EXFOR News (May 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) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,el	^{1}H	DA	1USAOHO	1.5+07	1.5+07	Jour	NSE,194,335	20	N.V.Kornilov+	14656
	^{17}O,α	^{14}N	TTD	1USAORL	3.3+06	3.4+06	Jour	PR/C,75,065801	07	B.H.Moazen+	C1567

1 Hydrogen 2

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,n+p	^{1}H	POD	2NEDKVI	1.9+08	1.9+08	Jour	EPJ/A,56,81	20	M.Mohammadi-Dadkan+	O2473
*	p,n+p	^{1}H	?	2NEDKVI	1.9+08	1.9+08	Jour	EPJ/A,56,81	20	M.Mohammadi-Dadkan+	O2473
*	d,n+p	^{2}H	?	2NEDKVI	1.6+08	1.6+08	Jour	PR/C,100,024003	19	I.Ciepal+	O2462

1 Hydrogen

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	1USALAS	3.0+06	4.8+08	Jour	PR/C,102,034601	20	C.D.Pruitt+	14661
*	n,tot		CS	1USALAS	3.0+06	4.8+08	Jour	PR/C,102,034601	20	C.D.Pruitt+	14661

4 Berylium 9

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	d,α	^{7}Li	DAP	2GRCATH	1.0+06	2.2+06	Jour	NIM/B,479,205	20	P.Tsavalas+	O2481
*	d,p	^{10}Be	DAP	2GRCATH	1.0+06	2.2+06	Jour	NIM/B,479,205	20	P.Tsavalas+	O2481
*	^{55}Co,x	^{54}Fe	CS	1USAMSU	8.8+09	8.8+09	Jour	PR/C,100,061303	19	M.Spieker+	C2460
*	^{55}Co,x	^{54}Co	CS	1USAMSU	8.8+09	8.8+09	Jour	PR/C,100,061303	19	M.Spieker+	C2460
*	^{55}Co,x	^{54}Co	CSP	1USAMSU	8.8+09	8.8+09	Jour	PR/C,100,061303	19	M.Spieker+	C2460
*	^{238}U,^{8}Be+fis	Many	?	2FR GAN	1.4+09	1.4+09	Jour	PR/C,101,034609	20	D.Ramos+	O2479

5 Boron 11

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,2α	^{4}He	CSP	2DENAAU	2.0+06	2.6+06	Jour	EPJ/A,56,179	20	O.S.Kirsebom+	O2452
*	p,α	^{8}Be	CSP	2DENAAU	1.8+05	1.8+05	Jour	EPJ/A,54,138	18	M.Munch+	O2517
*	p,α	^{8}Be	CSP	2DENAAU	5.0+05	3.5+06	Jour	EPJ/A,56,17	20	M.Munch+	O2472
*	p,α	^{8}Be	DAP	2DENAAU	1.8+05	1.8+05	Jour	EPJ/A,54,138	18	M.Munch+	O2517
*	p,α	^{8}Be	DAP	2DENAAU	5.0+02	3.5+06	Jour	EPJ/A,56,17	20	M.Munch+	O2472

6 Carbon

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{12}C,x	^{11}B	CS	2GERGSI	4.8+09	4.8+09	Jour	PL/B,797,134802	19	V.Panin+	O2519

6 Carbon 12

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,α	^{9}Be	CSP	2ZZZGEL	1.9+07	2.1+07	Jour	EPJ/CS,146,11005	17	M.Pillon+	23768
*	n,d	^{11}B	CSP	2ZZZGEL	1.9+07	2.1+07	Jour	EPJ/CS,146,11005	17	M.Pillon+	23768
*	n,p	^{12}B	CSP	2ZZZGEL	1.9+07	2.1+07	Jour	EPJ/CS,146,11005	17	M.Pillon+	23768
*	n,tot		CS	1USALAS	2.5+06	5.8+08	Jour	PR/C,102,034601	20	C.D.Pruitt+	14661
	p,inel	^{12}C	CSP	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576
	p,inel	^{12}C	CSP	1USABRK	8.9+06	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,inel	^{12}C	DAP	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576
	p,x	^{10}B	?	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576
	p,x	^{11}C	CSP	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576
	p,x	^{11}C	DAP	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576
*	d,el	^{12}C	POD	2GERJUL	1.7+08	3.8+08	Jour	EPJ/A,56,211	20	F.Mueller+	O2514
*	^{12}C,α	^{20}Ne	CSP	1USANOT	2.2+06	5.0+06	Jour	PRL,124,192702	20	W.P.Tan+	C2574
*	^{12}C,γ	^{24}Mg	CS	1USANOT	2.2+06	5.0+06	Jour	PRL,124,192702	20	W.P.Tan+	C2574
*	^{12}C,p	^{23}Na	CSP	1USANOT	2.2+06	5.0+06	Jour	PRL,124,192702	20	W.P.Tan+	C2574
*	^{13}C,fus		CS	1USANOT	2.6+06	4.8+06	Jour	PR/C,85,014607	12	M.Notani+	C1785

