev

19-K -39 -4

07/04/76

(n,X) γ
Cross Section

19-K -39

07/04/76

(n,p)
Cross Section

19-K -39

19-K -Nat ENOL-7125

2-160

19-K -39 -5

07/04/76

(n,p)
Cross Section

19-K -39

2-161

Mev

19-K -39 -6

07/04/76

(n,p)

19-K-39

Cross Section

19-K Nat ENCL-7125

2-162

19-K-39 -7

Barns

07/04/76

19-K -39

(n, σ)
Cross Section

Barns

2-163

19-K -39 -8

07/04/76

(n,n')

19-K -39

Cross Section

Barns

07/04/76

(n,n')

19-K -39

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
RS 1785	3.7500 ± 0.30000	2.89200	1.14000	2

2-164

19-K -39 -9

07/04/76

(n,n')

19-K -39

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
65 1785	3.7600+ 0	9.0000- 2	1.0+00- 1	5.0000- 3	2.5300+ 0	68 2010	2.6300+ 0	1.4000- 2	2.5190+ 0	1.3400- 1	2.8170+ 0
65 1785	3.7600+ 0	9.0000- 2	1.1300- 1	6.0000- 3	2.8200+ 0	68 2010	3.4200+ 0	3.4000- 2	2.5190+ 0	3.8000- 2	3.0210+ 0
65 1785	3.7600+ 0	9.0000- 2	7.6000- 2	8.0000- 3	3.0200+ 0	68 2010	3.9600+ 0	1.1500- 1	2.5190+ 0	7.6000- 2	3.0210+ 0
						68 2010	3.4200+ 0	6.0000- 2	2.8170+ 0	3.0000- 2	3.6030+ 0

07/04/76

(n,2n)

19-K -39

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 676	1.4400+ 1	3.0000- 1	3.4000- 3	3.0000- 4	67 1921	1.4700+ 1	1.0000- 1	3.2+00- 3	1.0000- 4
65 1764	1.4500+ 1	4.0000- 1	3.3000- 3	7.0000- 4	61 703	1.4200+ 1	2.5000- 1	6.0020- 3	1.0000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
68 3369	1.4700+ 1	2.0000- 1	4.7800- 3	4.7000- 4	0.0000+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
68 2369	1.5000+ 1	3.0000- 1	8.0000- 4	2.0000- 4	9.5000- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
73 3988	1.4600+ 1		5.1000- 3	6.0000- 4	7.6100+ 0
68 1944	1.4200+ 1	2.0000- 1	2.6000- 3	4.0000- 4	7.7000+ 0
53 27	1.4500+ 1		1.0000- 2	5.5000- 3	7.7000+ 0

2 162

19-K -39 -10

07/04/76

(n,p)

19-K -39

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 586	1.4500+ 1		1.8000- 1	2.2000- 2

07/04/76

(n,X) γ

19-K -39

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
68 2010	3.4200+ 0		4.0000- 2		1.2660+ 0	61 11	3.0000+ 0	2.0000- 2	0.0000+ 0		3.0500+ 0
68 2010	3.9600+ 0		7.7000- 2		1.2660+ 0	61 11	3.6500+ 0	2.0000- 2	0.0000+ 0		3.5900+ 0
61 11	2.5000+ 0	2.0000- 2	0.0000+ 0		2.5200+ 0						

07/04/76

(n,p)

19-K -39

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1896	2.4600+ 0	4.0000- 2	9.5000- 2	4.0000- 3	58 457	2.5900+ 0	5.0000- 2	4.5000- 2	4.5000- 3
61 65	2.4600+ 0	5.0000- 2	9.6020- 2	6.0020- 3	60 586	1.4000+ 1		3.5400- 1	5.4020- 2

07/04/76

(n,t)

19-K -39

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
73 3996	1.4700+ 1		1.8400- 4	3.7000- 5

P-166

19-K -39 -11

07/04/76

19-K

-39

Cross Section

REFERENCE	ENERGY MEV	DELTA BARNs	X-SEC BARNs	DELTA MEV	X-SEC BARNs
67 1998	2.4500 ± 0.0000	2.6000 ± 1.0000	50 400	2.5000 ± 0.0000	2.6000 ± 3.6000
61 653	2.4500 ± 0.5000	2.6000 ± 3	60 596	1.4000 ± 1	1.1000 ± 1.6000

07/04/76

(n,2n)

19-K -39

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 3367	1.4750 ± 1.5000	1.12700 ± 2.4000	5	

07/04/76

Coherent Scattering

19-K -39

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 2877	2.5300 ± 8	1.7200 ± 0	0	

07/04/76

(n,n')

19-K -41

Cross Section

07/04/76

(n,n')

19-K -41

Cross Section

07/04/76

(n,n')

19-K -41

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
68 2010	1.8200+ 0		7.6000- 2		1.2910+ 0

07/04/76

(n,2n)

19-K -41

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
72 3957	1.4700+ 1		3.6000- 2	1.6000- 2	1.6100+ 0

2-168

19-K -41 -2

07/04/76

(n,p)

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
68 1944	1.4200+ 1	2.0000- 1	5.0000- 2	6.0000- 3	65 1697	1.4800+ 1		8.8000- 2	9.0000- 3
53 27	1.4500+ 1		8.7220- 2	3.5000- 2	68 4071	1.4800+ 1		3.4000- 2	7.0000- 3
67 1921	1.4700+ 1	1.0000- 1	3.0500- 2	2.5000- 3	63 756	1.4800+ 1	2.0000- 1	6.9020- 2	1.7000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
73 3987	1.4600+ 1		7.8380- 2	5.7000- 3	1.2900+ 0

07/04/76

(n,He-3)

19-K -41

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71 3816	1.4000+ 1		8.4800- 4	3.2000- 4

07/04/76

(n,a)

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
60 586	1.4000+ 1		1.2000- 2	5.0000- 3	67 1921	1.4700+ 1	1.0000- 1	3.1500- 2	1.5000- 3
68 1944	1.4200+ 1	2.0000- 1	4.6000- 2	6.0000- 3	65 1697	1.4800+ 1		3.3000- 2	4.0000- 3
65 1764	1.4500+ 1	4.0000- 1	3.9000- 2	8.0000- 3	68 4071	1.4800+ 1		3.1000- 2	4.0000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
63 756	1.4800+ 1	2.0000- 1	3.0000- 2	1.2000- 2	3.7000+ 1
53 27	1.4500+ 1		3.1400- 2	1.1000- 2	3.8000+ 1

07/04/76

Total Scattering
Cross Section

20-Ca-Nat

07/04/76

(n,n')
Cross Section

20-Ca-Nat

2-170

20-Ca-Nat -1

07/04/76

(n,n')

20-Ca-Nat

07/04/76

Nonelastic
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
56	34	2.5000+ 0	4.0000- 1	2.0000- 1	56	151	7.0000+ 0	2.0000- 1	1.1400+ 0
55	790	2.5000+ 0	1.5000- 1	4.0000- 1	200	1.4500+ 1		1.3600+ 0	2.0000- 2

07/04/76

(n,n')

20-Ca-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV	E-LVL MEV
70	3.92	5.0000	0 5.0000	2 2.0544	1 5.6085	2 3.7300	0
70	3.92	5.1800	0 5.0000	2 1.4001	1 2.2682	2 3.7300	0
70	3.92	5.5000	0 5.0000	2 1.6272	1 1.9038	2 3.7300	0
70	3.92	5.1800	0 5.0000	2 1.8002	1 4.7345	2 3.9000	0
70	3.92	5.5000	0 5.0000	2 1.3416	1 1.9453	2 3.9000	0
70	3.92	6.3700	0 1.3000	1 3.5990	2 4.0309	3 4.4900	0
70	3.92	7.6000	0 1.0000	1 2.2580	2 2.1451	3 4.4900	0
70	3.92	8.5200	0 8.0000	2 2.6560	2 3.1992	3 4.4900	0
70	3.92	7.6000	0 1.0000	1 8.5600	2 7.4472	3 5.2000	0 5.2400
70	3.92	8.5200	0 8.0000	2 6.1650	2 5.7520	3 5.2000	0 5.2400
70	3.92	7.6000	0 1.0000	1 4.5950	2 6.0654	3 5.6100	0 5.6200
70	3.92	8.5200	0 8.0000	2 3.2350	2 3.8173	3 5.6100	0 5.6200
70	3.92	7.6000	0 1.0000	1 5.7440	2 1.1833	2 5.9000	0 6.0200
70	3.92	8.5200	0 8.0000	2 4.9950	2 6.7932	3 5.9000	0 6.0200
70	3.92	8.5200	0 8.0000	2 2.3120	2 4.5084	3 6.2800	0
70	3.92	8.5200	0 8.0000	2 5.3340	2 9.0678	3 6.5100	0 6.5400

07/04/76

Absorption

20-Ca-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58	364	2.5000	2 4.0000	3 1.3000
58	364	2.2000	1 2.0000	2 5.0000
58	364	8.3000	1 4.0000	2 8.0020

07/04/76

(n,X) γ

20-Ca-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E PHOTON MEV	E PHOTON MEV
58	364	2.5000	2 1.2500	1 6.3000	2 3.0000	2
58	364	2.5000	2 1.0000	1 1.5000	2 5.1000	1
58	364	2.5000	1 1.0000	2 1.6000	2 7.6000	1
58	364	8.3000	1 1.0000	3 4.7000	3 8.7000	1

2-172

20-Ca-Nat -3

07/04/76

(n,X) γ
Cross Section

20-Ca-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/5	DELTA BARN/5	E-PHOTON MEV	E-PHOTON MEV
56 140	3.9500+ 0	3.0000- 2	2.3000- 2	6.0000- 3	1.1500+ 0	0
63 1723	1.4700+ 1	6.0000- 1	9.0000- 2	3.7300+ 0	3.9000+ 0	0
56 140	3.9500+ 0	3.0000- 2	7.3000- 2	3.0000- 2	3.7400+ 0	0
56 140	3.9500+ 0	3.0000- 2	3.6000- 2	1.6000- 2	3.9000+ 0	0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/5	DELTA BARN/5	E-PHON-MIN MEV	E-PHON-MAX MEV
63 1723	1.4700+ 1	6.0000- 1	5.6700- 1	2.0000+ 0	9.0000+ 0	0

07/04/76

(n,d)
Cross Section

20-Ca-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/5	DELTA BARN/5
75 3561	1.4700+ 1	5.0000- 2	1.3800- 1	0
75 3561	1.4700+ 1	2.4000- 1	1.2600- 1	0

07/04/76

Bound Atom
Cross Section

20-Ca-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/5	DELTA BARN/5
51 1584	7.3000- 8	0	3.5000+ 0	0

07/04/76

Coherent Scattering
Cross Section

20-Ca-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/5	DELTA BARN/5
61 1408	0.0000+ 0	0	2.9900+ 0	9.0000- 2
51 1584	7.3000- 8	0	3.0000+ 0	2.4000- 1

07/04/76

(n,α)
Cross Section

20-Ca-40

07/04/76

(n,n'p)
Cross Section

20-Ca-40

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 351	1.4000 ± 1		2.0500 - 1	3.8000 - 2
58 3021	1.400 ± 1	1.0000	1.8000 - 1	3.2000 - 2

2-174

20-Ca-40 -1

07/04/76

(n,n')
Cross Section

20-Ca-40

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 289*	1.4100+ 1	1.0000- 1	2.3000- 2	6.0000- 3

07/04/76

(n,p)
Cross Section

20-Ca-40

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 2032	6.0000+ 0		5.2000- 1	5.0000- 2
68 3021	1.4100+ 1	1.0000- 1	4.7100- 1	2.1000- 2

07/04/76

(n,t)
Cross Section

20-Ca-40

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
74 3823	1.4500+ 1		3.1000- 4	1.0000- 4
68 3369	1.4700+ 1	2.0000- 1	7.5000- 6	7.5000- 6
65 1697	1.4800+ 1		2.0000- 2	4.0000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
68 1944	1.4200+ 1	2.0000- 1	1.6000- 4	2.0000- 5	7.7000+ 2

07/04/76

(n,a)
Cross Section

20-Ca-40

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 2032	6.0000+ 0		4.3000- 1	1.0000- 1

07/04/76

(n,X) a
Cross Section

20-Ca-40

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 2894	1.4000+ 1	1.0000- 1	1.3600- 1	2.0000- 2

07/04/76

(n,p)
Cross Section

20-Ca-42

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 323	1.4000+ 1		1.6000- 1	3.0000- 2	66 1675	1.4700+ 1		1.7300- 1	1.2000- 2
68 1944	1.4200+ 1	2.0000- 1	1.9000- 1	2.4000- 2	68 4071	1.4800+ 1		1.8000- 1	2.0000- 2
65 1777	1.4600+ 1	2.0000- 1	1.8200- 1	2.1840- 2	61 3373	1.4900+ 1		1.4000- 1	4.5000- 2
64 3685	1.4600+ 1	2.0000- 1	1.9400- 1	2.3000- 2					

07/04/76

(n,p)
Cross Section

20-Ca-43

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 1944	1.4200+ 1	2.0000- 1	9.3000- 2	1.2000- 2	64 3685	1.4600+ 1	2.0000- 1	1.3700- 1	3.0000- 2
65 1777	1.4600+ 1	2.0000- 1	1.1000- 1	1.3200- 2	66 1675	1.4700+ 1		1.0100- 1	8.0000- 3

07/04/76

(n,d)
Cross Section

20-Ca-43

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 1944	1.4200+ 1	2.0000- 1	1.3000- 3	

2-176

20-Ca-43 -1

07/04/76

(n,p)

20-Ca-44

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 323	1.4000+ 1		3.7000- 2	7.0020- 3	65 1697	1.4800+ 1		9.1000- 2	2.0000- 2
68 1944	1.4200+ 1	2.0000- 1	2.0000- 2	8.0000- 3	68 4071	1.4800+ 1		3.8000- 2	4.0000- 3
66 1675	1.4700+ 1		4.5000- 2	6.0000- 3	61 3373	1.4900+ 1		2.5000- 2	1.2000- 2

07/04/76

(n,d)

20-Ca-44

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 1944	1.4200+ 1	2.0000- 1	2.6000- 3	4.0000- 4

07/04/76

(n,a)

20-Ca-44

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 1944	1.4200+ 1	2.0000- 1	3.5000- 2	3.0000- 3
65 1697	1.4800+ 1		1.1300- 1	2.0000- 2
61 3373	1.4900+ 1		3.5000- 2	1.0000- 2

07/04/76

Coherent Scattering

20-Ca-44

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		4.0000- 1	6.0000- 2

07/04/76

(n,2n)
Cross Section

20-Ca-48

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 2009	1.330+ 1		8.6000- 1	2900- 1	62 840	1.4500+ 1	5 0000- 1	9.2020- 1	1.8000- 1
68 1944	1.4200+ 1	2.0000- 1	9.0000- 1	3800- 1	61 3373	1.4900+ 1		1.0700+ 0	3.6000- 1

2-178

20-Ca-48 -1

07/04/76

21-Sc-45

(n,n')

Cross Section

07/04/76

21-Sc-45

(n,n')

Cross Section

MeV

3-2

21-Sc-45 -2

Barns

07/04/76

(n, p)
Cross Section

21-Sc-45

Barns

3-3

Mev

21-Sc-45 -3

07/04/76

(n,2n)

21-Sc-45

Cross Section

MeV

3-4

21-Sc-45 -4

Barns

07/04/76

(n, 2n)

21-Sc-45

Cross Section

ECSIL-588 (60)

ECSIL-1791 (64)

ECSIL-1792 (61)

Barns

2-5

MeV

21-Sc-45 -5

07/04, 76

(n,2n)

21-Sc-45

Cross Section

ECSIL-588 (60)

ECSIL-3437 (72)

ECSIL-3890 (75)

Barns

3-6

21-Sc-45 -6

07/04/76

(n, p)

21-Sc-45

Cross Section

ECSIL-588 (60)

Barns

07/04/76

(n, p)

21-Sc-45

Cross Section

ECSIL-588 (60)

Barns

21-Sc-45

MeV

21-Sc-45 -7

07/04/76

(n,n')

21-Sc-45

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
69 3445	1.6100+ 0		1.7000- 2	7.0000- 3	8.9300- 1	69 3445	1.6900+ 0		9.0000- 2	3.3000- 2	1.4120+ 0
69 3445	1.6100+ 0		6.1000- 2	1.6000- 2	8.9300- 1	69 3445	1.6100+ 0		2.6000- 2	1.3000- 2	1.4370+ 0
69 3445	1.6200+ 0		6.0000- 3	7.0000- 2	1.4120+ 0	69 3445	1.6900+ 0		3.6000- 2	1.5000- 2	1.4370+ 0
69 3445	1.6100+ 0		4.3000- 2	1.7000- 2	1.4120+ 0	69 3445	1.6900+ 0		2.1000- 2	1.1000- 2	1.6640+ 0

07/04/76

(n,2n)

21-Sc-45

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 588	1.1550+ 1	1.5000- 1	0.0000+ 0		61 660	1.4800+ 1		3.2800- 1	4.9000- 2
61 676	1.4400+ 1	3.0000- 1	3.4700- 1	2.6000- 2	75 3567	1.5100+ 1	3.0000- 1	3.2200- 1	1.6000- 2
67 2009	1.4600+ 1		3.2000- 1	4.8000- 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
69 108	1.4130+ 1	1.0000- 1	1.3000- 1	7.8020- 3	3.9200+ 0	67 1901	1.4800+ 1	5.0000- 1	1.0000- 1	1.0000- 2	4.0000+ 0
61 660	1.4800+ 1		1.7900- 1	2.7000- 2	3.9200+ 0	63 756	1.4600+ 1	2.0000- 1	2.0000- 1	2.5000- 2	4.0000+ 0
73 3577	1.4800+ 1		2.0700- 1	1.7000- 2	3.9200+ 0	59 619	1.4000+ 1	5.0000- 1	1.2900- 1	9.0020- 3	4.0100+ 0
70 3527	1.5100+ 1	3.0000- 1	1.6100- 1	1.3000- 2	3.9200+ 0	61 703	1.4800+ 1	5.0000- 1	1.4800- 1	2.2200- 2	4.0100+ 0
66 2889	1.4000+ 1		1.5200- 1	2.2000- 2	4.0000+ 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 2889	1.4000+ 1		1.9500- 1	3.0000- 2	2.4400+ 0	75 3577	1.4800+ 1		1.9200- 1	1.5000- 2	2.4400+ 0
61 660	1.4800+ 1		1.4900- 1	2.2000- 2	2.4400+ 0	75 3567	1.5100+ 1	3.0000- 1	1.4100- 1	9.0000- 3	2.4400+ 0

07/04/76

(n,X) γ

21-Sc-45

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
61 11 1.6100+ 0			1.3600- 1	5.4400- 3	3.7300- 1	61 11 1.6100+ 0			5.6000- 2	2.6400- 3	9.6300- 1
61 11 1.6100+ 0			1.2900- 1	5.1600- 3	5.3400- 1	61 11 1.6100+ 0			1.2300- 1	4.9200- 3	1.2200+ 0
61 11 1.6100+ 0			1.7500- 1	7.0000- 3	7.1500- 1	61 11 1.6100+ 0			7.6000- 2	3.0400- 3	1.4000+ 0

3-8

21-Sc-45 -8

07/04/76

(n,p)

21-Sc-45

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 1675	1.4700+ 1		5.7000- 2	8.0000- 3
69 4071	1.4800+ 1		5.6000- 2	1.2000- 2

07/04/76

(n,d)

21-Sc-45

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 660	1.4800+ 1		6.3020- 2	9.0020- 3
59 4071	1.4800+ 1		4.9000- 2	5.0000- 3
63 756	1.4800+ 1	2.0000- 1	6.3020- 2	1.2000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs HOURS
59 619	1.4000+ 1	5.0000- 1	1.3200- 1	8.0020- 3 1.2400+ 1

07/04/76

Nonelastic
Cross Section

22-Ti-Nat

07/04/76

Nonelastic
Cross Section

22-Ti-Nat

07/04/76

Total Scattering
Cross Section

22-Ti-Nat

07/04/76

(n,n')
Cross Section

22-Ti-Nat

Barns

07/04/76

(n,n')
Cross Section

22-Ti-Nat

07/04/76

(n,n')
Cross Section

22-Ti-Nat

07/04/76

(n,X) γ
Cross Section

22-Ti-Nat

3-13

22-Ti-Nat -5

07/04/76

(n,X) γ
Cross Section

22-Ti-Nat

07/04/76

Nonelastic
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
55 122	4.0000+ 0	7.0020- 2	1.2800+ 0	7.0020- 2	57 319	1.4200+ 1	1.5000- 1	1.3300+ 0	3.0000- 2
55 296	4.1000+ 0	4.0000- 2	1.2000+ 0	2.0000- 1	58 356	2.5500+ 1		1.0800+ 0	6.0020- 2
55 122	4.5000+ 0	7.0020- 2	1.1800+ 0	7.0020- 2					

07/04/76

Total Scattering
Cross Section

22-Ti-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 2561	7.0000- 8		4.0000+ 0	

07/04/76

(n,n')

22-Ti-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
73 3448	4.6500+ 0	7.0000- 2	1.1363- 1	2.2840- 2	2.4200+ 0	73 3448	5.2300+ 0	5.0000- 2	1.0667- 1	1.9724- 2	3.2240+ 0
73 3448	5.2300+ 0	5.0000- 2	8.3970- 2	2.2756- 2	2.4200+ 0	73 3448	5.2300+ 0	5.0000- 2	1.2836- 1	3.0293- 2	3.2240+ 0
73 3448	4.0700+ 0	8.0000- 2	6.5290- 2	1.9718- 2	3.0000+ 0	73 3448	4.6500+ 0	7.0000- 2	1.5523- 1	2.6544- 2	3.3400+ 0
73 3448	4.3400+ 0	7.0000- 2	4.0950- 2	6.3892- 3	3.0000+ 0	73 3448	5.2300+ 0	5.0000- 2	1.3863- 1	2.6062- 2	3.3400+ 0
73 3448	4.6500+ 0	7.0000- 2	1.3242- 1	2.1452- 2	3.2240+ 0	73 3448	5.2300+ 0	5.0000- 2	1.1594- 1	3.0840- 2	3.3600+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL-MIN MEV	E-LVL-MAX MEV
73 3448	4.9200+ 0	6.0000- 2	3.1841- 1	4.3304- 2	3.5180+ 0	3.8600+ 0

07/04/76

(n,2n)
Cross Section

22-Ti-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 1821	1.4100+ 1		5.2000- 1	4.0000- 2

07/04/76

(n,p)
Cross Section

22-Ti-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 688	1.4400+ 1	2.0000- 1	3.5000- 2	4.0000- 3

07/04/76

(n,t)
Cross Section

22-Ti-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
73 3996	1.4700+ 1		7.0000- 5	1.8000- 5

07/04/76

Bound Atom
Cross Section

22-Ti-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		5.0000+ 0	

07/04/76

Free Atom
Cross Section

22-Ti-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 887	4.5000- 5		4.0200+ 0	4.0000- 2

07/04/76

Coherent Scattering
Cross Section

22-Ti-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 2564	2.5300- 8		1.6000+ 0	3.0000- 1
60 2561	7.0000- 8		1.4500+ 0	1.1600- 1
51 1584	7.3000- 8		1.8000+ 0	1.4400- 1

3-16

22-Ti-Nat -8

07/04/76

(n,n')

22-Ti-46

Cross Section

E-level = 0.389 Mev

EC51L-4069 (73)

Barns

07/04/76

(n,2n)

22-Ti-46

Cross Section

EC51L-588 (60)

Barns

3-17

22-Ti-46 -1

07/04/76

(n,2n)

22-T1-46

Cross Section

3-18

22-T1-46 -2

07/04/76

(n,p)

22-Ti-46

Cross Section

Barns

Mev

3-19

22-Ti-46 -3

07/04/76

(n,p)

22-TI-46

Cross Section

ECSIL-893 (65)

ECSIL-1799 (66)

07/04/76

Total Scattering
Cross Section

22-TI-46

REFERENCE	ENERGY	DELTA	X-SEC	DELTA
	MEV	MEV	BARNs	BARNs
60 2561	7.0000	8	2.1000	0

3-20

22-TI-46 -4

Barns

07/04/76

(n,2n)
Cross Section

22-Ti-46

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 108 1.4130+ 1	1.0000- 1	1.3300- 2	1.1000- 3		65 1672 1.4630+ 1	1.0000- 1	5.6000- 2	5.0000- 3	
72 3427 1.4200+ 1	2.0000- 1	1.2700- 2	1.3000- 3		63 1009 1.4700+ 1		5.0000- 2		
61 676 1.4400+ 1	3.0000- 1	3.2000- 2	2.0000- 3		59 662 1.4800+ 1	9.0020- 1	5.0000- 2	8.0020- 3	
REFERENCE					REFERENCE				
ENERGY MEV					X-SEC BARNs				
DELTA MEV					DELTA HALF-LIFE BARNs HOURS				
73 3988 1.4800+ 1					4.2800- 2 3.6000- 3 3.0800+ 0				

07/04/76

(n,p)
Cross Section

22-Ti-46

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
7 3178 4.1000+ 0	2.0000- 1	4.6000- 2	8.0000- 3		63 1009 1.4500+ 1		2.6800- 1	3.0000- 2	
71 3178 5.0000+ 0	2.0000- 1	1.0600+ 1	2.0000- 2		64 1801 1.4700+ 1	7.0000- 1	3.2400- 1	9.7200- 2	
71 3178 6.1000+ 0	2.0000- 1	1.4900+ 1	2.7000- 2		59 662 1.4800+ 1	9.0020- 1	5.2020- 1		
61 361 1.4000+ 1		2.0300+ 1	2.1000- 2						
REFERENCE					REFERENCE				
ENERGY MEV					X-SEC BARNs				
DELTA MEV					DELTA HALF-LIFE BARNs DAYS				
69 4083 1.4800+ 1					2.3000- 1 5.0000- 2 8.4000+ 1				

07/04/76

Coherent Scattering
Cross Section

22-Ti-46

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 2561 7.0000- 8			2.9000+ 0	2.3200- 1

07/04/76

(n,p)

22-Ti-47

Cross Section

3-22

MeV

22-Ti-47 -1

07/04/76

(n,p)

22-Ti-47

Cross Section

07/04/76

Activation
Cross Section

22-Ti-47

ECSIL-1799 (66)

07/04/76

Total Scattering
Cross Section

22-Ti-47

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60	2561	7.0000- 8	1.3000+ 0	

07/04/76

(n,p)
Cross Section

22-Ti-47

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61	361	1.4000+ 1	1.1200- 1	1.5000- 2	62	840	1.4500+ 1	5.0000- 1	9.9020- 2
63	1009	1.4500+ 1	1.2000- 1	1.2000- 2	59	662	1.4800+ 1	9.0020- 1	2.3000- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE DAYS
69	4083	1.4800+ 1	1.7000- 1	4.0000- 2	3.5000+ 0

3-24

22-Ti-47 -3

07/04/76

(n,α)
Cross Section

22-Ti-47

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LEVEL MEV
69 2710	1.4600+ 1		1.5000- 3	6.0000- 4	1.1560+ 0

07/04/76

Activation
Cross Section

22-Ti-47

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	ACTIVATE
63 1009	1.4500+ 1		5.4000- 2	1.5000- 2	21-SC-68

07/04/76

Coherent Scattering
Cross Section

22-Ti-47

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 2561	7.0000- 8		1.3700+ 0	1.0960- 1

07/04/76

(n,n')
Cross Section

22-Ti-48

3-25

Mev

22-Ti-48 -1

07/04/76

(n,n')
Cross Section

22-Ti-48

07/04/76

(n,p)
Cross Section

22-Ti-48

3-26

22-Ti-48 -2

07/04/76

(n,p)
Cross Section

22-Ti-48

3-27

22-Ti-48 -3

07/04/76

(n,p)

