EXFOR News (January 2021)

New experimental data available from Nuclear Reaction Data Centres

EXFOR [1] is a world-wide data library for experimental neutron, charged-particle and photon induced reaction data compiled by the International Network of the Nuclear Reaction Data Centres (NRDC)[a] co-ordinated by the IAEA Nuclear Data Section. Regularly updated web retrieval databases are available at IAEA-NDS as well as NNDC, NEADB, JCPRG and CDFE.

This News lists newly created EXFOR entries as well as revised EXFOR entries where new data subentries are added. Entries from articles pubslished in past 10 years are flagged by asterisks (*). Please send an email to the NRDC Coordinator (n.otsuka@iaea.org) for inclusion in the EXFOR News distribution list as well as any question on EXFOR.

[1] N. Otuka, E. Dupont, V. Semkova, B. Pritychenko et al., Nucl.Data.Sheets **120**(2014)272.

Quantity codes

ALF	α-value ($\sigma_{\rm capt}/\sigma_{\rm fis}$)	KE	Kinetic energy
AMP	Length or amplitude	INT	Cross section integral over incident energy
CHG	Fragment charge	KER	Kerma factor
CS	Cross section	MAS	Fragment mass
CSP	Partial cross section	MFQ	Differential fission neutron multiplicity
CST	Temperature dependent cross section	MLT	Multiplicity
D3A	Triple differential $\mathrm{d}\Omega_1/\mathrm{d}\Omega_2/\mathrm{d}E'$	NQ	Nuclear quantity
D3E	Triple differential $\mathrm{d}\Omega/\mathrm{d}E'_1/\mathrm{d}E'_2$	NU	Fission neutron multiplicity $\bar{\nu}$
D4A	Quadruple diff. $\mathrm{d}\Omega_1/\mathrm{d}\Omega_2/\mathrm{d}E'_1/\mathrm{d}E'_2$	NUD	Delayed fission neutron multiplicity $\bar{\nu_d}$
DA	Differential $\mathrm{d}/\mathrm{d}\Omega$	POL	Polarization
DAA	Double differential $\mathrm{d}\Omega_1/\mathrm{d}\Omega_2$	POD	Differential polarization
DAE	Double differential $\mathrm{d}\Omega/\mathrm{d}E'$	PY	Product yield (other than fission)
DAP	Partial differential $\mathrm{d}/\mathrm{d}\Omega$	RI	Resonance integral
DAT	Temperature-dependent Legendre coefficient	RP	Resonance parameter
DE	Differential $\mathrm{d}/\mathrm{d}E'$	RR	Reaction rate
DEP	Energy spectrum for specific group	SIF	Self indication
DP	Diff. by linear momentum of outgoing part.	SPC	Gamma spectrum
DT	Diff. by 4-momentum transfer squared	TSL	Thermal scattering
ETA	η-value = $\bar{\nu}\sigma_{\rm fis}/(\sigma_{\rm capt}+\sigma_{\rm fis})$	TT	Thick target yield
EVL	Evaluation	TTD	Differential thick target yield, $\mathrm{d}/\mathrm{d}\Omega$
FY	Fission product yield	TTP	Partial thick target yield

Special codes in outgoing particle field

abs	Absorption	fus	Fusion	sct	Scattering	tot	Total
el	Elastic	inel	Inelastic	tcx	Total charge changing		
fis	Fission	non	Nonelastic	ths	Thermal scattering		

Special codes in incident energy field

Fast	Fast reactor spectrum average	Maxw	Maxwellian spectrum average
Fiss	Fission spectrum average	Spont	Spontaneous (for fission)

[a] NNDC (USA), NEADB (France), NDS (Austria), CJD (Russia), CNDC (China), ATOMKI (Hungary), NDPCI (India), JAEA (Japan), JCPRG (Japan), KAERI (Korea), CDFE (Russia), CNPD (Russia), UkrNDC (Ukraine)

1 Hydrogen 1

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,γ	^{2}H	CS	1CANQU	2.5-02	2.5-02	Jour	PR/C,102,014002	20	M.R.Anderson+	14659
*	d,el	^{1}H	POD	2GERJUL	1.2+09	2.3+09	Jour	NP/A,977,14	18	D.Mchedlishvili+	O2478

1 Hydrogen

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	n,tot		CST	2FR ILL			Jour	JAC,18,61	85	W.Knoll+	23725
	n,tot		CST	2FR ILL			Jour	JAC,18,61	85	W.Knoll+	23725

3 Lithium 7

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	n,γ	^{8}Li	CS	2GERKFK	2.5+04	2.5+04	Jour	AJ,344,464	89	M.Wiescher+	22171
	n,inel	^{7}Li	CSP	2ZZZGEL	6.5+06	1.2+07	Jour	NSE,97,353	87	E.Dekempeneer+	22031
	n,inel	^{7}Li	DAP	2ZZZGEL	6.5+06	1.2+07	Jour	NSE,97,353	87	E.Dekempeneer+	22031

4 Berylium 7

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,α	^{4}He	CS	2ITYLNS	2.7+04	1.7+06	Jour	AJ,879,23	19	L.Lamia+	23726
*	n,α	^{4}He	RR	2ITYLNS			Jour	AJ,879,23	19	L.Lamia+	23726

4 Berylium 9

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	d,n	^{10}B	TTD	2ITYPAD	1.4+06	1.4+06	Jour	NIM/B,445,57	19	M.E.Capoulat+	O2431

5 Boron

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	n,abs		CS	2FR ILL			Jour	JAC,18,61	85	W.Knoll+	23725

5 Boron 10

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{7}Li	?	2ZZZCER	1.6-02	2.5+05	Jour	EPJ/A,55,120	19	S.Amaducci+	23453

6 Carbon

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	2UK NIN	6.0-04	1.0+02	Jour	NIM/A,971,164096	20	J.I.Robledo+	23721
*	p,x	^{7}Be	CS	2GERUDE	1.2+08	2.2+08	Jour	NIM/B,454,50	19	C.M.Baecker+	O2474
*	p,x	^{11}C	CS	2GERUDE	1.2+08	2.2+08	Jour	NIM/B,454,50	19	C.M.Baecker+	O2474

