EXFOR News (February 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 2

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{11}Li,el	^{2}H	?	1CANTMF	5.5+07	5.5+07	Jour	PRL,114,192502	15	R.Kanungo+	C2166
*	^{11}Li,inel	^{2}H	?	1CANTMF	5.5+07	5.5+07	Jour	PRL,114,192502	15	R.Kanungo+	C2166
*	^{26}Al,p	^{27}Al	?	1CANTMF	1.6+08	1.6+08	Jour	PRL,115,062701	15	V.Margerin+	C2176

1 Hydrogen

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
t,x+n	inclusive	PY	1USALAS	2.0+07	2.0+07	Jour	NSE,,,		M.Drosg+	C2185
t,x+n	inclusive	PY	1USALAS	2.0+07	2.0+07	Jour	NSE,,,		M.Drosg+	C2185

2 Helium 4

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	t,n	^{6}Li	DA	1USALAS	1.2+07	1.2+07	Jour	NSE,,,		M.Drosg	C2184
	t,n+d	^{4}He	DA	1USALAS	1.2+07	1.2+07	Jour	NSE,,,		M.Drosg	C2184
	t,n+d	^{4}He	DAE	1USALAS	1.2+07	1.2+07	Jour	NSE,,,		M.Drosg	C2184
*	^{23}Na,p	^{26}Mg	?	1CANTMF	1.4+06	3.1+06	Jour	PRL,115,052702	15	J.R.Tomlinson+	C2169

3 Lithium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
t,x+n	inclusive	DAE	1USALAS	1.5+07	1.7+07	Jour	NSE,,,		M.Drosg+	C2185
t,x+n	inclusive	DAP	1USALAS	1.5+07	1.7+07	Jour	NSE,,,		M.Drosg+	C2185
t,x+n	inclusive	PY	1USALAS	2.0+07	2.0+07	Jour	NSE,,,		M.Drosg+	C2185

4 Beryllium 9

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
t,x+n	inclusive	DAE	1USALAS	1.7+07	1.7+07	Jour	NSE,,,		M.Drosg+	C2185
t,x+n	inclusive	DAP	1USALAS	1.7+07	1.7+07	Jour	NSE,,,		M.Drosg+	C2185

5 Boron 11

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

*	^{14}N,^{11}B	^{14}N	DAP	3POLWWA	8.8+07	8.8+07	Jour	NP/A,941,167	15	A.T.Rudchik+	D5120
*	^{14}N,el	^{11}B	DA	3POLWWA	8.8+07	8.8+07	Jour	NP/A,941,167	15	A.T.Rudchik+	D5120

6 Carbon 12

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,inel	^{12}C	DAP	1USAINU	1.2+08	2.0+08	Jour	PR/C,28,1	83	M.Hugi+	C2180
	p,inel	^{12}C	POD	1USAINU	1.2+08	2.0+08	Jour	PR/C,28,1	83	M.Hugi+	C2180
*	^{12}C,n	^{23}Mg	CS	1USANOT	3.1+06	6.5+06	Jour	PRL,114,251102	15	B.Bucher+	C2168

8 Oxygen 16

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	t,x+n	inclusive	PY	1USALAS	2.0+07	2.0+07	Jour	NSE,,,		M.Drosg+	C2185

9 Fluorine 19

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ	^{20}F	CS	1USAORL	1.0+02	6.0+05	Jour	NIM/B,241,(1-4),218	05	K.H.Guber+	14419
	α,n	^{22}Na	CS	1USADKE	2.5+06	3.5+06	Jour	PR,117,1325	60	R.M.Williamson+	C2190
	α,n	^{22}Na	CSP	1CANOTC	2.7+06	3.8+06	Jour	NP/A,284,189	77	L.Vanderzwan+	C2189
	α,n	^{22}Na	DAP	1CANOTC	2.4+06	4.7+06	Jour	NP/A,284,189	77	L.Vanderzwan+	C2189

11 Sodium 23

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	d,p	^{24}Na	CS	3ISLSOR	1.7+06	5.0+06	Jour	NIM/B,362,29	15	T.Y.Hirsh+	D0782
*	d,p	^{24}Na	CS	3CZRUJF	5.5+06	2.0+07	Jour	NIM/B,362,29	15	T.Y.Hirsh+	D0782