22-Ti-48

Cross Section

3-28

22-Ti-48 -4

07/04/76

22-TI-48

(n,p)
Cross Section

Relative

07/04/76

22-TI-48

Activation
Cross Section

Barns

07/04/76

Total Scattering
Cross Section

22-Ti-48

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 2561	7.0000- 8		3.7000+ 0	

07/04/76

(n,p)
Cross Section

22-Ti-48

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71 3178	6.1000+ 0	2.0000- 1	2.4000- 3	4.0000- 4	53 27	1.4500+ 1		9.2720- 2	3.2000- 2
61 361	1.4000+ 1		2.9000- 2	8.0000- 3	68 2596	1.4700+ 1	7.5000- 2	6.6500- 2	2.5000- 3
63 1009	1.4500+ 1		6.2000- 2	7.0000- 3	59 662	1.4800+ 1	9.0020- 1	5.8020- 2	8.0020- 3
62 840	1.4500+ 1	5.0000- 1	5.5020- 2	1.1000- 2					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs DAYS
69 4083	1.4800+ 1		6.3000- 2	6.0000- 3 1.8300+ 0

07/04/76

(n,α)
Cross Section

22-Ti-48

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1780	1.4100+ 1		3.9000- 2	5.8500- 3
63 1009	1.4500+ 1		4.8000- 2	1.0000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs DAYS
69 4083	1.4800+ 1		2.3000- 2	6.0000- 3 1.6500+ 2

07/04/76

Activation
Cross Section 22-Ti-48

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	ACTIVATE BARNs
63 1009	1.4500 ± 1		1.2400 ± 2	2.0000 ± 3	21-SC-47

07/04/76

Coherent Scattering
Cross Section 22-Ti-48

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 2561	7.0000 ± 8		4.2300 ± 0	3.3840 ± 1

07/04/76

(n,p)
Cross Section 22-Ti-49

3-31

100

07/04/76

Activation
Cross Section

22-Ti-49

07/04/76

Total Scattering
Cross Section

22-Ti-49

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60	2561	7.0000- 8	1.0000+ 0	

07/04/76

(n,p)
Cross Section

22-Ti-49

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63	1009	1.4500+ 1	3.5000- 2	4.0000- 3
62	662	1.4800+ 1	9.0020- 1	2.9000- 2
			5.0000- 3	

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
59	619	1.4000+ 1	5.0000- 1	9.7020- 2	1.6000- 2
				5.6320+ 1	
69	4083	1.4800+ 1	3.5000- 2	5.0000- 3	5.9000+ 1

07/04/76

Activation
Cross Section

22-Ti-49

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	ACTIVATE
63 10C9	1.4500- 1		9.0000- 3	2.0000- 3	21-5C-48

07/04/76

Coherent Scattering
Cross Section

22-Ti-49

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 2561	7.0000- 8		8.0000- 2	6.4000- 3

07/04/76

(n,p)
Cross Section

22-Ti-50

3-33

22-Ti-50 -1

07/04/76

Total Scattering
Cross Section

22-Ti-50

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 2561	7.0000- 8		3.5000+ 0	

07/04/76

(n,p)
Cross Section

22-Ti-50

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 1009	1.4500+ 1		1.7000- 2	3.0000- 3
64 1801	1.4700+ 1	7.0000- 1	9.0000- 3	2.7000- 3
59 662	1.4800+ 1	9.0020- 1	7.5020- 2	1.6000- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
59 619	1.4000+ 1	5.0000- 1	1.4700- 1	1.3000- 2	1.5500+ 0
69 4083	1.4800+ 1		2.2000- 2	7.0000- 3	1.7000+ 0
63 756	1.4800+ 1	2.0000- 1	2.8000- 2	1.2000- 2	1.7000+ 0

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(n,a)
Cross Section

22-Ti-50

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1780	1.4100+ 1		9.4000- 3	2.8200- 3
63 1009	1.4500+ 1		8.6000- 3	2.0000- 3
62 840	1.4500+ 1	5.0000- 1	1.0000- 2	2.0000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE DAYS
69 4083	1.4800+ 1		1.0000- 2	2.0000- 3	4.7000+ 0

07/04/76

Coherent Scattering
Cross Section

22-Ti-50

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 2561	7.0000- 8		3.8000+ 0	3.0400- 1

07/04/76

(n,n')
Cross Section

23-V -Nat

3-35

MeV

23-V -Nat -1

07/04/76

(n,n')

Cross Section

23-V -Nat

23-V -5; END: 7129

3-36

Mev

23-V -Nat -2

07/04/76

(n,n')
Cross Section

23-V -Nat

Barns

07/04/76

 (n,n')
Cross Section

23-V -Nat

3-38

Mev

23-V -Nat -4

Barns

07/04/76

(n,n')

23-V -Na

Cross Section

Bates

07/04/76

(n,n')

23-V -Nat

Cross Section

07/04/76

(n,n')

23-V -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 836	7.0000 ± 0		1.2700 ± 0	1.1000 ± 1

3-40

23-V -Nat -6

07/04/76

23-V -Nat

(n,n')

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	K-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	K-SEC BARNs	DELTA BARNs	E-LVL MEV
70 3581	5.3700	0 1.3000	3 3.6100	4 9.5100	0	70 3581	7.5400	0 6.0000	2 1.1300	3 3.0100	4 1.0960
70 3581	7.6000	0 1.0000	3 3.8500	4 9.5700	0	70 3581	8.5600	0 5.0000	2 1.6600	3 3.3200	4 1.0960
70 3581	5.4400	0 1.7000	4 8.9600	4 9.6400	0	70 3581	6.3700	0 1.3000	3 9.1000	4 2.2300	4 1.0980
70 3581	8.5000	0 8.0000	2 1.2700	3 3.8200	0	70 3581	7.6000	0 1.0000	1 8.4800	2 2.2600	4 1.1040
70 3581	6.3700	0 1.3000	3 3.3700	4 9.7600	0	70 3581	5.0000	0 5.0000	2 2.4680	3 6.3000	4 1.1050
70 3581	7.6000	0 1.0000	1 1.1780	3 3.2300	0	70 3581	5.1800	0 5.0000	2 3.9580	3 9.7800	4 1.1070
70 3581	5.4400	0 1.0000	1 1.7800	4 9.8900	0	70 3581	5.4400	0 1.7000	1 6.8000	3 1.6300	4 1.1110
70 3581	8.5000	0 8.0000	2 3.9000	4 9.8900	0	70 3581	8.5000	0 8.0000	2 1.3800	3 2.6000	4 1.1170
70 3581	6.3700	0 1.3000	1 1.0540	3 3.5300	0	70 3581	6.4400	0 7.0000	2 2.9980	3 3.1600	4 1.1170
70 3581	7.6000	0 1.0000	1 9.9800	4 3.6100	0	70 3581	5.5000	0 5.0000	2 1.1910	3 3.0300	4 1.1200
70 3581	5.4400	0 1.7000	1 6.0000	4 2.0600	0	70 3581	7.5400	0 6.0000	2 1.0450	3 3.2600	4 1.1200
70 3581	8.5000	0 8.0000	2 7.8000	4 3.3000	0	70 3581	8.5600	0 5.0000	2 1.5570	3 3.7300	4 1.1200
70 3581	5.5000	0 5.0000	2 7.9200	4 2.9000	0	70 3581	6.3700	0 1.3000	1 9.2700	4 2.0600	4 1.1230
70 3581	6.3700	0 1.3000	1 1.0400	3 3.2500	0	70 3581	7.6000	0 1.0000	1 8.4000	2 2.1200	4 1.1290
70 3581	7.6000	0 1.0000	1 7.0400	4 2.3600	0	70 3581	5.0000	0 5.0000	2 1.5200	3 3.9800	4 1.1300
70 3581	5.0000	0 5.0000	2 3.0250	3 9.6000	0	70 3581	5.1800	0 5.0000	2 4.4310	3 9.9520	4 1.1310
70 3581	5.1800	0 5.0000	2 2.6050	3 8.3200	0	70 3581	5.4400	0 1.7000	1 6.9400	4 1.5100	4 1.1380
70 3581	8.5000	0 8.0000	1 6.1700	4 2.9600	0	70 3581	6.5000	0 8.0000	2 1.1750	3 2.6500	4 1.1380
70 3581	6.5000	0 8.0000	2 1.9300	4 1.0380	0	70 3581	6.4400	0 7.0000	2 1.2470	3 2.7600	4 1.1410
70 3581	5.4400	0 7.0000	2 1.3250	3 4.6500	0	70 3581	5.5000	0 5.0000	2 1.0980	3 3.8200	4 1.1450
70 3581	5.5000	0 5.0000	2 9.2700	4 3.0900	0	70 3581	7.5400	0 6.0000	2 1.1050	3 3.5000	4 1.1450
70 3581	6.3700	0 1.3000	1 1.0550	3 3.0500	0	70 3581	8.5600	0 5.0000	2 1.5190	3 3.3800	4 1.1450
70 3581	7.6000	0 1.0000	1 7.3300	4 2.2900	0	70 3581	6.3700	0 1.3000	1 9.1300	4 1.4700	4 1.1470
70 3581	5.0000	0 5.0000	2 3.2670	3 9.6400	0	70 3581	7.6000	0 1.0000	1 8.7700	4 1.9200	4 1.1530
70 3581	5.1800	0 5.0000	2 2.9140	3 8.6000	0	70 3581	5.0000	0 5.0000	2 2.0450	3 4.1900	4 1.1540
70 3581	5.4400	0 1.7000	1 6.1500	4 1.7700	0	70 3581	5.1800	0 5.0000	2 3.7350	3 7.7000	4 1.1560
70 3581	8.5000	0 8.0000	2 1.0740	3 3.1300	0	70 3581	6.5000	0 1.7000	1 6.6600	4 1.6700	4 1.1600
70 3581	6.5000	0 8.0000	2 1.4900	3 3.3700	0	70 3581	8.5000	0 8.0000	2 1.2010	3 2.4500	4 1.1600
70 3581	5.5000	0 5.0000	2 1.0680	3 3.1900	0	70 3581	6.4400	0 7.0000	2 1.2130	3 2.4400	4 1.1660
70 3581	7.5400	0 6.0000	2 1.0680	3 3.1500	0	70 3581	5.5000	0 5.0000	2 9.8900	2 2.1100	4 1.1690
70 3581	8.5600	0 5.0000	2 1.4790	3 4.2400	0	70 3581	7.5400	0 6.0000	2 1.5470	3 3.0200	4 1.1690
70 3581	6.3700	0 1.3000	1 9.2100	4 2.4600	0	70 3581	8.5600	0 5.0000	2 1.5490	3 3.0200	4 1.1690
70 3581	7.6000	0 1.0000	1 8.7900	4 2.4600	0	70 3581	6.3700	0 1.3000	1 9.1000	4 1.6100	4 1.1720
70 3581	5.0000	0 5.0000	2 2.9150	3 7.9000	0	70 3581	7.6000	0 1.0000	1 8.9800	4 1.7800	4 1.1780
70 3581	5.1800	0 5.0000	2 3.6900	3 9.9500	0	70 3581	5.5000	0 5.0000	2 2.5120	3 4.8100	4 1.1790
70 3581	6.5000	0 8.0000	1 6.0600	4 1.6000	0	70 3581	5.1800	0 5.0000	2 2.5980	3 5.2800	4 1.1800
70 3581	8.5000	0 8.0000	2 1.1250	3 3.0200	0	70 3581	5.4400	0 1.7000	1 9.0200	4 1.5470	4 1.1850
70 3581	6.4400	0 7.0000	2 1.3480	3 3.5600	0	70 3581	8.5000	0 8.0000	2 1.2200	3 2.2500	4 1.1850
70 3581	5.5000	0 5.0000	2 1.0290	3 3.6750	0	70 3581	6.4400	0 7.0000	2 1.1270	3 2.6000	4 1.1900

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23-V -Nat -7

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-L-XL MEV
70 3581	5.50000	0.50000	2.83200	1.83000	1.19000
70 3581	5.50000	0.50000	2.38700	1.98000	1.19000
70 3581	5.56000	0.50000	2.14500	2.37000	1.19000
70 3581	5.37000	0.13000	1.96000	1.51000	1.19700
70 3581	5.60000	0.10000	1.93500	1.51000	1.20200
70 3581	5.60000	0.50000	2.26180	1.45200	1.20300
70 3581	5.18000	0.50000	2.21430	1.38500	1.20500
70 3581	5.50000	0.80000	2.10840	1.85000	1.20900
70 3581	5.44000	0.17000	1.91000	1.53000	1.21000
70 3581	6.44000	0.70000	2.10240	1.84000	1.21500
70 3581	5.50000	0.50000	2.10660	2.03000	1.21800
70 3581	5.50000	0.60000	2.10340	1.79000	1.21800
70 3581	5.56000	0.50000	2.13160	2.22000	1.21800
70 3581	5.37000	0.30000	1.03700	1.54000	1.22000
70 3581	5.60000	0.10000	1.81800	1.54000	1.22700
70 3581	5.00000	0.50000	2.32050	3.51800	1.22800
70 3581	5.18000	0.50000	2.24070	3.42000	1.22900
70 3581	5.44000	0.17000	1.11730	1.72000	1.23400
70 3581	5.57000	0.80000	2.10480	1.75000	1.23400
70 3581	6.44000	0.70000	2.10610	1.76000	1.23400
70 3581	5.50000	0.50000	2.91000	1.78000	1.24300
70 3581	5.50000	0.60000	2.11180	1.83000	1.24300
70 3581	5.56000	0.50000	2.13070	2.13000	1.24300
70 3581	5.37000	0.13000	1.10050	1.43000	1.24600
70 3581	5.60000	0.10000	1.91200	1.53000	1.25100
70 3581	5.00000	0.50000	2.33860	3.47500	1.25400
70 3581	5.18000	0.50000	2.12840	3.78000	1.25900
70 3581	5.44000	0.17000	1.12420	1.79000	1.26500
70 3581	6.44000	0.70000	2.10500	1.68000	1.26600
70 3581	5.50000	0.50000	2.12100	1.97000	1.26700
70 3581	5.50000	0.60000	2.12013	1.85000	1.26700
70 3581	5.56000	0.50000	2.14540	2.15000	1.26700
70 3581	5.37000	0.13000	1.10300	1.43000	1.27000
70 3581	5.60000	0.10000	1.86900	1.42600	1.27600
70 3581	5.00000	0.50000	2.28870	3.36600	1.27800
70 3581	5.18000	0.50000	2.18870	3.30900	1.27900
70 3581	5.44000	0.17000	1.13540	1.81000	1.28100
70 3581	6.44000	0.70000	2.11920	1.82000	1.28300
70 3581	5.50000	0.80000	2.11520	1.65000	1.28100
70 3581	6.44000	0.70000	2.12220	1.57000	1.28100
70 3581	5.50000	0.50000	2.14320	2.29000	1.28200
70 3581	5.50000	0.60000	2.13900	1.86000	1.28400
70 3581	5.18000	0.50000	2.19360	3.27400	1.28500
70 3581	5.56000	0.50000	2.12500	2.36000	1.28500
70 3581	5.44000	0.17000	1.14710	1.69000	1.28700
70 3581	6.44000	0.80000	2.12700	1.95000	1.28700
70 3581	5.50000	0.50000	2.19980	1.65000	1.28700
70 3581	5.50000	0.60000	2.16980	1.72000	1.28800
70 3581	5.56000	0.50000	2.33700	1.79000	1.29100
70 3581	5.37000	0.13000	1.89100	1.48000	1.29400
70 3581	5.60000	0.10000	1.89100	1.48000	1.29400
70 3581	5.00000	0.50000	2.19360	3.27400	1.29500

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(n.p.)

23-V -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-SEC MEV	DIFFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	
70 3581	6.5000	0.0000	2.97700	4.13300	1.3810	0	70 3581	6.5400	0.17000	3.14200	4.14790	0
70 3581	6.4400	0.0000	2.12130	3.15130	1.3863	0	70 3581	6.5000	0.0000	2.86100	4.14790	0
70 3581	6.5000	0.0000	2.22300	3.15130	1.3900	0	70 3581	6.4400	0.0000	2.94000	4.14790	0
70 3581	6.5400	0.0000	2.95800	4.12600	1.3500	0	70 3581	6.5000	0.0000	2.19730	4.14880	0
70 3581	6.5600	0.0000	2.12930	3.15900	1.3900	0	70 3581	6.5400	0.0000	2.19560	4.14880	0
70 3581	6.3700	0.13000	1.82800	4.85900	1.3930	0	70 3581	6.5600	0.0000	2.10510	4.14880	0
70 3581	6.7000	0.0000	1.97700	4.10500	1.3980	0	70 3581	6.3700	0.13000	1.82000	4.14880	0
70 3581	6.0000	0.50000	2.03500	3.25800	1.3990	0	70 3581	6.7000	0.0000	1.82700	4.14910	0
70 3581	5.1800	0.50000	2.24600	3.13100	1.4010	0	70 3581	6.0000	0.0000	1.82700	4.14910	0
70 3581	5.4000	0.17000	1.51900	3.15700	1.4060	0	70 3581	5.1800	0.50000	1.02400	4.14990	0
70 3581	6.5000	0.0000	2.97000	4.12200	1.4060	0	70 3581	5.4000	0.17000	1.14790	4.15040	0
70 3581	6.4400	0.0000	2.11860	3.13600	1.4110	0	70 3581	6.5000	0.0000	2.86000	4.15040	0
70 3581	5.5000	0.50000	2.25060	3.29600	1.4140	0	70 3581	6.4400	0.0000	2.86000	4.15090	0
70 3581	5.9000	0.62000	2.10450	3.13100	1.4140	0	70 3581	5.5000	0.50000	2.11000	4.15200	0
70 3581	6.5600	0.0000	1.17500	3.14200	1.4140	0	70 3581	6.5600	0.0000	2.86000	4.15200	0
70 3581	6.3700	0.13000	1.83700	4.85000	1.4170	0	70 3581	6.3700	0.13000	1.79500	4.15150	0
70 3581	6.7000	0.0000	1.03100	3.10500	1.4230	0	70 3581	6.7000	0.0000	1.03600	4.15150	0
70 3581	5.0000	0.50000	2.21350	3.26300	1.4240	0	70 3581	5.0000	0.50000	2.86000	4.15200	0
70 3581	5.1800	0.50000	2.23910	3.16000	1.4250	0	70 3581	5.1800	0.50000	2.14240	4.15280	0
70 3581	5.4000	0.17000	1.48570	3.14900	1.4300	0	70 3581	5.4000	0.17000	1.15880	4.15280	0
70 3581	6.5000	0.0000	2.89000	4.11900	1.4300	0	70 3581	6.5000	0.0000	2.86000	4.15340	0
70 3581	6.4400	0.0000	2.27400	3.25400	1.4350	0	70 3581	6.4400	0.0000	2.86000	4.15340	0
70 3581	5.5000	0.50000	2.25700	3.25400	1.4390	0	70 3581	5.5000	0.50000	2.86000	4.15370	0
70 3581	5.9000	0.62000	2.11710	3.13700	1.4390	0	70 3581	6.5600	0.0000	2.86000	4.15370	0
70 3581	6.5600	0.0000	1.06700	3.12930	1.4390	0	70 3581	5.9000	0.62000	2.86000	4.15370	0
70 3581	6.3700	0.13000	1.82100	4.82000	1.4420	0	70 3581	6.3700	0.13000	1.76900	4.15400	0
70 3581	6.7000	0.0000	1.05940	3.10100	1.4470	0	70 3581	6.7000	0.0000	1.05900	4.15460	0
70 3581	5.0000	0.50000	2.21610	3.25800	1.4480	0	70 3581	5.0000	0.50000	2.86000	4.15460	0
70 3581	5.1800	0.50000	2.23180	3.10100	1.4500	0	70 3581	5.1800	0.50000	1.13770	4.15530	0
70 3581	5.4000	0.17000	1.50580	3.14500	1.4550	0	70 3581	6.5000	0.0000	2.86000	4.15530	0
70 3581	6.5000	0.0000	2.93300	4.11400	1.4550	0	70 3581	6.4400	0.0000	2.86000	4.15610	0
70 3581	6.4400	0.0000	2.93300	4.11400	1.4600	0	70 3581	6.5000	0.0000	2.86000	4.15610	0
70 3581	5.5000	0.50000	2.22220	3.25100	1.4630	0	70 3581	6.4400	0.0000	2.86000	4.15610	0
70 3581	5.9000	0.62000	2.12110	3.13600	1.4630	0	70 3581	5.5000	0.50000	2.86000	4.15610	0
70 3581	6.5600	0.0000	1.01500	3.12300	1.4630	0	70 3581	6.5600	0.0000	2.86000	4.15610	0
70 3581	6.3700	0.13000	1.79300	4.85000	1.4650	0	70 3581	6.3700	0.13000	1.87000	4.15610	0
70 3581	6.7000	0.0000	1.04460	3.95000	1.4720	0	70 3581	6.7000	0.0000	1.04460	4.15700	0
70 3581	5.0000	0.50000	2.20100	3.23400	1.4730	0	70 3581	5.0000	0.50000	2.86000	4.15700	0
70 3581	5.1800	0.50000	2.18420	3.25200	1.4740	0	70 3581	5.1800	0.50000	2.86000	4.15710	0

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UNIVERSITY OF CALIFORNIA

22-V - Nat

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23-V - Nat - 11

Section 501(c)(3)

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23-V -Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	Y-SEC BARN	DELTA MEV	Y-SEC BARN	DELTA MEV	E-LVL MEV
70 356	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 357	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 358	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 359	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 360	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 361	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 362	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 363	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 364	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 365	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 366	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 367	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 368	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 369	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 370	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 371	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 372	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 373	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 374	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 375	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 376	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 377	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 378	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 379	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 380	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 381	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 382	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 383	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 384	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 385	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 386	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 387	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 388	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 389	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 390	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 391	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 392	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 393	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 394	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 395	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 396	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 397	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 398	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 399	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0
70 400	5.4400	0.1300	2.1700	0.1300	1.0400	1.8000	5.2400+0

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Cross Section

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REFERENCE	ENERGY keV	DELTA keV	PHYS. BLOCK	DELTA keV	DELTA keV	REFERENCE	ENERGY keV	DELTA keV	X-RAY BARS	DELTA BARS	E-LEVEL MEV
70 3581	8 5600	5 5000	2 6 8100	5 5000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 7000	5 3.9990
70 3581	8 5600	5 3000	2 6 8100	5 3000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 4000	5 3.0050
70 3581	8 5600	5 1000	2 6 8100	5 1000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 3000	5 3.0090
70 3581	8 5600	5 0000	2 6 8100	5 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 2000	5 3.0080
70 3581	8 5600	4 8000	2 6 8100	4 8000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 1000	5 3.0110
70 3581	8 5600	4 6000	2 6 8100	4 6000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0170
70 3581	8 5600	4 4000	2 6 8100	4 4000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0240
70 3581	8 5600	4 2000	2 6 8100	4 2000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0290
70 3581	8 5600	4 0000	2 6 8100	4 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0330
70 3581	8 5600	3 8000	2 6 8100	3 8000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0350
70 3581	8 5600	3 6000	2 6 8100	3 6000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0410
70 3581	8 5600	3 4000	2 6 8100	3 4000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0480
70 3581	8 5600	3 2000	2 6 8100	3 2000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0540
70 3581	8 5600	3 0000	2 6 8100	3 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0570
70 3581	8 5600	2 8000	2 6 8100	2 8000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0600
70 3581	8 5600	2 6000	2 6 8100	2 6000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0660
70 3581	8 5600	2 4000	2 6 8100	2 4000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0730
70 3581	8 5600	2 2000	2 6 8100	2 2000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0780
70 3581	8 5600	2 0000	2 6 8100	2 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0820
70 3581	8 5600	1 8000	2 6 8100	1 8000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0840
70 3581	8 5600	1 6000	2 6 8100	1 6000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0900
70 3581	8 5600	1 4000	2 6 8100	1 4000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.0970
70 3581	8 5600	1 2000	2 6 8100	1 2000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.1030
70 3581	8 5600	1 0000	2 6 8100	1 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.1080
70 3581	8 5600	8 0000	2 6 8100	8 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.1090
70 3581	8 5600	6 0000	2 6 8100	6 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.1150
70 3581	8 5600	4 0000	2 6 8100	4 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.1200
70 3581	8 5600	2 0000	2 6 8100	2 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.1270
70 3581	8 5600	0 0000	2 6 8100	0 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.1310
70 3581	8 5600	0 0000	2 6 8100	0 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.1330
70 3581	8 5600	0 0000	2 6 8100	0 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.1390
70 3581	8 5600	0 0000	2 6 8100	0 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.1460
70 3581	8 5600	0 0000	2 6 8100	0 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.1500
70 3581	8 5600	0 0000	2 6 8100	0 0000	2 2 8950	70 3581	8 5600	0 0000	2 9400	5 0000	5 3.1550

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REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
70 3581	8.5000	0.80000	4.25000	4.70000	5.31800
70 3581	8.5000	0.80000	2.10000	4.70000	5.31800
70 3581	7.5000	0.60000	6.72000	5.60000	5.32700
70 3581	8.5600	0.50000	4.53000	4.90000	5.32700
70 3581	6.3700	0.13000	1.20000	5.14000	5.33000
70 3581	7.6000	0.10000	1.42700	4.16000	5.33500
70 3581	8.5000	0.80000	2.39400	4.60000	5.34300
70 3581	7.5000	0.60000	2.74400	5.70000	5.35100
70 3581	8.5600	0.50000	4.77600	5.10000	5.35500
70 3581	6.3700	0.13000	1.10000	5.13000	5.35400
70 3581	7.6000	0.10000	1.45100	4.17000	5.36000
70 3581	8.5000	0.80000	4.21000	4.80000	5.36700
70 3581	7.5000	0.60000	2.56600	5.90000	5.37600
70 3581	8.5600	0.50000	2.49100	5.10000	5.37600
70 3581	6.3700	0.13000	1.70000	6.13000	5.37900
70 3581	7.6000	0.10000	1.48700	4.18000	5.38400
70 3581	8.5000	0.80000	4.00000	4.50000	5.39200
70 3581	7.5000	0.60000	2.56500	5.80000	5.40000
70 3581	8.5600	0.50000	2.47600	5.00000	5.40000
70 3581	6.3700	0.13000	1.40000	6.12000	5.40300
70 3581	7.6000	0.10000	1.53100	4.19000	5.40900
70 3581	8.5000	0.80000	2.34000	4.30000	5.41600
70 3581	7.5000	0.60000	2.78100	4.60000	5.42500
70 3581	8.5600	0.50000	2.44100	4.80000	5.42500
70 3581	6.3700	0.13000	1.20000	6.10000	5.42800
70 3581	7.6000	0.10000	1.53600	4.20000	5.43300
70 3581	8.5000	0.80000	2.31000	4.42000	5.44100
70 3581	7.5000	0.60000	2.78000	4.90000	5.44900
70 3581	8.5600	0.50000	2.87000	4.70000	5.44900
70 3581	6.3700	0.13000	1.10000	6.10000	5.45200
70 3581	7.6000	0.10000	1.56800	4.21000	5.45800
70 3581	8.5000	0.80000	2.32400	4.10000	5.46500
70 3581	7.5000	0.60000	2.70500	4.57000	5.47400
70 3581	8.5600	0.50000	2.32500	4.60000	5.47700
70 3581	6.3700	0.13000	1.10000	6.13000	5.47700
70 3581	7.6000	0.10000	1.52800	4.20000	5.48200
70 3581	8.5000	0.80000	2.84000	4.30000	5.49000
70 3581	7.5000	0.60000	2.53000	4.52000	5.49800
70 3581	8.5600	0.50000	2.69000	4.60000	5.49800

