EXFOR News (May 2016)

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, JAEA, 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 N.Otsuka (NRDC Coordinator n.otsuka@iaea.org) for inclusion in the EXFOR News distribution list as well as any question on EXFOR.

[1] N.Otuka et al., Nucl.Data.Sheets **120**(2014)272.

Quantity codes

ALF	α-value ($\sigma_{\rm capt}/\sigma_{\rm fis}$)	FY	Fission product yield
AMP	Length or amplitude	INT	Cross section integral over incident energy
CHG	Fragment charge	KE	Kinetic energy
CS	Cross section	KER	Kerma factor
CSN	Differential with respect to number of particles	MLT	Multiplicity
CSP	Partial cross section	NQ	Nuclear quantity
CST	Temperature dependent cross section	NU	Fission neutron multiplicity $\bar{\nu}$
D3A	Triple differential dΩ_1/dΩ_2/dE'	NUD	Delayed fission neutron multiplicity $\bar{\nu_d}$
D3E	Triple differential dΩ/dE'_1/dE'_2	NUF	Fragment neutrons
D4A	Quadruple diff. dΩ_1/dΩ_2/dE'_1/dE'_2	POL	Polarization
DA	Differential d/dΩ	POD	Differential polarization
DAA	Double differential dΩ_1/dΩ_2	PY	Product yield (other than fission)
DAE	Double differential dΩ/dE'	RI	Resonance integral
DAP	Partial differential d/dΩ	RP	Resonance parameter
DAT	Temperature-dependent Legendre coefficient	RR	Reaction rate
DE	Differential d/dE'	SIF	Self indication
DEP	Energy spectrum for specific group	SPC	Gamma spectrum
DP	Diff. by linear momentum of outgoing part.	TSL	Thermal scattering
DT	Diff. by 4-momentum transfer squared	TT	Thick target yield
ETA	η-value $\bar{\nu}\sigma_{\rm fis}/(\sigma_{\rm capt}+\sigma_{\rm fis})$	TTD	Differential thick target yield, d/dΩ
EVL	Evaluation	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) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{90}Sr,x	Many	?	2JPNIPC	1.7+10	1.7+10	Jour	PL/B,754,104	16	H.Wang+	E2493
*	^{137}Cs,x	Many	?	2JPNIPC	2.5+10	2.5+10	Jour	PL/B,754,104	16	H.Wang+	E2493

1 Hydrogen 2

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{90}Sr,x	Many	?	2JPNIPC	1.7+10	1.7+10	Jour	PL/B,754,104	16	H.Wang+	E2493
*	^{137}Cs,x	Many	?	2JPNIPC	2.5+10	2.5+10	Jour	PL/B,754,104	16	H.Wang+	E2493

1 Hydrogen

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,ths	1-H-CXX		3RUMBUC	2.5-02	7.1-02	Conf	64BOMBAY,2,421	64	D.Bally+	30227
	n,ths	1-H-MTH		3RUMBUC	2.5-02	2.5-02	Conf	64BOMBAY,2,421	64	D.Bally+	30227

2 Helium 4

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{14}O,0			2JPNIPC			Jour	PR/C,92,035801	15	A.Kim+	E2487
*	^{14}O,p	^{17}F	?	2JPNIPC	2.1+06	5.1+06	Jour	PR/C,92,035801	15	A.Kim+	E2487

3 Lithium 7

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,x+n	inclusive		2JPNOSA	1.0+08	1.0+08	Jour	NIM/A,804,50	15	Y.Iwamoto+	E2490
	p,x+n	inclusive		2JPNJAE	2.0+07	3.0+07	Conf	96PRAHA,,465	96	Y.Uno+	E2489
*	p,x+n	inclusive		2JPNOSA	3.0+08	3.0+08	Jour	NIM/A,804,50	15	Y.Iwamoto+	E2490
	p,x+n	inclusive		2JPNJAE	3.2+07	3.2+07	Conf	96PRAHA,,465	96	Y.Uno+	E2489
*	p,x+n	inclusive		2JPNOSA	8.0+07	3.0+08	Jour	NIM/A,804,50	15	Y.Iwamoto+	E2490
*	d,el	^{7}Li		4KASKAZ	2.5+07	2.5+07	Jour	APP/B,46,1037	15	N.Burtebayev+	D0787
*	d,inel	^{7}Li		4KASKAZ	2.5+07	2.5+07	Jour	APP/B,46,1037	15	N.Burtebayev+	D0787
*	d,t	^{6}Li		4KASKAZ	2.5+07	2.5+07	Jour	APP/B,46,1037	15	N.Burtebayev+	D0787