6 Carbon 12

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	t,α	^{11}B	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	t,d	^{13}C	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	t,el	^{12}C	DA	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	t,^{3}He	^{12}B	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	t,inel	^{12}C	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403

7 Nitrogen 14

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,p	^{14}C	CS	2JPNKEK	2.5-02	2.5-02	Jour	PTEP,2019,093C01	19	R.Kitahara+	23600
*	n,p	^{14}C	?	2JPNKEK	1.8-03	7.0-03	Jour	PTEP,2019,093C01	19	R.Kitahara+	23600

8 Oxygen 16

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{17}O	CS	2JPNTIT	1.2+05	5.9+05	Jour	PR/C,102,044616	20	Y.Nagai+	23297
*	n,γ	^{17}O	CSP	2JPNTIT	1.2+05	5.9+05	Jour	PR/C,102,044616	20	Y.Nagai+	23297
	p,inel	^{16}O	DAP	2FR PAR	2.0+08	2.0+08	Jour	PR/C,35,1201	87	C.Djalali+	O0042
	t,α	^{15}N	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	t,d	^{17}O	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	t,^{3}He	^{16}N	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403

8 Oxygen 18

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #

*	p,γ		RP	2ITYLGS	9.0+04	1.4+05	Jour	PL/B,797,134900	19	A.Best+	O2457
*	p,γ	^{19}F	TT	2ITYLGS	8.5+04	1.5+05	Jour	PL/B,797,134900	19	A.Best+	O2457
*	p,γ	^{19}F	?	2ITYLGS	8.5+04	1.5+05	Jour	PL/B,797,134900	19	A.Best+	O2457
	p,inel	^{18}O	DAP	2FR PAR	2.0+08	2.0+08	Jour	PR/C,35,1201	87	C.Djalali+	O0042

9 Fluorine 19

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	p,α	^{16}O	CSP	1USAORL	2.3+07	2.3+07	Jour	PR,132,2644	63	H.D.Holmgren+	C2575
	p,α	^{16}O	DAP	1USAORL	2.3+07	2.3+07	Jour	PR,132,2644	63	H.D.Holmgren+	C2575
	p,t	^{17}F	CSP	1USAORL	2.3+07	2.3+07	Jour	PR,132,2644	63	H.D.Holmgren+	C2575
	p,t	^{17}F	DAP	1USAORL	2.3+07	2.3+07	Jour	PR,132,2644	63	H.D.Holmgren+	C2575
	t,α	^{18}O	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	t,d	^{20}F	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	t,^{3}He	^{19}O	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403

11 Sodium 23

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	p,α	^{20}Ne	CSP	2FR SAC	1.0+06	1.7+06	Jour	JRC,67,135	81	P.Trocellier+	O2210
*	p,inel	^{23}Na	DAP	3IRNNRT	1.0+06	2.9+06	Jour	NIM/B,441,108	19	M.Chiari+	O2476
*	p,inel	^{23}Na	DAP	3HUNDEB	1.8+06	3.0+06	Jour	NIM/B,441,108	19	M.Chiari+	O2476
*	p,inel	^{23}Na	DAP	3CRORBZ	1.9+06	3.1+06	Jour	NIM/B,441,108	19	M.Chiari+	O2476
*	p,inel	^{23}Na	DAP	2PRTLIS	2.4+06	4.1+06	Jour	NIM/B,441,108	19	M.Chiari+	O2476
*	p,inel	^{23}Na	DAP	2ITYFIR	2.5+06	4.1+06	Jour	NIM/B,441,108	19	M.Chiari+	O2476
*	p,inel	^{23}Na	?	3IRNNRT	1.0+06	2.9+06	Jour	NIM/B,441,108	19	M.Chiari+	O2476
*	p,inel	^{23}Na	?	2PRTLIS	1.3+06	4.1+06	Jour	NIM/B,441,108	19	M.Chiari+	O2476
*	p,inel	^{23}Na	?	3HUNDEB	1.8+06	3.0+06	Jour	NIM/B,441,108	19	M.Chiari+	O2476
*	p,inel	^{23}Na	?	3CRORBZ	1.9+06	3.1+06	Jour	NIM/B,441,108	19	M.Chiari+	O2476
*	p,inel	^{23}Na	?	2ITYFIR	2.5+06	4.1+06	Jour	NIM/B,441,108	19	M.Chiari+	O2476

12 Magnesium 24

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	t,α	^{23}Na	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	t,d	^{25}Mg	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	t,^{3}He	^{24}Na	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	^{12}C,el	^{24}Mg	DA	1USAPUP	2.0+07	3.6+07	Jour	PR/C,20,851	79	M.S.Chiou+	C2538

14 Silicon 28

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	^{12}C,el	^{28}Si	DA	1USAPUP	1.9+07	4.8+07	Jour	PR/C,20,1042	79	C.M.Cheng+	C2566
	^{12}C,inel	^{28}Si	DAP	1USAPUP	3.6+07	4.8+07	Jour	PR/C,20,1042	79	C.M.Cheng+	C2566

14 Silicon 29

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{18}O,x	^{44}Sc	CS	1USABRK	3.0+07	9.9+07	Jour	NP/A,389,80	82	H.Groening+	C2543

16 Sulphur 32

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	d,p	^{33}S	DAP	2UK CRN	1.0+06	2.5+06	Jour	NIM/B,136-138,66	98	M.J.F.Healy+	O0822

20 Calcium 40

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	t,α	^{39}K	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	t,d	^{41}Ca	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	t,^{3}He	^{40}K	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403

20 Calcium 41

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,α	^{38}Ar	CSP	2FR ILL	Maxwl		Jour	PR/C,57,1766	98	C.Wagemans+	23732
	n,γ+α	^{38}Ar	CS	2FR ILL	Maxwl		Jour	PR/C,57,1766	98	C.Wagemans+	23732
	n,p	^{41}K	CS	2FR ILL	Maxwl		Jour	PR/C,57,1766	98	C.Wagemans+	23732

20 Calcium 42

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	d,n	^{43}Sc	CS	2SWTETH	2.8+06	7.1+06	Jour	ARI,145,205	19	T.S.Carzaniga+	O2470