7 Nitrogen 14

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,inel	^{14}N	?	1USABRK	8.9+06	4.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577

8 Oxygen

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	1USALAS	3.0+06	4.8+08	Jour	PR/C,102,034601	20	C.D.Pruitt+	14661

8 Oxygen 16

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,inel	^{16}O	CSP	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576
	p,inel	^{16}O	CSP	1USABRK	8.9+06	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,inel	^{16}O	DAP	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576
	p,x	^{12}C	CSP	1USABRK	2.0+07	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,x	^{12}C	CSP	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576
	p,x	^{12}C	DAP	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576

p,x	^{14}N	CSP	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576
p,x	^{14}N	DAP	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576
p,x	^{15}N	CSP	1USABRK	3.0+07	4.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
p,x	^{15}N	CSP	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576
p,x	^{15}N	DAP	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576
p,x	^{15}O	CSP	1USABRK	3.0+07	4.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
p,x	^{15}O	CSP	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576
p,x	^{15}O	DAP	1USAMRY	4.0+07	8.5+07	Jour	PR/C,35,1214	87	F.L.Lang+	C2576

8 Oxygen 17

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,α		RP	1USAORL			Jour	PR/C,75,065801	07	B.H.Moazen+	C1567

8 Oxygen 18

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	1USALAS	3.0+06	4.8+08	Jour	PR/C,102,034601	20	C.D.Pruitt+	14661

10 Neon 22

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,γ		RP	1CANTMF	1.5+05	4.6+05	Jour	PL/B,807,135539	20	A.Lennarz+	C2572
*	α,γ	^{26}Mg	RR	1USATAM			Jour	PL/B,802,135256	20	S.Ota+	C2573
*	α,n	^{25}Mg	RR	1USATAM			Jour	PL/B,802,135256	20	S.Ota+	C2573

12 Magnesium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x	^{20}Ne	?	1USABRK	8.9+06	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,x	^{24}Mg	DAP	1USABRK	3.3+07	3.3+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,x	^{24}Mg	?	1USABRK	8.9+06	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577

13 Aluminium 23

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	d,n	^{24}Si	CS	1USAMSU	9.6+07	9.6+07	Jour	PRL,122,232701	19	C.Wolf+	C2458
*	d,n	^{24}Si	CSP	1USAMSU	9.6+07	9.6+07	Jour	PRL,122,232701	19	C.Wolf+	C2458
*	d,n	^{24}Si	DA	1USAMSU	9.6+07	9.6+07	Jour	PRL,122,232701	19	C.Wolf+	C2458

13 Aluminium 27

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,2p	^{26}Mg	CSP	1USABRK	8.9+06	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,inel	^{27}Al	CSP	1USABRK	8.9+06	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,inel	^{27}Al	?	1USABRK	8.9+06	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,x	^{24}Mg	?	1USABRK	8.9+06	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,x	^{26}Al	?	1USABRK	2.0+07	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577

14 Silicon

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,x	^{24}Mg	?	1USABRK	2.0+07	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,x	^{27}Al	CSP	1USABRK	8.9+06	4.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,x	^{27}Al	?	1USABRK	8.9+06	4.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,x	^{27}Si	CSP	1USABRK	2.0+07	4.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,x	^{27}Si	?	1USABRK	2.0+07	4.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,x	^{28}Si	DAP	1USABRK	3.3+07	3.3+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
	p,x	^{28}Si	?	1USABRK	8.9+06	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577