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1000

Year	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	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500
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Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	
70 3581	6.5000	0.80000	2.14200	3.2000	5.39560	70 3581	7.6000	0.10000	1.1400	4.70000	6.41940	0
70 3581	6.5000	0.80000	2.14200	3.2000	5.39560	70 3581	8.5000	0.80000	2.70800	4.41000	5.42010	0
70 3581	6.5600	0.50000	2.13600	3.5000	5.39640	70 3581	7.5400	0.60000	2.68000	5.30000	5.42090	0
70 3581	7.6000	0.10000	1.33800	4.1000	5.39730	70 3581	8.5600	0.50000	2.8500	4.41000	5.42090	0
70 3581	8.5000	0.80000	2.15500	3.2000	5.39800	70 3581	7.6000	0.10000	1.1200	4.70000	6.42180	0
70 3581	7.5400	0.60000	2.13600	4.2000	5.39890	70 3581	6.5000	0.80000	2.32900	4.43000	5.42250	0
70 3581	8.5600	0.50000	2.15500	4.3000	5.39890	70 3581	7.5400	0.60000	2.95000	5.30000	5.42340	0
70 3581	7.6000	0.10000	1.33600	4.1000	5.39970	70 3581	8.5600	0.50000	2.30100	4.43000	5.42340	0
70 3581	8.5000	0.80000	2.16700	4.3000	5.40050	70 3581	7.6000	0.10000	1.10100	4.70000	6.42430	0
70 3581	7.5400	0.60000	2.28300	4.9000	5.40130	70 3581	8.5000	0.80000	2.32000	4.43000	5.42500	0
70 3581	8.5600	0.50000	2.18600	4.36000	5.40130	70 3581	7.5400	0.60000	2.75000	5.30000	5.42580	0
70 3581	7.6000	0.10000	1.29700	4.12000	5.40220	70 3581	8.5600	0.50000	2.34100	4.44000	5.42580	0
70 3581	8.5000	0.80000	2.18400	4.34000	5.40290	70 3581	7.6000	0.10000	1.80000	5.70000	6.42670	0
70 3581	7.5400	0.60000	2.21600	4.36000	5.40380	70 3581	8.5000	0.80000	2.33000	4.43000	5.42740	0
70 3581	8.5600	0.50000	2.20400	4.38000	5.40380	70 3581	7.5400	0.60000	2.43000	5.26000	5.42830	0
70 3581	7.6000	0.10000	1.27700	4.12000	5.40460	70 3581	8.5600	0.50000	2.40200	4.46000	5.42830	0
70 3581	8.5000	0.80000	2.17800	4.35000	5.40540	70 3581	7.6000	0.10000	1.70000	5.60000	6.42920	0
70 3581	7.5400	0.60000	2.15400	4.33000	5.40620	70 3581	8.5000	0.80000	2.33300	4.44000	5.42990	0
70 3581	8.5600	0.50000	2.15400	4.39000	5.40620	70 3581	7.5400	0.60000	2.33000	5.33000	5.43070	0
70 3581	7.6000	0.10000	1.24300	4.11000	5.40710	70 3581	8.5600	0.50000	2.45000	4.49000	5.43070	0
70 3581	8.5000	0.80000	2.16600	4.34000	5.40780	70 3581	7.6000	0.10000	1.67000	5.60000	6.43160	0
70 3581	7.5400	0.60000	2.11000	4.31000	5.40870	70 3581	8.5000	0.80000	2.37900	4.44000	5.43230	0
70 3581	8.5600	0.50000	2.17100	4.37000	5.40870	70 3581	7.5400	0.60000	2.14000	5.32000	5.43320	0
70 3581	7.6000	0.10000	1.22900	4.10000	5.40950	70 3581	8.5600	0.50000	2.48000	4.49000	5.43320	0
70 3581	8.5000	0.80000	2.18200	4.34000	5.41030	70 3581	7.6000	0.10000	1.55000	5.60000	6.43410	0
70 3581	7.5400	0.60000	2.89000	5.28000	5.41110	70 3581	8.5000	0.80000	2.43900	4.47000	5.43480	0
70 3581	8.5600	0.50000	2.18100	4.38000	5.41110	70 3581	8.5600	0.50000	2.49400	4.49000	5.43560	0
70 3581	7.6000	0.10000	1.19500	4.90000	6.41200	70 3581	7.5400	0.60000	2.13000	5.48000	5.43570	0
70 3581	8.5000	0.80000	2.23700	4.37000	5.41270	70 3581	7.6000	0.10000	1.51000	5.60000	6.43650	0
70 3581	7.5400	0.60000	2.71000	5.28000	5.41360	70 3581	8.5000	0.80000	2.42000	4.46000	5.43720	0
70 3581	8.5600	0.50000	2.19000	4.39000	5.41360	70 3581	8.5600	0.50000	2.48800	4.49000	5.43810	0
70 3581	7.6000	0.10000	1.16000	4.80000	6.41440	70 3581	7.6000	0.10000	1.51000	5.60000	6.43900	0
70 3581	8.5000	0.80000	2.24900	4.38000	5.41520	70 3581	8.5000	0.80000	2.35900	4.44000	5.43970	0
70 3581	7.5400	0.60000	2.65000	5.28000	5.41600	70 3581	8.5600	0.50000	2.45300	4.47000	5.44060	0
70 3581	8.5600	0.50000	2.24300	4.39000	5.41600	70 3581	7.6000	0.10000	1.50000	5.70000	6.44140	0
70 3581	7.6000	0.10000	1.14200	4.87000	6.41690	70 3581	8.5000	0.80000	2.36000	4.44000	5.44210	0
70 3581	8.5000	0.80000	2.26600	4.39000	5.41760	70 3581	8.5600	0.50000	2.40700	4.46000	5.44300	0
70 3581	7.5400	0.60000	2.71000	5.27000	5.41850	70 3581	7.6000	0.10000	1.51000	5.80000	6.44390	0
70 3581	8.5600	0.50000	2.28000	4.40000	5.41950	70 3581	8.5000	0.80000	2.33800	4.43000	5.44460	0

3-52

23-V -Nat -18

[illegible]

07/04/76

Absorption
Cross Section

23-V -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 2569	2.5300- 8		6.2900+ 0	3.4000- 1
67 770	2.5300- 8		6.2500+ 0	2.0000- 1
58 1162	2.5300- 8		5.0100+ 0	7.0000- 2

07/04/76

Bound Atom
Cross Section

23-V -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53 370	0.0000- 0		4.8000+ 0	2.0000- 1
51 1584	7.3000- 8		5.0000+ 0	

07/04/76

Free Atom
Cross Section

23-V -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53 874	5.0000- 6		5.0700+ 0	1.5000- 1

07/04/76

Absorption
Cross Section

23-V -50

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 3431	2.5300- 8		4.1000+ 1	4.0000+ 0

07/04/76

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23-V - Nat

[illegible]

3-53

23-V-Nat-19

07/04/76

Absorption
Cross Section

23-V -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 2569	2.5300- 8		5.2900+ 0	3.4000- 1
57 2770	2.5300- 8		5.0100+ 0	2.80000- 1
56 1762	2.5300- 8		5.0100+ 0	2.0000- 2

07/04/76

Bound Atom
Cross Section

23-V -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53 370	0.0000- 0		4.8000+ 0	2.0000- 1
51 1584	7.3000- 8		5.0000+ 0	

07/04/76

Free Atom
Cross Section

23-V -Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53 874	5.0000- 6		5.0700+ 0	1.5000- 1

07/04/76

Absorption
Cross Section

23-V -50

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 3431	2.5300- 8		4.1000+ 1	4.0000+ 0

3-54

23-V -50 -1

07/04/76

Total Scattering
Cross Section

23-4 -51

07/04/76

(n,n')
Cross Section

23-4 -51

07/04/76

(n.n.)
Cross Section

23-V -51

3-56

23-V -51 -2

07/04/76

23-V -51

(n,n')
Cross Section

Bates

07/04/76

(n,n')

23-V -51

Cross Section

07/04/76

(n,n')

23-V -51

Cross Section

07/04/76

(n.p)
Cross Section

23-V -51

3-59

23-V -51 -5

07/04/76

(n.a)

23-V -51

Cross Section

3-60

23-V -51 -6

07/04/76

17.00

23-V -51

Cross Section

EC51L-2596 (68)

07/04/76

(n,n')

23-V -51

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
65 1809	2.3500	0.7000	2.3500	2.3500	65 1809	2.3500	2.7000	2.0750	1.0000	2.16100
65 1809	2.3500	0.7000	2.3500	2.3500	65 1809	2.3500	2.7000	2.0750	1.0000	2.16100

07/04/76

(n,2n)

23-V -51

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58	7.14100	1	6.6020	15.0000

3-61

23-V -51 -7

07/04/76

(n,n').

23-V -51

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 814	1.400+ 1		1.0000- 4	5.0000- 5
59 837	1.4800+ 1		2.0000- 2	1.2000- 2

07/04/76

(n,p)

23-V -51

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 351	1.4000+ 1		2.0000- 2	7.0020- 3	65 1697	1.4800+ 1		2.5000- 2	3.0000- 3
53 27	1.4500+ 1		2.7000- 2	4.1000- 3	63 756	1.4800+ 1	2.0000- 1	5.5020- 2	1.2000- 2
66 907	1.4800	1.0000- 1	2.4700- 2	2.2000- 3					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
73 3987	1.4600+ 1		1.4600- 2	7.0000- 4	3.2000- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE DAYS
69 4063	1.4800+ 1		0.8000- 2	8.0000- 3	5.8000+ 0

07/04/76

(n,He-3)

23-V -51

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
50 667	1.4800+ 1	9.0020- 1	8.0020- 4	

3-62

23-V -51 -8

07/04/76

Group
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
58	514	1.4100+1	1.3500-2	1.4000-3	58	2530	1.4700+1	1.5100-2	1.6000-4
62	840	1.4500+1	1.5000-1	1.8000-2	59	537	1.4810+1	1.3000-2	1.6000-3
53	27	1.4500+1	2.8500-2	1.2000-2	54	754	1.4810+1	1.2000-2	1.3000-2
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs DAYS					
65	4083	1.4800+1	1.6000-2	3.0000-3	1.8300+0				

07/04/76

Nonelastic
Cross Section

24-Cr-Nat

3-63

MeV

24-Cr-Nat -1

07/04/76

Total Scattering
Cross Section

24-Cr-Nat

07/04/76

(n,n')
Cross Section

24-Cr-Nat

07/04/76

(n,n')

Cross Section

²⁴Cr-NaI

ECSIL-3550 (74)

E-level = 1.434 MeV

ECSIL-3550 (74)

E-level = 2.369 MeV

ECSIL-3566 (75)

E-Photon = 0.7017 MeV

3-65

MeV

²⁴Cr-NaI -3

Barns

07/04/76

(n,n')

Cross Section

24-Cr-Nat

07/04/76

(n,n')
Cross Section

24-Cr-Nat

07/04/76

(n,X) γ
Cross Section

24-Cr-Nat

3-67

24-Cr-Nat -5

07/04/76

Nonelastic
Cross Section

24-Cr-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS
56	34 2.5000+ 0		1.4000+ 0	3.0000+ 1
55	790 2.5000+ 0	1.5000+ 1	1.4000+ 0	3.0000+ 1

07/04/76

Total Scattering
Cross Section

24-Cr-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS
63	879 9.8000+ 1	5.0000+ 2	2.9900+ 0	8.9700+ 2

07/04/76

(n,n')

24-Cr-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS	E-LVL MEV	E-LVL MEV
54	301 2.5000+ 0		1.0000+ 0	2.0000+ 1	1.4200+ 0	
74	3550 8.5600+ 0	5.0000+ 2	1.8340+ 2	3.1545+ 3	2.3690+ 0	2.6480+ 0
74	3550 4.6500+ 0	7.0000+ 2	1.3482+ 1	2.0086+ 2	2.6480+ 0	2.7660+ 0
74	3550 5.2300+ 0	5.0000+ 2	1.0923+ 1	1.5129+ 2	2.6480+ 0	2.7660+ 0
74	3550 5.5000+ 0	5.0000+ 2	1.1085+ 1	1.5186+ 2	2.6480+ 0	2.7660+ 0
74	3550 4.6500+ 0	7.0000+ 2	1.5341+ 1	2.2551+ 2	2.9650+ 0	
74	3550 5.2300+ 0	5.0000+ 2	1.1932+ 1	1.5870+ 2	2.9650+ 0	
74	3550 5.5000+ 0	5.0000+ 2	1.1482+ 1	1.6993+ 2	2.9650+ 0	
74	3550 4.6500+ 0	7.0000+ 2	1.6379+ 1	2.4820+ 2	3.1120+ 0	3.1600+ 0
74	3550 5.2300+ 0	5.0000+ 2	1.5167+ 1	1.6532+ 2	3.1120+ 0	3.1600+ 0
74	3550 5.5000+ 0	5.0000+ 2	1.1267+ 1	1.6214+ 2	3.1120+ 0	3.1600+ 0
74	3550 4.6500+ 0	7.0000+ 2	1.1947+ 1	1.8237+ 2	3.4300+ 0	3.4900+ 0
74	3550 5.2300+ 0	5.0000+ 2	1.6078+ 1	2.2293+ 2	3.4300+ 0	3.4900+ 0
74	3550 5.5000+ 0	5.0000+ 2	1.1490+ 1	1.4789+ 2	3.4300+ 0	3.4900+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BAPNS	DELTA BAPNS	E-PHOTON MEV
74	3550 4.6500+ 0		1.4000+ 0	3.130000+ 3	8.461+ 0
74	3550 4.6500+ 0		1.4000+ 0	3.130000+ 4	8.461+ 0
74	3550 5.4600+ 0		1.6000+ 0	3.800000+ 4	1.8461+ 0

3-68

24-Cr-Nat -6

07/04/76

Absorption
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
65 1364	2.4000- 2		1.0000- 2	4.0000- 3	58 364	2.2000- 1	2.0000- 2	3.6000- 2	1.0000- 3
58 364	2.5000- 2	4.0000- 3	1.6200- 1	7.0020- 3	56 364	8.3000- 1	4.0000- 2	2.1000- 2	1.0000- 3

07/04/76

(n,X) γ
Cross Section

24-Cr-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
54 113	3.2000- 0	3.0000- 2	2.7000- 2	5.0000- 3	7.5000- 1	54 113	1.4400- 0	2.0000- 2	0.0000- 0		1.4400- 0
54 113	3.2000- 0	3.0000- 2	1.0000- 1	2.0000- 2	9.4000- 1	51 284	2.5000- 0		1.2000- 0	4.0000- 1	1.4600- 0
54 113	3.2000- 0	3.0000- 2	7.3000- 1	1.5000- 2	1.4300- 0						

07/04/76

Bound Atom
Cross Section

24-Cr-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		3.8000- 0	

07/04/76

Coherent Scattering
Cross Section

24-Cr-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		1.7000- 0	1.3600- 1

07/04/76

24-Cr-50

(n,n')

Cross Section

Barns

Mev

3-70

24-Cr-50 -1

07/04/76

(n,n')

24-Cr-50

Cross Section

07/04/76

(n,2n)

24-Cr-50

Cross Section

3-71

Mev

24-Cr-50 -2

07/04/76

(n,2n)

24-Cr-50

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 676	1.4000+ 1	3.0000- 1	2.6400- 2	2.2000- 3	51 707	1.4000+ 1	2.5000- 1	2.7000- 2	7.0020- 3
61 701	1.4000+ 1	1.6600- 2	1.2000- 3		51 651	1.4000+ 1	3.2000- 2	3.0000- 2	3.0000- 3
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES				
73 3988	1.4600+ 1		3.1400- 2	2.5000- 3	4.2110+ .				

07/04/76

(n,n'p)

24-Cr-50

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61	361	1.4000+ 1	1.5300- 1	2.1000- 2

07/04/76

(n,p)

24-Cr-50

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61	361	1.4000+ 1	2.6500- 1	2.1000- 2

07/04/76

 (n,n')
Cross Section

24-Cr-52

3-73

Mev

24-Cr-52 -1

07/04/76

24-Cr-52

(n,n')

Cross Section

3-74

24-Cr-52 -2

Barns

07/04/76

(n,n')

24-Cr-52

Cross Section

ECSIL-606 (62)

ECSIL-865 (63)

ECSIL-3564 (73)

Barns

3-75

Mev

24-Cr-52 -3

07/04/76

(n,n')

24-Cr-52

Cross Section

3-76

Mev

24-Cr-52 -4

Bates

07/04/76

24-Cr-52

(n,n')
Cross Section

ECSIL-3564 (73)

ECSIL-3564 (73)

ECSIL-3566 (75)

3-77

24-Cr-52 -5

07/04/76

24-Cr-52

(n,n')

Cross Section

Barns

3-78

24-Cr-52 -6

07/04/76

(n,n')
Cross Section

24-Cr-52

3-79

Mev

24-Cr-52 -7

07/04/76

(n,n')

 $^{24}\text{Cr}-52$

Cross Section

3-80

Mev

 $^{24}\text{Cr}-52$ -8

Bases

07/04/76

(n,n')
Cross Section

24-Cr-52

Barns

07/04/76

(n,2n)

24-Cr-52

Cross Section

24-Cr-Nat ENDL-7130

Barns

07/04/76

(n,p)
Cross Section

24-Cr-52

07/04/76

(n,n')

24-Cr-52

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
67 3397	2.9600+0		3.1200-1	6.2000-2	2.4300+0	62	606 3.3100+0	2.0000-2	6.0020-2	3.0000-2	2.7700+0
67 3397	3.3600+0		8.4000-2	3.0000-2	2.4300+0	62	606 3.1500+0	2.0000-2	1.5000-1	3.0000-2	2.9600+0
67 3397	3.7600+0		1.7300-1	4.3000-2	2.4300+0	62	606 3.3100+0	2.0000-2	1.7000-1	4.0000-2	2.9600+0
62	606 2.9600+0	2.0000-2	2.0000-2	2.0000-2	2.7700+0	67 3397	3.3600+0		1.8000-1	3.3000-2	3.1300+0
62	606 3.1500+0	2.0000-2	3.0000-2	3.0000-2	2.7700+0	62	606 3.3100+0	2.0000-2	6.1020-2	1.3000-2	3.1600+0

07/04/76

(n,n')

24-Cr-52

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
65 1816	1.4000+ 1	1.0000- 1	7.4000- 1	1.8500- 1	1.4300+ 0
69 4078	1.4600+ 1		1.4000- 0	2.4000- 1	1.4000+ 0
66 1867	1.4000+ 1		7.4000- 1	1.8000- 1	1.4300+ 0

07/04/76

(n,2n)

24-Cr-52

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 3374	1.4000+ 1		2.8000- 1	6.0000- 2
72 3427	1.4200+ 1	2.0000- 1	3.4700- 1	3.0000- 2
72 3427	1.4600+ 1	2.0000- 1	5.4300- 1	5.0000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE DAYS
73 3988	1.4600+ 1		1.4300- 1	1.7000- 2	2.8100+ 1

07/04/76

(n,p)

24-Cr-52

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 361	1.4000+ 1		7.4000- 2	1.0000- 2	65 1897	1.4800- 1		1.1800- 1	1.6000- 2
53 27	1.4500+ 1		7.7720- 2	1.1000- 2	61 701	1.4800+ 1		8.2700- 2	9.0000- 3
66 907	1.4800- 1	1.0000- 1	8.2800- 2	5.8000- 3	61 660	1.4800+ 1		1.0500- 1	1.0000- 2
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
73 3987	1.4600+ 1		9.6100- 2	3.0000- 3				1.4340+ 0	

3-84

24-Cr-52 -12

07/04/76

24-Cr-53

Cross Section

3-85

MeV

24-Cr-53 -1

07/04/76

(n,n')

²⁴Cr-53

Cross Section

ECSIL-3564 (73)

ECSIL-606 (62)

ECSIL-3564 (73)

Barns

3-86

²⁴Cr-53 -2

07/04/76

(α, n)

24-Cr-53

Cross Section

Barns

3-87

24-Cr-53 -3

37/34/76

 (n,n')

24-Cr-53

Cross Section

C7/04/76

(n,n')

24-Cr-53

Cross Section

Mev

3-89

24-Cr-53 -5

Bar 35

07/04/76

(n,n')

24-Cr-53

Cross Section

Barns

3-90

Mev

24-Cr-53 -6

07/04/76

(n,n')
Cross Section

24-Cr-53

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
59 2713	1.4700+ 1		7.3000- 3	7.0000- 4

07/04/76

(n,p)
Cross Section

24-Cr-53

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
61 361	1.4000+ 1		4.4000- 2	7.0000- 3
61 701	1.4800+ 1		3.7200- 2	3.7200- 3

07/04/76

(n,n')
Cross Section

24-Cr-54

27-04/76

24-Cr-54

(n,n')

Cross Section

Barns

Mev

3-92

24-Cr-54 -2

37/04/76

(n,2n)

24-Cr-54

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57	217	1.4000 ± 1	1.0000 - 2	4.0000 - 3

07/04/76

(n,n')

25-Mn-55

Cross Section

3-93

Mev

25-Mn-55 -1

07/04/76

(n,n')

Cross Section

25-Mn-55

EC51L-3590 (72)

EC51L-3590 (72)

EC51L-3590 (72)

Barrs

07/04/76

(n,n')
Cross Section

25-Mn-55

Barns

3-95

Mev

25-Mn-55 -3

07/04/76

(n,n')

25-Mn-55

Cross Section

Barns

07/04/76

 (n,n')
Cross Section

25-Mn-55

07/04/76

 $(n,2n)$
Cross Section

25-Mn-55

07/04/76

25-Mn-55

(n,2n)
Cross Section

Barns

07/04/75

(n,X) γ
Cross Section

25-Mn-55

ECSIL-135 (56)

ECSIL-213 (55)

ECSIL-547 (59)

Barns

3-99

25-Mn-55 -7

07/04/76

 $(n, X) \gamma$
Cross Section

25-Mn-55

07/04/76

 (n, α)
Cross Section

25-Mn-55

3-100

25-Mn-55 -8

07/04/76

(n, α)
Cross Section

25-Mn-55

Barns

07/04/76

Neutron Emission
Cross Section

25-Mn-55

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 4072	1.4360+ 1	1.4000- 1	1.6100+ 0	1.0000- 1

07/04/76

(n,n')

25-Mn-55

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 836	7.0000+ 0		1.2400+ 0	1.3000- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
63 1822	2.2100+ 0		6.8600- 1	3.0000- 2	1.2600- 1	56 2337	2.5000+ 0		3.0000- 1		1.3700+ 0
63 1822	2.2100+ 0		2.9200- 1	7.0000- 3	9.3800- 1	63 1822	2.2100+ 0		1.4600- 1	7.0000- 3	1.5270+ 0
56 2337	2.5000+ 0		4.0000- 1		9.4000- 1	56 2337	2.5000+ 0		1.0000- 1		1.6500+ 0
63 828	1.2000+ 0		1.1000- 1	3.0000- 2	9.8320- 1	63 1822	2.2100+ 0		5.4000- 2	9.0000- 3	1.8840+ 0
63 1822	2.2100+ 0		1.1600- 1	7.0000- 3	1.2890+ 0						

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
65 1694	1.4100+ 1		6.3700- 1	7.3000- 2	9.5000- 1

07/04/76

(n,2n)

25-Mn-55

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 2009	3400+ 1		7.5000- 1	1.1250- 1	60 629	1.4500+ 1	5.0000- 1	8.2520- 1	1.8500- 1
63 377	4400+ 1		1.3100- 0	3.2159- 1	64 2354	1.4600+ 1	2.0000- 1	7.8500- 1	8.0000- 2
62 377	4400+ 1		6.0000- 1	1.2000- 1	12 3427	1.4600+ 1	2.7000- 1	8.6600- 1	6.5000- 2
58 1821	4100+ 1		4.0000- 1	7.0000- 2	73 3988	1.4600+ 1		6.4300- 1	6.5000- 2
72 4072	1.4360+ 1	1.4000- 1	5.4000- 1	1.0100- 2	68 2711	1.4600+ 1	2.0000- 1	7.5000- 1	6.0000- 2

3-102

25-Mn-55 -10

07/04/76

Absorption
Cross Section

25-Mn-55

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 897	2.5300- 8		1.3250+ 1	1.5000- 1
60 891	2.5300- 8		1.3200+ 1	1.0000- 1

07/04/76

(n,X) γ
Cross Section

25-Mn-55

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
63 1728	1.0000+ 0	1.0000- 1	5.1000- 1	1.0000- 1	1.2600- 1	59 547	1.8200+ 0		1.6000- 1	4.8000- 2	1.5400+ 0
59 547	1.8200+ 0		7.3000- 1	2.1900- 1	1.3000- 1	59 547	2.1900+ 0		1.8000- 1	5.4000- 2	1.5400+ 0
56 213	9.4000- 1	2.0000- 2	0.0000+ 0	2.0000- 2	8.4800- 1	59 547	2.4700+ 0		1.5000- 1	4.5000- 2	1.5400+ 0
56 213	1.2000+ 0	2.0000- 2	2.6000- 1	5.0000- 2	8.5700- 1	59 547	2.1900+ 0	2.0000- 2	1.0000- 1	3.0000- 2	1.7800+ 0
61 686	2.3000+ 0	1.7000- 1	3.5600- 1	2.0000- 2	8.5700- 1	59 547	2.4700+ 0	2.0000- 2	1.4000- 1	4.2000- 2	1.7800+ 0
61 686	2.9000+ 0	1.7000- 1	3.1000- 1	2.0000- 2	1.1600+ 0						

07/04/76

(n,p)
Cross Section

25-Mn-55

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 361	1.4000+ 1		4.3000- 2	7.0020- 3
67 1902	1.4700+ 1		3.0000- 2	3.0000- 3
66 907	1.4800+ 1	1.0000- 1	5.9500- 2	5.9000- 3

07/04/76

(n,X) p
Cross Section

25-Mn-55

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 1818	1.4000+ 1		1.1000- 1	1.5000- 2

07/04/76

(n,He-3)

25-Mn-55

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71 3816	1.4000+ 1		8.0000- 4	3.2000- 4
60 6617	1.4000+ 1	9.0000- 1	4.0000- 3	2.0000- 3

07/04/76

(n,a)

25-Mn-55

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 1761	1.4500+ 1	4.0000- 1	2.5000- 2	3.0000- 3	65 2151	1.4800+ 1		1.3800- 2	2.1000- 3
60 6617	1.4500+ 1	5.0000- 1	2.7000- 2	5.0000- 3	65 1657	1.4800+ 1		5.7000- 2	7.0000- 3
53 211	1.4500+ 1		5.8500- 2	7.9000- 3	61 701	1.4800+ 1	9.0000- 1	1.1800- 2	7.0000- 4
57 1901	1.4500+ 1		2.7000- 2	2.0000- 3	56 536	1.4800+ 1		9.6000- 2	1.4000- 2

07/04/76

Bound Atom

25-Mn-55

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		2.2000+ 0	

07/04/76

Coherent Scattering

25-Mn-55

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		1.3500+ 0	1.0800- 1

3-104

25-Mn-55 -12

07/04/76

Nonelastic
Cross Section

26-Fe-Nat

ECSIL-1826 (55)

ECSIL-1833 (63)

ECSIL-707 (62)

Barns

3-105

MeV

26-Fe-Nat -1

C7/04/76

23-Fe-Nat

Nonelastic
Cross Section

Barns

MeV

26-Fe-Nat -2

3-106

07/04/76

Nonelastic Cross Section

26-Fe-Nat

07/04/76

Total Scattering
Cross Section

26-Fe-Nat

07/04/76

(n,n')
Cross Section

26-Fe-Nat

07/04/76

(n,n')

Cross Section

26-Fe-Nat

3-109

26-Fe-Nat -5

07/04/76

(n,n')

26-Fe-Nat

Cross Section

ECSIL-1834 (64)

ECSIL-3171 (70)

ECSIL-1016 (65)

Barns

3-110

26-Fe-Nat -6

07/04/76

(n,n')
Cross Section

26-Fe-Nat

3-111

Mev

26-Fe-Nat -7

07/04/76

(n,n')
Cross Section

26-Fe-Nat

Barns

3-112

Mev

26-Fe-Nat -8

07/04/76

(n,n')
Cross Section

26-Fe-Nat

Barns

07/04/76

(n,n')

26-Fe-Nat

Cross Section

3-114

Mev

26-Fe-Nat -10

07/04/76

²⁶Fe-Nat

(n,n')

Cross Section

Mev

3-115

²⁶Fe-Nat -11

Barns

07/04/76

(n,n')

26-Fe-Nat

3-116

Mev

26-Fe-Nat -12

07/04/76

(n,n')

26-Fe-Nat

Cross Section

ECSIL-4090 (74)

ECSIL-3386 (70)

ECSIL-3386 (70)

3-117

26-Fe-Nat -13

07/04/76

(n,n')

26-Fe-Nat

Barns

3-118

Mev

26-Fe-Nat -14

07/04/76

(n, n')

26-Fe-NaI

Cross Section

ECSIL-3386 (70)

ECSIL-3386 (70)

ECSIL-3386 (70)

Barns

07/04/76

26-Fe-Nat

(n,n')

Cross Section

Barns

Mev

3-120

26-Fe-Nat -16

07/04/76

(n,n')