22 Titanium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	γ,x	^{43}Sc	CS	4RUSMOS		5.5+07	Jour	JRN,326,1099	20	R.A.Aliev+	M1021
*	γ,x	^{44}Sc	CS	4RUSMOS		5.5+07	Jour	JRN,326,1099	20	R.A.Aliev+	M1021
*	γ,x	^{46}Sc	CS	4RUSMOS		5.5+07	Jour	JRN,326,1099	20	R.A.Aliev+	M1021
*	γ,x	^{47}Sc	CS	4RUSMOS		5.5+07	Jour	JRN,326,1099	20	R.A.Aliev+	M1021
*	γ,x	^{48}Sc	CS	4RUSMOS		5.5+07	Jour	JRN,326,1099	20	R.A.Aliev+	M1021

*	γ,x	^{45}Ti	CS	4RUSMOS		5.5+07	Jour	JRN,326,1099	20	R.A.Aliev+	M1021

22 Titanium 48

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,inel	^{48}Ti	?	2ZZZGEL	9.2+05	1.8+07	Jour	PR/C,96,014621	17	A.Olacel+	23346

23 Vanadium

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	p,x	^{43}K	CS	2FR NTE	4.8+07	7.0+07	Jour	NIM/B,464,32	20	G.Pupillo+	O2477
*	p,x	^{43}Sc	CS	2FR NTE	4.8+07	7.0+07	Jour	NIM/B,464,32	20	G.Pupillo+	O2477

23 Vanadium 51

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	t,α	^{50}Ti	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	t,^{3}He	^{51}Ti	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403

24 Chromium 52

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,2n	^{51}Cr	CSP	4ZZZDUB	1.4+07	1.4+07	Jour	YF,83,200	20	D.N.Grozdanov+	41721
*	n,inel	^{52}Cr	CSP	4ZZZDUB	1.4+07	1.4+07	Jour	YF,83,200	20	D.N.Grozdanov+	41721
*	n,inel	^{52}Cr	DAP	4ZZZDUB	1.4+07	1.4+07	Jour	YF,83,200	20	D.N.Grozdanov+	41721
*	n,p	^{52}V	CSP	4ZZZDUB	1.4+07	1.4+07	Jour	YF,83,200	20	D.N.Grozdanov+	41721
*	n,x	^{51}V	CSP	4ZZZDUB	1.4+07	1.4+07	Jour	YF,83,200	20	D.N.Grozdanov+	41721
*	n,x+γ	inclusive	CSP	4ZZZDUB	1.4+07	1.4+07	Jour	YF,83,200	20	D.N.Grozdanov+	41721

25 Manganese 53

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,γ	^{54}Mn	CS	2SWTPSI	2.5-02	2.5-02	Jour	PR/C,102,024613	20	J.Ulrich+	23731
*	n,γ	^{54}Mn	CS	3CZRUJV	2.5-02	2.5-02	Jour	PR/C,102,024613	20	J.Ulrich+	23731
*	n,γ	^{54}Mn	CS	2SWTPSI	2.5-02	2.5-02	Jour	PR/C,102,024613	20	J.Ulrich+	23731
*	n,γ	^{54}Mn	RI	3CZRUJV		5.5-01	Jour	PR/C,102,024613	20	J.Ulrich+	23731

26 Iron 54

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,inel	^{54}Fe	CSP	2GERMUN	1.0+06	1.0+06	Jour	JRN,325,641	20	Z.Ilic+	23719
*	n,inel	^{54}Fe	?	2GERMUN	1.0+06	1.0+06	Jour	JRN,325,641	20	Z.Ilic+	23719

26 Iron 56

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,inel	^{56}Fe	CSP	2GERMUN	1.0+06	1.0+06	Jour	JRN,325,641	20	Z.Ilic+	23719
*	n,inel	^{56}Fe	?	2GERMUN	1.0+06	1.0+06	Jour	JRN,325,641	20	Z.Ilic+	23719

26 Iron 57

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,inel	^{57}Fe	CSP	2GERMUN	1.0+06	1.0+06	Jour	JRN,325,641	20	Z.Ilic+	23719
*	n,inel	^{57}Fe	?	2GERMUN	1.0+06	1.0+06	Jour	JRN,325,641	20	Z.Ilic+	23719

26 Iron 58

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ	^{59}Fe	CS	2GERKFK			Jour	PR/C,77,015808	08	M.Heil+	22996
*	n,inel	^{58}Fe	CSP	2GERMUN	1.0+06	1.0+06	Jour	JRN,325,641	20	Z.Ilic+	23719
*	n,inel	^{58}Fe	?	2GERMUN	1.0+06	1.0+06	Jour	JRN,325,641	20	Z.Ilic+	23719

27 Cobalt 59

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ	^{60}Co	CS	2GERKFK			Jour	PR/C,77,015808	08	M.Heil+	22996

28 Nickel

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	d,x	^{61}Cu	CS	2SWTETH	3.5+06	7.5+06	Jour	ARI,145,205	19	T.S.Carzaniga+	O2470

28 Nickel 64

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ	^{65}Ni	CS	2GERKFK			Jour	PR/C,77,015808	08	M.Heil+	22996

29 Copper 63

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ	^{64}Cu	CS	2GERKFK			Jour	PR/C,77,015808	08	M.Heil+	22996

29 Copper 65

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ	^{66}Cu	CS	2GERKFK			Jour	PR/C,77,015808	08	M.Heil+	22996

30 Zinc 67

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,x	^{65}Zn	CS	2FR NTE	4.5+07	6.8+07	Jour	RCA,108,593	20	G.Pupillo+	O2482
*	p,x	^{69}Zn	CS	2FR NTE	4.5+07	6.8+07	Jour	RCA,108,593	20	G.Pupillo+	O2482
*	p,x	^{66}Ga	CS	2FR NTE	4.5+07	6.8+07	Jour	RCA,108,593	20	G.Pupillo+	O2482
*	p,x	^{67}Ga	CS	2FR NTE	4.5+07	6.8+07	Jour	RCA,108,593	20	G.Pupillo+	O2482

30 Zinc 70

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,x	^{64}Cu	CS	2FR NTE	4.5+07	6.8+07	Jour	RCA,108,593	20	G.Pupillo+	O2482
*	p,x	^{67}Cu	CS	2FR NTE	4.5+07	6.8+07	Jour	RCA,108,593	20	G.Pupillo+	O2482

