EXFOR News (August 2014)

New experimental data available from Nuclear Reaction Data Centres

EXFOR is a world-wide data library for experimental neutron induced, charged-particle induced and photonuclear reaction data compiled by the International Network of the Nuclear Reaction Data Centres (NRDC)[a] coordinated by the IAEA Nuclear Data Section. Regularly updated retrieval database is available at NNDC, NEADB, IAEA-NDS, JAEA, JCPRG and CDFE. Please send an email to N.Otsuka (NRDC Coordinator n.otsuka@iaea.org) for inclusion to the EXFOR News distribution list or any question on EXFOR.

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 $\mathrm{d}\Omega_1/\mathrm{d}\Omega_2/\mathrm{d}E'$	NUD	Delayed fission neutron multiplicity $\bar{\nu}_d$
D3E	Triple differential $\mathrm{d}\Omega/\mathrm{d}E'_1/\mathrm{d}E'_2$	NUF	Fragment neutrons
D4A	Quadruple diff. $\mathrm{d}\Omega_1/\mathrm{d}\Omega_2/\mathrm{d}E'_1/\mathrm{d}E'_2$	POL	Polarization
DA	Differential $\mathrm{d}/\mathrm{d}\Omega$	POD	Differential polarization
DAA	Double differential $\mathrm{d}\Omega_1/\mathrm{d}\Omega_2$	PY	Product yield (other than fission)
DAE	Double differential $\mathrm{d}\Omega/\mathrm{d}E'$	RI	Resonance integral
DAP	Partial differential $\mathrm{d}/\mathrm{d}\Omega$	RP	Resonance parameter
DAT	Temperature-dependent Legendre coefficient	RR	Reaction rate
DE	Differential $\mathrm{d}/\mathrm{d}E'$	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, $\mathrm{d}/\mathrm{d}\Omega$
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), CAJaD (Russia), 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 #
α,el	^{1}H	DA	1USALAS	5.0+06	6.0+06	Rept	LA-UR-98-4867	98	C.J.Wetteland+	C2103
^{30}Ne,tcc		CS	2JPNIPC	6.9+09	6.9+09	Jour	PR/C,89,044602	14	A.Ozawa+	E2455
^{30}Ne,x	Many	CS	2JPNIPC	6.9+09	6.9+09	Jour	PR/C,89,044602	14	A.Ozawa+	E2455
^{32}Na,tcc		CS	2JPNIPC	7.7+09	7.7+09	Jour	PR/C,89,044602	14	A.Ozawa+	E2455
^{32}Na,x	Many	CS	2JPNIPC	7.7+09	7.7+09	Jour	PR/C,89,044602	14	A.Ozawa+	E2455
^{33}Na,tcc		CS	2JPNIPC	7.4+09	7.4+09	Jour	PR/C,89,044602	14	A.Ozawa+	E2455
^{33}Na,x	Many	CS	2JPNIPC	7.4+09	7.4+09	Jour	PR/C,89,044602	14	A.Ozawa+	E2455

1 Hydrogen 2

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,el	^{2}H	DA	1USASC	2.0+06	2.8+06	Conf	75GATLIN,4,158	75	R.A.Langley	C2101

1 Hydrogen 3

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,el	^{3}H	DA	1USASC	2.8+06	3.5+06	Conf	75GATLIN,4,158	75	R.A.Langley	C2101

2 Helium 3

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,el	^{3}He	DA	1USASC	2.1+06	4.8+06	Conf	75GATLIN,4,158	75	R.A.Langley	C2101

2 Helium 4

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,el	^{4}He	DA	1USASC	1.7+06	3.6+06	Conf	75GATLIN,4,158	75	R.A.Langley	C2101

5 Boron 11

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,el	^{11}B	DA	1USALAS	5.0+06	6.0+06	Rept	LA-UR-98-4867	98	C.J.Wetteland+	C2103

6 Carbon

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,el	^{nat}C	DA	1USALAS	5.1+06	6.0+06	Rept	LA-UR-98-4867	98	C.J.Wetteland+	C2103
^{31}Ne,x	^{30}Ne	CS	2JPNIPC	7.1+09	7.1+09	Jour	PRL,112,142501	14	T.Nakamura+	E2451
^{31}Ne,x	^{30}Ne	CSP	2JPNIPC	7.1+09	7.1+09	Jour	PRL,112,142501	14	T.Nakamura+	E2451
^{31}Ne,x	^{30}Ne	DP	2JPNIPC			Jour	PRL,112,142501	14	T.Nakamura+	E2451