²⁶Fe-Nat

Cross Section

Barns

07/04/76

(n,X) γ

²⁶Fe-Nat

Cross Section

3-121

Mev

²⁶Fe-Nat -17

3-124 76

in. XI 7
Right Section

26-Fe-Nat

3-122

Mev

26-Fe-Nat -18

Barres

07/24/76

(n, X) γ
Cross Section

²⁶Fe-Nat

ECSIL-942 (66)

ECSIL-111 (54)

ECSIL-3386 (70)

3-123

MeV

²⁶Fe-Nat -19

Barns

07/04/76

(n,X) γ
Cross Section

26-Fe-Nat

C7/04/76

26-Fe-Nat

(n,X) γ
Cross Section

Bars

07/04/76

(n,X) γ
Cross Section

²⁶Fe-Nat

ECSIL-3386 (70)

ECSIL-3386 (70)

ECSIL-724 (62)

3-126

MeV

²⁶Fe-Nat -22

Barns

07/04/76

(n, X) γ
Cross Section

²⁶Fe-Nat

ECSIL-3386 (70)

ECSIL-3386 (70)

ECSIL-3386 (70)

Barns

3-127

Mev

²⁶Fe-Nat -23

07/04/76

(n,X) γ
Cross Section

26-Fe-Nat

07/04/76

(n,X) γ
Cross Section

26-Fe-Nat

Barns

3-129

Mev

26-Fe-Nat -25

07 04 76

None lastic
Cross Section

20 : 6-15a1

REFERENCE	ENERGY	DELTA	X-SFC	DELTA	REFERENCE	ENERGY	DELTA	X-SFC	DELTA
	MEV	MEV	BARS	BARS					
50	573	2.000	2.0000	3.20000	51	582	5.000	1.0000	2.0000
51	574	2.000	2.0000	3.20000	52	583	5.000	1.0000	2.0000
52	575	2.000	2.0000	3.20000	53	584	5.000	1.0000	2.0000
53	576	2.000	2.0000	3.20000	54	585	5.000	1.0000	2.0000
54	577	2.000	2.0000	3.20000	55	586	5.000	1.0000	2.0000
55	578	2.000	2.0000	3.20000	56	587	5.000	1.0000	2.0000
56	579	2.000	2.0000	3.20000	57	588	5.000	1.0000	2.0000
57	580	2.000	2.0000	3.20000	58	589	5.000	1.0000	2.0000
58	581	2.000	2.0000	3.20000	59	590	5.000	1.0000	2.0000
59	582	2.0000	1.5100	0.17000	60	591	5.000	1.0000	2.0000
60	583	2.0000	1.4200	0.50000	61	592	5.000	1.0000	2.0000
61	584	2.0000	2.15000	0.20000	62	593	5.000	1.0000	2.0000
62	585	2.000	2.0000	3.20000	63	594	5.000	1.0000	2.0000
63	586	2.000	2.0000	3.20000	64	595	5.000	1.0000	2.0000
64	587	2.000	2.0000	3.20000	65	596	5.000	1.0000	2.0000
65	588	2.000	2.0000	3.20000	66	597	5.000	1.0000	2.0000
66	589	2.000	2.0000	3.20000	67	598	5.000	1.0000	2.0000
67	590	2.000	2.0000	3.20000	68	599	5.000	1.0000	2.0000
68	591	2.000	2.0000	3.20000	69	600	5.000	1.0000	2.0000
69	592	2.000	2.0000	3.20000	70	601	5.000	1.0000	2.0000
70	593	2.000	2.0000	3.20000	71	602	5.000	1.0000	2.0000
71	594	2.000	2.0000	3.20000	72	603	5.000	1.0000	2.0000
72	595	2.000	2.0000	3.20000	73	604	5.000	1.0000	2.0000
73	596	2.000	2.0000	3.20000	74	605	5.000	1.0000	2.0000
74	597	2.000	2.0000	3.20000	75	606	5.000	1.0000	2.0000
75	598	2.000	2.0000	3.20000	76	607	5.000	1.0000	2.0000
76	599	2.000	2.0000	3.20000	77	608	5.000	1.0000	2.0000
77	600	2.000	2.0000	3.20000	78	609	5.000	1.0000	2.0000
78	601	2.000	2.0000	3.20000	79	610	5.000	1.0000	2.0000
79	602	2.000	2.0000	3.20000	80	611	5.000	1.0000	2.0000
80	603	2.000	2.0000	3.20000	81	612	5.000	1.0000	2.0000
81	604	2.000	2.0000	3.20000	82	613	5.000	1.0000	2.0000
82	605	2.000	2.0000	3.20000	83	614	5.000	1.0000	2.0000
83	606	2.000	2.0000	3.20000	84	615	5.000	1.0000	2.0000
84	607	2.000	2.0000	3.20000	85	616	5.000	1.0000	2.0000
85	608	2.000	2.0000	3.20000	86	617	5.000	1.0000	2.0000
86	609	2.000	2.0000	3.20000	87	618	5.000	1.0000	2.0000
87	610	2.000	2.0000	3.20000	88	619	5.000	1.0000	2.0000
88	611	2.000	2.0000	3.20000	89	620	5.000	1.0000	2.0000
89	612	2.000	2.0000	3.20000	90	621	5.000	1.0000	2.0000
90	613	2.000	2.0000	3.20000	91	622	5.000	1.0000	2.0000
91	614	2.000	2.0000	3.20000	92	623	5.000	1.0000	2.0000
92	615	2.000	2.0000	3.20000	93	624	5.000	1.0000	2.0000
93	616	2.000	2.0000	3.20000	94	625	5.000	1.0000	2.0000
94	617	2.000	2.0000	3.20000	95	626	5.000	1.0000	2.0000
95	618	2.000	2.0000	3.20000	96	627	5.000	1.0000	2.0000
96	619	2.000	2.0000	3.20000	97	628	5.000	1.0000	2.0000
97	620	2.000	2.0000	3.20000	98	629	5.000	1.0000	2.0000
98	621	2.000	2.0000	3.20000	99	630	5.000	1.0000	2.0000
99	622	2.000	2.0000	3.20000	100	631	5.000	1.0000	2.0000
100	623	2.000	2.0000	3.20000					

07/04/76

Neutron Emission
Cross Section

26-Fe-Na it

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
72 4072	1.4360+ 1	1.4000- 1	1.5300+ 0	3.0000- 2

07/04/76

Total Scattering
Cross Section

26-Fe-Nat

REFERENCE	ENERGY	DELTA	X-SEC	DELTA
	MEV	MEV	BARNs	BARNs
63 879	9.8000- 1	5.0000- 2	2.0200+ 0	6.0600- 2

07/04/76

Neutron Nonelastic Emission
Cross Section

26-Fe-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
61 883	1.4000+1		9.6000-1	2.0000-1

07/04/76

 (n, n')

2001-2002

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
E3 773 1.0000+0			2.8000-1	4.0000-2	E5 889 6.0400+0		2.3000-1	1.6000-0	2.5000-1
E3 773 1.2000+0			5.5000-1	5.0000-2	E3 836 7.0000+0			1.2900-1	1.1000-1
E8 497 2.8000+0		2.0000-2	1.1100+0		74 3626 1.4100+1			5.2700-1	5.3000-2
E9 3400 2.8000+0			1.1600+0	4.0000-2	72 4072 1.4350+1		1.4000-1	6.6000-1	7.0000-2

REFERENCE	ENERGY MEV	DELTA MEV	X-SECS BARS	DELTA BARS	E-LVL MEV	E-LVL MEV	E-LVL MEV	E-LVL MEV
66 1831	4.5600+ 0		2.6900- 1	2.6900- 2	2.84600- 1			
54 1801	4.5600+ 0		1.0000+ 0	3.0000- 1	2.1000- 1			
66 1831	4.5600+ 0		1.1200+ 1	1.1200- 2	2.06100- 0			
66 1831	4.5600+ 0		1.2700- 1	1.2700- 2	2.6540+ 0			
66 1816	4.9900+ 0	3.0000- 2	1.6300- 1	1.1000- 2	2.6580+ 0			
66 1831	4.5600+ 0		1.1100- 1	1.1100- 2	2.9390+ 0	2.9570+ 0		
70 3171	4.4400+ 0	1.3500- 1	1.2850- 2	1.1100- 2	2.9390+ 0	2.9570+ 0	3.1190+ 0	3.1220+ 0
70 3171	4.4400+ 0	4.0000- 2	4.9930- 2	2.5610- 2	3.9390+ 0	2.9570+ 0	3.1190+ 0	3.1220+ 0
70 3171	4.4400+ 0	6.0000- 2	3.6540- 2	2.3311- 3	3.9390+ 0	2.9570+ 0	3.1190+ 0	3.1220+ 0
66 1816	4.9900+ 0	3.0000- 2	1.5300- 1	1.1400- 2	2.9400+ 0	2.9580+ 0		
66 1816	4.9900+ 0	3.0000- 2	1.7000- 1	1.7000- 2	3.1190+ 0			
66 1831	4.9600+ 0		8.5000- 2	8.5000- 3	3.1190+ 0	3.1220+ 0		
66 1816	4.9900+ 0	3.0000- 2	2.9400- 2	1.4000- 2	2.3680+ 0	3.3880+ 0		
66 1816	4.9900+ 0	3.0000- 2	1.2300- 1	1.3000- 2	3.4450+ 0			
64 1834	4.6000+ 0		6.8000- 2	3.5000- 2	3.6010+ 0			
64 1834	4.6000+ 0		1.7800- 1	1.1000- 2	3.6010+ 0			
64 1834	4.6000+ 0		1.6600- 1	1.1000- 2	3.6010+ 0			

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	E-PHOTON MEV
61 4089	1.5600+1		5.4000+2		1.0100+0	74 4090	3.4000+0		8.0000+2	3.2.6600+0	
61 3786	4.2400+0		1.2010+2		1.1730+0	74 4090	3.7000+0		8.0000+2	2.1.6000+0	2.2.0600+0
61 3886	5.4800+0		1.5000+2		1.1730+0	74 4090	3.9000+0		8.0000+2	2.1.1000+0	2.2.0600+0
61 4089	5.6000+0		1.5000+2		1.2200+0	67 4029	1.5600+1		1.9000+2		2.3300+0
61 4089	5.6000+0		1.5000+2		1.2600+0	74 4090	3.7000+0		8.0000+2	2.1.6000+0	3.2.0030+0
61 4089	5.6000+0		1.5000+2		1.3000+0	74 4090	3.9000+0		8.0000+2	2.1.6000+0	3.2.0030+0
61 4090	5.6000+0		1.5000+2		1.3500+0	74 4090	3.7000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		1.4000+0	74 4090	3.9000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		1.4500+0	61 4090	1.5600+1		1.9000+2		2.0200+0
61 4090	5.6000+0		1.5000+2		1.5000+0	61 4090	3.7000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		1.5500+0	61 4090	3.9000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		1.6000+0	61 4090	3.7000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		1.6500+0	61 4090	3.9000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		1.7000+0	61 4090	3.7000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		1.7500+0	61 4090	3.9000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		1.8000+0	61 4090	3.7000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		1.8500+0	61 4090	3.9000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		1.9000+0	61 4090	3.7000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		1.9500+0	61 4090	3.9000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		2.0000+0	61 4090	3.7000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		2.0500+0	61 4090	3.9000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		2.1000+0	61 4090	3.7000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		2.1500+0	61 4090	3.9000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		2.2000+0	61 4090	3.7000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		2.2500+0	61 4090	3.9000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		2.3000+0	61 4090	3.7000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		2.3500+0	61 4090	3.9000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		2.4000+0	61 4090	3.7000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		2.4500+0	61 4090	3.9000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		2.5000+0	61 4090	3.7000+0		8.0000+2	2.1.6000+0	
61 4090	5.6000+0		1.5000+2		2.5500+0	61 4090	3.9000+0		8.0000+2	2.1.6000+0	

07/04/76

(n,n')

26-Fe-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
61 850	1.4000+ 1		5.5000- 1	1.6500- 1	5.0000+ 0
61 850	1.4000+ 1		3.4000- 1	1.2200- 1	6.1000+ 0
61 850	1.4000+ 1		2.9000- 1	0.7000- 2	7.5000+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL-MIN MEV	E-LVL-MAX MEV
64 1834	4.0000+ 0		2.9000- 2	1.5000- 2	3.6300+ 0	3.8560+ 0
64 1834	4.5000+ 0		1.5300- 1	1.6000- 2	3.8300+ 0	3.8560+ 0
64 1834	5.0000+ 0		1.3000- 1	1.6000- 2	3.8300+ 0	3.8560+ 0
64 1834	4.5000+ 0		5.0000- 2	2.5000- 2	4.0350+ 0	4.1100+ 0
64 1834	5.0000+ 0		1.2600- 1	2.0000- 2	4.0350+ 0	4.1100+ 0

07/04/76

(n,2n)

26-Fe-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 7	1.4100+ 1		5.0000- 1	4.0000- 2
72 4072	1.4360+ 1	1.4000- 1	4.6000- 1	4.0000- 2

07/04/76

Absorption

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
60 897	2.5300- 8		2.6500+ 0	1.0000- 1	58 364	2.5000- 2	4.0000- 3	1.9000- 2	2.0000- 3
56 1491	2.5300- 8		2.5300+ 0	3.0000- 2	58 364	8.3000- 1	4.0000- 2	9.0000- 3	2.0000- 3
56 1122	2.5300- 8		2.7500+ 0	7.0000- 2					

3-132

26-Fe-Nat -28

07/04/76

(n,X) γ
Cross Section

26-Fe-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/5	DELTA BARN/5	E-PHY-MIN MEV	E-PHY-MAX MEV
60 1721	1.4000+ 1		5.5000- 1	1.6500- 1	4.0000+ 0	5.0000+ 0
60 1721	1.4000+ 1		5.5000- 1	1.6500- 1	4.0000+ 0	5.0000+ 0
60 1721	1.4000+ 1		2.9000- 1	8.7000- 2	6.1000+ 0	5.0000+ 0

07/04/76

(n,p)
Cross Section

26-Fe-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/5	DELTA BARN/5
62 688	1.4450+ 1	2.0000- 1	1.0200- 1	1.0000- 2

07/04/76

(n,t)
Cross Section

26-Fe-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/5	DELTA BARN/5
73 3996	1.4700+ 1		3.4000- 5	8.5000- 6

07/04/76

Bound Atom
Cross Section

26-Fe-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN/5	DELTA BARN/5
51 1584	7.3000- 8		1.1700+ 1	

07/04/76

Coherent Scattering
Cross Section

26-Fe-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 915	6.0700-8		1.0500-1	3.0000-1
51 1584	7.3000-8		1.1400-1	9.1200-1

07/04/76

(n,n')
Cross Section

26-Fe-54

07/04/76

(n,n')

26-Fe-54

Cross Section

3-136

Mev

26-Fe-54 -2

Barns

07/04/76

26-Fe-54

(n,n')

Cross Section

3-137

Mev

26-Fe-54 -3

Bars

07/04/76

(n,n')

26-Fe-54

Cross Section

Barns

3-138

26-Fe-54 -4

07/04/76

26-Fe-54

(n,p)
Cross Section

07/04/76

26-Fe-54

(n,p)
Cross Section

Z-139

26-Fe-54 -5

CS-7E

(σ, p)

Cross Section

26-Fe-54

Barns

ECSIL-3342 (73)

ECSIL-1843 (65)

ECSIL-1841 (65)

3-140

26-Fe-54 -6

07/04/75

(n,n)

26-Fe-54

Cross Section

07/04/75

(n,n')

26-Fe-54

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
55	4	2.5000- 0	1.0000+ 0	3.0000- 1
59	3662	1.5100- 1	4.0000- 1	6.0000- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV
74	3569	5.5010+ 0	9.0000- 2	1.7930	1.4264- 2	1.4090+ 0
74	3569	11.0020+ 0	9.0000- 2	9.1000- 2	7.4620- 3	1.4090+ 0
74	3569	4.5010+ 0	9.0000- 2	5.9130- 2	5.3217- 3	1.4090+ 0
74	3569	4.0400+ 0	9.0000- 2	3.9850- 2	1.7000- 2	1.4090+ 0
74	3569	5.1800+ 0	9.0000- 2	2.4000- 2	1.0000- 2	1.4090+ 0
74	3569	5.4710+ 0	9.0000- 2	2.0000- 2	1.0000- 2	1.4090+ 0
74	3569	4.0400+ 0	9.0000- 2	2.0000- 2	1.8000- 2	2.5500+ 0
74	3569	5.1600+ 0	9.0000- 2	1.1400- 2	1.6000- 2	2.5500+ 0
74	3569	5.6100+ 0	9.0000- 2	1.8000- 2	1.1000- 2	2.5500+ 0
74	3569	4.1400+ 0	9.0000- 2	1.3000- 2	9.1000- 3	2.9500+ 0
74	3569	5.1600+ 0	9.0000- 2	1.3300- 2	1.1000- 2	2.9500+ 0
74	3569	5.6000+ 0	9.0000- 2	1.0000- 2	1.6000- 2	2.9500+ 0
74	3569	4.0400+ 0	9.0000- 2	1.1000- 2	1.1000- 2	2.9500+ 0
74	3569	5.1600+ 0	9.0000- 2	1.3500- 2	1.6000- 2	3.1600+ 0

3-142

26-Fe-54 -8

07/04/76

(n,n')

26-Fe-54

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV
74 3589	5.4000	1.1000	2.82900	2.90890	3.31600	0
71 3214	5.6000	1.1000	2.81100	2.70000	3.31600	0
74 3589	5.6000	0.9000	2.14035	1.16843	2.32900	0.33400
71 3214	5.6000	0.1000	2.14200	1.11000	2.33200	0
71 3214	5.6000	0.1000	2.17300	1.91000	3.33200	0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL-MIN MEV	E-LVL-MAX MEV
74 3589	8.5000	0.5000	2.71030	2.78988	3.8400	0.45800

07/04/76

(n,2n)

26-Fe-54

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57 217	1.4000	1	1.0000	2.4.0000	3	65 1672	1.4600	1	1.6000
65 1843	1.4050	0	2.8300	3.5.0000	5	75 3562	1.4800	1	2.0000
61 651	1.4100	1	1.1000	2.2.0000	3	61 679	1.4800	1	9.0010
63 373	1.4100	1	1.0000	2.5.6010	3	60 628	1.5000	1	7.0010
61 676	1.4400	1	1.5000	2.1.0000	3	65 1843	1.6750	1	5.5000
63 1699	1.4500	1	8.5000	3.8.0000	4				

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
73 3988	1.4600	1	2.6500	2.2.6000	3.8.8600
58 376	1.6890	1	3.2000	1.1.2000	1.3.6000
58 326	1.7890	1	8.0000	2.1.7000	1.5.1000

07/04/76

(n,n'p)

26-Fe-54

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 361	1.4000	1	2.1800	1.1.3000
57 217	1.4000	1	2.2000	1.4.4000

07/04/76

(n,p)

26-Fe-54

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 655	2.6000	0.2000	1.5000-2	1.5000-2	62 1009	1.4500	3.1000-1	2.5000-2
61 655	3.3000	0.1000	1.9000-2	2.0000-2	63 1009	1.4500	3.1800-1	3.0000-2
61 655	3.6000	0.1000	2.1000-2	2.0000-2	72 3345	1.4500	5.1090-1	2.7500-2
62 1008	1.3580	1	3.7000-1	3.7000-2	64 2354	1.4500	3.4600-1	3.0000-2
61 361	1.4000	1	3.8200-1	3.8200-3	62 1008	1.4730	3.2000-1	3.2000-2
57 217	1.4000	1	4.6000-1	3.2010-2	69 2354	1.4800	2.9800-1	2.4000-2
62 1008	1.4070	1	3.4600-1	3.4600-2	68 2711	1.4800	3.0000-1	2.0000-2
60 837	1.4100	1	3.3300-1	6.6010-2	60 837	1.5700	1.0000-1	5.6110-1
67 184	1.4400	1	3.0000-1	2.5900-2				

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE DAYS
61 551	1.4000	1	2.5400-1	2.8000-2

07/04/76

(n,X) p

26-Fe-54

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
59 1840	1.4000	1	6.1000-1	2.0000-2

07/04/76

(n,t)

26-Fe-54

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE MINUTES
61 679	1.4800	1	5.710-1	6.0010-4
74 3923	1.4600	1	3.5100-4	1.5000-4

3-144

26-Fe-54 -10

07/04/76

(n,a)

26-Fe-54

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 1008	1.3500+ 1		8.7000- 2	8.7000- 3	63 1009	1.4500+ 1		9.4000- 2	1.0000- 2
62 1008	1.4070+ 1		9.4000- 2	9.4000- 3	72 3345	1.4500+ 1		1.3950- 1	7.5000- 3
61 651	1.4100+ 1		1.3100- 1	2.4000- 2	7P 3427	1.4600+ 1	2.0000- 1	1.0600- 1	7.0000- 3
67 1844	1.4400+ 1	3.0000- 1	9.0000- 2	1.0000- 2	62 1008	1.4730+ 1		9.6000- 2	9.6000- 3
62 1009	1.4500+ 1		1.0900- 1	1.0000- 2	61 679	1.4800+ 1	9.0010- 1	2.7000- 1	1.3500- 1

07/04/76

Bound Atom

26-Fe-54

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		2.5000+ 0	

07/04/76

Coherent Scattering

26-Fe-54

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		2.2000+ 0	1.7600- 1

07/04/76

26-Fe-56

(n,n')

Cross Section

3-146

MeV

26-Fe-56 -1

Barns

07/04/76

(n,n')
Cross Section

26-Fe-56

3-147

Mev

26-Fe-56 -2

07/04/76

 (n,n')
Cross Section

26-Fe-56

3-148

MeV

26-Fe-56 -3

07/04/76

(n,n')
Cross Section

26-Fe-56

Barns

3-149

Mev

26-Fe-56 --4

07/04/76

(n,n')

26-Fe-56

Cross Section

3-150

MeV

26-Fe-56 -5

07/04/76

(n,n')

26-Fe-56

ECSIL-1998 (68)

ECSIL-3889 (75)

ECSIL-1998 (68)

Barns

3-151

26-Fe-56 -6

07/04/76

(n,n')

Cross Section

26-Fe-56

ECSIL-3889 (75)

ECSIL-3889 (75)

ECSIL-1998 (68)

3-152

26-Fe-56 -7

Bac 55

07/04/76

26-Fe-56

(n,n')

Cross Section

Barns

07/04/76

(n,n')

26-fe-56

Cross Section

3-154

MeV

26-fe-56 -9

07/04/76

(n,n')

26-Fe-56

Cross Section

Barns

3-155

Mev

26-Fe-56 -10

07/04/76

(n,2n)
Cross Section

26-Fe-56

3-156

26-Fe-56 -11

07/04/76

Absorption
Cross Section

26-Fe-56

Barns

07/04/76

(n,X) γ
Cross Section

26-Fe-56

Barns

3-157

26-Fe-56 -12

07/04/76

(n,X) γ
Cross Section

26-Fe-56

07/04/76

(n,p)
Cross Section

26-Fe-56

07/04/76

26-Fe-56

(n,p)
Cross Section

B 255

07/04/76

(n,p)

26-Fe-56

Cross Section

26-Fe-Nat ENDL-7132

3-160

MeV

26-Fe-56 -15

Barns

07/04/76

(n,p)
Cross Section

26-Fe-56

07/04/76

Nonelastic
Cross Section

26-Fe-56

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 1228	8.1000+ 0		1.3400+ 0	6.0000- 2
65 1228	1.9700+ 1		1.2200+ 0	4.0000- 2

07/04/76

(n,n')
Cross Section

26-Fe-56

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 2321	1.8300+ 0		6.3460- 1	6.7300- 2	55 41	2.5000+ 0		1.0600+ 0	2.5000- 1
65 2321	2.2100+ 0		1.1200+ 0	1.1300- 1	69 3662	1.5100+ 1	4.0000- 1	9.5000- 1	1.4000- 1
65 2321	2.4300+ 0		8.3060- 1	8.6400- 2					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV
65 1016	7.9900+ 0	3.0000- 2	4.0600- 1	4.6000- 2	8.4500- 1	
65 828	1.1000+ 0		2.8000- 1	3.0000- 2	8.4510- 1	
65 862	1.2000+ 0		5.2910- 1	5.0000- 2	8.4510- 1	

3-161

26-Fe-56 -16

07/04/76

(n,n')

25-Fe-56

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV
71 3214	5.0500+ 0	1.0000- 2	2.5000- 1	1.5000- 2	8.5000- 1	
71 3214	5.5800+ 0	1.0000- 2	2.0000- 1	9.0000- 3	8.5000- 1	
65 1016	3.9900+ 0	3.0000- 2	1.3800- 1	8.0000- 3	2.0950+ 0	
71 3214	5.0500+ 0	1.0000- 2	9.7000- 2	9.0000- 3	2.0900+ 0	
71 3214	5.5800+ 0	1.0000- 2	8.0000- 2	8.0000- 3	2.0900+ 0	
67 3397	2.9600+ 0		1.6200- 1	2.8000- 2	2.6580+ 0	
67 3397	3.3600+ 0		8.6000- 2	2.2000- 2	2.6580+ 0	
67 3397	3.7600+ 0		1.7000- 2	1.9000- 2	2.6580+ 0	
65 1016	3.9900+ 0	3.0000- 2	1.6300- 1	1.2000- 2	2.6580+ 0	
71 3214	5.0500+ 0	1.0000- 2	9.7000- 2	5.0000- 3	2.6600+ 0	
71 3214	5.5800+ 0	1.0000- 2	8.5000- 2	5.0000- 3	2.6600+ 0	
65 1016	3.9900+ 0	3.0000- 2	1.5900- 1	1.5000- 2	2.9400+ 0	2.9580+ 0
62 1845	3.4500+ 0		1.4000- 1		3.0200+ 0	
62 1845	3.9500+ 0		1.3000- 1		3.0200+ 0	
65 1016	3.9900+ 0	3.0000- 2	1.7800- 1	1.9000- 2	3.1190+ 0	
62 1845	3.4500+ 0		6.0000- 2		3.1400+ 0	
62 1845	3.9500+ 0		5.0000- 2		3.1400+ 0	
71 3214	5.0500+ 0	1.0000- 2	2.7100- 1	8.0000- 3	3.1500+ 0	
71 3214	5.5800+ 0	1.0000- 2	1.8500- 1	7.0000- 3	3.1500+ 0	
65 1016	3.9900+ 0	3.0000- 2	8.7000- 2	1.5000- 2	3.3690+ 0	3.3880+ 0
65 1016	3.9900+ 0	3.0000- 2	1.3400- 1	1.4000- 2	3.4450+ 0	
62 1845	3.9500+ 0		1.6000- 1		3.4500+ 0	
71 3214	5.0500+ 0	1.0000- 2	2.1300- 1	1.1000- 2	3.4500+ 0	
71 3214	5.5800+ 0	1.0000- 2	1.5000- 1	1.1000- 2	3.4500+ 0	
71 3214	5.0500+ 0	1.0000- 2	1.1900- 1	6.0000- 3	3.6000+ 0	
71 3214	5.5800+ 0	1.0000- 2	1.2700- 1	7.0000- 3	3.6000+ 0	
<hr/>						
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	
64 1859	1.4000+ 1		6.6000- 1	8.0000- 2	8.4500- 1	
64 1859	1.4000+ 1		2.7000- 1	4.0000- 2	1.2400+ 0	
<hr/>						
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL-MIN MEV	E-LVL-MAX MEV
67 3397	3.3600+ 0		1.3000- 1	2.7000- 2	2.9400+ 0	3.1190+ 0
67 3397	3.7600+ 0		1.3800- 1	2.3000- 2	2.9400+ 0	3.1190+ 0

3-162

26-Fe-56 -17

07/04/76

(n,2n)
Cross Section

26-Fe-56

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 3374	1.4000+ 1		4.4000- 1	9.0000- 2
69 3662	1.5100+ 1	4.0000- 1	1.9000- 1	4.0000- 2

07/04/76

(n,n'p)
Cross Section

26-Fe-56

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 361	1.4000+ 1		3.5000- 2	7.0010- 3

07/04/76

(n,X) γ
Cross Section

26-Fe-56

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
61 686	2.9000+ 0	1.7000- 1	1.2600+ 0	6.0000- 2	8.4700- 1