15 Phosphorus

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,inel	P compound	TTD	2PRTLIS	2.6+06	3.9+06	Jour	NIM/B,452,26	19	H.Silva+	O2451

15 Phosphorus 31

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,inel	^{31}P	DAP	2PRTLIS	2.6+06	4.0+06	Jour	NIM/B,452,26	19	H.Silva+	O2451

18 Argon 40

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,n	^{40}K	CS	1USAOHO	3.4+06	3.9+06	Jour	PR/C,101,055805	20	P.Gastis+	C2570
*	p,n	^{40}K	CSP	1USAOHO	3.4+06	3.9+06	Jour	PR/C,101,055805	20	P.Gastis+	C2570
*	p,n	^{40}K	DA	1USAOHO	3.4+06	3.9+06	Jour	PR/C,101,055805	20	P.Gastis+	C2570
*	p,n	^{40}K	DAP	1USAOHO	3.4+06	3.9+06	Jour	PR/C,101,055805	20	P.Gastis+	C2570
*	p,n	^{40}K	RR	1USAOHO			Jour	PR/C,101,055805	20	P.Gastis+	C2570

19 Potassium 40

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,p	^{40}Ar	RR	1USAOHO			Jour	PR/C,101,055805	20	P.Gastis+	C2570

26 Iron

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	^{53}Mn	?	1USABRK	8.9+06	4.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
p,x	^{54}Fe	DAP	1USABRK	3.3+07	3.3+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
p,x	^{54}Fe	?	1USABRK	8.9+06	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
p,x	^{55}Fe	CSP	1USABRK	2.0+07	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577
p,x	^{56}Fe	CSP	1USABRK	8.9+06	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577

26 Iron 56

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,inel	^{56}Fe	CSP	1USABRK	8.9+06	5.0+07	Jour	PR/C,37,1808	88	K.T.Lesko+	C2577

28 Nickel

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	1USALAS	2.5+06	5.8+08	Jour	PR/C,102,034601	20	C.D.Pruitt+	14661

28 Nickel 58

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	1USALAS	2.5+06	5.8+08	Jour	PR/C,102,034601	20	C.D.Pruitt+	14661

28 Nickel 64

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	1USALAS	2.5+06	5.8+08	Jour	PR/C,102,034601	20	C.D.Pruitt+	14661

30 Zinc 64

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

*	^{11}Be,n+X	^{10}Be	DAE	2ZZZCER	2.9+07	2.9+07	Jour	PR/C,85,054607	12	A.Dipietro+	O1856

31 Gallium 82

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	0,β^-	^{82}Ge	NUD	2FR CSN	Decay		Jour	NIM/A,815,96	16	D.Testov+	23770

41 Niobium 93

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,γ	^{94}Mo	CS	2GERKLN	2.0+06	5.0+06	Jour	PR/C,101,035807	20	F.Heim+	O2516

42 Molybdenum

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	α,x	^{89}Zr	CS	2FR ARN	5.5+07	6.7+07	Jour	INST,3,7	19	M.Sitarz+	O2518
*	α,x	^{99}Mo	CS	2FR ARN	4.2+07	6.7+07	Jour	INST,3,7	19	M.Sitarz+	O2518
*	α,x	^{95}Tc	CS	2FR ARN	4.2+07	6.7+07	Jour	INST,3,7	19	M.Sitarz+	O2518
*	α,x	^{96}Tc	CS	2FR ARN	4.2+07	6.7+07	Jour	INST,3,7	19	M.Sitarz+	O2518
*	α,x	^{97}Ru	CS	2FR ARN	4.2+07	6.7+07	Jour	INST,3,7	19	M.Sitarz+	O2518

45 Rhodium 103

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	1USALAS	2.5+06	5.8+08	Jour	PR/C,102,034601	20	C.D.Pruitt+	14661

50 Tin

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	1USALAS	3.0+06	4.8+08	Jour	PR/C,102,034601	20	C.D.Pruitt+	14661