39 Yttrium 89

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{90}Y	CS	1USAORU	Maxwl		Jour	ARI,163,109191	20	K.S.Krane	14657
*	n,γ	^{90}Y	RI	1USAORU		5.0-01	Jour	ARI,163,109191	20	K.S.Krane	14657
	t,α	^{88}Sr	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	t,d	^{90}Y	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403
	$t,^3$He	^{89}Sr	DAP	2UK DAR	3.3+07	3.3+07	Jour	NP/A,533,25	91	C.N.Pinder+	O0403

46 Palladium 108

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{109}Pd	CS	4ZZZDUB	Maxwl		Jour	JRN,326,503	20	Hueminhbui+	41722

46 Palladium 110

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{111}Pd	CS	4ZZZDUB	Maxwl		Jour	JRN,326,503	20	Hueminhbui+	41722

53 Iodine 127

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	$\gamma,2n$	^{125}I	CS	4RUSMOS	1.7+07	3.1+07	Jour	AJPA,8,64	20	V.V.Varlamov+	M1016
*	$\gamma,3n$	^{124}I	CS	4RUSMOS	2.8+07	3.1+07	Jour	AJPA,8,64	20	V.V.Varlamov+	M1016
*	γ,n	^{126}I	CS	4RUSMOS	8.9+06	3.1+07	Jour	AJPA,8,64	20	V.V.Varlamov+	M1016
*	γ,x+n	inclusive	CS	4RUSMOS	8.9+06	3.1+07	Jour	AJPA,8,64	20	V.V.Varlamov+	M1016

55 Cesium 135

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{136}Cs	CS	2JPNKTO	2.5-02	2.5-02	Jour	NST,57,388	20	S.Nakamura+	23602
*	n,γ	^{136}Cs	RI	2JPNKTO		1.3-01	Jour	NST,57,388	20	S.Nakamura+	23602

62 Samarium 154

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{12}C,x	Many	CS	1USAMSU	4.2+08	4.2+08	Jour	PS,34,489	86	K.Aleklett+	C2554
	^{12}C,x	^{135}Ce	DA	1USAMSU	4.2+08	4.2+08	Jour	PS,34,489	86	K.Aleklett+	C2554
	^{12}C,x	^{145}Eu	DA	1USAMSU	4.2+08	4.2+08	Jour	PS,34,489	86	K.Aleklett+	C2554
	^{16}O,x	Many	CS	1USABRK	1.4+08	3.0+08	Jour	PS,34,489	86	K.Aleklett+	C2554
	^{16}O,x	^{149}Gd	DA	1USABRK	3.1+08	3.1+08	Jour	PS,34,489	86	K.Aleklett+	C2554
	^{16}O,x	^{151}Tb	DA	1USABRK	3.1+08	3.1+08	Jour	PS,34,489	86	K.Aleklett+	C2554
	^{16}O,x	^{155}Tb	DA	1USABRK	3.1+08	3.1+08	Jour	PS,34,489	86	K.Aleklett+	C2554

64 Gadolinium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{136}Xe,x	^{212}Pb	CS	1USABRK	1.2+09	1.2+09	Jour	RCA,24,3	77	R.J.Otto+	C2534

64 Gadolinium 155

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	2ZZZGEL	5.0-03	3.5+02	Rept	INDC(EUR)-0037	20	R.Mucciola+	23727

64 Gadolinium 157

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	2ZZZGEL	5.0-03	3.5+02	Rept	INDC(EUR)-0037	20	R.Mucciola+	23727

64 Gadolinium 160

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{136}Xe,x	^{212}Pb	CS	1USABRK	1.2+09	1.2+09	Jour	RCA,24,3	77	R.J.Otto+	C2534

67 Holmium 165

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,n	^{165}Er	CS	2SWTUBE	6.7+06	1.8+07	Jour	ARI,159,109079	20	N.Gracheva+	O2471
*	p,n	^{165}Er	TT	2SWTUBE	1.4+07	1.4+07	Jour	ARI,159,109079	20	N.Gracheva+	O2471

68 Erbium 168

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,t	^{166}Er	DAP	2GERMUN	2.5+07	2.5+07	Jour	PR/C,100,044316	19	D.Bucurescu+	O2463

69 Thulium 171

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,0		RP	2ZZZCER		7.0+05	Jour	PRL,125,142701	20	C.Guerrero+	23460
*	n,γ	^{172}Tm	CS	2ZZZCER	Maxwl	7.0+02	Jour	PRL,125,142701	20	C.Guerrero+	23460

73 Tantalum 181

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #

^{20}Ne,x	Many	CS	1USABRK	8.0+09	8.0+09	Jour	PR/C,21,1783	80	D.J.Morrissey+	C2539

78 Platinum 195

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{14}N,4n	^{205}At	CS	1USABRK	6.6+07	7.6+07	Jour	PR,126,1805	62	T.Darrahthomas+	C2530

78 Platinum 196

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{14}N,4n	^{206}At	CS	1USABRK	6.4+07	8.8+07	Jour	PR,126,1805	62	T.Darrahthomas+	C2530
^{14}N,5n	^{205}At	CS	1USABRK	6.8+07	9.4+07	Jour	PR,126,1805	62	T.Darrahthomas+	C2530
^{14}N,6n	^{204}At	CS	1USABRK	8.0+07	1.0+08	Jour	PR,126,1805	62	T.Darrahthomas+	C2530

78 Platinum 198

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{14}N,4n	^{208}At	CS	1USABRK	6.6+07	8.5+07	Jour	PR,126,1805	62	T.Darrahthomas+	C2530
^{14}N,5n	^{207}At	CS	1USABRK	6.4+07	1.2+08	Jour	PR,126,1805	62	T.Darrahthomas+	C2530
^{14}N,6n	^{206}At	CS	1USABRK	7.6+07	1.0+08	Jour	PR,126,1805	62	T.Darrahthomas+	C2530
^{14}N,7n	^{205}At	CS	1USABRK	8.6+07	1.1+08	Jour	PR,126,1805	62	T.Darrahthomas+	C2530
^{14}N,8n	^{204}At	CS	1USABRK	1.1+08	1.2+08	Jour	PR,126,1805	62	T.Darrahthomas+	C2530