3 Lithium 9

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	d,^{3}He	^{8}He		2JPNIPC	1.0+08	1.0+08	Jour	PR/C,92,041302	15	A.Matta+	E2488

3 Lithium 11

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	d,^{3}He	^{10}He		2JPNIPC	1.0+08	1.0+08	Jour	PR/C,92,041302	15	A.Matta+	E2488

4 Beryllium 9

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{3}He,el	^{9}Be		3CZRUJV	3.0+07	3.0+07	Jour	PPN/L,12,703	15	A.S.Denikin+	D0789

6 Carbon 12

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{12}C,el	^{12}C		2JPNOSA	1.2+09	1.2+09	Jour	PL/B,751,1	15	W.W.Qu+	E2494
*	^{12}C,inel	^{12}C		2JPNOSA	1.2+09	1.2+09	Jour	PL/B,751,1	15	W.W.Qu+	E2494

9 Fluorine

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot			1USAORL	6.2+03	6.2+06	Priv	HARVEY,4	98	J.A.Harvey	14241

9 Fluorine 19

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,2n	^{18}F		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

12 Magnesium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot			1USAORL	7.4+03	4.0+07	Jour	PR/C,14,1328	Oct 76	H.Weigmann+	10791

12 Magnesium 24

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,p	^{24}Na		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

13 Aluminium 27

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,2n	^{26}Al		3HUNDEB	1.5+07	1.5+07	Jour	NP,46,141	Jul 63	J.Csikai+	30118
	n,α	^{24}Na		3HUNDEB	1.5+07	1.5+07	Jour	NP,46,141	Jul 63	J.Csikai+	30118
*	n,α	^{24}Na		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
	n,γ	^{28}Al		3HUNDEB	1.5+07	1.5+07	Jour	NP,46,141	Jul 63	J.Csikai+	30118
	n,p	^{27}Mg		3HUNDEB	1.5+07	1.5+07	Jour	NP,46,141	Jul 63	J.Csikai+	30118
*	n,p	^{27}Mg		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

14 Silicon

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot			1USAORL	1.5-03	2.5+04	Priv	HARVEY,7	98	J.A.Harvey+	14225
	n,tot			1USAORL	8.1+04	2.5+07	Rept	ORNL-TM-11825	91	D.C.Larson+	14203

14 Silicon 28

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,inel	^{28}Si		2JPNOSA	3.0+08	3.0+08	Jour	PRL,115,102501	15	H.Matsubara+	E2491

16 Sulphur 32

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,p	^{32}P		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
	p,el	^{32}S		3NZLNZA	3.8+06	5.0+06	Jour	NP/A,220,183	74	L.K.Fifield+	D0784

22 Titanium 46

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,p	^{46}Sc		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

22 Titanium 47

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,p	^{47}Sc		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

22 Titanium 48

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,p	^{48}Sc		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
*	p,γ	^{49}V		4UKRKFT	9.5+05	2.8+06	Jour	EEJP,1,(4),64	14	V.N.Bondarenko+	D5123

23 Vanadium 51

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{48}Sc		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
*	n,p	^{51}Ti		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
	p,γ	^{52}Cr		4UKRKFT	1.2+06	2.2+06	Jour	UFZ,28,332	83	B.A.Nemashkalo+	D5119

25 Manganese 55

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,$2n$	^{54}Mn		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

26 Iron

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot			1USAORL	5.3+03	6.2+06	Priv	HARVEY,4	98	J.A.Harvey	14241