07/04/76

(n,p)
Cross Section

26-Fe-56

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 1008	1.3580+ 1		1.0600- 1	1.6600- 2	62 1009	1.4500+ 1		1.0600- 1	6.0000- 3
55 202	1.4000+ 1		7.2000- 2	7.2000- 3	63 1009	1.4500+ 1		1.0700- 1	8.0000- 3
57 217	1.4000+ 1		1.9000- 1	3.8000- 2	53 27	1.4500+ 1		9.6710- 2	1.2000- 2
61 361	1.4000+ 1		1.2000- 2	1.3000- 2	72 3345	1.4500+ 1		1.4840- 1	1.0000- 2
52 1506	1.4000+ 1		1.0600- 1	1.6600- 2	69 2354	1.4500+ 1	2.0000- 1	1.1300- 1	8.0000- 2
52 84	1.4100+ 1		1.2400- 1	1.2400- 2	68 2596	1.4700+ 1	7.5000- 2	1.0000- 1	4.0000- 3
60 437	1.4100+ 1	1.0000- 1	9.0000- 2	1.0000- 2	64 1848	1.4700+ 1	1.5000- 1	1.0000- 1	2.5000- 3
61 651	1.4150+ 1		1.1200- 1	5.6010- 3	62 1008	1.4730+ 1		1.0000- 1	1.0000- 2
57 535	1.4140+ 1	1.8000- 1	1.4400- 1	1.8700- 2	69 2354	1.4800+ 1		1.0820- 1	9.0000- 3
62 836	1.4400+ 1	2.5000- 2	1.0800- 1	1.0000- 2	68 2711	1.4800+ 1	2.0000- 1	1.0900- 1	9.0000- 3
72 3463	1.4400+ 1		1.0900- 1	1.0000- 2	64 843	1.4800+ 1	7.0010- 1	1.0800- 1	8.6010- 3

07/04/76

(n,p)

26-Fe-56

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 4071	1.4800+ 1		1.0600- 1	1.0000- 2	69 3562	1.5100+ 1	4.0000- 1	8.4000- 2	1.3000- 2
61 575	1.4840+ 1	5.0000- 1	1.2600- 1	1.3000- 2	55 533	1.5270+ 1	3.3000- 1	1.3100- 1	1.5000- 2
60 62P	1.5000+ 1		1.2800- 1	1.3000- 2					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
64 1859	1.4000+ 1		1.1500- 1		8.4500- 1

07/04/76

(n,X) p

26-Fe-56

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57 847	1.3200+ 1	2.0000- 1	1.2000- 1	3.0000- 2

07/04/76

(n,a)

26-Fe-56

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
69 2710	1.4600+ 1		2.3000- 3	7.0000- 4	0.0000+ 0

07/04/76

Bound Atom

26-Fe-56

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1384	7.3000- 8		1.3000+ 1	

3-184

26-Fe-56 -19

07/04/76

Coherent Scattering
Cross Section

26-Fe-56

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		1.2500- 1	1.0080- 0

07/04/76

(n,n'p)
Cross Section

26-Fe-57

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 679	1.4800+ 1	9.0010- 1	6.1010- 3	2.6000- 3

07/04/76

(n,p)
Cross Section

26-Fe-57

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 650	1.4800+ 1		6.0000- 2	1.0000- 2	72 3345	1.4500+ 1		3.1500- 2	2.0000- 3
63 1009	1.4500+ 1		7.5000- 2	8.0000- 3	61 679	1.4800+ 1	9.0010- 1	6.1010- 3	2.6000- 3

07/04/76

Bound Atom
Cross Section

26-Fe-57

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		2.0000+ 0	

07/04/76

Coherent Scattering
Cross Section

26-Fe-57

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		6.4000- 1	5.1200- 2

3-165

26-Fe-57 -1

07/04/76

(n,p)
Cross Section

26-Fe-58

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 3463	1.4400 ± 1		1.0800 - 2	1.0000 - 3
70 2245	1.500 ± 1		1.0000 - 2	1.0000 - 2
61 679	1.4800 ± 1	9.0010 - 1	2.3000 - 2	3.0000 - 3

07/04/76

(n,d)
Cross Section

26-Fe-58

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 679	1.4800 ± 1	9.0010 - 1	2.1500 - 2	2.0000 - 3

07/04/76

Total Scattering
Cross Section

27-Co-59

3-166

27-Co-59 -1

07/04/76

(n,n')
Cross Section

27-Co-59

Barns

07/04/76

(n,n')

27-C6-59

Cross Section

Barns

3-168

27-C6-59 -3

07/04/76

(n,n')
Cross Section

27-Co-59

Barns

07/04/76

(n,n')

27-Co-59

Cross Section

3-170

MeV

27-Co-59 -5

07/04 '76

(n,n')

27-Co-59

Cross Section

07/04/76

27-Co-59

(n,2n)
Cross Section

3-172

27-Co-59 -7

MeV

B&P-35

07/04/76

(n,2n)

27-Co-59

Cross Section

Barns

07/04/76

27-C0-59

(n,2n)

Cross Section

ECSIL-1700 (66)

Half-Life = 9 Hours

ECSIL-2894 (66)

Half-Life = 9 Hours

ECSIL-1871 (67)

MeV

3-174

27-C0-59 -9

BACS

07/04/76

(n,2n)
Cross Section

27-Co-59

ENCL. 7138

07/04/76

27-Co-59

ENCL 7135

(n,2n)
Cross Section

07/04/76

27-Co-59

(n,X) γ
Cross Section

3-176

27-Co-59 -11

07/14/76

 $(n, X) \gamma$
Cross Section

27-Co-59

Barns

07/04/76

(n,p)
Cross Section

27-Co-59

3-178

MeV

27-Co-59 -13

Barns

07/04/76

(n,p)
Cross Section

27-Co-59

07/04/76

(n,a)
Cross Section

27-Co-59

3-179

27-Co-59 -14

07/04/76

(n, α)
Cross Section

27-Co-59

3-180

MeV

27-Co-59 -15

07/04/76

(n, α)
Cross Section

27-Co-59

Barns

MeV

3-181

27-Co-59 -16

07/04/76

(n,α)
Cross Section

27-Co-59

07/04/76

Nonelastic
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
54	103	1.0000	0 5.0000	2 2.0000	1 9.0010	2			
56	34	2.5000	0	1.4000	0 1.1000	1			
55	790	2.5000	0 1.5000	1 1.4000	0 1.1000	1			
59	559	3.6600	0 2.0000	1 1.6200	0 1.8000	1			
57	319	1.4200	1 1.5000	1 1.3700	0 3.0000	2			

07/04/76

Neutron Emission
Cross Section

27-Co-59

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 4012	1.4360+	1.4900	1.7800+ 0	1.0000-

3-182

27-Co-59 -17

[illegible]

1. *U. rubra* (L.)
2. *U. rubra* (L.)
3. *U. rubra* (L.)
4. *U. rubra* (L.)
5. *U. rubra* (L.)
6. *U. rubra* (L.)
7. *U. rubra* (L.)
8. *U. rubra* (L.)
9. *U. rubra* (L.)
10. *U. rubra* (L.)

11
 12
 13
 14
 15
 16
 17

[illegible]

07/04/76

10

27-Cc-59

Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	X-SEC BARNs	DELTA MEV	DELTA BARNs
63 377	1.400	1	5.0710	1.1740	1	2.472	4.450	1.4000	1.5000
62 334	1.400	1	5.3000	1.2000	1	2.629	4.450	1.5000	1.6500
59 180	1.410	1	5.1700	1.2000	1	2.264	4.450	1.5000	1.6000
65 180	1.410	1	5.4200	1.3000	1	2.658	4.450	1.5000	1.6000
63 455	1.410	1	5.4010	1.7000	2			1.4900	1.6000

07/04/76

(n,n'p)
Cross Section

27-Co-59

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
62	688 1.4400+ 1	2.0000+ 1	1.1000- 2	

07/04/76

Absorption
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
61	2569 2.5300- 8		3.8400+ 1	9.9000- 1	58	1162 2.5300- 8		3.8200+ 1	7.0000- 1
52	437 2.5300- 8		3.8700+ 1		60	891 2.5300- 8		3.6300+ 1	6.0000- 1
66	1491 2.5300- 8		3.8000+ 1	3.0000- 1					

07/04/76

(n,X) γ
Cross Section

27-Co-59

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	E-PHOTON MEV
54	113 3.2000+ 0	2.0000- 1	2.0000- 1	4.0000- 2	6.0000- 1	54	113 3.2000+ 0	2.0000- 1	1.5000- 1	3.0000- 2	1.7000+ 0
54	113 3.2000+ 0	2.0000- 1	6.0000- 1	1.6000- 1	1.1500+ 0	54	113 3.2000+ 0	2.0000- 1	1.5000- 1	4.0000- 2	2.5000+ 0
54	113 3.2000+ 0	2.0000- 1	1.5.3000- 1	1.1000- 1	1.1900+ 0						

07/04/76

(n,p)
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
61	361 1.4000+ 1		8.1010- 2	7.0010- 3	62	3427 1.4600+ 1	2.0000- 1	6.4000- 2	7.0000- 3
61	877 1.4000+ 1	1.1.0000- 1	7.5010- 2	1.5000- 2	65	1855 1.4800+ 1		5.3000- 2	1.2000- 2
62	568 1.4000+ 1	2.0000- 1	4.6700- 2	5.0010- 3	65	599 1.4800+ 1	9.0010- 1	8.2010- 2	8.0010- 3
62	629 1.4000+ 1	6.0000- 1	6.5010- 2	2.3700- 3	66	4571 1.4800+ 1		3.7000- 2	6.0000- 3

3-184

27-Co-59 -19

07/04/76

(n,p)

27-Co-59

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
73 3987	1.4600+ 1		8.4100- 2	5.7000- 3	1.2900+ 0

07/04/76

(n,t)

27-Co-59

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
73 3996	1.4700+ 1		6.5000- 4	1.3000- 4
65 1697	1.4800+ 1		2.1000- 3	2.0000- 4

07/04/76

(n,He-3)

27-Co-59

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71 3816	1.4000+ 1		6.2000- 5	3.0000- 5
60 667	1.4800+ 1	9.0010- 1	2.0000- 3	8.0010- 4
65 2151	1.4800+ 1		1.7000- 5	8.5000- 6

07/04/76

(n,a)

27-Co-59

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
59 401	1.4050+ 1	5.5010- 1	3.1100- 2	3.0000- 3	65 1697	1.4800+ 1		3.2000- 2	5.0000- 3
65 1630	1.4100+ 1		2.7000- 2	1.5000- 3	60 598	1.4800+ 1	9.0010- 1	3.0000- 2	3.0000- 3
60 629	1.4500+ 1	5.0000- 1	2.9000- 2	6.0010- 3	65 2151	1.4800+ 1		3.0000- 2	3.0000- 3
53 27	1.4500+ 1		3.9100- 2	7.8010- 3	68 4071	1.4800+ 1		3.2000- 2	7.0000- 3
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69 2710	1.4600+ 1		1.1000- 3	4.0000- 4				0.0000+ 0	

07/04/76

(n,X) o
Cross Section

27-Co-59

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 536	1.4800+ 1		8.4000- 2	1.2600- 2

07/04/76

Bound Atom
Cross Section

27-Co-59

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		5.0000+ 0	

07/04/76

Coherent Scattering
Cross Section

27-Co-59

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		1.0000+ 0	8.0000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	SPIN
69 3226	2.5300- 8		1.4120+ 1	6.1580- 2	3.0000+ 0
69 3226	2.5300- 8		1.8150+ 0	3.6640- 2	4.0000+ 0

3-186

27-Co-59 -21

07/04/76

Total Scattering
Cross Section

28-Ni-Nat

07/04/76

(n,n')

28-Ni-Nat

07/04/76

(n,n')
Cross Section

28-Ni-Nat

07/04/76

(n,n')
Cross Section

28-Ni-Nat

3-190

Mev

28-Ni-Nat -4

Barns

07/04/76

28-Ni-Nat

(n,n')

Cross Section

Bar 5

MeV

28-Ni-Nat -5

3-191

07/04/76

(n,n')

28-Ni-Nat

Cross Section

3-192

28-Ni-Nat -6

07/04/76

28-Ni-Nat

(n,n')

Cross Section

3-193

Mev

28-Ni-Nat -7

07/04/76

(n,n')

28-Ni-Nat

Cross Section

3-194

28-Ni-Nat -8

07/04/76

(n,n')
Cross Section

28-Ni-Nat

Barns

07/04/76

(n,2n)

28-Ni-Nat

Cross Section

EC51L-3807 (75)

Barms

3-196

28-Ni-Nat -10

07/Du/76

(n,X) γ
Cross Section

28-Ni-Nat

3-197

28-Ni-Nat -11

Barns

07-04-76

(n,X) γ
Cross Section

28-Ni-Nat

ECSIL-1023 (65)

ECSIL-111 (54)

ECSIL-3386 (70)

Barns

3-198

28-Ni-Nat -12

07/04/76

(n, X) γ
Cross Section

28-Ni-Nat

Barns

07/04/76

(n, X) γ

28-Ni-Nat

Cross Section

ECSIL-3386 (70)

E-Photon = 2.15 Mev

ECSIL-3386 (70)

E-Photon = 2.24 Mev

ECSIL-3386 (70)

E-Photon = 3.04 Mev

3-200

Mev

28-Ni-Nat -14

Barns

07/04/76

(n,X) y
Cross Section

ECSIL-1719 (59)

07/04/76

Nonelastic
Cross Section

28-Ni-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
55	121 1.0000	0 4.0000	- 2 6.0010	- 2 3.0000	55	122 4.0000	0 7.0010	- 2 1.3500	0 1.0000
55	34 2.5000	0	6.3000	1 1.2000	55	123 4.5000	0 7.0010	- 2 1.5000	0 6.0010
56	151 2.5000	0 4.0000	- 2 8.0010	- 1 6.0010	56	151 7.0000	0 2.6000	- 1 1.4600	0 6.0010
55	790 2.5000	0 1.5000	- 1 8.3010	- 1 1.2000	55	790 1.4000	1	1.3600	0 5.0000
55	790 3.3000	0	1.3500	0 2.5000	57	199 1.4100	1	1.3800	0 5.0000
55	559 3.6500	0 2.0000	- 1 1.5100	0 1.8000	57	319 1.4200	1 1.5000	- 1 1.3800	0 3.0000

07/04/76

Neutron Nonelastic Emission
Cross Section

28-Ni-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61	883 1.4000	1	9.0000	- 1 2.0000

07/04/76

(n,n')

23-Ni-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
75 3566	4.2160+ 0		3.2000- 3	8.0000- 4	1.6051+ 0
75 3566	4.8450+ 0		4.7000- 4	9.0000- 4	1.6051+ 0
75 3566	5.4230+ 0		5.5000- 3	1.0000- 3	1.6051+ 0

07/04/76

(n,2n)

28-Ni-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 1821	1.4100+ 1		2.0000- 1	2.0000- 2

07/04/76

(n,n'p)

28-Ni-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 688	1.4400+ 1	2.0000- 1	2.4000- 1	5.0000- 2

07/04/76

Absorption

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
58 1162	2.5300- 8		4.6000+ 0	1.0000- 1	58 364	2.2000- 1	2.0000- 2	2.6000- 2	2.0000- 3
65 1364	2.4000- 2		2.3000- 2	6.0000- 3	58 364	8.3000- 1	4.0000- 2	1.9000- 2	6.0010- 3
58 364	2.5000- 2	4.0000- 3	5.0000- 2	1.0000- 3					

3-202

28-Ni-Nat -16

07/04/76

(n,X) γ
Cross Section

28-Ni-Nat

		REFERENCE		ENERGY		DELTA		X-SEC		DELTA	
				MEV		MEV		BARNs		BARNs	
		53	294	1.4200	1			6.0300	0	1.5000	0

REFERENCE	ENERGY	DELTA	X-SEC	DELTA	E-PHOTON	REFERENCE	ENERGY	DELTA	X-SEC	DELTA	E-PHOTON
	MEV	MEV	BARNs	BARNs	MEV		MEV	MEV	BARNs	BARNs	MEV
54	113	3.2000	0	2.0000	1	4.7000	2	1.0090	2	5.9000	1
56	140	2.5600	0	3.0000	2	5.6000	2	1.0000	2	8.2700	1
54	111	1.3470	0	2.0000	2	0.0000	0			1.3300	0
56	140	2.5600	0	3.0000	2	1.8100	1	2.1000	2	1.3300	0
54	113	3.2000	0	2.0000	1	6.4000	1	1.7000	1	1.3300	0
56	140	2.5600	0	3.0000	2	3.8700	1	3.7000	2	1.4500	0
54	113	3.2000	0	2.0000	1	5.4000	1	1.1000	1	1.4900	0

07/04/76

(n,p)
Cross Section

28-Ni-Nat

		REFERENCE		ENERGY		DELTA		X-SEC		DELTA	
				MEV		MEV		BARNs		BARNs	
		62	688	1.4400	1	2.0000	1	2.5500	1	2.6000	2
		63	767	1.5000	1			8.1000	1	1.7000	1

07/04/76

Bound Atom
Cross Section

28-Ni-Nat

		REFERENCE		ENERGY		DELTA		X-SEC		DELTA	
				MEV		MEV		BARNs		BARNs	
		51	1584	7.3000	8			1.7300	1		

07/04/76

Coherent Scattering
Cross Section

28-Ni-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
SI 2564	2.5300	8	1.7000 ± 1	4.0000 ± 0
SI 1584	7.3000	8	1.3400 ± 1	1.0720 ± 0

07/04/76

(n,n')
Cross Section

28-Ni-58

Barns

3-204

Mev

28-Ni-58 -1

07/04/76

(n, n')

Cross Section

28-Ni-58

ECSIL-865 (63)

ECSIL-865 (63)

ECSIL-3586 (75)

Barns

3-205

Mev

28-Ni-58 -2

07/04/76

(n,n')

28-Ni-58

Cross Section

3-206

Mev

28-Ni-58 -3

07/04/76

 (α, n')
Cross Section

28-Ni-58

28-Ni-58 -4

07/04/76

(n,n')

Cross Section

28-Ni-58

INDL 7137

07/04/76

(n,2n)

Cross Section

28-Ni-58

INDL 7137

3-208

28-Ni-58 -5

07/04/76

28-Ni-58

(n,2n)
Cross Section

3-209

MeV

28-Ni-58 -6

Barns

07/04/76

28-Ni-58

(n,2n)
Cross Section

3-210

MeV

28-Ni-58 -7

Bases

07/04/76

(n,2n)
Cross Section

28-Ni-58

01-04-76

(π, E_n)

Cross Section

28-N1-58

ECSIL-1672 (170)

ECSIL-933 (52)

3-212

28-N1-58-9

Relative

07/04/76

28-Ni-58

(n,n'p)
Cross Section

3-213

MeV

28-Ni-58 -10

Barns

07/04/76

(n,X) γ

28-Ni-58

Cross Section

E-Photon = 1.452 Mev

Barns

07/04/76

(n,p)

28-Ni-58

Cross Section

Barns

3-214

28-Ni-58 -11

07/04/76

(n,p)
Cross Section

28-Ni-58

Barns

3-215

Mev

28-Ni-58 -12

07/04/76

28-Ni-58

(n,p)
Cross Section

MeV

3-216

28-Ni-58 -13

Barns

07/04/76

28-Ni-58

(n,p)
Cross Section

3-217

MeV

28-Ni-58 -14

07/04/76

(n,p)

28-Ni-58

Cross Section

Barns

3-218

MeV

28-Ni-58 -15

07/04/76

28-Ni-58

(n,p)
Cross Section

EC51L-374 (63)

EC51L-698 (61)

EC51L-872 (62)

Barns

MeV

3-219

28-Ni-58 -16

07/04/76

(n,p)
Cross Section

28-Ni-58

3-220

28-Ni-58 -17

07/04/76

Activation
Cross Section

28-Ni-58

07/04/76

(n,n')

28-Ni-58

Cross Section

REFERENCE ENERGY DELTA X-SEC DELTA						REFERENCE ENERGY DELTA X-SEC DELTA					
69 3662 1.5100+ 1 4.0000- 1 3.6000- 1 6.0000- 2											
REFERENCE	ENERGY	DELTA	X-SEC	DELTA	E-LVL	REFERENCE	ENERGY	DELTA	X-SEC	DELTA	E-LVL
	MEV	MEV	BARNs	BARNs	MEV		MEV	MEV	BARNs	BARNs	MEV
71 3214	5.0500+ 0	1.0000- 2	1.3500- 1	9.0000- 3	1.4500+ 0	71 3214	5.0500+ 0	1.0000- 2	2.2000- 1	1.4000- 2	2.9100+ 0
71 3214	5.5800+ 0	1.0000- 2	1.6600- 1	8.0000- 3	1.4500+ 0	71 3214	5.5800+ 0	1.0000- 2	1.8600- 1	1.1000- 2	2.9100+ 0
71 3214	5.0500+ 0	1.0000- 2	1.3500- 1	2.6000- 2	2.4600+ 0	71 3214	5.0500+ 0	1.0000- 2	1.2100- 1	1.0000- 2	3.3400+ 0
71 3214	5.0500+ 0	1.0000- 2	1.6000- 1	8.0000- 3	2.4600+ 0	71 3214	5.5800+ 0	1.0000- 2	1.1800- 1	1.2000- 2	3.3400+ 0
REFERENCE	ENERGY	DELTA	X-SEC	DELTA	E-PHOTON	REFERENCE	ENERGY	DELTA	X-SEC	DELTA	E-PHOTON
	MEV	MEV	BARNs	BARNs	MEV		MEV	MEV	BARNs	BARNs	MEV
63 865	3.7800+ 0		0.0000- 2		1.0000+ 0	75 3566	4.8450+ 0		1.6800- 2	2.9000- 3	2.0764+ 0
63 865	4.0000+ 0		0.0000- 2		1.0000+ 0	75 3566	5.4230+ 0		1.4300- 2	2.4000- 3	2.0764+ 0
75 3566	4.2160+ 0		1.9300- 2	3.7000- 3	2.0764+ 0						

07/04/76

(n,2n)

28-Ni-58

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 2754	1.4500+ 1	2.0000- 1	3.3400- 2	2.0000- 3	69 2754	1.4500+ 1	2.0000- 1	3.3400- 2	2.0000- 3
67 2754	1.4500+ 1	3.0000- 1	3.6000- 2	2.6000- 3	69 2754	1.4500+ 1	3.0000- 1	3.6000- 2	2.6000- 3
67 2754	1.4500+ 1	4.0000- 1	3.4000- 2	2.6000- 3	69 2754	1.4500+ 1	4.0000- 1	3.6100- 2	3.0000- 3
67 2754	1.4500+ 1	5.0000- 1	3.8000- 2	2.6000- 3	69 2754	1.4500+ 1	5.0000- 1	3.6200- 2	3.0000- 3
67 2754	1.4500+ 1	6.0000- 1	3.1500- 2	2.0000- 3	69 2754	1.4500+ 1	6.0000- 1	3.6200- 2	3.0000- 3
67 2754	1.4500+ 1	7.0000- 1	4.0000- 2	2.6000- 3	69 2754	1.4500+ 1	7.0000- 1	3.6000- 2	3.0000- 3
67 2754	1.4500+ 1	8.0000- 1	3.5000- 2	2.4000- 3	69 2754	1.4500+ 1	8.0000- 1	3.5000- 2	2.4000- 3
67 2754	1.4500+ 1	9.0000- 1	4.0000- 2	2.1800- 2	69 2754	1.4500+ 1	9.0000- 1	4.0000- 2	2.1800- 2
REFERENCE ENERGY DELTA X-SEC DELTA HALF-LIFE					73 3988 1.4500+ 1 3.7900- 2 3.8000- 3 4.2390+ 1				

REFERENCE ENERGY DELTA X-SEC DELTA
MEV MEV MEV RELATIVE RELATIVE
52 933 1.2000+ 1 1.0000+ 0 0.0000+ 0

07/04/76

(n,n'p)

28-Ni-58

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 30	1.4000+ 1	3.4300- 1	2.7000- 2		69 2050	1.4500+ 1	2.0000- 1	7.5000- 1	7.0000- 2
57 217	1.4000+ 1	2.2000- 1	4.4000- 2		61 654	1.4800+ 1	3.0000- 1	3.4000- 1	7.0000- 2
59 527	1.4100+ 1	1.6000- 1	4.0000- 2						

07/04/76

(n,n'a)

28-Ni-58

Cross Section

REFERENCE ENERGY DELTA X-SEC DELTA
MEV MEV MEV BARNs BARNs
65 899 1.4100+ 1 3.0000- 2 6.0000- 3

3-222

28-Ni-58 -19

07/04/76

(n,p)
Cross Section

28-Ni-58

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 655	3.3000+ 0	1.0000- 1	1.7000+ 1	1.5000- 2	62 1079	1.4500+ 1		3.1500- 1	2.0000- 2
65 1729	8.4000+ 0		6.3000+ 1	5.0000- 2	63 1079	1.4500+ 1		3.3500- 1	2.0000- 2
62 1008	1.3580+ 1		4.1000+ 1	4.1000- 2	69 2354	1.4600+ 1	2.0000- 1	3.4100- 1	3.0000- 2
61 361	1.4000+ 1		4.4000+ 1	1.0000- 2	72 3427	1.4600+ 1	2.0000- 1	3.8200- 1	2.7000- 2
57 217	1.4000+ 1		3.1000+ 1	6.2010- 2	62 1008	1.4730+ 1		3.1500- 1	3.1500- 2
62 1008	1.4070+ 1		3.6600+ 1	3.6600- 2	69 2354	1.4790+ 1		3.2000- 1	2.5000- 2
59 527	1.4100+ 1		5.6000+ 1	1.1000- 1	69 2354	1.4800+ 1		3.2100- 1	2.5000- 2
60 837	1.4100+ 1	1.0000- 1	5.3410+ 1	1.0500- 1	68 2711	1.4800+ 1	2.0000- 1	3.1800- 1	2.5000- 2
70 3634	1.4400+ 1	4.0000- 1	3.3100+ 1	3.0000- 2	60 837	1.5700+ 1	1.0000- 1	7.5410+ 1	1.5000- 1
69 2050	1.4500+ 1	2.0000- 1	3.7400+ 1	3.0000- 2					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
73 3987	1.4600+ 1		3.4870- 1	1.4100- 2	8.1000- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
66 1768	1.4100+ 1	1.5000+ 1	3.0500- 1	2.6000- 2	9.0000+ 0
63 1009	1.4500+ 1		1.6400+ 1	1.6050- 2	9.0000+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE DAYS
66 1768	1.4100+ 1	1.5000+ 1	2.2700- 1	5.1000- 2	7.1000+ 1
60 598	1.4800+ 1	9.0010- 1	2.3700- 1	2.0000- 2	7.1010+ 1
69 4083	1.4800+ 1		2.1000- 1	4.0000- 2	7.2000+ 1

07/04/76

(n,X) p
Cross Section

28-Ni-58

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 630	1.4800+ 1		4.4000- 1	4.4000- 2

07/04/76

(n,d)

28-Ni-58

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 654	1.4600+ 1	3 0000- 1	2.5000 2	6.0000- 3

07/04/76

(n,a)

28-Ni-58

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	E-LVL MEV
69 2710	1.4600+ 1		1.4000- 3	4.0000- 4	0.0000+ 0	
69 2710	1.4600+ 1		4.4000- 3	1.0000- 3	1.3220+ 0	1.4120+ 0

07/04/76

(n,X) a

28-Ni-58

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
65 899	1.4100+ 1		1.2500- 1	1.6000- 2

07/04/76

Activation
Cross Section

28-Ni-58

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	ACTIVATE	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	ACTIVATE
61 654	1.4600+ 1	3 0000- 1	4.5000- 1	5.5000- 2	27-CO-57	72 3427	1.4600+ 1	2 0000- 1	8.1000- 1	5.7000- 2	27-CO-57
61 654	1.4600+ 1	4.0000- 1	5.0000- 1	5.1000- 2	27-CO-57	69 2710	1.4790+ 1		7.6400- 1	6.0000- 2	27-CO-57
61 654	1.4600+ 1		5.6000- 1	8.0000- 2	27-CO-57	68 2711	1.4800+ 1	2 0000- 1	7.5000- 1	6.0000- 2	27-CO-57
61 654	1.4600+ 1		6.6500- 1	6.0000- 2	27-CO-57	63 756	1.4800+ 1		5.2000- 1	1.2000- 1	27-CO-57
69 2710	1.4600+ 1	2 1000- 1	7 3000- 1	6.0000- 2	27-CO-57						