7 Nitrogen

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,el	^{nat}N	DA	1USALAS	5.1+06	6.0+06	Rept	LA-UR-98-4867	98	C.J.Wetteland+	C2103

7 Nitrogen 15

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,γ	^{16}O	DAP	1USASTF	9.0+06	1.8+07	Jour	PR/C,17,(3),892	78	W.J.O'Connell+	C1223

8 Oxygen

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,el	^{nat}O	DA	1USALAS	5.2+06	6.0+06	Rept	LA-UR-98-4867	98	C.J.Wetteland+	C2103

8 Oxygen 16

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,x	Many	CS	2FR CSN	1.4+08	6.0+08	Jour	PR,166,968	68	F.Yiou+	C0395

8 Oxygen 18

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,0		RP	1CANCRC			Jour	NP,14,(3),472	60	R.L.Clarke+	C2104
p,α	^{15}N	DAP	1CANCRC	8.1+05	3.1+06	Jour	NP,14,(3),472	60	R.L.Clarke+	C2104

12 Magnesium 26

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,p	^{29}Al	CS	2JPNTOK	6.5+06	3.7+07	Jour	ARI,41,57	90	Y.Minai+	E2392
α,p	^{29}Al	TT	2JPNTOK	2.7+07	3.9+07	Jour	ARI,41,57	90	Y.Minai+	E2392

14 Silicon 28

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
α,0		RP	1USAKTY			Thes	LEUNG	72	M.K.Leung	C2100
α,el	^{28}Si	DA	1USAKTY	1.7+06	6.0+06	Thes	LEUNG	72	M.K.Leung	C2100

15 Phosphorus 31

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,0		RP	1USATEX			Jour	NP/A,96,(3),641	67	P.J.Riley+	C2099
p,0		RP	1CANCRC			Jour	NP,14,(3),472	60	R.L.Clarke+	C2104
p,α	^{28}Si	DAP	1USATEX	1.0+06	1.0+06	Jour	NP/A,96,(3),641	67	P.J.Riley+	C2099
p,α	^{28}Si	DAP	1CANCRC	1.0+06	3.1+06	Jour	NP,14,(3),472	60	R.L.Clarke+	C2104
p,α	^{28}Si	DAP	1USATEX	1.4+06	5.3+06	Jour	NP/A,96,(3),641	67	P.J.Riley+	C2099

16 Sulphur

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,el	$^{\rm nat}$S	DA	1USAALB	1.9+06	2.7+06	Jour	APL,56,2696	90	A.Li-Scholz+	C2102

17 Chlorine 35

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,α	^{32}S	DAP	1CANCRC	1.3+06	3.1+06	Jour	NP,14,(3),472	60	R.L.Clarke+	C2104

17 Chlorine 37

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,α	^{34}S	DAP	1CANCRC	9.8+05	3.1+06	Jour	NP,14,(3),472	60	R.L.Clarke+	C2104

19 Potassium 39

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,α	^{36}Ar	DAP	1CANCRC	2.2+06	3.2+06	Jour	NP,14,(3),472	60	R.L.Clarke+	C2104

82 Lead

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{31}Ne,x	^{30}Ne	CS	2JPNIPC	7.3+09	7.3+09	Jour	PRL,112,142501	14	T.Nakamura+	E2451
^{31}Ne,x	^{30}Ne	CSP	2JPNIPC	7.3+09	7.3+09	Jour	PRL,112,142501	14	T.Nakamura+	E2451

96 Curium 248

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{19}F,4n	^{263}Db	CS	2JPNIPC	9.7+07	1.0+08	Jour	PR/C,89,024618	14	H.Haba+	E2450
^{19}F,5n	^{262}Db	CS	2JPNIPC	9.7+07	1.0+08	Jour	PR/C,89,024618	14	H.Haba+	E2450
^{19}F,6n	^{261}Db	CS	2JPNIPC	1.0+08	1.0+08	Jour	PR/C,89,024618	14	H.Haba+	E2450