MEMO 4C-2/131

NDB/3181/cel
3rd October 1985.

To: Distribution

From: I. Forest

Subject: CINDA manual update

Please find enclosed update pages for the CINDA coding manual.

cc. Cullen
Gandarias
Ceolo
Lammer
Lemmel
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Oshomurwc
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Distribution: Dr. V. Manokhin, CDJ
Dr. S. Pearlstein, NNDC
Mr. J.J. Schmidt, NDS

	Reaction	Threshold (MeV)	CINDA Entry 1 2 3 4 5 6 7 8 _	Notes
Z=4	Be-9(n,γ)Be-10	0	B E 0 0 9 N G	
	Be-9(n,α)He-6	0.67	B E 0 0 9 N A	
	Be-9(n,2n 2α)	1.85	B E 0 0 9 N 2	
	Be-9(n,t)Li-7	11.59	B E 0 0 9 N T	
	Be-9(n,p)Li-9	14.74	B E 0 0 9 N P	
	Be-9(n,d)Li-8	16.28	B E 0 0 9 N D	
	Be-9(n,n d)Li-7	18.54	B E 0 0 9 N N D	
	Be-9(n,n p)Li-8	18.76	B E 0 0 9 N N P	
	Be-9(n,n t)Li-6	19.66	B E 0 0 9 N N T	
	Be-9(n,3 n)Be-7	22.85	B E 0 0 9 N 3 N	
	Be-9(n,n He-3)He-6	23.54	B E 0 0 9 N H E	(No separate quantity exists for n,nHe).
Z=5	B-10(n,γ)B-11	0	B 0 1 0 N G	
	B-10(n,p)Be-10	0	B 0 1 0 N P	
	B-10(n,t 2α)	0	B 0 1 0 N T	Via Be-8, Li-7**, or 3 particle break up to ground state and 1st excited state; the 2nd excited state decays to t+α.
	B-10(n,α)Li-7	0	B 0 1 0 N A	
	B-10(n,d)Be-9	4.79	B 0 1 0 N D	
	B-10(n,n α)Li-6	4.90	B 0 1 0 N N A	
	B-10(n,n d 2α)	6.62	B 0 1 0 N N D	
	B-10(n,n p)Be-9	7.24	B 0 1 0 N N P	
	B-10(n,2n p 2α)	9.28	B 0 1 0 N 2 N	
	B-10(n,He-3)Li-8	17.32	B 0 1 0 N H E	
	B-10(n,n He-3)Li-7	19.56	B 0 1 0 N H E	(No separate quantity for n,nHe-3)
	B-10(n,n t)Be-7	20.54	B 0 1 0 N N T	
	B-10(n,3n)B-8	29.72	B 0 1 0 N 3 N	
	B-11(n,α)Li-8	7.23	B 0 1 1 N A	
	B-11(n,n α)Li-7	9.44	B 0 1 1 N N A	
	B-11(n,d)Be-10	9.82	B 0 1 1 N D	
	B-11(n,t)Be-9	10.42	B 0 1 1 N T	
	B-11(n,p)Be-11	11.70	B 0 1 1 N P	
	B-11(n,n p)Be-10	12.25	B 0 1 1 N N P	
	B-11(n,n t 2α)	12.25	B 0 1 1 N N T	
	B-11(n,2n)B-10	12.50	B 0 1 1 N 2 N	
	B-11(n,n d)Be-9	17.25	B 0 1 1 N N D	
	B-11(n,3n p 2α)	21.70	B 0 1 1 N 3 N	
	B-11(n,He-3)Li-9	25.73	B 0 1 1 N H E	
	B-11(n,n He-3)Li-8	29.68	B 0 1 1 N H E	(No separate quantity for n,nHe-3).

Alphabetic Energy Codes for Spectrum Averages

These codes are intended to describe quantities averaged over typical neutron spectra. They may occasionally be combined with numerical codes or with other alphabetic codes to indicate that both values are given. For instance, a code MAXW 25-2 should be used when both a maxwellian spectrum average and a value for monochromatic neutrons are given

Code (right adjusted)	Expansion in CINDA Book	Internal file Code	Description
COLD	Cold	C	Subthermal neutron spectrum
MAXW	Maxwl	M	Maxwellian neutron spectrum at a temperature of 293^{o}K.
PILE	Pile	P	A reactor spectrum with a non-Maxwellian energy distribution.
FAST	fast	G	A Fast-reactor spectrum
FISS	fiss	F	An unmoderated fission neutron spectrum.

Non spectrum codes

NDG	None	-	No data given
SPON	Spont	S	Spontaneous fission (Use for quantities associated with neutrons, fission fragments and gammas following spontaneous fission).
TR	Thresh	T	Threshold Energy. If possible a numerical value should be given.

