EXFOR News (May 2018)

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 #
γ,el	^{1}H	DA	4RUSLEB	8.1+07	1.1+08	Jour	ZEP,19,(12),777	74	P.S.Daranov+	M0966

1 Hydrogen 2

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
γ,n	^{1}H	POD	4RUSTPI	2.0+07	1.0+08	Jour	ZEP,43,(11),510	86	I.E.Vnukov+	M0963

2 Helium 4

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
γ,n	^{3}He	DA	1CANMCG	2.2+07	3.7+07	Jour	PR/C,8,1211	73	J.D.Irish+	L0228

3 Lithium 7

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
γ,n	^{6}Li	INT	1CANOTC		2.3+07	Jour	CJP,55,428	77	H.Ferdinande+	M0395

6 Carbon 12

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
γ,p	^{11}B	CS	1USASUI	1.9+07	3.2+07	Jour	PR,176,1177	68	D.E.Frederick+	L0226
γ,p	^{11}B	DA	1USASUI	2.2+07	3.0+07	Jour	PR,176,1177	68	D.E.Frederick+	L0226

8 Oxygen 16

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
γ,abs		CS	4RUSLEB	1.4+07	2.2+07	Jour	ZEP,1,47	65	B.S.Dolbilkin+	M0957

13 Aluminium 27

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

n,p	^{27}Mg	CS	4RUSMIM	1.5+07	1.5+07	Jour	AE,54,417	83	V.T.Shchebolev+	40676

25 Manganese 55

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
γ,abs		CS	4RUSLEB	9.0+06	2.8+07	Jour	ZEP,10,(8),365	69	B.S.Dolbilkin+	M0961

27 Cobalt 58

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,γ	^{59}Co	CS	4RUSFTI	2.5-02	2.5-02	Jour	AE,24,533	68	I.A.Kondurov+	40743

30 Zinc 67

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
γ,p	^{66}Cu	CS	4RUSJIA	1.3+07	2.6+07	Jour	ZEP,3,(11),452	66	V.G.Ivanchenko+	M0959

38 Strontium

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
γ,el	$^{\mathrm{nat}}$Sr	CS	1USAUI	8.7+06	1.2+07	Jour	PR/C,8,1421	73	S.Datta+	L0229
γ,inel	$^{\mathrm{nat}}$Sr	CSP	1USAUI	9.3+06	1.2+07	Jour	PR/C,8,1421	73	S.Datta+	L0229

46 Palladium

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,0		RP	4RUSKUR			Jour	AE,1,(5),55	56	I.A.Radkevich+	40382

48 Cadmium 116

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,γ	^{117}Cd	CS	4RUSRI	4.0+05	2.0+06	Rept	INDC(CCP)-267,27	86	Yu.N.Trofimov	40917

49 Indium 113

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,0		RP	4RUSKUR	1.5+01	3.2+01	Jour	AE,1,(5),55	56	I.A.Radkevich+	40382

49 Indium 115

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,0		RP	4RUSKUR	1.4+01	7.0+01	Jour	AE,1,(5),55	56	I.A.Radkevich+	40382
n,inel	^{115}In	CS	4RUSMIM	1.5+07	1.5+07	Jour	AE,68,128	90	N.N.Moiseev+	41063

53 Iodine 127

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,0		RP	4RUSKUR	2.0+01	9.2+01	Jour	AE,1,(5),55	56	I.A.Radkevich+	40382

67 Holmium 165

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
γ,x+n	inclusive	CS	1USALRL	8.3+06	2.9+07	Jour	PR,179,1194	69	M.A.Kelly+	L0227

73 Tantalum 181

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,el		RP	4RUSKUR		6.3+01	Jour	AE,1,(5),55	56	I.A.Radkevich+	40382

76 Osmium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,el		RP	4RUSKUR			Jour	AE,1,(5),55	56	I.A.Radkevich+	40382

77 Iridium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,el		RP	4RUSKUR		9.4+01	Jour	AE,1,(5),55	56	I.A.Radkevich+	40382

78 Platinum 192

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,0		RP	4UKRIJD	2.0-02	3.0+03	Jour	YF,22,674	75	V.P.Vertebnyi+	40276

82 Lead 208

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
γ,n	^{207}Pb	CS	1USAUI	9.3+06	1.6+07	Jour	PR/C,43,R2470	91	R.Alarcon+	L0230
γ,n	^{207}Pb	CSP	1USAUI	1.1+07	1.6+07	Jour	PR/C,43,R2470	91	R.Alarcon+	L0230

90 Thorium 232

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,0		RP	4RUSKUR		3.0+02	Jour	AE,1,(5),55	56	I.A.Radkevich+	40382

92 Uranium 233

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,fis	^{4}He	KE	4RUSITE	2.5-02	2.5-02	Jour	YF,25,732	77	V.N.Andreev+	40527

92 Uranium 238

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,x+γ	inclusive	CSP	4RUSKUR	1.4+07	1.4+07	Rept	INDC(CCP)-134,21	78	V.M.Bezotosnyy+	40516

94 Plutonium 239

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,abs		ALF	4ZZZDUB	1.0+02	3.0+04	Jour	AE,42,218	77	V.P.Bolotskii+	40548
n,x+γ	inclusive	CSP	4RUSKUR	1.4+07	1.4+07	Rept	INDC(CCP)-134,21	78	V.M.Bezotosnyy+	40516

94 Plutonium 242

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,fis		?	4RUSFEI	1.0+05	6.4+06	Jour	YF,52,650	90	D.L.Shpak	41098

95 Americium 242

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,fis	Many	FY	4RUSMIF	2.5-02	2.5-02	Jour	YF,41,573	85	A.N.Gudkov+	40869

96 Curium 242

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,fis		?	4RUSKUR	6.2+05	1.0+06	Jour	YF,40,1141	84	P.E.Vorotnikov+	40597

96 Curium 245

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,0		RP	4RUSNIR	1.2+00	3.0+01	Jour	AE,42,52	77	T.S.Belanova+	40534
n,el		RP	4RUSNIR	1.2+00	3.0+01	Jour	AE,42,52	77	T.S.Belanova+	40534