50 Tin 112

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,el	^{112}Sn	DA	1USATNL	1.1+07	1.7+07	Thes	Pruitt	19	C.D.Pruitt	14662
*	n,tot		CS	1USALAS	3.0+06	4.8+08	Jour	PR/C,102,034601	20	C.D.Pruitt+	14661

50 Tin 124

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,el	^{124}Sn	DA	1USATNL	1.1+07	1.7+07	Thes	Pruitt	19	C.D.Pruitt	14662
*	n,tot		CS	1USALAS	3.0+06	4.8+08	Jour	PR/C,102,034601	20	C.D.Pruitt+	14661

58 Cerium 142

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	2ZZZGEL	2.0+02	3.0+05	Rept	INDC(EUR)-0038	21	D.H.Moon+	23729

64 Gadolinium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,x	^{149}Tb	CS	2FR ARN	5.8+07	7.0+07	Jour	NIM/B,478,174	20	R.Formento-Cavaier+	O2515
*	p,x	^{150}Tb	CS	2FR ARN	5.8+07	7.0+07	Jour	NIM/B,478,174	20	R.Formento-Cavaier+	O2515
*	p,x	^{151}Tb	CS	2FR ARN	5.8+07	7.0+07	Jour	NIM/B,478,174	20	R.Formento-Cavaier+	O2515
*	p,x	^{152}Tb	CS	2FR ARN	5.8+07	7.0+07	Jour	NIM/B,478,174	20	R.Formento-Cavaier+	O2515
*	p,x	^{153}Tb	CS	2FR ARN	5.8+07	7.0+07	Jour	NIM/B,478,174	20	R.Formento-Cavaier+	O2515
*	p,x	^{154}Tb	CS	2FR ARN	5.8+07	7.0+07	Jour	NIM/B,478,174	20	R.Formento-Cavaier+	O2515
*	p,x	^{155}Tb	CS	2FR ARN	5.8+07	7.0+07	Jour	NIM/B,478,174	20	R.Formento-Cavaier+	O2515
*	p,x	^{156}Tb	CS	2FR ARN	5.8+07	7.0+07	Jour	NIM/B,478,174	20	R.Formento-Cavaier+	O2515

64 Gadolinium 160

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,t	^{158}Gd	DAP	2GERMUN	2.2+07	2.2+07	Jour	PR/C,100,034307	19	A.I.Levon+	O2480

67 Holmium 165

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,2n	^{164}Ho	CS	2GRCATH		2.0+07	Jour	PR/C,102,034610	20	E.Georgali+	23762

73 Tantalum 181

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	γ,fis	Many	FY	4ZZZDUB		2.4+07	Prog	JINR-P15-229	66	S.A.Karamian+	M1025

75 Rhenium 185

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,3n	^{183}Re	CS	2ZZZGEL	1.5+07	1.8+07	Jour	EPJ/A,56,202	20	S.Ilic+	23723

75 Rhenium 187

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,p	^{187}W	CS	2ZZZGEL	1.5+07	1.8+07	Jour	EPJ/A,56,202	20	S.Ilic+	23723

82 Lead

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,tot		CS	1USALAS	2.5+06	5.8+08	Jour	PR/C,102,034601	20	C.D.Pruitt+	14661

90 Thorium 232

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	γ,fis	Many	FY	4ZZZDUB		2.4+07	Prog	JINR-P15-229	66	S.A.Karamian+	M1025

92 Uranium 234

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,fis		CS	2GRCATH	1.5+07	1.8+07	Jour	EPJ/CS,239,05005	20	A.Kalamara+	23766
	n,fis		?	1USALAS	3.6+06	3.6+06	Rept	LA-21	43	E.Segre+	14669