3-224

28-Ni-58 -21

07/04/76

Bound Atom
Cross Section

28-Ni-59

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
52 437	2.5300- 8		2.7000+ 1	
51 1584	2.5300- 8		2.7000+ 1	

07/04/76

Free Atom
Cross Section

28-Ni-59

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
52 437	2.5300- 8		2.6000+ 1	

07/04/76

Absorption
Cross Section

28-Ni-59

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 3489	2.5300- 8		9.2000+ 1	4.0000+ 0

07/04/76

(n,p)
Cross Section

28-Ni-59

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
75 3910	2.5300- 8		9.0000+ 1	

27/04/76

(n,0)

28-Ni-59

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
75 3910	2.5300- 8		2.2500+ 1	1.7000+ 0
74 3-81	2.5300- 8		1.3700+ 1	6.0000- 1
75 3573	5.5100- 8		1.2000+ 1	1.2000+ 0

07/04/76

(n,n')

28-Ni-60

Cross Section

Barns

Mev

3-226

28-Ni-60 -1

07/04/76

(n,n')

28-Ni-60

Cross Section

ECSIL-4033 (71)

ECSIL-3243 (71)

ECSIL-3172 (70)

Barns

3-227

28-Ni-60 -2

07/04/76

(n,n')

28-Ni-60

Cross Section

3-228

Mev

28-Ni-60 -3

Bart

07/04/76

(n,n')

28-Ni-60

Cross Section

ECSIL-3566 (75)

ECSIL-3566 (75)

ECSIL-3566 (75)

Barns

3-229

Mev

28-Ni-60 -4

07/04/76

28-Ni-60

(n,n')

Cross Section

28-Ni-60 -5

07/04/76

(n,n')

28-Ni-60

Cross Section

07-04-76

(p,n')

28-Ni-60

Cross Section

Barns

3-232

MeV

28-Ni-60 -7

07/04/76

(n, p')
Cross Section

28-Ni-60

07/04/76

(n.p)

28-Ni-60

Cross Section

EC51L 1714 (66)

EC51L-893 (65)

3-234

MeV

28-Ni-60 -9

Baras

07/04/76

Total Scattering
Cross Section

28-Ni-60

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
52	437	2.5300- 8	5.0000+ 0	

07/04/76

(n,n')
Cross Section

28-Ni-60

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69	3662	1.5100+ 1	4.0000- 1	8.8000- 1 1.3000- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
71	3214	5.0500+ 0	1.0000- 2	2.4100- 1	9.0000- 3 1.3300+ 0	71	3214	5.5800+ 0	1.0000- 2	1.0400- 1	1.1000- 2 2.2200+ 0
71	3214	5.5800+ 0	1.0000- 2	2.1000- 1	1.5000- 2 1.3300+ 0	71	3214	5.0500+ 0	1.0000- 2	1.7000- 1	8.0010- 3 2.5700+ 0
74	3460	4.3400+ 0	7.0000- 2	2.9572- 1	2.2475- 2 1.3375+ 0	71	3214	5.5800+ 0	1.0000- 2	1.3000- 1	9.0000- 3 2.5700+ 0
74	3460	4.9200+ 0	6.0000- 2	2.3410- 1	1.8494- 2 1.3330+ 0	71	3214	5.0500+ 0	1.0000- 2	3.9900- 1	2.2000- 2 3.2500+ 0
71	3214	5.0500+ 0	1.0000- 2	1.3200- 1	1.2000- 2 2.2200+ 0	71	3214	5.5800+ 0	1.0000- 2	3.0500- 1	1.9000- 2 3.2500+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
75	3566	4.2160+ 0		3.9800- 2	9.3000- 3 1.9376+ 0	75	3566	5.4230+ 0		2.5500- 2	4.5000- 3 1.9846+ 0
75	3566	4.8450+ 0		2.1500- 2	4.2000- 3 1.9376+ 0	75	3566	4.2160+ 0		3.0100- 2	6.4000- 3 2.0607+ 0
75	3566	5.4230+ 0		2.0100- 2	3.6210- 3 1.9376+ 0	75	3566	4.8450+ 0		5.8400- 2	9.9000- 3 2.0607+ 0
75	3566	4.2160+ 0		2.3200- 2	5.1000- 3 1.9846+ 0	75	3566	5.4230+ 0		6.1300- 2	1.0100- 2 2.0607+ 0
75	3566	4.8450+ 0		2.2500- 2	4.1000- 3 1.9846+ 0						

07/04/76

(n,n'p)
Cross Section

28-Ni-60

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
56	448	1.3500+ 1	1.0000- 1	6.8000- 2
61	361	1.4000+ 1		1.0100- 2 9.0010- 3
57	217	1.4000+ 1		6.0010- 2 1.2000- 2

07/04/76

(n,p)
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		
60 3785	1.400	1.5000	1.4000	2.7000	3	60 837	1.400	1.0000	1.5800	1.3.2000	- 2
60 3786	1.400	1.5000	1.4000	1.5500	1	72 342	1.400	1.0000	1.7900	1.2.0000	- 2
60 3787	1.400	1.5000	1.4000	1.9000	3	62 1009	1.4500	1	1.8000	1.2.5000	- 2
60 3788	1.400	1.5000	1.4000	1.6000	2	63 1009	1.4500	1	1.6000	1.2.0000	- 2
60 3789	1.400	1.5000	1.4000	1.9000	3	62 1008	1.4500	1	1.5000	1.2.0000	- 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						
67 3785	1.400	1.5000	1.5000	2.7000	3	1.0350	63 1009	1.4500	1	2.0000	3	1.0500	1				
67 3786	1.400	1.5000	1.5000	2.7000	3	1.0350	58 598	1.4800	1	9.0000	1	9.0000	3	2.0000	- 3	1.0500	1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE YEARS			
69 4083	1.4800	1	1.3000	1	4.0000	2	5.3000	0

07/04/76

(n,p)
Cross Section

28-Ni-60

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
69 2710	1.4600+ 1		4.3000- 3	2.0000- 3	0.0000+ 0

07/04/76

Bound Atom
Cross Section

28-Ni-60

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000	8	1.0000	0

3-236

28-Ni-60 -11

07/04/76

Coherent Scattering
Cross Section

28-Ni-60

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51	158	7.3000	8	9.7000 - 1 7.7600 - 2

07/04/76

(n,n'p)
Cross Section

28-Ni-61

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
58	598	1.4800	1	9.0000 - 1 3.8000 - 3	1.0000 - 3 1.0500 - 1

07/04/76

(n,p)
Cross Section

28-Ni-61

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	
61	655	3.3000	0	2.0000 - 1 3.0000 - 3	1.5000 - 3	63	1009	1.4500	1	8.3000 - 2 8.0000 - 3
56	278	1.4000	1	9.1010 - 2		53	27	1.4500	1	1.8150 - 1 2.5000 - 2
62	868	1.4100	1	8.6000 - 2 3.0000 - 3		72	3427	1.4600	1	2.0000 - 1 1.4400 - 1 1.5000 - 2
62	1009	1.4500	1	1.0300 - 1 1.0000 - 2		60	598	1.4800	1	9.0000 - 1 2.2000 - 2 2.0000 - 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
69	4083	1.4800	1	9.8000 - 2 1.0000 - 2 9.8000 - 1	

07/04/76

(n,α)
Cross Section

28-Ni-61

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
75	3910	2.5300	8	2.0000 - 3

07-04-76

28-Ni-61

Cross Section

REMARKS	ENERGY MEV	DATA BANKS	DATA BANKS	DATA BANKS
69 P-10 14600	1.4600	1.4600	1.4600	1.4600
1.4600 1.4600	1.4600	1.4600	1.4600	1.4600

07-04-76

28-Ni-62

Cross Section

En level = 1.171 Mev

3-238

28-Ni-62 -1

Bar 25

07/04/76

(n,p)

28-Ni-62

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69 7460	1.4100+ 1	1.5010- 1	2.4000- 1	2.4000- 1

07/04/76

(n,n'p)

28-Ni-62

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 868	1.4100+ 1	4.0000- 3	2.0000- 3	
60 598	1.4600+ 1	9.5010- 1	6.5010- 4	1.5000- 4

07/04/76

(n,p)

28-Ni-62

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
74 1740	1.4100+ 1	2.5000- 3	2.5000- 3		63 1009	1.4500+ 1	3.9000- 2	6.0000- 3
68 5071	1.4800+ 1	2.4000- 2	6.0000- 3		72 3-20	1.4600+ 1	2.0000- 1	1.3500- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 868	1.4100+ 1	2.5000- 3	2.5000- 3		60 598	1.4600+ 1	3.9000- 2	6.0000- 3
64 1682	1.4100+ 1	3.0000- 2	6.0000- 3		69 4083	1.4800+ 1	2.1000- 2	3.0000- 3
64 1682	1.4100+ 1	3.0000- 2	6.0000- 3					
64 1682	1.4100+ 1	3.0000- 2	6.0000- 3					
64 1682	1.4100+ 1	3.0000- 2	6.0000- 3					

07/04/76

(n,a)

28-Ni-62

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1780	1.4100+ 1	2.0000- 2	3.3000- 3	
68 4071	1.4800+ 1	1.7000- 2	4.0000- 3	

3-239

28-Ni-62 -2

07-04-76

Activation
Cross Section

28-Ni-62

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	ACTIVATE
63 1009	1.4500+ 1		4.4000- 3	1.0000- 3	27-50-61

07/04/76

Bound Atom
Cross Section

28-Ni-62

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1594	7.3000- 8		9.0000+ 0	

07/04/76

Coherent Scattering
Cross Section

28-Ni-62

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		9.1000+ 0	7.2800- 1

07/04/76

(n,n'p)
Cross Section

28-Ni-64

REFERENCE	ENERGY MEV	DELTA MEV	X-SFC BARNs	DELTA BARNs
60 598	1.4800+ 1	9.0010- 1	9.3010- 4	4.0000- 5

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs MINUTES
62 868	1.4100+ 1		6.0000- 3	2.0000- 3 1.2200+ 2

3-240

28-Ni-64 -1

07/04/76

(n,p)

28-Ni-64

Cross Section

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
66 666 1 4101+ 1	1.400	1.400	3.000	2.000	1.0	67 666 1 4101+ 1	1.400	1.400	3.000	2.000	1.0
67 666 1 4101+ 1	1.400	1.400	3.000	2.000	1.0	67 666 1 4101+ 1	1.400	1.400	3.000	2.000	1.0

07/04/76

(n,o)

28-Ni-64

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 4071 1.4804+ 1	1.4804	1.4804	5.2000	3.1.2000- 3

07/04/76

Nonelastic
Cross Section

29-Cu-Nat

3-241

Mev

29-Cu-Nat -1

Barns

CT 24/76

Nonelastic
Cross Section

29-Cu-Nat

07/04/76

29-Cu-Nat

Nonelastic
Cross Section

Barns

07/04/76

Total Scattering
Cross Section

29-Cu-Nat

ECSIL-571 (60)

ECSIL-231 (56)

Bars

3-244

29-Cu-Nat -4

07/04/76

(n,X) γ
Cross Section

29-Cu-Nat

07/04/76

(n,X) γ
Cross Section

29-Cu-Nat

07/04/76

Nonelastic
Cross Section

29-Cu-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 3963	9.6000-1	4.0000-2	1.8000-1	5.0000-2	55 117	1.4100+1		1.4200+0	4.0000-2
55 122	1.0000+0	1.6000-1	2.1000-1	4.0000-2	52 82	1.4150+1	5.0000-2	1.5100-1	6.0010-2
56 353	1.0200+0		2.0000-1	1.0000-1	57 319	1.4200+1	1.5000-1	1.4900+0	2.0000-2
56 164	1.2000+0		5.0000-1	1.0000-1	56 200	1.4500+1		1.4800+0	2.0000-2
56 164	1.6000+0		7.0010-1	1.4000-1	63 1271	1.4700+1	2.0000-1	1.4800+0	4.0000-2
56 164	2.0000+0		1.1000+0	2.2000-1	67 1656	1.4900+1	5.0000-2	1.8500+0	4.0000-2
56 34	2.5000+0		1.5800+0	1.5000-1	61 706	1.6100+1		1.3800+0	4.0000-2
56 151	2.5000+0	4.0000-2	1.2700+0	6.0010-2	61 706	1.9700+1		1.4800+0	4.0000-2
55 555	3.6600-0	2.0000-1	1.5700+0	1.8000-1	58 356	2.1000+1		1.3900+0	7.0010-2
55 122	4.0000+0	7.0010-2	1.6000+0	5.0000-2	58 356	2.5500+1		1.3300+0	7.0010-2
55 122	4.5000+0	7.0010-2	1.6000+0	5.0000-2	58 356	2.9200+1		1.3000+0	7.0010-2
56 151	7.0000+0	2.0000-1	1.5400+0	6.0010-2	55 2056	1.4600+3	2.0000+2	6.7000-1	3.3500-2
65 1228	8.1000+0		1.4700+0	7.0000-2	61 1565	5.0000+3	4.0000+2	5.8600-1	2.5000-2
63 766	1.3980+1	5.0000-2	1.4400+0	3.0000-2	62 1657	8.3000+3		6.2600-1	2.9000-2
58 877	1.4000+1		1.5000+0	7.0000-2					

3-246

29-Cu-Nat -6

07/04/76

Neutron Emission
Cross Section

29-Cu-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72 4072	1.4360+ 1	1.4000- 1	1.7700+ 0	9.0000- 2

07/04/76

(n,n')
Cross Section

29-Cu-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
59 3400	2.8000+ 0		1.0800+ 0	4.0000- 2	63 836	7.0000+ 0		1.4500+ 0	1.2000- 1
63 836	5.0000+ 0		1.7400+ 0	2.2000- 1	72 4072	1.4360+ 1	1.4000- 1	8.4000+ 1	8.0000- 2

07/04/76

(n,2n)
Cross Section

29-Cu-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58	7.14100+ 1		7.6010- 1	6.0010- 2
57	8.14200+ 1		5.6010- 1	6.0010- 2
72 4072	1.4360+ 1	1.4000- 1	4.8500- 1	4.0000- 2

07/04/76

(n,n'p)
Cross Section

29-Cu-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
59 2053	1.4000+ 1		1.8100- 1	1.8100- 2

07/04/76

Absorption
Cross Section

29-Cu-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 2569	2.5300- 8		4.1400+ 0	1.0000- 1	58 364	2.4000- 2	2.0000- 3	3.2000- 2	1.1000- 2
60 2570	2.5300- 8		3.7900+ 0	4.0000- 2	58 364	2.4000- 2		5.9000- 2	8.0000- 3
66 1491	2.5300- 8		3.7400+ 0	4.0000- 2	58 364	2.2000- 1	2.0000- 2	1.8000- 2	2.0000- 3
58 1162	2.5300- 8		4.0000+ 0	1.0000- 1	58 364	8.3000- 1	4.0000- 2	1.9000- 2	1.0000- 3
66 3468	2.5300- 8		3.7100+ 0	6.0000- 2					

07/04/76

(n,X) γ
Cross Section

29-Cu-Nat

REFERENCE						ENERGY MEV		DELTA MEV		X-SEC BARNs		DELTA BARNs	
53 294						1.4200+ 1				6.3000- 0		1.5750+ 0	
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV		
55 140	2.5600+ 0	3.0000- 2	4.9000- 2	1.0000- 2	3.6500- 1	56 140	2.5600+ 0	3.0000- 2	6.0000- 2	2.0000- 2	1.4100+ 0		
56 140	2.5600+ 0	3.0000- 2	7.1000- 2	1.8000- 2	6.5000- 1	56 140	2.5600+ 0	3.0000- 2	3.0000- 2	1.5000- 2	1.4700+ 0		
54 113	3.2000+ 0	2.0000- 1	2.1000- 1	4.2000- 2	6.6000- 1	56 140	2.5600+ 0	3.0000- 2	4.9000- 2	1.0000- 2	1.5500+ 0		
56 140	2.5600+ 0	3.0000- 2	4.7000- 2	1.5000- 2	7.6400- 1	56 140	2.5600+ 0	3.0000- 2	2.6000- 2	9.0000- 3	1.8800+ 0		
56 140	2.5600+ 0	3.0000- 2	3.6000- 1	4.8000- 2	9.5800- 1	54 113	3.2000+ 0	2.0000- 1	1.6000- 1	3.2000- 2	1.9000+ 0		
54 113	3.2000+ 0	2.0000- 1	1.2000- 1	2.4000- 2	9.6000- 1	56 140	2.5600+ 0	3.0000- 2	3.7000- 2	7.0000- 3	2.0700+ 0		
52 284	2.5000+ 0		1.2000+ 0	6.0000- 1	1.1000+ 0	52 284	2.5000+ 0		3.4000- 1	1.2000- 1	2.2000+ 0		
55 140	2.5600+ 0	3.0000- 2	1.6000- 1	2.1000- 2	1.1100+ 0	53 294	1.4200+ 1		5.2000- 2	1.8200- 2	3.1000+ 0		
67 1897	1.1900+ 0	3.0000- 2	3.3000- 2	7.0000- 2	1.1140+ 0	61 850	1.4000+ 1		4.7000- 1	1.4100- 1	4.0000+ 0		
67 1897	1.2890+ 0	3.0000- 2	5.1000- 2	1.1000- 2	1.1140+ 0	53 294	1.4200+ 1		2.9000- 2	1.0150- 2	4.5000+ 0		
67 1897	1.3820+ 0	3.0000- 2	9.0000- 2	1.9000- 2	1.1140+ 0	61 850	1.4000+ 1		2.5000- 1	7.5000- 2	5.0000+ 0		
56 140	2.5600+ 0	3.0000- 2	1.1000- 1	1.8000- 2	1.3250+ 0	61 850	1.4000+ 1		1.4000- 1	4.2000- 2	6.1000+ 0		
54 113	3.2000+ 0	2.0000- 1	1.6000- 1	1.6000- 1	1.3700+ 0								
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHN-MIN MEV	E-PHN-MAX MEV							
63 1723	1.4100+ 1	6.0000- 1	6.3900- 1		1.5000+ 0	9.0000+ 0							
60 1721	1.4000+ 1		4.7000- 1	1.4100- 1	4.0000+ 0	5.0000+ 0							
60 1721	1.4000+ 1		2.6000- 1	7.5000- 2	5.0000+ 0	6.1000+ 0							
60 1721	1.4000+ 1		1.4000- 1	4.2000- 2	6.1000+ 0	7.5000+ 0							

3-248

29-Cu-Nat -8

07/04/76

(n,X) p
Cross Section

29-Cu-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
59 1840	1.4000+ 1		2.4500- 1	1.0000- 2
58 441	1.4000+ 1		1.7300- 1	

07/04/76

(n,t)
Cross Section

29-Cu-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
73 3996	1.4700+ 1		3.2000- 4	8.0000- 5

07/04/76

Bound Atom
Cross Section

29-Cu-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		7.8000+ 0	

07/04/76

Coherent Scattering
Cross Section

29-Cu-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
56 2555	2.5300- 8		6.8000+ 0	5.0000- 1
62 915	6.6700- 8		7.0000+ 0	2.9000- 1
51 1584	7.3000- 8		7.3000+ 0	5.8400- 1

07/04/76

Incoherent Scattering

29-Cu-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58	404	0.0000 ± 0	4.0040 ± 1	1.4180 ± 1

07/04/76

(n,n')

29-Cu-63

Cross Section

Barns

3-250

29-Cu-63 -1

07/04/76

29-Cu-63

(n,n')

Cross Section

Bar 55

07/04/76

(n,n')
Cross Section

29-Cu-63

3-252

29-Cu-63 -3

07/04/76

(n,2n)
Cross Section

29-Cu-63

Baras

07/04/75

29-Cu-63

(n,2n)

Cross Section

Barns

MeV

3-254

29-Cu-63 -5

07/04/76

(n,2n)
Cross Section

29-Cu-63

Barns

3-255

MeV

29-Cu-63 -6

07/04/76

(n,2n)
Cross Section

29-Cu-63

07/04/76

(n,2n)

29-Cu-63

Cross Section

Half-Life: 9.901 Minutes

EC51L-562 (62)

10-24-76

(n,2n)
Cross Section

29-Cu-63

3-258

29-Cu-63 -9

07/04/76

(n,X) γ
Cross Section

29-Cu-63

ECSIL-1023 (65)

ECSIL-1897 (67)

ECSIL-1857 (67)

Barns

3-259

Mev

29-Cu-63 -10

07/04/76

(n,X) γ
Cross Section

29-Cu-63

07/04/76

(n, α)
Cross Section

29-Cu-63

07/04/76

29-Cu-63

(n, α)
Cross Section

3-261

Mev

29-Cu-63 -12

07/04/76

(n,n')

29-Cu-63

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
69 3662	1.5100+ 1	4.0000- 1	6.5000- 1	1.0000- 1		63 828	1.0000+ 0		1.0000- 1	5.0000- 2	9.3110- 1
63 828	1.0000+ 0		1.7000- 1	5.0000- 2	6.6810- 1	63 828	1.2000+ 0		3.0000- 1	5.0000- 2	9.3110- 1
63 828	1.2000+ 0		2.4000- 1	5.0000- 2	6.6810- 1						

07/04/76

(n,2n)

29-Cu-63

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 2009	1.4000+ 1		4.9500- 1	7.4250- 2	65 1672	1.4600+ 1	1.0000- 1	5.4100- 1	
64 2060	1.4100+ 1		4.7800- 1	4.8000- 2	60 695	1.4600+ 1		5.3000- 1	2.6500- 2
61 851	1.4100+ 1		4.9000- 1	4.0000- 2	67 1921	1.4700+ 1	1.0000- 1	5.1100- 1	1.5000- 2
52 84	1.4100+ 1		5.1010- 1	4.0000- 2	60 3351	1.4700+ 1	2.0000- 1	6.0300- 1	2.8000- 2
62 108	1.4130+ 1	1.0000- 1	4.0900- 1	2.5000- 2	69 3351	1.4800+ 1	3.5000- 1	6.1500- 1	2.8000- 2
57 535	1.4140+ 1	1.8000- 1	5.5610- 1	2.8000- 2	65 3379	1.4800+ 1	1.0000- 1	5.6800- 1	1.6000- 2
69 2050	1.4500+ 1	2.0000- 1	6.0800- 1	5.0000- 2	65 3379	1.4800+ 1	1.0000- 1	5.4600- 1	1.0000- 2
53 27	1.4500+ 1		4.8200- 1	7.2010- 2	66 2058	1.4800+ 1	1.0000- 1	5.0900- 1	5.1000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs MINUTES
61 830	1.4100+ 1		4.5800- 1	1.0000- 2 9.9010+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA RELATIVE
52 933	1.1100+ 1	2.0000- 1	0.0000+ 0	

3-262

29-Cu-63 -13

07/04/76

(n,n'p)
Cross Section

29-Cu-63

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61	361 1.4000+ 1		1.5200- 1	9.0010- 3
57	217 1.4000+ 1		1.3000- 1	2.6000- 2
69	3562 1.5100+ 1	4.0000- 1	1.5000- 1	3.0000- 2

07/04/76

(n,X) γ
Cross Section

29-Cu-63

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
65	1023 9.4000- 1	3.0000- 2	0.0000+ 0		9.6100- 1

07/04/76

(n,p)
Cross Section

29-Cu-63

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57	217 1.4000+ 1		1.2000- 1	2.4000- 2
61	361 1.4000+ 1		1.1800- 1	9.0010- 3
60	837 1.4100+ 1	1.0000- 1	1.4900- 1	3.0000- 2

07/04/76

(n,He-3)
Cross Section

29-Cu-63

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71	3816 1.4000+ 1		1.1300- 4	4.0000- 5
61	361 1.4100+ 1		3.0000- 3	1.0000- 3

07/04/76

(n,α)
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 3786	8.1900+ 0	3.5000- 1	1.9000- 2	1.4000- 3	69 2354	1.4600+ 1	2.0000- 1	4.9500- 2	1.0000- 2
60 3372	1.4600+ 1	2.6100- 2	5.0000- 3		67 3786	1.4700+ 1	6.0000- 1	3.3800- 2	2.4000- 3
72 3939	1.4200+ 1								

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
69 2710	1.4600+ 1		2.8000- 3	1.0000- 5	0.0000+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
67 3786	8.1900+ 0	3.5000- 1	1.0300- 2	1.5000- 3	1.0350+ 1
62 68	1.4700+ 1	1.5000- 1	2.3000- 2	3.0000- 3	1.0500+ 1

07/04/76

(n,n')
Cross Section

29-Cu-65

07/04/76

(n,n')
Cross Section

29-Cu-65

07/04/76

(n,2n)

29-Cu-65

Cross Section

MeV

3-266

29-Cu-65 -3

Barns

07/04/76

(n,2n)

29-Cu-65

Cross Section

Barns

3-267

MeV

29-Cu-65 -4

07/04/76

29-Cu-65

(n,2n)
Cross Section

3-268

MeV

29-Cu-65 -5

07/04/76

(n,n' α)

29-Cu-65

Cross Section

07/04/76

(XX) 7

29-Cu-65

Cross Section

3-270

29-Cu-65 -7

07/04/76

(n,p)

29-Cu-65

Cross Section

07/04/76

(n,n')

29-Cu-65

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69 3662	1.5100 ±	4.0000 -	3.8000 -	6.0000 - 2

07/04/76

(n,n')

29-Cu-65

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
64 885	1.4000+ 0		4.6800- 1		1.1140+ 0
64 885	1.4400+ 0		3.8100- 1	1.1300- 1	1.1140+ 0
64 885	1.5000+ 0		7.1100- 1	1.2900- 1	1.1140+ 0

07/04/76

(n,2n)

29-Cu-65

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 588	1.0050+ 1	3.0000- 1	0.0000+ 0		69 2354	1.4600+ 1	2.0000- 1	8.9700- 1	1.0000- 1
67 2009	1.3100+ 1		8.1000- 1	1.2150- 1	65 1672	1.4600+ 1	1.0000- 1	1.0260+ 0	5.0000- 2
52 84	1.4100+ 1		9.7000- 1	7.7500- 2	65 1777	1.4600+ 1	2.0000- 1	8.7800- 1	7.9020- 2
61 651	1.4100+ 1		9.4010- 1	8.0010- 2	64 3685	1.4600+ 1	2.0000- 1	8.0800- 1	7.3000- 2
65 1777	1.4200+ 1	2.0000- 1	9.3700- 1	8.4330- 2	68 2596	1.4700+ 1	7.5000- 2	8.6600- 1	3.5000- 2
64 3685	1.4200+ 1	2.0000- 1	8.4000- 1	6.5000- 2	64 1848	1.4700+ 1	1.5000- 1	1.0000+ 0	1.2500- 2
64 3685	1.4200+ 1	2.0000- 1	8.6600- 1	7.8000- 2	69 3351	1.4700+ 1	2.0000- 1	9.5300- 1	5.4000- 2
61 676	1.4400+ 1	3.0000- 1	9.5910- 1	8.0010- 2	62 872	1.4770+ 1	2.5000- 1	9.9500- 1	7.0600- 2
60 623	1.4500+ 1	5.0000- 1	1.0300+ 0	9.5000- 2	59 662	1.4800+ 1	9.0010- 1	9.3410- 1	1.3000- 1
61 588	1.4500+ 1	2.0000- 1	9.3810- 1	3.0000- 2	60 628	1.4800+ 1		8.6910- 1	1.0400- 1
53 27	1.4500+ 1		1.0850+ 0	1.7000- 1					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
73 3988	1.4600+ 1		9.7500- 1	6.3000- 2	1.2580+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
69 3662	1.5100+ 1	4.0000- 1	6.0000- 1	6.0000- 1	1.6000- 1

3-272

29-Cu-65 -9

7/04/76

(n,n'p)
Cross Section

29-Cu-65

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
59 2053	1.4000+ 1		2.5000- 1	2.5000- 2
57 217	1.4000+ 1		4.0000- 2	8.0010- 3
69 3662	1.5100+ 1	4.0000- 1	2.2000- 2	1.1000- 2