26 Iron 54

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,p	^{54}Mn		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

26 Iron 56

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,p	^{56}Mn		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

26 Iron 58

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{48}Ti,fus			2ITYPAD	6.5+07	9.0+07	Jour	PR/C,92,064607	15	A.M.Stefanini+	D0791

27 Cobalt 59

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,2n	^{58}Co		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
*	n,α	^{56}Mn		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
*	n,p	^{59}Fe		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
	p,γ	^{60}Ni		4UKRKFT	1.4+06	2.2+06	Jour	UFZ,28,332	83	B.A.Nemashkalo+	D5119

28 Nickel

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	d,x	^{52}Mn		2JPNIPC	1.7+07	2.4+07	Jour	NIM/B,368,112	16	A.R.Usman+	E2492
*	d,x	^{54}Mn		2JPNIPC	1.9+07	2.4+07	Jour	NIM/B,368,112	16	A.R.Usman+	E2492
*	d,x	^{55}Co		2JPNIPC	9.8+06	2.4+07	Jour	NIM/B,368,112	16	A.R.Usman+	E2492
*	d,x	^{56}Co		2JPNIPC	4.4+06	2.4+07	Jour	NIM/B,368,112	16	A.R.Usman+	E2492
*	d,x	^{57}Co		2JPNIPC	1.8+06	2.4+07	Jour	NIM/B,368,112	16	A.R.Usman+	E2492
*	d,x	^{58}Co		2JPNIPC	1.8+06	2.4+07	Jour	NIM/B,368,112	16	A.R.Usman+	E2492
*	d,x	^{60}Co		2JPNIPC	1.9+07	2.4+07	Jour	NIM/B,368,112	16	A.R.Usman+	E2492
*	d,x	^{57}Ni		2JPNIPC	9.8+06	2.4+07	Jour	NIM/B,368,112	16	A.R.Usman+	E2492
*	d,x	^{61}Cu		2JPNIPC	1.1+07	2.3+07	Jour	NIM/B,368,112	16	A.R.Usman+	E2492

28 Nickel 58

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,2n	^{57}Ni		1USATNL	1.7+07	2.1+07	Jour	PR/C,93,014611	16	B.Champine+	14447
*	n,2n	^{57}Ni		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
*	n,p	^{58}Co		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
*	^{11}B,el	^{58}Ni		3ARGCNE	1.6+07	2.9+07	Jour	PR/C,92,054615	15	N.N.Deshmukh+	D0788
*	^{11}B,inel	^{58}Ni		3ARGCNE	1.6+07	2.9+07	Jour	PR/C,92,054615	15	N.N.Deshmukh+	D0788

29 Copper

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot			1USAORL	2.7+01	3.9+05	Priv	HARVEY,3	98	J.A.Harvey	14234
*	α,x	^{58}Co		3KORKRM	3.2+07	4.2+07	Jour	NIM/B,358,160	15	M.Shahid+	D7016

*	α,x	^{60}Co		3KORKRM	3.6+07	4.2+07	Jour	NIM/B,358,160		15	M.Shahid+	D7016
*	α,x	^{61}Cu		3KORKRM	3.0+07	4.2+07	Jour	NIM/B,358,160		15	M.Shahid+	D7016
*	α,x	^{64}Cu		3KORKRM	2.4+07	4.2+07	Jour	NIM/B,358,160		15	M.Shahid+	D7016
*	α,x	^{62}Zn		3KORKRM	3.5+07	4.2+07	Jour	NIM/B,358,160		15	M.Shahid+	D7016
*	α,x	^{63}Zn		3KORKRM	3.7+07	4.2+07	Jour	NIM/B,358,160		15	M.Shahid+	D7016
*	α,x	^{65}Zn		3KORKRM	1.5+07	4.2+07	Jour	NIM/B,358,160		15	M.Shahid+	D7016
*	α,x	^{66}Ga		3KORKRM	1.8+07	4.2+07	Jour	NIM/B,358,160		15	M.Shahid+	D7016
*	α,x	^{67}Ga		3KORKRM	1.5+07	4.2+07	Jour	NIM/B,358,160		15	M.Shahid+	D7016
*	α,x	^{68}Ga		3KORKRM	1.8+07	4.2+07	Jour	NIM/B,358,160		15	M.Shahid+	D7016