Specific Combinations of Codes

MAXW25-2	Maxwl 2.5-2	X	Maxwellian spectrum and 0.025 eV monochromatic neutrons
PILE25-2	Pile 2.5-2	Z	Pile spectrum and 0.025 eV monochromatic neutrons
MAXW PILE	Maxwl Pile	K	Both indicated spectrum averages are given.
MAXW FISS	Maxwl Fiss	E	
MAXW FAST	Maxwl Fast	H	
SPON MAXW	Spont Maxwl	R	
TR^^UP	Thrsh up.	T	No upper limit specified above threshold. (A limit should be given if possible).

General Combinations of Alphabetic and Numeric Codes

If both a spectrum average and monochromatic neutron values are given, the alphabetic spectrum code should be entered in the minimum energy field (columns 19-22) and the numerical value in the maximum energy field (columns 23-26).

If the numerical value is less than the conventionally assigned energy of the spectrum code, two separate entries should be made.

These equivalences are given below for internal sorting processes.

Energy equivalent for sorting

COLD	Zero → 1 eV
MAXW	0.025 eV
PILE	0.025 eV
FAST	1 MeV
FISS	1 MeV
SPON	Zero
TR	0.5 MeV → 5 MeV
TR UP	0.5 MeV → 10 MeV

AUTHOR NAME AND COMMENTS

Format

Columns 45-80 Author name terminated by a full stop '.' (single author) or a plus sign '+' (multiple authors.

Author names are not required for data index lines (hierarchy 6, numeric reference type. If no author exists for any other line, enter '.' in column 45.

The author name (if any) is followed by additional, abbreviated information about the work.

Author flag

A non blank author flag is generated for every line with hierarchy other than 6, where the author delimiter appers in column 46-80.

Character set

Comments may only contain the following characters:

Upper case alphabetic A to Z

Numeric 0 to 9

Blank

Special characters + - .) (* / = ' , % < > : ; ! ? &

Transliteration of the Russian Alphabet

The following conventional transliterations have been adopted for CINDA. These conversions are similar to the ISO-scheme, but with some modifications for a computer character set :

А	Б	В	Г	Д	Е	Ё	Ж	З	И	Й	К	Л	М	Н	О	П
A	B	V	G	D	E	E	ZH	Z	I	J	K	L	M	N	O	P

Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
R	S	T	U	F	KH	C	CH	SH	SHCH	'	Y	'	E	JU	JA

REACTION QUANTITY

Format

Columns 6 - 8 code for reaction quantity measured **or calculated**. Left adjusted for two letter codes. The **internal** sortcode defines the order in which reactions are listed in the CINDA book.

Neutron nuclear scattering

SEL	5	Elastic
DEL	7	Differential elastic
POL	9	Polarization
POT	11	Potential
SIN	13	Total inelastic
DIN	15	Differential inelastic
SCT	19	Elastic + inelastic

Neutron production

N2N	39	(n,2n)
NXN	41	(n,3n)(n,4n)...
NEM	43	Neutron emission

Gamma ray production

NG	29	(n,γ)
RIG	31	Capture reson. integral
SNG	33	(n,γ) gamma spectrum
DNG	35	Inelastic γ
NEG	37	Nonelastic γ

Charged particle production

NP	45	(n,p)
NNP	47	(n,np)
PEM	48	Proton emission
ND	49	(n,d)
NND	51	(n,nd)
DEM	52	Deuteron emission
NT	53	(n,t)
NNT	55	(n,nt)
TEM	56	Triton emission
NHE	57	(n,He3)
NA	59	(n,α)
NNA	61	(n,nα)
AEM	62	Alpha emission

Fission

NF	63	Fission
RIF	65	Fission resonance integral
ALF	67	Alpha
ETA	69	Eta
NU	71	Nu
NUD	73	Delayed neutrons
NUF	75	Fragment neutrons
SFN	77	Fission neutron spectrum
SFG	79	Fission γ spectrum
FPG	81	Fission product γ
FPB	82	Fission product β
NFY	83	Fragment yield
FRS	85	Fragment energy distribution
CHG	87	Fragment charge distribution

Aggregate cross sections

TOT	3	Total
SNE	21	Nonelastic
ABS	23	Absorption
RIA	25	Absorption resonance integral

Resonance parameters

RES	89	Resonance parameters
STF	91	Strength function
LDL	93	Level density

Gamma-induced reactions

GN	95	(γ,n)
GF	97	Photo fission

Special quantities

EVL	1	Evaluation (used in addition to other specific quantities)
TSL	17	Thermal scattering

Dr. J.J. Schmidt

OECD

NUCLEAR ENERGY AGENCY

Re memo 4C-2/131:

With the compliments
of the
NEA Data Bank

Please replace page II.2.6 with this new version (typing error in version of 3rd October)

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