

Japan Charged-Particle Nuclear Reaction Data Group (JCPRG)

EXFOR : Recent Compilation List (Added in Oct 2006)

EXFOR is a world-wide database for experimental neutron induced, charged-particle induced and photonuclear reaction compiled by Nuclear Reaction Data Centres Network coordinated by IAEA Nuclear Data Section. This list gives newly compiled data to EXFOR. *This list consists of tables titled by target nuclide.*

Retrieval service is available at:

<http://www.jcprg.org/exfor/>

Quantity code

ALF	Alpha	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	Nu
D3A	Triple differential $d\Omega_1/d\Omega_2/dE'$	NUD	Nu delayed
D3E	Triple differential $d\Omega/dE'_1/dE'_2$	NUF	Fragment neutrons
D4A	Quadruple diff. $d\Omega_1/d\Omega_2/dE'_1/dE'_2$	POL	Polarization
DA	Differential $d/d\Omega$	POD	Differential polarization
DAA	Double differential $d\Omega_1/d\Omega_2$	PY	Product yield (other than fission)
DAE	Double differential $d\Omega/dE'$	RI	Resonance integral
DAP	Partial differential $d/d\Omega$	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	Eta	TTD	Differential thick target yield, $d/d\Omega$
EVL	Evaluation	TT	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)

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Lithium

6

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

n,t	^4He	CS	1USALAS	1.1-01	1.1+03	Jour	NIM/A,562,771	06	C.Romano+	14105
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Silicon

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

$n,x+\gamma$	inclusive	DAE	1USAORL	1.0+06	2.0+07	Jour	PR/C,10,958	Aug 74	J.K.Dickens+	10397
$n,x+\gamma$	inclusive	DAP	1USAORL	1.0+06	2.0+07	Jour	PR/C,10,958	Aug 74	J.K.Dickens+	10397

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Titanium

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

n,x	^{46}Sc	CS	3SAFITH	7.4+07	1.1+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092
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Iron

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

n,x	^{46}Sc	CS	3SAFITH	1.1+08	1.5+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092
n,x	^{48}V	CS	3SAFITH	1.1+08	1.5+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092
n,x	^{51}Cr	CS	3SAFITH	1.1+08	1.5+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092
n,x	^{52}Mn	CS	3SAFITH	1.1+08	1.5+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092
n,x	^{54}Mn	CS	3SAFITH	1.1+08	1.5+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092

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Iron

56

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

n,inel	^{56}Fe	DA	1USASRL	8.7+05	9.9+05	Jour	NP/A,111,513	68	L.Torop	14103
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Nickel

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

n,x	^{48}V	CS	3SAFITH	1.1+08	1.1+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092
n,x	^{51}Cr	CS	3SAFITH	1.1+08	1.5+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092
n,x	^{52}Mn	CS	3SAFITH	7.4+07	1.5+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092
n,x	^{54}Mn	CS	3SAFITH	7.1+07	1.5+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092

n,x	^{59}Fe	CS	3SAFITH	1.1+08	1.1+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092
n,x	^{56}Co	CS	3SAFITH	7.1+07	1.5+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092
n,x	^{57}Co	CS	3SAFITH	7.1+07	1.5+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092
n,x	^{58}Co	CS	3SAFITH	7.1+07	1.5+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092
n,x	^{56}Ni	CS	3SAFITH	7.4+07	1.5+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092
n,x	^{57}Ni	CS	3SAFITH	7.4+07	1.1+08	Jour	NIM/B,245,371	06	J.M.Sisterson+	14092

42 Molybdenum 98

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,γ	^{99}Mo	RI	1USADKE		1.0+03	Prog	TID-16059	62	A.K.Furr+	14102

42 Molybdenum 100

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,γ	^{101}Mo	RI	1USADKE		1.0+03	Prog	TID-16059	62	A.K.Furr+	14102

45 Rhodium 103

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,γ	^{104}Rh	RI	1USADKE		1.0+03	Prog	TID-16059	62	A.K.Furr+	14102

47 Silver

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,γ		RI	1USADKE		1.0+03	Prog	TID-16059	62	A.K.Furr+	14102

47 Silver 107

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,γ	^{108}Ag	RI	1USADKE		1.0+03	Prog	TID-16059	62	A.K.Furr+	14102

47 Silver 109

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,γ	^{110}Ag	RI	1USADKE		1.0+03	Prog	TID-16059	62	A.K.Furr+	14102

49

Indium

115

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,γ	^{116}In	RI	1USADKE		1.0+03	Prog	TID-16059	62	A.K.Furry+	14102

58

Cerium

140

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,inel	^{140}Ce	DA	1USASRL	1.6+06	1.9+06	Jour	NP/A,111,513	68	L.Torop	14103