79 Gold 197

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,γ	^{198}Au	CS	2GERKFK	Maxwl		Jour	PR/C,37,595	88	W.Ratynski+	22099
^{12}C,4n	^{205}At	CS	1USABRK	6.0+07	9.6+07	Jour	PR,126,1805	62	T.Darrahthomas+	C2530
^{12}C,5n	^{204}At	CS	1USABRK	7.1+07	1.1+08	Jour	PR,126,1805	62	T.Darrahthomas+	C2530
^{12}C,6n	^{203}At	CS	1USABRK	8.2+07	1.2+08	Jour	PR,126,1805	62	T.Darrahthomas+	C2530
^{12}C,7n	^{202}At	CS	1USABRK	9.2+07	1.2+08	Jour	PR,126,1805	62	T.Darrahthomas+	C2530
^{12}C,8n	^{201}At	CS	1USABRK	1.0+08	1.2+08	Jour	PR,126,1805	62	T.Darrahthomas+	C2530
^{12}C,x	Many	CS	1USABRK	2.4+08	2.4+08	Jour	PR/C,30,1561	84	H.Kudo+	C2548
^{12}C,x	Many	CS	1USABRK	2.5+10	2.5+10	Jour	PL/B,69,284	77	W.Loveland+	C2535
^{12}C,x	Many	?	1USABRK	3.0+09	1.2+10	Jour	PR/C,26,511	82	Y.Morita+	C2568
^{12}C,x	^{44}Sc	DA	1USABRK	2.5+10	2.5+10	Jour	PR/C,28,2519	83	Y.Morita+	C2544
^{12}C,x	^{84}Rb	CS	1USABRK	2.4+08	2.4+08	Jour	PR/C,30,1561	84	H.Kudo+	C2548
^{12}C,x	^{85}Sr	CS	1USABRK	2.4+08	2.4+08	Jour	PR/C,30,1561	84	H.Kudo+	C2548
^{12}C,x	^{86}Y	CS	1USABRK	2.4+08	2.4+08	Jour	PR/C,30,1561	84	H.Kudo+	C2548
^{12}C,x	^{97}Ru	DA	1USABRK	2.5+10	2.5+10	Jour	PR/C,28,2519	83	Y.Morita+	C2544
^{12}C,x	^{116}Sb	CS	1USABRK	2.4+08	2.4+08	Jour	PR/C,30,1561	84	H.Kudo+	C2548
^{12}C,x	^{119}Te	CS	1USABRK	2.4+08	2.4+08	Jour	PR/C,30,1561	84	H.Kudo+	C2548
^{12}C,x	^{121}Te	CS	1USABRK	2.4+08	2.4+08	Jour	PR/C,30,1561	84	H.Kudo+	C2548
^{12}C,x	^{132}La	CS	1USABRK	2.4+08	2.4+08	Jour	PR/C,30,1561	84	H.Kudo+	C2548

^{12}C,x	^{145}Eu	DA	1USABRK	2.5+10	2.5+10	Jour	PR/C,28,2519	83	Y.Morita+	C2544
^{12}C,x	^{149}Gd	DA	1USABRK	2.5+10	2.5+10	Jour	PR/C,28,2519	83	Y.Morita+	C2544
^{12}C,x	^{171}Lu	DA	1USABRK	2.5+10	2.5+10	Jour	PR/C,28,2519	83	Y.Morita+	C2544
^{12}C,x	^{196}Au	CS	1USABRK	2.4+08	2.4+08	Jour	PR/C,30,1561	84	H.Kudo+	C2548
^{12}C,x	^{198}Au	CS	1USABRK	2.4+08	2.4+08	Jour	PR/C,30,1561	84	H.Kudo+	C2548
^{12}C,x	^{197}Hg	CS	1USABRK	2.4+08	2.4+08	Jour	PR/C,30,1561	84	H.Kudo+	C2548
^{12}C,x	^{196}Tl	CS	1USABRK	2.4+08	2.4+08	Jour	PR/C,30,1561	84	H.Kudo+	C2548
^{12}C,x	^{198}Tl	CS	1USABRK	2.4+08	2.4+08	Jour	PR/C,30,1561	84	H.Kudo+	C2548
^{20}Ne,x	Many	CS	1USABRK	8.0+09	8.0+09	Jour	PR/C,21,1783	80	D.J.Morrissey+	C2539

81 Thallium 203

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,inel	^{203}Tl	CSP	1USALAS	1.3+06	5.1+06	Jour	PR/C,101,064608	20	N.Fotiades+	14658
*	n,x	^{192}Hg	CSP	1USALAS	8.3+07	2.5+08	Jour	PR/C,101,064608	20	N.Fotiades+	14658
*	n,x	^{194}Hg	CSP	1USALAS	6.9+07	2.5+08	Jour	PR/C,101,064608	20	N.Fotiades+	14658
*	n,x	^{195}Hg	CSP	1USALAS	6.9+07	2.5+08	Jour	PR/C,101,064608	20	N.Fotiades+	14658
*	n,x	^{196}Hg	CSP	1USALAS	5.8+07	2.5+08	Jour	PR/C,101,064608	20	N.Fotiades+	14658
*	n,x	^{197}Hg	CSP	1USALAS	5.8+07	2.5+08	Jour	PR/C,101,064608	20	N.Fotiades+	14658
*	n,x	^{198}Hg	CSP	1USALAS	4.3+07	2.5+08	Jour	PR/C,101,064608	20	N.Fotiades+	14658
*	n,x	^{199}Hg	CSP	1USALAS	4.3+07	2.5+08	Jour	PR/C,101,064608	20	N.Fotiades+	14658
*	n,x	^{200}Hg	CSP	1USALAS	2.7+07	2.5+08	Jour	PR/C,101,064608	20	N.Fotiades+	14658
*	n,x	^{202}Hg	CSP	1USALAS	1.1+07	2.5+08	Jour	PR/C,101,064608	20	N.Fotiades+	14658