92 Uranium 235

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,fis		CS	1USACHI		6.4+05	Rept	CF-636	43	N.P.Heydenburg+	14667
	n,fis		CS	1USAWIS	1.2+05	1.8+06	Rept	CF-618	43	A.O.Hanson	14666
	n,fis		CS	1USABRK	2.2+05	4.3+05	Rept	CF-403	42	O.Chamberlain+	14665
	n,fis		CS	1USAWIS	5.3+05	5.3+05	Rept	CF-638	43	D.L.Benedict+	14668
*	n,fis		DA	1USALAS	1.9+04	2.4+08	Jour	PR/C,102,014605	20	D.Hensle+	14660
*	n,fis	Many	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,102,044602	20	S.Dubey+	23763
*	n,fis		NUD	2FR GRE	2.5-02	2.5-02	Jour	EPJ/CS,239,18006	20	D.Foligno+	23767
	n,fis		?	1USACHI		4.0+06	Rept	CF-636	43	N.P.Heydenburg+	14667
*	n,fis		?	2FR GRE	2.5-02	2.5-02	Jour	EPJ/CS,239,18006	20	D.Foligno+	23767
	n,fis		?	1USACHI	2.7+06	2.7+06	Rept	CF-636	43	N.P.Heydenburg+	14667

	n,fis	n	KE	1USACHI	3.6+06	3.6+06	Rept	CF-209	42	R.F.Christy+	14664
*	n,fis	^{96}Y	?	2FR ILL	2.5-02	2.5-02	Jour	PR/C,102,044602	20	S.Dubey+	23763

92 Uranium 236

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
*	n,fis		CS	2GRCATH	4.5+06	1.0+07	Jour	EPJ/CS,239,05001	20	M.Diakaki+	23765

92 Uranium 238

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	γ,fis	Many	FY	4ZZZDUB		2.4+07	Jour	CZJ/A,53,339	03	D.N.Rassadov+	M1026
	γ,fis	^{92}Sr	CS	4ZZZDUB	1.1+07	1.9+07	Rept	AIP-1109,16	09	J.Badamsambuu+	M1022
	γ,fis	^{97}Zr	CS	4ZZZDUB	1.1+07	1.9+07	Rept	AIP-1109,16	09	J.Badamsambuu+	M1022
	γ,fis	^{97}Nb	CS	4ZZZDUB	1.1+07	1.9+07	Rept	AIP-1109,16	09	J.Badamsambuu+	M1022
	γ,fis	^{135}I	CS	4ZZZDUB	1.1+07	1.9+07	Rept	AIP-1109,16	09	J.Badamsambuu+	M1022
	n,fis		CS	1USACHI		4.0+06	Rept	CF-636	43	N.P.Heydenburg+	14667
	n,fis		CS	1USAWIS	1.1+06	1.8+06	Rept	CF-618	43	A.O.Hanson	14666
*	n,fis		DA	1USALAS	1.3+06	2.3+08	Jour	PR/C,102,014605	20	D.Hensle+	14660
	n,fis		?	1USALAS	3.6+06	3.6+06	Rept	LA-21	43	E.Segre+	14669

94 Plutonium 239

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	n,fis		CS	1USALAS	8.7+04	1.5+06	Rept	LA-28	43	R.F.Taschek+	14670
*	n,fis	Many	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,102,044602	20	S.Dubey+	23763
	n,fis		?	1USALAS			Rept	LA-28	43	R.F.Taschek+	14670
	n,fis		?	1USALAS	2.2+05	2.2+05	Rept	LA-21	43	E.Segre+	14669
	n,fis		?	1USALAS	2.5-02	2.5-02	Rept	LA-102	44	T.M.Snyder+	12395
	n,fis		?	1USALAS	2.5-02	3.6+06	Rept	LA-21	43	E.Segre+	14669
	n,fis		?	1USALAS	8.3+04	1.5+06	Rept	LA-28	43	R.F.Taschek+	14670
*	n,fis	^{92}Rb	FY	2FR ILL	2.5-02	2.5-02	Jour	PR/C,102,044602	20	S.Dubey+	23763

94 Plutonium 241

	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	Jour	PR/C,102,044602	20	S.Dubey+	23763
*	n,fis	^{96}Y	?	2FR ILL	2.5-02	2.5-02	Jour	PR/C,102,044602	20	S.Dubey+	23763

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	0,fis		MFQ	1USAMHG	Spont		Jour	PR/C,100,014605	19	P.F.Schuster+	14574
*	0,fis		?	1USAMHG	Spont		Jour	PR/C,100,014605	19	P.F.Schuster+	14574
*	0,fis	*n*	KE	1USAMHG	Spont		Jour	PR/C,100,014605	19	P.F.Schuster+	14574