60

Neodymium

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,γ		RI	1USARPI	1.0+00	5.0+02	Jour	NSE,153,8	06	D.P.Barry+	14093

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Neodymium

143

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,el		RP	1USARPI	5.5+01	4.5+02	Jour	NSE,153,8	06	D.P.Barry+	14093
n,γ		RP	1USARPI	1.0+00	1.0+03	Jour	NSE,153,8	06	D.P.Barry+	14093
n,γ	^{144}Nd	RI	1USARPI	1.0+00	5.0+02	Jour	NSE,153,8	06	D.P.Barry+	14093

60

Neodymium

144

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,el		RP	1USARPI	3.7+02	3.7+02	Jour	NSE,153,8	06	D.P.Barry+	14093
n,γ		RP	1USARPI	1.0+00	1.0+03	Jour	NSE,153,8	06	D.P.Barry+	14093
n,γ	^{145}Nd	RI	1USARPI	1.0+00	5.0+02	Jour	NSE,153,8	06	D.P.Barry+	14093

60

Neodymium

145

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
n,el		RP	1USARPI	4.4+00	5.0+02	Jour	NSE,153,8	06	D.P.Barry+	14093
n,γ		RP	1USARPI	1.0+00	1.0+03	Jour	NSE,153,8	06	D.P.Barry+	14093
n,γ	^{146}Nd	RI	1USARPI	1.0+00	5.0+02	Jour	NSE,153,8	06	D.P.Barry+	14093

60 Neodymium 146

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,el		RP	1USARPI	3.6+02	3.6+02	Jour	NSE,153,8	06	D.P.Barry+	14093
<i>n</i> , γ		RP	1USARPI	1.0+00	1.0+03	Jour	NSE,153,8	06	D.P.Barry+	14093
<i>n</i> , γ	¹⁴⁷ Nd	RI	1USARPI	1.0+00	5.0+02	Jour	NSE,153,8	06	D.P.Barry+	14093

60 Neodymium 148

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,el		RP	1USARPI	9.5+01	4.0+02	Jour	NSE,153,8	06	D.P.Barry+	14093
<i>n</i> , γ		RP	1USARPI	1.0+00	1.0+03	Jour	NSE,153,8	06	D.P.Barry+	14093
<i>n</i> , γ	¹⁴⁹ Nd	RI	1USARPI	1.0+00	5.0+02	Jour	NSE,153,8	06	D.P.Barry+	14093

60 Neodymium 150

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,el		RP	1USARPI	7.9+01	4.9+02	Jour	NSE,153,8	06	D.P.Barry+	14093
<i>n</i> , γ		RP	1USARPI	1.0+00	1.0+03	Jour	NSE,153,8	06	D.P.Barry+	14093
<i>n</i> , γ	¹⁵¹ Nd	RI	1USARPI	1.0+00	5.0+02	Jour	NSE,153,8	06	D.P.Barry+	14093

79 Gold 197

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> , γ	¹⁹⁸ Au	RI	1USADKE		1.0+03	Prog	TID-16059	62	A.K.Furr+	14102

92 Uranium 233

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,fis		KE	1USAINL	2.5-02	2.5-02	Jour	NP,23,116	61	T.W.Bonner	14096
<i>n</i> ,fis		KE	1USAANL	2.5-02	2.5-02	Jour	PR,114,1351	59	A.B.Smith+	14097

92 Uranium 235

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,fis		KE	1USAINL	2.5-02	2.5-02	Jour	NP,23,116	61	T.W.Bonner	14096
<i>n</i> ,fis		KE	1USALAS	2.5-02	2.5-02	Jour	PR,87,1032	52	B.E.Watt	14099
<i>n</i> ,fis		KE	1USAANL	3.0+04	4.0+05	Jour	NSE,44,439	71	A.B.Smith	14098

92 Uranium 237

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,fis	CS		1USALBL	4.9+05	2.5+07	Jour	PR/C,73,054604	06	J.T.Burke+	14094

94 Plutonium 239

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,fis	KE		1USAINL	2.5-02	2.5-02	Jour	NP,23,116	61	T.W.Bonner	14096
<i>n</i> ,fis	?		1USAANL	3.0+04	4.0+05	Jour	NSE,44,439	71	A.B.Smith	14098

94 Plutonium 240

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
<i>n</i> ,fis	KE		1USAINL	2.5-02	2.5-02	Jour	NP,23,116	61	T.W.Bonner	14096

96 Curium 244

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
0,fis	KE		1USASRL	Spont		Rept	DP-949	69	T.R.Herold	14100

98 Californium 252

Reaction	Product	Quantity	Lab.	Energy (eV)		Type	Documentation Ref Vol Page	Date	Author	Data #
				Min	Max					
0,fis	Many	KE	1USALAS	Spont		Jour	PR,131,1232	63	S.L.Whetstone	14101