12 Magnesium 24

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{3}He,d	^{25}Al	DAP	1USACLU	3.8+07	3.8+07	Jour	NP/A,246,(2),402	75	R.J.Peterson+	C2188

12 Magnesium 26

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{3}He,d	^{27}Al	DAP	1USALRL	1.8+07	1.8+07	Jour	PR/C,2,981	70	H.F.Lutz+	C2187

13 Aluminium 27

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ	^{28}Al	CS	1USAORL	Maxwl	9.5+05	Conf	99SANTA,,737	99	K.H.Guber+	13958
	n,tot		CS	1USAORL	1.0+00	5.6+06	Conf	99SANTA,,737	99	K.H.Guber+	13958
*	p,α	^{24}Mg	DAP	3IRNIRN	1.6+06	3.0+06	Jour	NIM/B,362,138	15	A.Jokar+	D0783
*	p,inel	^{27}Al	DAP	3IRNIRN	1.5+06	3.0+06	Jour	NIM/B,362,138	15	A.Jokar+	D0783
	α,n	^{30}P	CS	1USADKE	2.8+06	3.9+06	Jour	PR,117,1325	60	R.M.Williamson+	C2190

14 Silicon

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ		CS	1USAORL	1.0+03	6.0+05	Jour	PR/C,67,062802	03	K.H.Guber+	13960
	t,x+n	inclusive	PY	1USALAS	2.0+07	2.0+07	Jour	NSE,,,		M.Drosg+	C2185

14 Silicon 28

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{3}He,d	^{29}P	DAP	1USACLU	3.8+07	3.8+07	Jour	NP/A,246,(2),402	75	R.J.Peterson+	C2188

14 Silicon 30

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	^{3}He,d	^{31}P	DAP	1USALRL	1.8+07	1.8+07	Jour	PR/C,2,981	70	H.F.Lutz+	C2187

24 Chromium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,x	^{52}Mn	TT	3IRNKRJ	6.0+06	1.6+07	Jour	JRN,304,669	15	T.Kakavand+	D0786

27 Cobalt 59

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	α,el	^{59}Co	DA	4KASKAZ	2.9+07	2.9+07	Jour	BAS,79,852	15	N.Burtebayev+	D0779

28 Nickel

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	t,x+n	inclusive	PY	1USALAS	2.0+07	2.0+07	Jour	NSE,,,		M.Drosg+	C2185

28 Nickel 58

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{59}Ni	CS	1USAORL	1.0+02	6.0+05	Jour	PR/C,82,057601	10	K.H.Guber+	14246

28 Nickel 60

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	n,γ	^{61}Ni	CS	1USAORL	1.0+02	6.0+05	Jour	PR/C,82,057601	10	K.H.Guber+	14246
*	α,γ	^{64}Zn	CS	1USANOT	5.0+06	6.9+06	Jour	PR/C,92,025806	15	A.Simon+	C2181
*	α,γ	^{64}Zn	RR	1USANOT			Jour	PR/C,92,025806	15	A.Simon+	C2181

28 Nickel 61

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	α,γ	^{65}Zn	CS	1USANOT	5.1+06	7.4+06	Jour	PR/C,92,025806	15	A.Simon+	C2181
*	α,γ	^{65}Zn	RR	1USANOT			Jour	PR/C,92,025806	15	A.Simon+	C2181

28 Nickel 62

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,el	^{62}Ni	DA	1USAORL	1.2+07	1.2+07	Rept	ORNL-3851	65	J.K.Dickens+	C2175
	p,inel	^{62}Ni	DAP	1USAORL	1.2+07	1.2+07	Rept	ORNL-3851	65	J.K.Dickens+	C2175
*	α,γ	^{66}Zn	CS	1USANOT	5.3+06	7.3+06	Jour	PR/C,92,025806	15	A.Simon+	C2181
*	α,γ	^{66}Zn	RR	1USANOT			Jour	PR/C,92,025806	15	A.Simon+	C2181

28 Nickel 64

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	α,γ	^{68}Zn	CS	1USANOT	4.5+06	8.4+06	Jour	PR/C,92,025806	15	A.Simon+	C2181
*	α,γ	^{68}Zn	RR	1USANOT			Jour	PR/C,92,025806	15	A.Simon+	C2181