82 Lead

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{12}C,x	Many	CS	1USABRK	2.5+10	2.5+10	Jour	PL/B,69,284	77	W.Loveland+	C2535
^{12}C,x	^{198}Tl	CS	1USABRK	2.5+10	2.5+10	Jour	PL/B,69,284	77	W.Loveland+	C2535

82 Lead 208

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{48}Ca,non		CS	1USABRK	3.0+08	3.0+08	Jour	PL/B,74,35	78	D.J.Morrissey+	C2540
^{48}Ca,x	Many	CS	1USABRK	2.6+08	3.0+08	Jour	PL/B,74,35	78	D.J.Morrissey+	C2540

83 Bismuth 209

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{12}C,x	Many	CS	1USABRK	4.8+09	2.5+10	Jour	PR/C,23,1044	81	K.Aleklett+	C2542
^{12}C,x	^{196}Au	CS	1USABRK	2.5+10	2.5+10	Jour	PL/B,69,284	77	W.Loveland+	C2535
^{20}Ne,x	Many	CS	1USABRK	8.0+09	8.0+09	Jour	PR/C,23,1044	81	K.Aleklett+	C2542

90 Thorium 232

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,fis	Many	KE	2GERKFK	1.5+06	1.7+06	Jour	APP/B,34,2119	03	M.Csatlos+	23576
	^{14}N,x	Many	CS	1USABRK	7.7+07	7.7+07	Jour	PR/C,19,1794	79	K.E.Williams+	C2541
	^{15}N,5n	^{242}Bk	CS	1USABRK	7.6+07	9.1+07	Jour	PR/C,19,1794	79	K.E.Williams+	C2541
	^{20}Ne,x	Many	CS	1USABRK	1.1+08	1.3+08	Jour	PR/C,30,911	84	S.Tanaka+	C2547
	^{20}Ne,x	^{233}Pa	CS	1USABRK	1.1+08	1.3+08	Jour	PR/C,30,911	84	S.Tanaka+	C2547
	^{22}Ne,x	Many	CS	1USABRK	1.1+08	1.1+08	Jour	PR/C,30,911	84	S.Tanaka+	C2547
	^{22}Ne,x	^{233}Pa	CS	1USABRK	1.1+08	1.1+08	Jour	PR/C,30,911	84	S.Tanaka+	C2547

92 Uranium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{12}C,x	Many	CS	1USABRK	2.5+10	2.5+10	Jour	PRL,39,320	77	W.Loveland+	C2536
	^{12}C,x	Many	FY	1USABRK	2.5+10	2.5+10	Jour	PRL,39,320	77	W.Loveland+	C2536
	^{12}C,x	^{186}Ir	CS	1USABRK	2.5+10	2.5+10	Jour	PRL,39,320	77	W.Loveland+	C2536

92 Uranium 232

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,fis	Many	FY	2FR ILL	2.5-02	2.5-02	Jour	ZP/A,341,319	92	J.Kaufmann+	23582
	n,fis		KE	2FR ILL	2.5-02	2.5-02	Jour	ZP/A,341,319	92	J.Kaufmann+	23582

92 Uranium 233

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,fis	Many	FY	4RUSFEI	2.5-02	1.1+06	Jour	YF,6,1167	67	P.P.Dyachenko+	41713
	n,fis	Many	KE	4RUSFEI	2.5-02	2.5-02	Jour	YF,6,1167	67	P.P.Dyachenko+	41713
	n,fis		?	4RUSFEI	1.8+07	2.1+07	Jour	YF,13,293	71	B.P.Maksyutenko+	41711
	n,fis		?	4RUSRI	2.5-02	2.5-02	Jour	SJA,15,955	63	L.Z.Malkin+	41719

92 Uranium 235

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,abs		?	2ZZZCER	2.0-01	2.0+02	Jour	PR/C,102,044615	20	J.Balibrea-Correa+	23733
*	n,fis		CS	2ZZZCER			Jour	EPJ/A,55,120	19	S.Amaducci+	23453
	n,fis		CS	2UK HAR	1.0+03	1.0+06	Conf	72VIENNA,,201	72	D.B.Gayther+	20422
	n,fis		CS	2FR SAC	2.0+01	3.0+04	Conf	71KNOX,2,829	71	J.Blons+	20483
*	n,fis		CS	2ZZZCER	2.0-01	2.0+02	Jour	PR/C,102,044615	20	J.Balibrea-Correa+	23733
	n,fis		CS	2UK GLS	3.0+05	1.3+07	Jour	JP/G,4,587	78	W.W.Osterhage+	20715
	n,fis	Many	FY	4RUSFEI	1.0+05	1.3+06	Jour	YF,6,1167	67	P.P.Dyachenko+	41713

	n,fis	Many	FY	4RUSRI	1.0+06	1.0+06	Jour	AE,6,577	59	M.A.Bak+	41717
	n,fis	Many	FY	1CANMCM	2.5-02	2.5-02	Prog	AECL-3776,96	70	G.Lum-Hee+	14596
	n,fis	Many	FY	4RUSFEI	2.5-02	2.5-02	Jour	YF,6,1167	67	P.P.Dyachenko+	41713
	n,fis	γ	FY	4ZZZDUB	7.0-01	3.6+01	Jour	SJA,64,493	88	N.A.Gundorin+	41716
	n,fis	Many	FY	2FR ILL	Maxwl		Jour	NP/A,597,188	96	C.Wagemans+	23581
	n,fis		FY	2FR ILL	Maxwl		Jour	NP/A,597,188	96	C.Wagemans+	23581
*	n,fis		INT	2ZZZCER	7.8+00	1.1+01	Jour	EPJ/A,55,120	19	S.Amaducci+	23453
	n,fis	Many	KE	4RUSFEI	2.5-02	2.5-02	Jour	YF,6,1167	67	P.P.Dyachenko+	41713
	n,fis	γ	KE	4ZZZDUB	7.0-01	3.6+01	Jour	SJA,64,493	88	N.A.Gundorin+	41716
	n,fis	Many	KE	2FR ILL	Maxwl		Jour	NP/A,597,188	96	C.Wagemans+	23581
*	n,fis		?	2ZZZCER			Jour	EPJ/A,55,120	19	S.Amaducci+	23453
	n,fis	Many	?	4RUSRI	1.0+06	1.0+06	Jour	AE,6,577	59	M.A.Bak+	41717
	n,fis		?	2FR ILL	Maxwl		Jour	NP/A,597,188	96	C.Wagemans+	23581
	n,fis	^{100}Zr	FY	4ZZZDUB	1.1+00	2.4+01	Rept	INDC(CCP)-235,(2),37	83	N.A.Gundorin+	41715
	n,fis	^{144}Ba	FY	4ZZZDUB	1.1+00	2.4+01	Rept	INDC(CCP)-235,(2),37	83	N.A.Gundorin+	41715
	n,fis	^{144}Ba	FY	4ZZZDUB	8.9-01	3.5+01	Jour	SJA,64,493	88	N.A.Gundorin+	41716
*	n,γ	^{236}U	CS	2ZZZCER	2.0-01	2.0+02	Jour	PR/C,102,044615	20	J.Balibrea-Correa+	23733
	^{11}B,4n	^{242}Bk	CS	1USABRK	5.5+07	6.5+07	Jour	PR/C,19,1794	79	K.E.Williams+	C2541
	^{11}B,x	Many	CS	1USABRK	6.0+07	6.0+07	Jour	PR/C,19,1794	79	K.E.Williams+	C2541