29 Copper 63

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	γ,2n	^{61}Cu		4RUSMOS		2.8+07	Jour	IZV,80,(3),351	16	V.V.Varlamov+	M0920
*	γ,n	^{62}Cu		4RUSMOS		2.8+07	Jour	IZV,80,(3),351	16	V.V.Varlamov+	M0920
*	γ,x+n	inclusive		4RUSMOS		2.8+07	Jour	IZV,80,(3),351	16	V.V.Varlamov+	M0920
*	n,2n	^{62}Cu		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
*	n,α	^{60}Co		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
*	n,γ	^{64}Cu		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
	p,γ	^{64}Zn		4UKRKFT	2.5+06	2.5+06	Jour	IZV,67,1556	03	B.A.Nemashkalo+	D5021
	p,γ	^{64}Zn		4UKRKFT	3.0+06	3.0+06	Jour	UFZ,28,332	83	B.A.Nemashkalo+	D5119

29 Copper 65

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	γ,2n	^{63}Cu		4RUSMOS		2.8+07	Jour	IZV,80,(3),351	16	V.V.Varlamov+	M0920
*	γ,n	^{64}Cu		4RUSMOS		2.8+07	Jour	IZV,80,(3),351	16	V.V.Varlamov+	M0920
*	γ,x+n	inclusive		4RUSMOS		2.8+07	Jour	IZV,80,(3),351	16	V.V.Varlamov+	M0920
*	n,2n	^{64}Cu		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
	p,γ	^{66}Zn		4UKRKFT	2.0+06	2.0+06	Jour	IZV,67,1561	03	B.A.Nemashkalo+	D5022
	p,γ	^{66}Zn		4UKRKFT	2.0+06	2.0+06	Jour	UFZ,28,332	83	B.A.Nemashkalo+	D5119

30 Zinc 64

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,p	^{64}Cu		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

34 Selenium 80

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	γ,2n	^{78}Se		4RUSMOS		2.8+07	Jour	IZV,80,(3),351	16	V.V.Varlamov+	M0920
*	γ,n	^{79}Se		4RUSMOS		2.8+07	Jour	IZV,80,(3),351	16	V.V.Varlamov+	M0920
*	γ,x+n	inclusive		4RUSMOS		2.8+07	Jour	IZV,80,(3),351	16	V.V.Varlamov+	M0920

38 Strontium 86

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot			1USAORL	6.3+00	3.5+06	Priv	HARVEY,2	98	J.A.Harvey	14261

39 Yttrium 89

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,2n	^{88}Y		3CZRUJF	1.7+07	3.4+07	Jour	JP/CS,533,012052	14	V.Wagner+	31723
*	n,3n	^{87}Y		3CZRUJF	2.4+07	3.4+07	Jour	JP/CS,533,012052	14	V.Wagner+	31723

40 Zirconium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot			1USAORL	1.5-03	2.6+04	Priv	HARVEY,7	98	J.A.Harvey+	14225

40 Zirconium 90

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,2n	^{89}Zr		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

40 Zirconium 94

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{91}Sr		1USATNL	1.7+07	2.1+07	Jour	PR/C,93,014611	16	B.Champine+	14447
*	n,γ	^{95}Zr		3ISLSOR			Jour	PL/B,751,418	15	M.Tessler+	31765

40 Zirconium 96

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{97}Zr		3ISLSOR			Jour	PL/B,751,418	15	M.Tessler+	31765