07/04/76

(n,n'a)
Cross Section

29-Cu-65

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 757	1.4500+ 1	9.0000- 1	2.3000- 3	1.3000- 3
62 88	1.4700+ 1	1.5000- 1	2.6000- 3	3.0000- 4
63 755	1.4800+ 1	2.0000- 1	2.9000- 3	8.0010- 4

07/04/76

(n,X) γ
Cross Section

29-Cu-65

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
65 1023	1.1000+ 0	3.0000- 2	0.0000+ 0		1.1140+ 0	67 1897	1.2800+ 0		1.6500- 1	3.6000- 2	1.1140+ 0
67 1897	1.1900- 0		1.0700- 1	2.3000- 2	1.1140+ 0	65 1023	1.3000- 0	3.0000- 2	1.2000- 1		1.1140+ 0
65 1023	1.2000+ 0	3.0000- 2	1.0000- 1		1.1140+ 0	67 1897	1.3820+ 0		2.9100- 1	6.1000- 2	1.1140+ 0

07/04/76

(n,p)
Cross Section

29-Cu-65

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
56 278	1.4000+ 1		2.0000- 2		72 3427	1.4600+ 1	2.0000- 1	3.1200- 2	3.2000- 3
52 84	1.4100+ 1		1.9000- 2	3.8000- 3	64 1848	1.4700+ 1	1.5000- 1	2.6000- 2	1.5000- 3
60 837	1.4100+ 1	1.0000- 1	2.5700- 1	5.0000- 2	67 2005	1.4800+ 1		2.0000- 2	2.0000- 3
61 651	1.4100+ 1		2.9000- 2	5.0000- 3	59 662	1.4800+ 1	9.0010- 1	2.7000- 2	1.1000- 2
67 3307	1.4100+ 1	1.8000- 1	1.9000- 2	2.0000- 3	60 598	1.4800+ 1	9.0010- 1	2.7000- 2	5.0000- 3
72 3427	1.4200+ 1	2.0000- 1	2.9200- 2	3.0000- 3	58 531	1.4800+ 1		3.1000- 2	1.3000- 2

07/04/76

(n,p)

29-Cu-65

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 660	1.4800+ 1		2.9000- 2	3.0000- 3	63 756	1.4800+ 1	2.0000- 1	2.9300- 2	3.2000- 3
67 3107	1.4800+ 1	2.0000- 2	2.6000- 2	3.0000- 3	60 628	1.5000+ 1		1.7000- 2	4.0000- 3
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV				
73 3987	1.4600+ 1		2.4900- 2	4.4000- 3	1.4900+ 0				

07/04/76

(n,He-3)

29-Cu-65

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60	598	1.4800+ 1	9.0010- 1	4.0000- 3

07/04/76

(n,p)

29-Cu-65

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60	598	1.4800+ 1	9.0010- 1	2.1000- 2
				7.0010- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
63	756	1.4800+ 1	2.0000- 1	1.5000- 1	1.5000+ 0
63	756	1.4800+ 1	2.0000- 1	1.5000- 1	1.5000+ 0
66	1748	1.4800+ 1	4.8000- 3	1.4000- 3	1.3900+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
62	98	1.4700+ 1	1.5000- 1	7.5010- 3	2.0000- 3
63	756	1.4800+ 1	2.0000- 1	1.4000- 2	1.0000- 2

07/04/76

Total Scattering
Cross Section

30-Zn-Nat

07/04/76

(n,X) γ
Cross Section

30-Zn-Nat

3-276

30-Zn-Nat -2

07/04/76

(n,p)

30-Zn-Nat

Cross Section

07/04/76

Nonelastic
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		
66	3663	9.6000+ 1	4.0000- 2	1.0000- 1	3.0000- 2	55	296	4.1000+ 0	4.0000- 2	1.7000+ 0	2.0000- 1
54	103	1.0000+ 0	5.0000- 2	3.0000- 1	1.0000- 1	55	122	4.5000+ 0	7.0010- 2	1.8100+ 0	1.0000- 1
56	34	2.5000+ 0		1.8800+ 0	1.5000- 1	56	151	7.0000+ 0	2.0000- 1	1.6100+ 0	1.0000- 1
56	151	2.5000+ 0	4.0000- 2	1.3000+ 0	1.0000- 1	55	117	1.4100+ 1		1.4600+ 0	3.0000- 2
59	559	3.6600+ 0	2.0000- 1	1.8400+ 0	2.0000- 1	57	319	1.4200+ 1	1.5000- 1	1.5800+ 0	3.0000- 2
55	122	4.0000+ 0	7.0010- 2	1.6900+ 0	5.0000- 2	56	200	1.4500+ 1		1.5800+ 0	2.0000- 2

07/04/76

(n,n')

30-Zn-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
69 407B	1.4600+ 1		4.7000- 1	2.2000- 1	1.0000+ 0

07/04/76

(n,Zn)
Cross Section

30-Zn-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 1821	1.4100+ 1		5.5000- 1	5.0000- 2

07/04/76

Absorption
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
58 1162	2.5200- 2		1.0900+ 0	2.0000- 2	58 364	2.2000- 1	2.0000- 2	2.1000- 2	2.0000- 3
58 1164	2.4000- 2	2.0000- 3	2.9000- 2	2.0000- 3	58 364	2.3000- 1	4.0000- 2	1.8000- 2	3.0000- 3
58 1364	2.4000- 2		6.4000- 2	7.0000- 3					

07/04/76

(n,X) γ
Cross Section

30-Zn-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
54 113	3.2000+ 0	2.0000- 2	0.0000- 0		1.0200+ 0	54 113	3.2000+ 0	2.0000- 1	3.0000- 2	6.0000- 3	1.3000+ 0
54 113	3.2000+ 0	2.0000- 1	1.3000+ 0	2.6000- 1	1.0200+ 0	54 113	3.2000+ 0	2.0000- 1	2.0000- 2	4.0000- 3	1.6000+ 0

07/04/76

(n,X) p
Cross Section

30-Zn-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 688	1.4400+ 1	2.0000- 1	1.7000- 1	2.0000- 2

3-278

30-Zn-Nat -4

07/04/76

(n,t)

30-Zn-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
73 3996	1.4700- 1		4.1000- 5	1.0000- 5

07/04/76

Bound Atom

30-Zn-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		4.2000+ 0	

07/04/76

Coherent Scattering

30-Zn-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		4.3000+ 0	3.4400- 1

07/04/76

(n,n')

30-Zn-64

Cross Section

07/04/76

(n,2n)

30-Zn-64

Cross Section

Baras

MeV

3-280

30-Zn-64 -2

07/04/76

(n,2n)

30-Zn-64

Cross Section

Barns

3-281

MeV

30-Zn-64 -3

07/04/76

30-Zn-64

(n,p)
Cross Section

MeV

3-282

30-Zn-64 -4

Barns

07/04/76

(n,p)
Cross Section

30-Zn-64

Barns

3-283

30-Zn-64 -5

07/04/76

(n,p)

30-Zn-64

Cross Section

07/04/76

(n,2n)

30-Zn-64

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs		
59	601	1.3500-1	3.0000-1	6.5010-2	6.0010-3	61	676	1.4400-1	3.0000-1	1.6700-1	1.3000-2
58	425	1.4000-1	1.5900-1			53	271	1.4500-1	2.2400-1	4.4800-2	
62	128	1.4130-1	1.0000-1	1.0500-1	7.2010-3	65	1672	1.4600-1	1.0000-1	2.0000-1	1.3000-2
67	536	1.4140-1	1.8200-1	1.1900-1	1.4000-2	67	2009	1.4700-1	2.2500-1	2.5000-2	
68	6695	1.4400-1	3.0000-1	1.5000-1	1.2000-2	67	2368	1.4800-1	1.0000-1	1.0200-1	1.0000-2

3-284

30-Zn-64

07/04/76

(n,2n)

30-Zn-64

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
58 598	1.4800+ 1	9.0000- 1	2.5400- 1	2.0000- 2	67 2009	1.5000+ 1		2.9800- 1	4.3800- 2
66 2058	1.4800+ 1	1.0000- 1	1.6500- 1	1.6000- 2	59 601	1.5600+ 1	3.0000- 1	2.2500- 1	2.0000- 2
63 756	1.4800+ 1	2.0000- 1	1.5300- 1	3.6000- 2	59 601	1.6400+ 1	4.0000- 1	2.6000- 1	2.5000- 2
REFERENCE					REFERENCE				
ENERGY MEV					X-SEC BARNs				
DELTA MEV					DELTA HALF-LIFE BARNs MINUTES				
73 3988 1.4600+ 1					1.6100- 1 1.2000- 2 3.8400+ 1				

07/04/76

(n,n'p)

30-Zn-64

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 361	1.4000+ 1		2.8100- 1	1.8000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHN-MIN MEV	E-PHN-MAX MEV
71 3768	1.4100+ 1	1.0000- 1	1.6900- 1	2.6000- 2	3.0000+ 0	6.5000+ 0

07/04/76

(n,n'a)

30-Zn-64

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 2894	1.4100+ 1	1.0000- 1	7.3000- 2	7.0000- 3

07/04/76

(n,p)

30-Zn-64

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 655	2.6000+ 0	2.0000- 1	2.6500- 2	2.0000- 3	61 651	3.6000+ 0	1.0000- 1	5.6510- 2	4.0000- 3
61 651	3.3000+ 0	1.0000- 1	5.1510- 2	5.0000- 3	63 323	1.4000+ 1		2.1000- 1	4.0000- 2

3-285

30-Zn-64 -7

07/04/76

(n,p)
Cross Section

30-Zn-64

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 361	1.4000+ 1		1.7900- 1	1.8000- 2	67 2005	1.4800+ 1		1.5400- 1	1.0000- 2
60 837	1.4100+ 1	1.0000- 1	3.4400- 1	5.8010- 2	60 538	1.4800+ 1	9.0010- 1	2.8400- 1	2.0000- 2
68 2695	1.4400+ 1	3.0000- 1	2.1000- 1	2.0000- 2	66 3380	1.4800+ 1	2.0000- 1	2.0400- 1	1.5000- 2
53 27	1.4500+ 1		3.8600- 1	5.6010- 2	63 756	1.4800+ 1	2.0000- 1	2.3000- 1	3.0000- 2
69 2354	1.4600+ 1	2.0000- 1	1.4700- 1	1.0000- 2	60 637	1.5700+ 1	1.0000- 1	3.0000- 2	6.0010- 3
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV				
73 3987	1.4600+ 1		2.9260- 1	9.2000- 3	5.1100- 1				

07/04/76

(n,X) p
Cross Section

30-Zn-64

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 25	1.4000+ 1		5.9000- 1	7.5000- 2

07/04/76

(n,t)
Cross Section

30-Zn-64

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
74 3823	1.4600+ 1		3.3700- 5	1.0000- 5
68 2708	1.4700+ 1		1.5000- 4	1.0000- 5

07/04/76

(n,a)
Cross Section

30-Zn-64

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
69 2710	1.4600+ 1		6.5000- 3	2.0000- 3	0.0000+ 0

3-285

30-Zn-64 -8

07/04/76

(n,X) o
Cross Section

30-Zn-64

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 2894	1.4100 ± 1	1.0000 - 1	1.6800 - 1	1.6000 - 2

07/04/76

(n,n')
Cross Section

30-Zn-66

07/04/76

(n,p)
Cross Section

30-Zn-66

07/04/76

(n,2n)
Cross Section

30-Zn-66

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 2009	1.4200+ 1		5.5000- 1	8.2500- 2
68 2695	1.4400+ 1	3.0000- 1	6.5000- 1	1.5000- 1
73 3988	1.4600+ 1		5.8300- 1	5.0000- 2

07/04/76

(n,n*p)
Cross Section

30-Zn-66

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 361	1.4000+ 1		5.0000- 2	4.0000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHN-MIN MEV	E-PHN-MAX MEV
71 3768	1.4100+ 1	1.0000- 1	4.0500- 2	8.3000- 3	3.0000+ 0	5.5000+ 0

3-282

30-Zn-66 -2

07/04/76

(n,p)

30-Zn-66

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
54 843	3.3200*	6.0010-1	4.4410-2	9.7010-3	88 2695	1.4400*	3.0020-	5.5000-2	6.0000-3
56 278	1.4000*		8.0010-2		53 271	1.4500*		1.0100-2	1.7000-2
63 323	1.4000*		7.5010-2	1.0000-2	67 2005	1.4800*		6.7000-2	1.0000-2
61 361	1.4000*		3.4000-2	4.0000-3	60 598	1.4800*	9.0010-	7.7010-2	1.0000-2
57 535	1.4140*	1.8000-	6.0010-2	7.0010-3					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
73 3987	1.4600* 1		8.8100-2	2.7000-3	1.0400* 0

07/04/76

(n,p)

30-Zn-67

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
61 655	3.3200*	0.20000-	5.0000-	7.0010-3	63 323	1.4000* 1		4.8000-2	8.0010-3
61 361	1.4000* 1		4.1000-	2.7.0010-3	67 2005	1.4800* 1		4.3000-2	1.0000-2

07/04/76

(n,n')

30-Zn-68

Cross Section

3-289

Mev

30-Zn-68 -1

Barns

07/04/76

(n,a)
Cross Section

30-Zn-68

07/04/76

(n,2n)
Cross Section

30-Zn-68

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
62 3374	1.4000 ± 1		5.3000 - 1	1.0000 - 1

07/04/76

(n,p)
Cross Section

30-Zn-68

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 2695	1.4400 ± 1	3.0000 - 1	8.0000 - 3	1.0000 - 3
60 598	1.4800 ± 1	9.0010 - 1	2.5000 - 2	1.0000 - 2

07/04/76

(n,c)

30-Zn-68

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71 3765	1.3600+	1 2.0000-	6.8000- 3	6.0000- 4	67 2005	1.4800+ 1		1.0000- 2	1.0000- 3
55 131	1.4000-		7.5000- 3	8.0000- 4	60 598	1.4800+ 1	9.0010- 1	5.1010- 2	1.0000- 2
58 401	1.4050-	1 5.5010-	7.6010- 3	8.0010- 4	71 3765	1.4800+ 1	2.0000-	8.0000- 3	5.0000- 4
71 3765	1.4100-	1 5.0000-	8.0000- 3	1.0000- 3	63 756	1.4800+ 1	2.0000-	1.8000-	2 5.0000- 3
68 2695	1.4400-	1 2 0 30-	9.0000- 3	1.0000- 3					

07/04/76

(n,2n)

30-Zn-70

Cross Section

07/04/76

(n,2n)

30-Zn-70

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 1672	1.2200+ 1		1.0800+ 0	1.6200- 1
67 2009	1.4700+ 1		1.3070+ 0	1.3000- 1

07/04/76

(n,2n)

30-Zn-70

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
68 2695	1.4400+ 1	3.0000- 1	6.0000- 1	4.0000- 2	1.3800+ 1
74 4002	1.4700+ 1	2.0000- 1	7.0200- 1	4.6000- 2	1.3800+ 1

07/04/76

(n,n'a)

30-Zn-70

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 756	1.4800+ 1	2.0000- 1	8.9010- 4	4.0000- 4

07/04/76

Total Scattering
Cross Section

31-Ga-Nat

07/04/76

(n,2n)
Cross Section

31-Ga-Nat

07/04/76

(n,2n)
Cross Section

31-Ga-Nat

ENDL-7140

07/04/76

(n,p)
Cross Section

31-Ga-69

31-Ga-Nat ENDL-7140

07/04/76

(n,p)

31-Ga-69

Cross Section

07/04/76

(n,2n)

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
72 3411	1.4100+ 1	3.0000- 1	9.8900- 1	4.0000- 2	87 2009	1.4700+ 1	3.0000- 1	1.0880+ 0	1.0000- 1
62 108	1.4130+ 1	1.0000- 1	7.3510- 1	4.4000- 2	67 236B	1.4800+ 1	1.0000- 1	9.8300- 1	1.5000- 1
61 676	1.4400+ 1	3.0000- 1	9.2310- 1	6.9010- 2	61 703	1.4800+ 1	2.5000- 1	1.0700+ 0	1.1000- 1
53 27	1.4500+ 1		5.5210- 1	1.7000- 1	66 205B	1.4800+ 1	1.0000- 1	9.5000- 1	9.5000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs MINUTES
73 398B	1.4600+ 1		9.0800- 1	6.8000- 2 6.8020+ 1

07/04/76

(n,p)

31-Ga-69

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs MINUTES
67 2005	1.4800+ 1		1.0000- 2	1.5000- 3 5.2500+ 1

07/04/76

(n,p)
Cross Section

31-Ga-69

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
67 2005	1.4800+ 1		2.3600- 2	3.0000- 3	1.3900+ 1
53 27	1.4500+ 1		2.4200- 2	1.9000- 2	1.4000+ 1

07/04/76

(n,p)
Cross Section

31-Ga-69

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53 27	1.4500+ 1		1.0500- 1	5.7010- 2
67 2005	1.4800+ 1		1.8000- 2	2.0000- 3

07/04/76

(n,2n)
Cross Section

31-Ga-71

31-Ga-71 -1

07/04/76

(n,n'p)

³¹Ga-71

Cross Section

07/04/76

(n,p)

³¹Ga-71

Cross Section

4-5

MeV

³¹Ga-71 -2

07/04/76

(n,2n)
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
66 1672	1.2320+ 1		6.0600- 1	1.2100- 1	67 2009	1.4700- 1	3.0000- 1	9.6100- 1	1.0000- 1
72 3-11	1.4100+ 1	3.0000- 1	1.1660+ 0	5.8000- 2	61 703	1.4800+ 1	2.5000- 1	2.1800+ 0	2.2000- 1
53 27	1.4500+ 1		7.0010- 1	1.1000- 1					

07/04/76

(n,n')
Cross Section

31-Ga-71

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 756	1.4800+ 1	2.0000- 1	2.1000- 3	1.8000- 3

07/04/76

(n,p)
Cross Section

31-Ga-71

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
67 2005	1.4800+ 1		5.4000- 3	1.2000- 3	2.3000+ 0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
67 2005	1.4800+ 1		1.1000- 2	1.5000- 3	3.9200+ 0

07/04/76

(n,He-3)
Cross Section

31-Ga-71

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71 3816	1.4000+ 1		6.6000- 5	2.0000- 5

07/04/76

(n,p)

31-Ga-71

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 2142	1.4800- 1		5.0000- 2	4.0000- 3

07/04/76

(n,n')

32-Ge-Nat

Cross Section

4-7

Mev

32-Ge-Nat -1

07/24/76

(n, p')

³²Ge-Nat

Cross Section

Barns

07/04/76

(n,n')

$^{32}\text{Ge-Nat}$

Cross Section

Barns

4-9

Mev

$^{32}\text{Ge-Nat}$ -3

07/04/76

(n,n')

32-Ge-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
69 2850	7.5500+ 0	1.3000- 1	1.6800+ 0	1.7000- 1	

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
66 1931	6.0000- 1	5.0000- 2	0.0000+ 0	6.9500- 1	
66 1931	6.5000- 1	5.0000- 2	0.0000+ 0	6.9500- 1	
66 1931	1.0300+ 0	5.0000- 2	0.0000+ 0	1.0400+ 0	

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL-MIN MEV	E-LVL-MAX MEV
68 2413	1.4000+ 0	2.0000- 2	1.8450- 1	2.0120- 2	1.0400+ 0	1.0600+ 0
68 2413	1.4500+ 0	2.0000- 2	1.9830- 1	2.1390- 2	1.0400+ 0	1.0600+ 0
68 2413	1.5000+ 0	2.0000- 2	1.9330- 1	1.6330- 2	1.0400+ 0	1.0600+ 0

07/04/76

(n,X) Charged Particle

32-Ge-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
59 829	1.4500+ 1		3.0000- 1		1.6000- 2

07/04/76

Bound Atom
Cross Section

32-Ge-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1564	7.3000- 8		8.5000+ 0	6.8000- 1

07/04/76

Coherent Scattering
Cross Section

32-Ge-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
73 3476	2.5300-8		8.4204+0	7.4053-3
51 1584	7.3000-8		8.8000+0	7.0400-1

07/04/76

(n,n')
Cross Section

32-Ge-70

4-11

Mev

32-Ge-70 -1

07/04/76

(n,2n)

32-Ge-70

Cross Section

07/04/76

(n,X) γ

32-Ge-70

Cross Section

07/04/76

(n,n')
Cross Section

32-Ge-70

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
69 2763	1.7500+ 0	5.5000- 2	6.8200- 1		1.0400+ 0	69 2763	2.1300+ 0	5.5000- 2	1.9700- 1		1.7090+ 0
69 2763	2.1300+ 0	5.5000- 2	7.0900- 1		1.0400+ 0	69 2763	2.5500+ 0	5.5000- 2	3.1700- 1		1.7090+ 0
69 2763	2.5500+ 0	5.5000- 2	9.3300- 1		1.0400+ 0						

07/04/76

(n,2n)
Cross Section

32-Ge-70

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
60 588	1.1750+ 1	2.0000- 1	0.0000+ 0		53 27	1.4500+ 1		6.6670- 1	2.5000- 1
61 676	1.4400+ 1	3.0000- 1	5.9810- 1	4.5000- 2	61 703	1.4800+ 1	5.0000- 1	1.6000+ 0	2.4000- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
73 3988	1.4600+ 1		7.1000- 1	5.8000- 2	4.0830+ 1

07/04/76

(n,X) γ
Cross Section

32-Ge-70

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
69 2763	1.7500+ 0	5.5000- 2	6.8200- 1	6.8000- 2	1.0410+ 0	69 2763	2.1300+ 0	5.5000- 2	9.2000- 2		1.7090+ 0
69 2763	2.1300+ 0	5.5000- 2	8.1400- 1	8.1000- 2	1.0410+ 0	69 2763	2.5500+ 0	5.5000- 2	1.6300- 1	1.6000- 2	1.7090+ 0
69 2763	2.5500+ 0	5.5000- 2	1.0870+ 0	1.1800- 1	1.0410+ 0						

07/04/76

(n,p)
Cross Section

32-Ge-70

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
56 278	1.4000+ 1		9.3010- 2	
53 27	1.4500+ 1		1.2900- 1	6.5010- 2
67 2005	1.4800+ 1		7.7000- 2	1.0000- 2

07/04/76

(n,n')

32-Ge-72

Cross Section

Barns

07/04/76

(n,2n)

32-Ge-72

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs SECONDS
69 2910	1.4800+ 1		4.8700- 1	5.0000- 2 2.0000- 2

07/04/76

(n,X) γ

32-Ge-72

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
69 2763	1.7500+ 0	5.5000- 2	1.6500- 1	1.7000- 2	6.3000- 1	69 2763	2.1300+ 0	5.5000- 2	4.5000- 2	5.0000- 3	8.9500- 1
69 2763	2.1300+ 0	5.5000- 2	2.4800- 1	2.5000- 2	6.3000- 1	69 2763	2.5500+ 0	5.5000- 2	3.3000- 2	9.0000- 3	8.9500- 1
69 2763	2.5500+ 0	5.5000- 2	4.0600- 1	4.1000- 2	5.3000- 1	69 2763	2.5500+ 0	5.5000- 2	2.2000- 2	3.0700- 3	1.2300+ 0
69 2763	1.7500+ 0	5.5000- 2	8.2700- 1	8.3000- 2	8.3400- 1	69 2763	1.7500+ 0	5.5000- 2	1.8000- 2	2.0000- 3	1.4650+ 0
69 2763	2.1300+ 0	5.5000- 2	9.3700- 1		8.3400- 1	69 2763	2.1300+ 0	5.5000- 2	4.7000- 2	5.0000- 3	1.4650+ 0
69 2763	2.5500+ 0	5.5000- 2	1.1700+ 0	1.1700- 1	8.3400- 1	69 2763	2.5500+ 0	5.5000- 2	8.5000- 2	9.0000- 3	1.4650+ 0

07/04/76

(n,p)

32-Ge-72

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
56 278	1.4000+ 1		3.2000- 2	
67 3010	1.4400+ 1	3.0000- 1	4.7400- 2	4.7000- 3
67 2005	1.4800+ 1		3.1000- 2	4.0000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs HOURS
53 27	1.4500+ 1		6.5210- 2	2.6000- 2 1.4000+ 1

4-16

32-Ge-72 -3

07/04/76

(n,g)

32-Ge-72

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 3010	1.4400+ 1	3.0000- 1	1.5200- 2	1.5200- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
67 2005	1.4800+ 1		6.3000- 3	1.0000- 3	5.2500+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
67 2005	1.4800+ 1		8.2000- 3	1.0000- 3	1.3900+ 1
67 3010	1.4400+ 1	3.0000- 1	7.6100- 3	7.6000- 4	1.4000+ 1

07/04/76

(n,n')

32-Ge-73

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC RELATIVE	DELTA RELATIVE	E-PHOTON MEV
67 3860	1.0000+ 0		2.2000+ 1	4.4000+ 0	7.2500- 2
67 3860	1.0000+ 0		1.6000+ 1	3.6000+ 0	1.1000- 1
67 3860	1.0000+ 0		2.4000+ 1	4.8000+ 0	1.3750- 1
67 3860	1.0000+ 0		8.0000+ 0	1.6000+ 0	1.5800- 1
67 3860	1.0000+ 0		1.3300+ 1	2.6600+ 0	1.9400- 1
67 3860	1.0000+ 0		1.2000+ 1	2.4000+ 0	2.4500- 1
67 3860	1.0000+ 0		2.6000+ 0	5.2000- 1	3.4900- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC RELATIVE	DELTA RELATIVE	E-PHOTON MEV
67 3860	1.0000+ 0		4.3000+ 0	8.6000- 1	3.9700- 1
67 3860	1.0000+ 0		1.7700+ 1	3.5400+ 0	4.1700- 1
67 3860	1.0000+ 0		1.1000+ 0	2.2000- 1	4.7200- 1
67 3860	1.0000+ 0		1.0600+ 1	2.1200+ 0	5.1300- 1
67 3860	1.0000+ 0		6.6000+ 0	1.3200+ 3	6.0000- 1
67 3860	1.0000+ 0		1.0600+ 1	2.1200+ 0	7.0000- 1

07/04/76

(n,p)

32-Ge-73

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
56 278	1.4000+ 1		2.0000- 2	
67 3010	1.4400+ 1	3.0000- 1	2.6400- 2	2.6000- 3
67 2005	1.4800+ 1		2.0000- 2	4.0000- 3

07/04/76

(n,p)
Cross Section

32-Ge-73

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs MINUTES
53 27	1.4500+1		1.3660-1	6.8010-2 2.2000+0

07/04/76

(n,n')
Cross Section

32-Ge-74

07/04/76

(n,X) γ
Cross Section

32-Ge-74

07/04/76

(n,n')
Cross Section

32-Ge-74

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
69 2763	1.7500+	0 5.5000-	2 7.6500- 1		5.9600- 1	69 2763	2.5500+	0 5.5000-	2 1.5100- 1		1.4640+ 0
69 2763	2.1300+	0 5.5000-	2 6.8800- 1		5.9600- 1	69 2763	1.7500+	0 5.5000-	2 5.4000- 2		1.4840+ 0
69 2763	2.5500+	0 5.5000-	2 6.7200- 1		5.9600- 1	69 2763	2.1300+	0 5.5000-	2 9.2000- 2		1.4840+ 0
69 2763	1.7500+	0 5.5000-	2 3.4100- 1		1.2050+ 0	69 2763	2.5500+	0 5.5000-	2 1.2300- 1		1.4840+ 0
69 2763	2.1300+	0 5.5000-	2 3.1500- 1		1.2050+ 0	69 2763	1.7500+	0 5.5000-	2 1.0000- 2		1.6980+ 0
69 2763	2.5500+	0 5.5000-	2 3.7700- 1		1.2050+ 0	69 2763	2.1300+	0 5.5000-	2 1.2900- 1		1.6980+ 0
69 2763	1.7500+	0 5.5000-	2 6.5000- 2		1.4640+ 0	69 2763	2.5500+	0 5.5000-	2 2.3900- 1		1.6980+ 0
69 2763	2.1300+	0 5.5000-	2 1.0900- 1		1.4640+ 0	69 2763	2.5500+	0 5.5000-	2 1.6000- 2		2.1980+ 0

07/04/76

(n,n'p)
Cross Section

32-Ge-74

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
68 2713	1.4700+ 1		6.7000- 4	7.0000- 5