29 Copper

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,x	^{56}Co	CS	3KORKRM	2.4+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{56}Co	TT	3KORKRM	2.4+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{57}Co	CS	3KORKRM	2.0+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{57}Co	TT	3KORKRM	2.0+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{58}Co	CS	3KORKRM	2.2+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{58}Co	TT	3KORKRM	2.2+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{60}Co	CS	3KORKRM	2.4+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{60}Co	TT	3KORKRM	2.4+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{57}Ni	CS	3KORKRM	3.7+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{57}Ni	TT	3KORKRM	3.7+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{61}Cu	CS	3KORKRM	1.4+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{61}Cu	TT	3KORKRM	1.4+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{64}Cu	CS	3KORKRM	1.4+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{64}Cu	TT	3KORKRM	1.4+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{62}Zn	CS	3KORKRM	1.4+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{62}Zn	TT	3KORKRM	1.4+07	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{65}Zn	CS	3KORKRM	7.9+06	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015
*	p,x	^{65}Zn	TT	3KORKRM	7.9+06	4.3+07	Jour	NIM/B,342,305	15	M.Shahid+	D7015

29 Copper 63

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,el	^{63}Cu	DA	1USAORL	1.2+07	1.2+07	Rept	ORNL-3851	65	J.K.Dickens+	C2175
p,inel	^{63}Cu	DAP	1USAORL	1.2+07	1.2+07	Rept	ORNL-3851	65	J.K.Dickens+	C2175

30 Zinc 64

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,el	^{64}Zn	DA	1USAORL	1.2+07	1.2+07	Rept	ORNL-3851	65	J.K.Dickens+	C2175
p,inel	^{64}Zn	DAP	1USAORL	1.2+07	1.2+07	Rept	ORNL-3851	65	J.K.Dickens+	C2175

32 Germanium 72

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,γ	^{73}As	CS	1USANOT	1.8+06	3.6+06	Jour	PR/C,92,025804	15	F.Naqvi+	C2183

38 Strontium 88

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,tot		CS	1USAORL	2.6+03	1.6+05	Jour	PR/C,62,055803	Nov 00	P.E.Koehler+	13742

39 Yttrium 89

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	α,x	^{87}Y	CS	3KORKRM	3.2+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{87}Y	TT	3KORKRM	3.2+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{88}Y	CS	3KORKRM	2.3+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{88}Y	TT	3KORKRM	2.3+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{90}Y	CS	3KORKRM	3.2+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{90}Y	TT	3KORKRM	3.2+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{91}Y	CS	3KORKRM	2.8+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{91}Y	TT	3KORKRM	2.8+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{88}Zr	CS	3KORKRM	4.0+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{88}Zr	TT	3KORKRM	4.0+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{89}Zr	CS	3KORKRM	3.3+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{89}Zr	TT	3KORKRM	3.3+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{89}Nb	CS	3KORKRM	3.9+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{89}Nb	TT	3KORKRM	3.9+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{90}Nb	CS	3KORKRM	2.8+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{90}Nb	TT	3KORKRM	2.8+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{91}Nb	CS	3KORKRM	1.9+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{91}Nb	TT	3KORKRM	1.9+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{92}Nb	CS	3KORKRM	1.1+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014
*	α,x	^{92}Nb	TT	3KORKRM	1.1+07	4.3+07	Jour	NIM/B,342,158	15	M.Shahid+	D7014

42 Molybdenum

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	t,x+n	inclusive	PY	1USALAS	2.0+07	2.0+07	Jour	NSE,,,		M.Drosg+	C2185

48 Cadmium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,x	^{110}In	TT	3IRNKRJ	5.0+06	1.5+07	Jour	JRN,306,423	15	T.Kakavand+	D0780
*	p,x	^{110}In	TT	3IRNKRJ	5.0+06	1.5+07	Jour	ARI,104,60	15	T.Kakavand+	D0785
*	d,x	^{110}In	TT	3IRNKRJ	5.0+06	1.5+07	Jour	ARI,104,60	15	T.Kakavand+	D0785
*	d,x	^{111}In	TT	3IRNKRJ	5.0+06	1.5+07	Jour	ARI,104,60	15	T.Kakavand+	D0785
*	d,x	^{114}In	TT	3IRNKRJ	5.0+06	1.5+07	Jour	ARI,104,60	15	T.Kakavand+	D0785