48 Cadmium

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

	d,x	^{110}In	?	3ARGCNE	1.1+07	2.7+07	Jour	RCA,24,55	77	O.H.Usher+	D4064
*	α,x	^{111}Cd		3KORKRM	9.8+06	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{111}Cd	?	3KORKRM	9.8+06	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{115}Cd		3KORKRM	2.2+07	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{108}In		3KORKRM	2.0+07	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{109}In		3KORKRM	9.8+06	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{110}In		3KORKRM	2.0+07	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{111}In		3KORKRM	7.7+06	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{113}In		3KORKRM	1.2+07	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{114}In		3KORKRM	2.0+07	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{115}In		3KORKRM	2.2+07	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{116}In		3KORKRM	1.7+07	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{117}In		3KORKRM	1.4+07	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{117}In	?	3KORKRM	1.4+07	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{110}Sn		3KORKRM	2.0+07	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{113}Sn		3KORKRM	7.7+06	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018
*	α,x	^{117}Sn		3KORKRM	7.7+06	4.5+07	Jour	NIM/B,333,80	14	M.U.Khandaker+	D7018

49 Indium 113

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,inel	^{113}In		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

49 Indium 115

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{116}In		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
*	n,inel	^{115}In		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

50 Tin

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot			1USAORL	8.1+03	5.0+09	Priv	HARVEY,6	98	J.A.Harvey	14194

53 Iodine 127

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,2n	^{126}I		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

57 Lanthanum 139

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{140}La		3KORPUE		5.5-01	Jour	NIM/B,335,1	14	V.D.Nguyen+	30835

60 Neodymium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,x	^{139}Ce		3KORKRM	1.2+07	4.5+07	Jour	NIM/B,362,142	15	S.C.Yang+	D7017
*	p,x	^{138}Pr		3KORKRM	2.4+07	4.5+07	Jour	NIM/B,362,142	15	S.C.Yang+	D7017
*	p,x	^{142}Pr		3KORKRM	3.0+07	4.5+07	Jour	NIM/B,362,142	15	S.C.Yang+	D7017
*	p,x	^{139}Nd		3KORKRM	3.3+07	4.5+07	Jour	NIM/B,362,142	15	S.C.Yang+	D7017
*	p,x	^{147}Nd		3KORKRM	1.2+07	4.5+07	Jour	NIM/B,362,142	15	S.C.Yang+	D7017
*	p,x	^{149}Nd		3KORKRM	1.2+07	4.5+07	Jour	NIM/B,362,142	15	S.C.Yang+	D7017
*	p,x	^{141}Pm		3KORKRM	2.4+07	4.5+07	Jour	NIM/B,362,142	15	S.C.Yang+	D7017
*	p,x	^{143}Pm		3KORKRM	5.1+06	4.5+07	Jour	NIM/B,362,142	15	S.C.Yang+	D7017
*	p,x	^{144}Pm		3KORKRM	5.1+06	4.5+07	Jour	NIM/B,362,142	15	S.C.Yang+	D7017
*	p,x	^{146}Pm		3KORKRM	5.1+06	4.5+07	Jour	NIM/B,362,142	15	S.C.Yang+	D7017
*	p,x	^{148}Pm		3KORKRM	5.1+06	4.5+07	Jour	NIM/B,362,142	15	S.C.Yang+	D7017
*	p,x	^{148}Pm	?	3KORKRM	5.1+06	4.5+07	Jour	NIM/B,362,142	15	S.C.Yang+	D7017
*	p,x	^{149}Pm		3KORKRM	5.1+06	4.5+07	Jour	NIM/B,362,142	15	S.C.Yang+	D7017
*	p,x	^{150}Pm		3KORKRM	5.1+06	4.5+07	Jour	NIM/B,362,142	15	S.C.Yang+	D7017

69 Thulium 169

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,2n	^{168}Tm		1USATNL	1.7+07	2.1+07	Jour	PR/C,93,014611	16	B.Champine+	14447
*	n,3n	^{167}Tm		1USATNL	1.7+07	2.1+07	Jour	PR/C,93,014611	16	B.Champine+	14447

74 Tungsten

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,x	^{186}Re		3IRNKRJ	6.0+06	1.5+07	Jour	JRN,307,253	16	T.Kakavand+	D0790