07/04/76

(n,X) γ
Cross Section

32-Ge-74

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
69 2763	2.1300+ 0	5.5000- 2	5.1000- 2	5.0000- 3	4.9300- 1	69 2763	1.7500+ 0	5.5000- 2	5.4000- 2	5.0000- 3	6.8800- 1
69 2763	2.5500+ 0	5.5000- 2	1.3600- 1	1.4000- 2	4.5200- 1	69 2763	2.1300+ 0	5.5000- 2	9.2000- 2	9.0000- 3	8.8800- 1
69 2763	1.7500+ 0	5.5000- 2	1.1290+ 0	1.1300- 1	5.9600- 1	69 2763	2.5500+ 0	5.5000- 2	1.2300- 1	1.2000- 2	8.8800- 1
69 2763	2.1300+ 0	5.5000- 2	1.1850+ 0	1.1900- 1	5.9600- 1	69 2763	1.7500+ 0	5.5000- 2	1.0000- 2	1.0000- 3	1.1020+ 0
69 2763	2.5500+ 0	5.5000- 2	1.3900+ 0	1.4000- 1	5.9600- 1	69 2763	2.1300+ 0	5.5000- 2	7.8000- 2	8.0000- 3	1.1020+ 0
69 2763	1.7500+ 0	5.5000- 2	2.3500- 1	2.4000- 2	6.0900- 1	69 2763	2.5500+ 0	5.5000- 2	1.0200- 1	1.0000- 2	1.1020+ 0
69 2763	2.1300+ 0	5.5000- 2	2.2000- 1	2.2000- 2	6.0900- 1	69 2763	1.7500+ 0	5.5000- 2	1.0600- 1	1.1000- 2	1.2050+ 0
69 2763	2.5500+ 0	5.5000- 2	3.4800- 1	3.4000- 2	6.0900- 1	69 2763	2.1300+ 0	5.5000- 2	1.4500- 1	1.5000- 2	1.2050+ 0
69 2763	1.7500+ 0	5.5000- 2	6.5000- 2	6.0000- 3	8.6800- 1	69 2763	2.5500+ 0	5.5000- 2	1.7100- 1	1.7000- 2	1.2050+ 0
69 2763	2.1300+ 0	5.5000- 2	1.0900- 1	1.1000- 2	8.6800- 1	69 2763	2.5500+ 0	5.5000- 2	1.6000- 2	2.0000- 3	2.1990+ 0
69 2763	2.5500+ 0	5.5000- 2	1.5100- 1	1.5000- 2	8.6800- 1						

07/04/76

(n,p)
Cross Section

32-Ge-74

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 3010	1.4400+ 1	3.0000- 1	1.3200- 2	1.3000- 3
67 2005	1.4800+ 1		1.0000- 2	3.0000- 3

07/04/76

(n, α)
Cross Section

32-Ge-74

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
57 3010	1.4400+ 1	3.0000- 1	1.3300- 2	1.3300- 3
53 27	1.4500+ 1		1.4900- 2	6.0010- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE BARNs MINUTES
67 2005	1.4800+ 1		2.8000- 3	6.0000- 4 2.3000+ 0

4-20

32-Ge-74 -3

07/04/76

(n,α)
Cross Section

32-Ge-74

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
57 3010	1.4400 ± 1	3.0000 ± 1	3.3200 ± 3	3.3000 ± 4	3.9000 ± 0
67 2005	1.4800 ± 1		3.3000 ± 3	5.0000 ± 4	3.9200 ± 0

07/04/76

Bound Atom
Cross Section

32-Ge-75

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
70 3969	2.5000 ± 2	5.0000 ± 3	2.2000 ± 0	2.0000 ± 1

07/04/76

(n,n')
Cross Section

32-Ge-76

07/04/76

(n,2n)
Cross Section

32-Ge-76

ECSIL-1871 (67)

ECSIL-2888 (67)

ECSIL-1871 (67)

4-22

Mev

32-Ge-76 -2

Barns

07/04/76

(n,X)
Cross Section

32-Ge-76

07/04/76

(n,n')
Cross Section

32-Ge-76

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
69 2763	1.7500+ 0	5.5000- 2	8.4200- 1		5.6300- 1	69 2763	1.7500+ 0	5.5000- 2	3.5400- 1		1.1090+ 0
69 2763	2.1300+ 0	5.5000- 2	9.0300- 1		5.6300- 1	69 2763	2.1300+ 0	5.5000- 2	3.4800- 1		1.1090+ 0
69 2763	2.5500+ 0	5.5000- 2	9.8000- 1		5.6300- 1	69 2763	2.5500+ 0	5.5000- 2	4.6400- 1		1.1090+ 0

07/04/76

(n,2n)
Cross Section

32-Ge-76

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 3010	1.4400+ 1	3.0000- 1	1.2360+ 0	1.2000- 1	53 27	1.4500+ 1		1.8200+ 0	5.5010- 1
67 3010	1.4400+ 1	3.0000- 1	1.4440+ 0	2.8900- 1	61 703	1.4800+ 1	2.5000- 1	1.2000+ 0	2.4000- 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE SECONDS
74 4002	1.4700+ 1	2.0000- 1	1.2140+ 0	1.2100- 1
63 884	1.4800+ 1	2.5000- 1	7.2600- 1	1.48000+ 1

07/04/76

(n,2n)
Cross Section

32-Ge-76

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
73 3388	1.4600+ 1		9.3700- 1	1.0000- 1	8.1790+ 1
74 4062	1.4700+ 1	2.0000- 1	1.2150- 0	1.0500- 1	8.2000+ 1

07/04/76

(n,X) γ
Cross Section

32-Ge-76

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-PHOTON MEV
69 2763	1.7500+ 0	5.5000- 2	2.0200- 1	2.0000- 2	5.4500- 1	69 2763	2.5500+ 0	5.5000- 2	1.2000+ 0	1.2000- 1	5.6300- 1
69 2763	2.1300+ 0	5.5000- 2	2.0600- 1	2.1000- 2	5.4500- 1	69 2763	1.7500+ 0	5.5000- 2	1.5200- 1	1.5000- 2	1.1090+ 0
69 2763	2.5500+ 0	5.5000- 2	2.2000- 1	2.2000- 2	5.4500- 1	69 2763	2.1300+ 0	5.5000- 2	1.4200- 1	1.4000- 2	1.1090+ 0
69 2763	1.7500+ 0	5.5000- 2	1.0440+ 0	1.1400- 1	5.6300- 1	69 2763	2.5500+ 0	5.5000- 2	2.4400- 1	2.5000- 2	1.1090+ 0
69 2763	2.1300+ 0	5.5000- 2	1.1090- 0	1.1100- 1	5.6300- 1						

07/04/76

(n,2n)
Cross Section

33-As-75

4-24

33-As-75 -1

07/04/76

(n,2n)
Cross Section

33-As-75

07/04/76

(n,p)
Cross Section

33-As-75

4-25

Mev

33-As-75 -2

07/04/76

(n,p)

Cross Section

33-As-75

ECSIL-1871 (67)

ECSIL-3818 (75)

ECSIL-2888 (67)

4-26

MeV

33-As-75 -3

Barns

07/04/76

33-As-75

(n,p)
Cross Section

07/04/76

(n,n')

33-As-75

Cross Section

Barns

FC51L-4016 (75)

MeV

07/04/76

(n,n')

33-As-75

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63 REF 10001-2	1.7000	0.15000-1		

4-28

33-As-75 -5

07/04/76

(n,n')
Cross Section

33-As-75

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
59 829	1.4500+ 1		1.3000- 1		1.7000- 2
73 3457	1.4800+ 1	3.0000- 1	1.6100- 1	1.3000- 2	1.7500- 2

07/04/76

(n,2n)
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
60 588	1.0300+ 1	2.0000- 1	0.0000+ 0		69 2334	1.4200+ 1	2.2000- 1	1.1700+ 0	1.1700- 1
63 377	1.4000+ 1		8.4310- 1	2.5290- 1	67 2009	1.4700+ 1	3.0000- 1	1.0920+ 0	1.2000- 1
66 1874	1.4050+ 1	1.0000- 1	9.6500- 1	6.7550- 2	66 1874	1.4750+ 1	1.7000- 1	1.0380+ 0	7.2660- 2
72 3411	1.4100+ 1	3.0000- 1	9.1000- 1	3.7000- 2					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
53 27	1.4500+ 1		5.4510- 1	1.6000- 1	1.7000+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE DAYS
71 3184	1.4400+ 1	3.0000- 1	1.0160+ 0	1.0200- 1	1.8000+ 1
73 3988	1.4600+ 1		8.3500- 1	7.2000- 2	1.8540+ 1

07/04/76

(n,p)
Cross Section

33-As-75

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 2894	1.4100+ 1	1.0000- 1	2.0300- 2	1.6000- 3
67 3307	1.4100+ 1	1.8000- 1	1.5000- 2	4.0000- 3
67 3307	1.4800+ 1	2.0000- 2	3.3000- 2	3.0000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
73 3987	1.4600+ 1		1.3580- 2	1.1000- 3	2.6500- 1

07/04/76

(n,p)

33-As-75

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC		DELTA HALF-LIFE	
			BARNs	MINUTES	BARNs	SECONDS
66 289*	1.4100*	1.0000-	1.8600-	2 1.5000-	3 4.9000*	1
61 70*	1.4100*	1.0000-	1.0000-	2 2.0000-	3 4.9000*	1
69 233*	1.4200*	1.2.0000-	1.8.0000-	3 1.0000-	3 4.9000*	1
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC		DELTA HALF-LIFE	
			BARNs	MINUTES	BARNs	MINUTES
53 27	1.4500*	1	1.1800-	2 2.4000-	3 1.1800*	1
71 318*	1.4400*	1 3.0000-	1 1.5000-	2 2.0000-	3 8.0000*	1
69 233*	1.4200*	1 2.0000-	1 1.6000-	2 2.4000-	3 8.2000*	1
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC		DELTA HALF-LIFE	
			BARNs	MINUTES	BARNs	MINUTES
61 70*	1.4100*	1 2.0000-	1 2.5000-	2 5.0000-	3 8.20* 1	
67 206	1.4800*	1	1.7000-	2 3.0000-	3 8.5000*	1

07/04/76

(n,He-3)

33-As-75

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71 3816	1.4000*	1	5.7800-	4 2.0000- 4
60 667	1.4800*	1 9.0010-	1 5.0000-	3 2.0000- 3
65 2151	1.4800*	1	5.0000-	4 5.0000- 4

07/04/76

(n,p)

33-As-75

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69 233*	1.4200*	1 2.0000-	1 1.3600-	2 1.6000- 3
67 206	1.4800*	1	1.9.0000-	3 2.0000- 3
61 701	1.4800*	1 9.0010-	1 4.5000-	3
REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA HALF-LIFE HOURS
53 27	1.4500*	1	1.2300-	2 2.2000- 3 1.4000* 1
63 756	1.4800*	1 2.0000-	1 9.3010-	3 3.1000- 3 1.4000* 1
71 318*	1.4400*	1 3.0000-	1 1.3500-	2 1.5000- 3 1.4100* 1

4-30

33-As-75 -7

07/04/76

Bound Atom
Cross Section

33-As-75

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
51 1584	7.3000- 8		7.0000+ 0	

07/04/76

Coherent Scattering
Cross Section

33-As-75

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
50 2564	2.5300- 8		4.6000+ 0	5.0000- 1
51 1584	7.3000- 8		5.0000+ 0	4.0000- 1

07/04/76

Total Scattering
Cross Section

34-Se-Nat

4-31

34-Se-Nat -1

07/04/76

Nonelastic
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	
54	103	1.0000- 0	5.0000- 2	7.0910- 1	1.0000- 1	55	790	1.4000+ 1	1.4000- 0	2.3000- 1
56	34	2.5000- 0		1.8000+ 0	1.7000- 1	57	199	1.4100+ 1	1.5700- 0	8.0010- 2
55	790	2.5000- 0	1.5000- 1	1.6800+ 0	1.7000- 1	56	250	1.4500+ 1	1.7700- 0	6.0010- 2

07/04/76

(n,n')

34-Se-Nat

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
63	836	7.0000+ 0	1.7800+ 0	1.6000- 1

07/04/76

Absorption
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
53	370	2.5300- 8	1.2400+ 1	5.0000- 1	58	364	2.2000- 1	2.0000- 2	8.3010- 2
60	691	2.5300- 8	1.1700+ 1	1.0000- 1	58	364	8.3000- 1	4.0001- 2	5.8010- 2
58	364	2.5000- 2	4.0000- 3	2.1500- 1					

07/04/76

Activation
Cross Section

34-Se-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	ACTIVATE
69	4877	1.4700+ 1	1.8700+ 0	2.5000- 1	34-SE-61

1-38

34-Se-Nat -2

07/04/76

Bound Atom
Cross Section

34-Se-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53	370 0.0000+ 0		9.0000+ 0	1.0000+ 0
51	1584 7.3000- 8		1.0000+ 1	

07/04/76

Coherent Scattering
Cross Section

34-Se-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53	370 0.0000+ 0		7.0000+ 0	2.0000+ 0
51	1584 7.3000- 8		1.0000+ 1	8.0000- 1

07/04/76

(n,2n)
Cross Section

34-Se-74

07-04/76

(n,2n)

34-56-74

Cross Section

ECSIL-2366 (69)

ECSIL-2894 (66)

ECSIL-2894 (66)

Barns

4-34

34-56-74 -2

07/04/76 (n,2n) 34-Se-74
Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69 4077	1.4700+ 1		4.2000- 1	4.4000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
61 676	1.4400+ 1	3.0000- 1	4.9000- 2	8.0010- 3	3.9000+ 1
67 1844	1.4400+ 1	3.0000- 1	6.5000- 2	1.5000- 2	4.4000+ 1
67 1876	1.4700+ 1		5.8000- 1	6.0000- 2	4.4000+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
61 676	1.4400+ 1	3.0000- 1	3.8300- 1	2.9000- 2	6.8010+ 0
67 1844	1.4400+ 1	3.0000- 1	2.9300- 1	2.9000- 2	7.1000+ 0
67 1876	1.4700+ 1		2.9400- 1	2.0000- 2	7.1000+ 0

07/04/76

(n,p)

34-Se-74

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 1874	1.450*	1.0000-	1.6500-	3.3000- 2	66 1674	1.4750*	1.0000-	1.4200-	1.4200- 2
67 1844	1.4400*	1.0000-	1.0700-	1.1000- 2	67 2005	1.4800*	2.0000-	1.4000-	1.4000- 2
65 4077	1.4700*		1.4800-	1.7000- 2					

07/04/76

(n,n')

34-Se-76

Cross Section

4-36

34-Se-76 -1

07/04/76 (n,n') 34-Se-76

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
75 3903	6.0000+ 0	1.0000- 1	2.0390- 1	4.0576- 2	5.6000- 1
75 3903	8.0000+ 0	1.0000- 1	1.8357- 1	2.4966- 2	5.6000- 1

07/04/76 $(n,2n)$ 34-Se-76

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
66 1874	1.4050+ 1	1.0000- 1	8.4500- 1	5.9150- 2	67 1876	1.4700+ 1		1.2500+ 0	8.0000- 2
67 1844	1.4400+ 1	3.0000- 1	8.0200- 1	8.1000- 2	66 1874	1.4760+ 1	1.0000- 1	9.4400- 1	6.6080- 2

07/04/76

(n,p)

34-Se-76

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1844	1.4400+ 1	3.0000- 1	5.6000- 2	5.6000- 3	69 4077	1.4700+ 1		5.7000- 2	8.0000- 3
67 2004	1.4700+ 1		6.8000- 2	8.0000- 3	67 2006	1.4800+ 1		5.4000- 2	8.0000- 3
67 1876	1.4700+ 1		4.7000- 2	5.0000- 3					

07/04/76

(n,n')

34-Se-77

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
70 2987	1.4500+ 1	2.0000- 1	5.9300- 1	6.0000- 2	1.7600+ 1
67 2602	2.8000+ 0	7.0000- 2	1.0000+ 0	1.3000- 1	1.6000+ 1

07/04/76

(n,p)

34-Se-77

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53 27	1.4500+ 1		4.5200- 2	2.3000- 2
67 2006	1.4800+ 1		3.6000- 2	1.0000- 2

07/04/76

(n,d)

34-Se-77

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
69 4077	1.4700+ 1		1.5600- 2	2.4000- 3

07/04/76

34-Sep-77

Activation
Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	ACTIVATE 33-AS-76
67 2004	1.4700 ± 1		1.2102 ± 2	1.6000 ± 3	

07/04/76

34-Sep-78

(n,n')

Cross Section

07/04/76

(n,2n)

3- Se-78

Cross Section

Barns

07/04/76

(r,n')

34-Se-78

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
75 3903	8.0000+ 0	1.0000- 1	2.0133- 1	2.7381- 2	6.1000- 1

07/04/76

(n,2n)

34-Se-78

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
72 2987	1.4500+ 1	2.0000- 1	7.0300- 1	7.0000- 2	1.7500+ 1
67 1876	1.4700+ 1		7.3600- 1	4.0000- 2	1.6000+ 1

07/04/76

(n,p)
Cross Section

34-Se-78

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1844	1.4400+ 1	3.0000- 1	2.4000- 2	2.4000- 3
69 4077	1.4700+ 1		2.1000- 2	6.0000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
67 1876	1.4700+ 1		9.3000- 4	9.0000- 5	6.0000+ 0
67 1876	1.4700+ 1		2.1000- 2	2.0000- 3	9.1000+ 1
67 2006	1.4800+ 1		1.4000- 2	2.0000- 3	9.5000+ 1

07/04/76

(n,a)
Cross Section

34-Se-78

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1844	1.4400+ 1	3.0000- 1	6.0000- 3	1.0000- 3

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
67 1876	1.4700+ 1		7.6000- 3	9.0000- 4	4.9000+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
67 1876	1.4700+ 1		1.9000- 2	2.0000- 3	8.2000+ 1
67 2006	1.4800+ 1		7.0000- 3	1.0000- 3	8.5000+ 1

07/04/76

(n,n')

24-Sc-80

Cross Section

E_{inc} = 0.665 Mev

ECSIL-4034 (172)

Barns

07/04/76

(n,2n)

34-Sc-80

Cross Section

ECSIL-3807 (175)

Barns

4-42

34-Sc-80 -1

Mev

07/04/76

34-Se-80

0.20
0.25
0.30

Half-Life = 3.9 Minutes

EC51L-2888 (67)

Barns

Half-Life = 3.9 Minutes

EC51L-3818 (75)

07-04-76

(n,n')

34-5e-80

Cross Section

07/04/76

(n,n')

34-5e-80

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
75 3903	8.000 ± 0.1	0.000 ± 1.2	0.232 ± 1.4	4.915 ± 2.6	7000 ± 1

07/04/76

(n,2n)

34-5e-80

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
65 1957	14.800 ± 1		1.2500 ± 1	1.2500 ± 2	3.8000 ± 0
67 1844	14.400 ± 1	3.3000 ± 1	6.8000 ± 1	1.0000 ± 1	3.9000 ± 0
67 1876	14.700 ± 1		2.5500 ± 1	2.0000 ± 2	3.9000 ± 0

4-44

34-5e-80 -3

07/04/76

(n,p)
Cross Section

34-Se-80

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 1876	1.4700+ 1		1.6000- 2	2.0000- 3

07/04/76

(n,a)
Cross Section

34-Se-80

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
67 2004	1.4700+ 1		1.4600- 1	2.2000- 2
69 4077	1.4700+ 1		1.3400- 1	2.5000- 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE SECONDS
67 1876	1.4700+ 1		5.0000- 3	2.0000- 3	5.4000+ 1
53 27	1.4500+ 1		3.7700- 2	1.6000- 2	5.9010+ 1

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
67 1876	1.4700+ 1		6.0000- 4	3.0000- 4	1.1000+ 1
67 2006	1.4800+ 1		2.6000- 3	4.0000- 4	1.2000+ 1

07/04/76

(n,n')
Cross Section

34-Se-82

07/04/76

(n,n')

34-Sc-82

Cross Section

EC51L-3818 (75)

Half-Life = 57 Minutes

07/04/76

(n,n')

34-Sc-82

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	E-LVL MEV
75 3903	6.0000 ± 0.10000	0.10000	2.5347 ± 1.26389	2.78000	1
75 3903	6.0000 ± 0.10000	0.10000	2.0656 ± 1.36498	2.78000	1

4-46

34-Sc-82 -2

07/04/76

(n,2n)

24-Sep-82

Cross Section

REFERENCE																					
ENERGY		DELTA	X-SEC		DELTA		ENERGY		DELTA	X-SEC		DELTA									
MEV	BARN	MEV	BARN	MEV	BARN	MEV	BARN	MEV	BARN	MEV	BARN	MEV	BARN								
67 1844	1.4400	1	3.0000	1	2.2500	1	5.0000	2	1.8000	1	67 1844	1.4400	1	8.9400	1	8.9000	2	5.7000	1		
67 1876	1.4700	1	2.0000	1	3.8500	1	2.5000	2	1.8000	1	67 1876	1.4700	1	1.0770	0	3.0000	2	5.7000	1		
72 3868	1.4800	1	5.0000	1	3.1200	1	2.0000	2	1.8000	1	72 3868	1.4800	1	5.0000	1	5.0000	2	5.7000	1		
75 3567	1.5100	1	3.0000	1	3.3500	1	3.3000	2	1.8600	1	75 3567	1.5100	1	3.0500	1	9.8500	1	8.9000	2	5.7000	1
65 1957	1.4800	1	1.6000	1	1.6000	1	1.6000	1	5.6000	1	53 27	1.4500	1	1.5000	0	5.0000	1	5.9010	1	5.9010	1

07/04/76

(n,g)

35-Br-Nat

Cross Section

4-47

MeV

35-Br-Nat -1

Barns

07/04/76

Absorption
Cross Section

35-Br-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53	370	2.5300- 8	6.6000+ 0	1.0000- 1
60	891	2.5300- 8	6.6200+ 0	6.0000- 2

07/04/76

Bound Atom
Cross Section

35-Br-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
53	370	0.0000+ 0	6.0000+ 0	1.0000- 1
51	1584	7.3000- 8	6.0000+ 0	

07/04/76

Coherent Scattering
Cross Section

35-Br-Nat

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
72	3444	7.1600- 8	5.6410+ 0	2.0106- 4
51	1534	7.3000- 8	5.7000+ 0	4.5600- 1

07/04/76

(n,n')

35-Br-79

4-48

35-Br-79 -1

Barns

07/04/76

(n,2n)

35-Br-79

Cross Section

Barns

4-4-9

MeV

35-Br-79 -2

07/04/76

n,n'

35-Br-79

Cross Section

Barns

07/04/76

(n,n')

35-Br-79

Cross Section

REFERENCE	ENERGY MEV	DELTA BARNs	X-SEC BARNs	DELTA HALF-LIFE SECONDS
67 2602	2.8000 ± 0.7000	2.237 ± 0.1670	3.0810 ± 2.4800	0
68 3356	1.4700 ± 1.1000	1.26630 ± 1.36000	2.486 ± 0.0	

07/04/76

(n,2n)

35-Br-79

Cross Section

REFERENCE	ENERGY MEV	DELTA BARNs	X-SEC BARNs	DELTA BARNs
63 373	1.4120 ± 1.3370	0.1670 ± 1.3370	1.4800 ± 1.1400	0.27000 ± 2
68 2602	1.4700 ± 1.0000	1.26630 ± 1.36000	2.486 ± 0.0	
69 676	1.4700 ± 1.0000	1.26630 ± 1.36000	2.486 ± 0.0	

REFERENCE	ENERGY MEV	DELTA BARNs	X-SEC BARNs	DELTA HALF-LIFE SECONDS
43 27	1.4500 ± 1.4100	0.29000 ± 1.64010	1	

4-50

35-Br-79 -3

07/04/76

(n,2n)
Cross Section

35-Br-79

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
73 3988	1.4600+ 1		9.4200- 1	6.4000- 2	6.3700+ 0
71 3184	1.4400+ 1	3.0000- 1	7.4100- 1	7.4000- 2	6.4000+ 0
52 108	1.4130+ 1	1.0000- 1	7.9310- 1	4.8000- 2	6.4010+ 0

07/04/76

(n,p)
Cross Section

35-Br-79

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
66 3380	1.4800+ 1	2.0000- 1	1.0000- 2	3.0000- 3	3.9000+ 0

07/04/76

(n,d)
Cross Section

35-Br-79

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
71 3765	1.3600+ 1	2.0000- 1	1.0000- 2	8.0000- 4	65 3379	1.4800+ 1	1.0000- 1	2.0000- 2	1.0000- 2
58 401	1.4050+ 1	5.5010- 1	1.0000- 2	1.8000- 3	56 3380	1.4800+ 1	2.0000- 1	1.2000- 2	2.0000- 3
71 3765	1.4100+ 1	5.0000- 1	9.1000- 3	5.0000- 4	67 2006	1.4800+ 1		1.7000- 2	2.0000- 3
68 2002	1.4400+ 1	3.0000- 1	2.0000- 2		71 3765	1.4800+ 1	2.0000- 1	1.0800- 2	7.0000- 4

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE HOURS
71 3184	1.4400+ 1	3.0000- 1	2.0000- 2	2.0000- 3	2.6500+ 1
63 756	1.4800+ 1	2.0000- 1	9.2010- 3	2.0000- 3	2.7000+ 1

35-Br-81 -1

Mev

4-52

Bars

07/04/76

(n,2)

35-Br-81

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
62 702	4.600	3.000	0.700	9.8000 - 2
75 4507	5.100	3.000	1.000	5.6000 - 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	HALF-LIFE MINUTES
70 3567	5.000	3.000	3.6000	2.6000	7.6000
61 704	4.500	2.0000	4.7000	0.0000	8.0000
68 2028	4.400	3.0000	3.9000	1.8000	8.0000
71 318	4.400	3.0000	3.9000	2.6000	8.0000

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	HALF-LIFE HOURS
71 318	4.400	3.0000	7.3700	4.4000	2.40000 - 0
75 3567	5.000	3.0000	7.3600	5.0000	2.40000 - 0
61 704	4.500	2.0000	5.1010	5.0000	2.40000 - 0
68 2028	4.400	3.0000	7.3700	4.5000	0

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	HALF-LIFE HOURS
61 676	4.400	3.000	7.5200	6.8010	2.40000 - 0
67 702	4.600	3.0000	5.7010	2.3610	2.40000 - 0
65 3379	4.900	1.0000	7.6000	1.5000	2.40000 - 0

07/04/76

(n,p)

35-Br-81

Cross Section

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN
62 702	4.600	3.000	5.7000	2.10000 - 2

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	HALF-LIFE MINUTES
59 702	4.600	3.0000	2.5000	2.50000	3.8000
67 2028	4.400	3.0000	6.5000	3.10000	3.8000
66 3380	4.600	2.0000	8.0000	3.14000	3.8000
71 318	4.400	3.0000	1.7000	2.00000	3.50000

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARN	DELTA BARN	HALF-LIFE MINUTES
65 3380	4.600	2.0000	1.5000	3.0000	3.50000
62 702	4.600	3.0000	3.2000	2.80010	3.50010
67 2028	4.400	3.0000	1.4000	2.00000	3.50000

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REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs
11 3765	1.3600*	1 2.0000-	1 3.1000-	3 4.0000- 4	65 3379	1.4800*	1 1.0000-	1 1.4000- 2	1.0000- 2
71 3765	1.4100*	1 5.0000-	1 3.3000-	3 4.0000- 4	66 3380	1.4800*	1 2.0000-	1 3.8000- 3	1.0000- 3
68 2002	1.4400*	1 3.0000-	1 1.9000- 2		71 3765	1.4800*	1 2.0000-	1 3.7000- 3	3.0000- 4
62 702	1.4600*	1 3.0000-	1 1.0700-	1 2.0000- 2	63 756	1.4800*	1 2.0000-	1 6.6010- 3	1.4000- 3
65 3379	1.4800*	1 1.0000-	1 7.0000-	3 3.0600- 3					

REFERENCE	ENERGY MEV	DELTA MEV	X-SEC BARNs	DELTA BARNs	HALF-LIFE MINUTES
71 318*	1.4400*	1 3.0000-	1 9000- 2	2.0000- 3	9.0000* 1
53 27	1.4500*	1	1.0300- 1	2.1900- 2	9.0010* 1
67 2006	1.4800*	1	6.5000- 3	1.2000- 3	9.5000* 1

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