48 Cadmium 110

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,x	^{110}In	TT	3IRNKRJ	5.0+06	1.5+07	Jour	JRN,306,423	15	T.Kakavand+	D0780

50 Tin 116

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ	^{117}Sn	CS	1USAORL	Maxwl		Jour	PR/C,64,065802	01	P.E.Koehler+	13909

50 Tin 120

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ	^{121}Sn	CS	1USAORL	Maxwl		Jour	PR/C,64,065802	01	P.E.Koehler+	13909
	p,el	^{120}Sn	DA	1USAORL	2.1+07	3.6+07	Rept	ORNL-4252	68	F.E.Bertrand+	C2174
	p,inel	^{120}Sn	DAP	1USAORL	2.1+07	3.6+07	Rept	ORNL-4252	68	F.E.Bertrand+	C2174

52 Tellurium 120

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	α,inel	^{120}Te	DAP	1USANOT	1.7+07	2.7+07	Jour	PR/C,85,035808	12	A.Palumbo+	C1739

52 Tellurium 130

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	α,inel	^{130}Te	DAP	1USANOT	1.7+07	2.7+07	Jour	PR/C,85,035808	12	A.Palumbo+	C1739

56 Barium 134

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot		CS	1USAORL	1.2+01	2.1+04	Jour	PR/C,54,1463	Sep 96	P.E.Koehler+	13729

56 Barium 136

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot		CS	1USAORL	1.1+01	3.5+04	Jour	PR/C,54,1463	Sep 96	P.E.Koehler+	13729

73 Tantalum 181

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

	t,x+n	inclusive	PY	1USALAS	2.0+07	2.0+07	Jour	NSE,,,		M.Drosg+	C2185

74 Tungsten

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	t,x+n	inclusive	PY	1USALAS	2.0+07	2.0+07	Jour	NSE,,,		M.Drosg+	C2185

78 Platinum

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	t,x+n	inclusive	PY	1USALAS	2.0+07	2.0+07	Jour	NSE,,,		M.Drosg+	C2185

79 Gold 197

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	t,x+n	inclusive	CSP	1USALAS	6.0+06	1.9+07	Jour	NSE,,,		M.Drosg+	C2186
	t,x+n	inclusive	DAE	1USALAS	6.0+06	1.9+07	Jour	NSE,,,		M.Drosg+	C2186
	t,x+n	inclusive	DAP	1USALAS	6.0+06	1.9+07	Jour	NSE,,,		M.Drosg+	C2186
	t,x+n	inclusive	PY	1USALAS	2.0+07	2.0+07	Jour	NSE,,,		M.Drosg+	C2185
*	α,el	^{197}Au	DA	4KASKAZ	2.9+07	2.9+07	Jour	BAS,79,852	15	N.Burtebayev+	D0779

82 Lead 208

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{22}Ne,el	^{208}Pb	DA	2ITYPAD	1.3+08	1.3+08	Jour	PR/C,85,064621	12	S.Bottoni+	D0781
*	^{22}Ne,x	^{21}F	DA	2ITYPAD	1.3+08	1.3+08	Jour	PR/C,85,064621	12	S.Bottoni+	D0781
*	^{22}Ne,x	^{22}Ne	DAP	2ITYPAD	1.3+08	1.3+08	Jour	PR/C,85,064621	12	S.Bottoni+	D0781
*	^{22}Ne,x	^{23}Ne	DA	2ITYPAD	1.3+08	1.3+08	Jour	PR/C,85,064621	12	S.Bottoni+	D0781
*	^{136}Xe,x	Many	CS	1USAANL	4.5+08	4.5+08	Jour	PR/C,91,064615	15	J.S.Barrett+	C2178

83 Bismuth 209

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	α,el	^{209}Bi	DA	4KASKAZ	2.9+07	2.9+07	Jour	BAS,79,852	15	N.Burtebayev+	D0779

92 Uranium 238

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{238}U,x	Many	CS	2GERGSI		2.1+09	Jour	PR/C,88,054615	13	J.V.Kratz+	D0776