92 Uranium 238

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,fis		CS	2UK GLS	7.0+05	1.3+07	Jour	JP/G,4,587	78	W.W.Osterhage+	20715
n,fis		?	2GERTUE	1.6+06	1.6+06	Jour	PAN,58,1152	95	L.N.Bondarenko+	23584
p,x	Many	CS	1USABNL	2.8+10	2.8+10	Jour	CJC,61,(4),701	83	B.V.Jacak+	C2546
^{10}B,x	Many	CS	1USABRK	6.7+07	6.7+07	Jour	PR/C,19,1794	79	K.E.Williams+	C2541
^{12}C,x	Many	CS	2ZZZCER	1.0+09	1.0+09	Jour	PR/C,31,896	85	P.L.Mcgaughey+	C2549
^{12}C,x	Many	CS	1USABRK	1.2+10	1.2+10	Jour	PR/C,31,896	85	P.L.Mcgaughey+	C2549
^{12}C,x	Many	CS	1USABRK	2.4+08	2.4+08	Jour	PR/C,38,1757	88	C.H.Lee+	C2555
^{12}C,x	Many	CS	1USABRK	3.0+09	4.8+09	Jour	PR/C,31,896	85	P.L.Mcgaughey+	C2549
^{12}C,x	Many	?	1USABRK	3.0+09	1.2+10	Jour	PR/C,26,511	82	Y.Morita+	C2568
^{20}Ne,x	Many	CS	1USABRK	8.0+09	2.0+10	Jour	PR/C,31,896	85	P.L.Mcgaughey+	C2549
^{40}Ar,x	Many	CS	1USABRK	2.9+08	2.9+08	Jour	PR/C,13,2347	76	J.V.Kratz+	C2533
^{84}Kr,x	Many	CS	1USABRK	6.0+08	6.0+08	Jour	PRL,33,502	74	J.V.Kratz+	C2531
^{136}Xe,x	^{211}Rn	CS	1USABRK	1.2+09	1.2+09	Jour	RCA,24,3	77	R.J.Otto+	C2534
^{136}Xe,x	^{290}Ds	CS	1USABRK	1.2+09	1.2+09	Jour	RCA,24,3	77	R.J.Otto+	C2534

93 Neptunium 237

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,fis	Many	FY	4RUSLIN	1.0+06	1.0+06	Jour	YF,29,293	79	V.F.Teplykh+	40545
n,fis	Many	FY	4RUSTIL	1.4+07	1.4+07	Jour	YF,29,293	79	V.F.Teplykh+	40545

94 Plutonium 239

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #

n,2n	^{238}Pu	CS	1USALAS	6.5+06	2.2+07	Jour	PR/C,65,021601	02	L.A.Bernstein+	13787
n,fis	Many	FY	4RUSRI	1.0+06	1.0+06	Jour	AE,6,577	59	M.A.Bak+	41717
n,fis	Many	FY	4ZZZDUB	2.0-01	2.3+02	Conf	91JUELIC,,150	91	A.A.Bogdzel+	41179
n,fis	γ	FY	4ZZZDUB	2.0-01	2.3+02	Jour	YF,57,1198	94	V.Polhorsky+	41714
n,fis	Many	FY	4ZZZDUB	2.0-01	2.3+02	Jour	YF,57,1198	94	V.Polhorsky+	41714
n,fis	Many	FY	2FR ILL	2.5-02	2.5-02	Jour	ZP/A,341,319	92	J.Kaufmann+	23582
n,fis	Many	FY	2FR ILL	2.5-02	2.5-02	Jour	NP/A,535,77	91	N.Boucheneb+	23583
n,fis	Many	FY	4ZZZDUB	3.0-01	7.5+01	Conf	91JUELIC,,150	91	A.A.Bogdzel+	41179
n,fis		KE	2FR ILL	2.5-02	2.5-02	Jour	ZP/A,341,319	92	J.Kaufmann+	23582
n,fis	Many	KE	2FR ILL	2.5-02	2.5-02	Jour	NP/A,535,77	91	N.Boucheneb+	23583
n,fis	Many	NU	4RUSNIR	2.5-02	2.5-02	Jour	SJA,46,282	79	B.G.Basova+	41720
n,fis	Many	?	4RUSRI	1.0+06	1.0+06	Jour	AE,6,577	59	M.A.Bak+	41717
n,fis		?	4RUSFEI	1.8+07	2.1+07	Jour	YF,13,293	71	B.P.Maksyutenko+	41711

94 Plutonium 240

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
0,fis		NU	2FR BRC	Spont		Rept	CEA-R-4626	74	J.Frehaut+	20488