74 Tungsten 180

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{181}W		3HUNKFI	2.5-02	2.5-02	Jour	PR/C,92,034615	15	A.M.Hurst+	31752

78 Platinum

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	d,x	^{190}Ir		2JPNIPC	1.9+07	2.4+07	Jour	NIM/B,362,151	15	M.U.Khandaker+	E2485
*	d,x	^{192}Ir		2JPNIPC	1.0+07	2.4+07	Jour	NIM/B,362,151	15	M.U.Khandaker+	E2485
*	d,x	^{194}Ir		2JPNIPC	1.6+07	2.4+07	Jour	NIM/B,362,151	15	M.U.Khandaker+	E2485
*	d,x	^{195}Pt		2JPNIPC	9.9+05	2.4+07	Jour	NIM/B,362,151	15	M.U.Khandaker+	E2485
*	d,x	^{197}Pt		2JPNIPC	2.6+06	2.4+07	Jour	NIM/B,362,151	15	M.U.Khandaker+	E2485
*	d,x	^{192}Au		2JPNIPC	7.7+06	2.4+07	Jour	NIM/B,362,151	15	M.U.Khandaker+	E2485
*	d,x	^{193}Au		2JPNIPC	9.9+05	2.4+07	Jour	NIM/B,362,151	15	M.U.Khandaker+	E2485
*	d,x	^{194}Au		2JPNIPC	9.9+05	2.4+07	Jour	NIM/B,362,151	15	M.U.Khandaker+	E2485
*	d,x	^{195}Au		2JPNIPC	7.0+06	2.4+07	Jour	NIM/B,362,151	15	M.U.Khandaker+	E2485
*	d,x	^{196}Au		2JPNIPC	9.9+05	2.4+07	Jour	NIM/B,362,151	15	M.U.Khandaker+	E2485
*	d,x	^{198}Au		2JPNIPC	5.5+06	2.4+07	Jour	NIM/B,362,151	15	M.U.Khandaker+	E2485
*	d,x	^{199}Au		2JPNIPC	9.9+05	2.4+07	Jour	NIM/B,362,151	15	M.U.Khandaker+	E2485

79 Gold 197

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,2n	^{196}Au		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
*	n,γ	^{198}Au		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

80 Mercury 199

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,inel	^{199}Hg		2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

81 Thallium 203

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot			1USAORL	5.4+01	1.2+06	Prog	ORNL-4743,54	May 72	J.A.Harvey+	12816

81 Thallium 205

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot			1USAORL	5.9+01	1.2+06	Prog	ORNL-4743,54	May 72	J.A.Harvey+	12816

82 Lead

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

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{32}Mg,inel	^{nat}Pb		2JPNIPC	6.2+09	6.2+09	Jour	PR/C,92,014608	15	K.Li+	E2483

82 Lead 207

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot			1USAORL	3.0+03	2.0+06	Jour	PR/C,18,722	Aug 78	D.J.Horen+	10663

92 Uranium 235

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,fis			2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

92 Uranium 238

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,fis			2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

93 Neptunium 237

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,fis			2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104
	n,tot			1USAORL	8.8+03	7.1+07	Priv	HARVEY,1	98	J.A.Harvey	14252

94 Plutonium 239

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,fis			2GERPTB	Fiss		Rept	STI/DOC/10-452,30	06	W.Mannhart	V0104

94 Plutonium 240

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot			1USAORL	4.0+01	2.3+05	Rept	INDC(USA)-88/L,119	82	R.Gwin	14249

96 Curium 244

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,tot			1USAORL	7.6-01	3.4+04	Priv	HARVEY,5	98	R.W.Benjamin+	14247

96 Curium 246

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,γ	^{247}Cm		1USAORL	2.5-02	2.5-02	Jour	NSE,55,440	Dec 74	R.W.Benjamin+	10461

96 Curium 248

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,γ	^{249}Cm		1USAORL	2.5-02	2.5-02	Jour	NSE,55,440	Dec 74	R.W.Benjamin+	10461