94 Plutonium 241

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,fis	^{88}Br	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,59,82	99	J.Genevey+	23579
n,fis	^{96}Rb	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,59,82	99	J.Genevey+	23579
n,fis	^{97}Sr	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,59,82	99	J.Genevey+	23579
n,fis	^{94}Y	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,59,82	99	J.Genevey+	23579
n,fis	^{98}Y	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,59,82	99	J.Genevey+	23579
n,fis	^{99}Y	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,59,82	99	J.Genevey+	23579
n,fis	^{99}Zr	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,59,82	99	J.Genevey+	23579
n,fis	^{100}Nb	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,59,82	99	J.Genevey+	23579
n,fis	^{106}Nb	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,59,82	99	J.Genevey+	23579
n,fis	^{107}Mo	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,59,82	99	J.Genevey+	23579
n,fis	^{104}Tc	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,59,82	99	J.Genevey+	23579
n,fis	^{109}Ru	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,59,82	99	J.Genevey+	23579
n,fis	^{109}Rh	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,59,82	99	J.Genevey+	23579

95 Americium 242

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,fis	Many	CHG	2FR ILL	2.5-02	2.5-02	Jour	NP/A,658,217	99	I.Tsekhanovich+	23580
n,fis	Many	FY	2FR ILL	2.5-02	2.5-02	Jour	NP/A,658,217	99	I.Tsekhanovich+	23580
n,fis	Many	KE	2FR ILL	2.5-02	2.5-02	Jour	NP/A,658,217	99	I.Tsekhanovich+	23580

95 Americium 243

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,fis	Many	FY	2FR ILL	Maxwl		Jour	NP/A,597,188	96	C.Wagemans+	23581
n,fis		?	2FR ILL	Maxwl		Jour	NP/A,597,188	96	C.Wagemans+	23581
n,fis	Many	?	2FR ILL	Maxwl		Jour	NP/A,597,188	96	C.Wagemans+	23581

96 Curium 243

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,fis		CS	2FR ILL	2.5-02	5.4+00	Rept	AIP-798,182	05	O.Serot+	23577
n,fis	Many	FY	1USAORL	2.5-02	2.5-02	Rept	ORNL-TM-8168	82	D.G.Breederland	14095

96 Curium 244

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
0,fis		?	4RUSRI	Spont		Jour	AE,16,148	64	L.Z.Malkin+	41718
0,fis		?	4RUSRI	Spont		Jour	SJA,15,955	63	L.Z.Malkin+	41719
0,fis	^{4}He	FY	4RUSRI	Spont		Jour	AE,16,148	64	L.Z.Malkin+	41718
0,fis	^{4}He	?	4RUSRI	Spont		Jour	AE,16,148	64	L.Z.Malkin+	41718

96 Curium 246

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,fis		CS	2FR ILL	2.5-02	5.4+00	Rept	AIP-798,182	05	O.Serot+	23577

96 Curium 248

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,fis		CS	2FR ILL	2.5-02	5.4+00	Rept	AIP-798,182	05	O.Serot+	23577
^{18}O,x	Many	CS	1USABRK	9.6+07	9.6+07	Jour	PR/C,33,1315	86	K.J.Moody+	C2552
^{18}O,x	Many	CS	1USABRK	9.7+07	1.2+08	Jour	PR/C,27,2656	83	D.Lee+	C2545
^{18}O,x	^{239}Np	CS	1USABRK	9.6+07	9.6+07	Jour	PR/C,33,1315	86	K.J.Moody+	C2552
^{40}Ca,x	Many	CS	2GERGSI	2.2+08	2.9+08	Jour	PR/C,31,1763	85	D.C.Hoffman+	C2551
^{48}Ca,x	Many	CS	1USABRK	2.2+08	2.6+08	Jour	PR/C,31,1763	85	D.C.Hoffman+	C2551
^{48}Ca,x	Many	CS	1USABRK	2.5+08	2.6+08	Jour	PR/C,33,1983	86	H.Gaggeler+	C2553
^{48}Ca,x	Many	CS	1USABRK	2.7+08	2.7+08	Jour	PRL,39,385	77	E.K.Hulet+	C2537
^{48}Ca,x	Many	CS	1USABRK	2.7+08	2.9+08	Jour	PR/C,31,1763	85	D.C.Hoffman+	C2551
^{48}Ca,x	Many	CS	2GERGSI	3.0+08	3.2+08	Jour	PR/C,31,1763	85	D.C.Hoffman+	C2551
^{86}Kr,x	Many	CS	1USABRK	3.8+08	5.5+08	Jour	PR/C,33,1315	86	K.J.Moody+	C2552
^{86}Kr,x	^{239}Np	CS	1USABRK	4.4+08	4.9+08	Jour	PR/C,33,1315	86	K.J.Moody+	C2552
^{129}Xe,x	Many	CS	1USABRK	7.7+08	7.9+08	Jour	PR/C,35,204	87	R.B.Welch+	C2556
^{132}Xe,x	Many	CS	1USABRK	7.9+08	8.2+08	Jour	PR/C,35,204	87	R.B.Welch+	C2556

^{136}Xe,x	Many	CS	1USABRK	6.2+08	8.1+08	Jour	PR/C,33,1315	86	K.J.Moody+	C2552
^{136}Xe,x	^{239}Np	CS	1USABRK	7.2+08	7.6+08	Jour	PR/C,33,1315	86	K.J.Moody+	C2552

98 Californium 249

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{18}O,4n	^{263}Sg	CS	1USABRK	9.5+07	9.5+07	Jour	PRL,33,1490	74	A.Ghiorso+	C2532
^{18}O,x	Many	CS	1USABRK	9.7+07	1.2+08	Jour	PR/C,27,2656	83	D.Lee+	C2545

98 Californium 251

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,fis	Many	FY	2FR ILL	2.5-02	2.5-02	Rept	AIP-798,349	05	E.Birgersson+	23578
n,fis	Many	KE	2FR ILL	2.5-02	2.5-02	Rept	AIP-798,349	05	E.Birgersson+	23578

98 Californium 252

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
0,fis	Many	KE	4RUSRI	Spont		Jour	YF,48,1635	88	I.D.Alkhazov+	41712
0,fis	Many	NU	4RUSRI	Spont		Jour	YF,48,1635	88	I.D.Alkhazov+	41712
0,fis	Many	NU	4RUSNIR	Spont		Jour	SJA,46,282	79	B.G.Basova+	41720

99 Einsteinium 254

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
^{48}Ca,x	Many	CS	1USABRK	2.4+08	2.5+08	Jour	PR/C,32,1760	85	R.W.Lougheed+	C2550