

Japan Charged-Particle Nuclear Reaction Data Group

Division of Physics, Graduate School of Science
Hokkaido University
060-0810 Sapporo, JAPAN

E-mail: services@jcprg.org
Internet: <http://www.jcprg.org/>

Telephone +81(JPN)-11-706-2684
Facsimile +81(JPN)-11-706-4850

Memo CP-E/122

Date: October 4, 2007
To: Distribution
From: OTSUKA Naohiko
Subject: Multiplicity of prompt gamma in capture reaction (22960.005-006)

Energy spectra of prompt gamma in capture reaction (particles/capture/MeV) are compiled in 22960.005-006 in PRELIM.2186 in which REACTION code

(40-ZR-94(N, G)40-ZR-95, , PY/DE)

or

(40-ZR-94(N, G)40-ZR-95, , PY/DE, G)

is proposed for them. The first one is impossible because the first REACTION code means “product yield of ⁹⁵Zr”. But the second option might be possible.

There is not clear explanation of difference between “MLT” and “PY” in LEXFOR. However, LEXFOR “Thick- and thin-target yields” (submitted by Memo CP-C/347 = WP2004-18 and approved after corrections) implies the following rule:

- PY refers product (SF4)
- MLT refers outgoing particle (SF3)

Example:

(40-ZR-94(N, G)40-ZR-95, , PY/DE, , TT) : Thick target product yield of ⁹⁵Zr

(40-ZR-94(N, G)40-ZR-95, , MLT/DE, , TT) : Thick target yield multiplicity of gamma.

Therefore I would like to propose

(40-ZR-94(N, G)40-ZR-95, , MLT/DE)

for gamma spectra in 22960.005-006, from the view of consistency with “thick- and thin-target yield” case.

We also need addition of a new unit code for “particles/capture/MeV”:

Dictionary 25 (Data Units)

PT/RCT/MEV

1/E

particles per reaction per MeV

Example (22960.006 proposed in PRELIM.2186)

SUBENT	22960006	20070810	22960	6	1
BIB	3	6	22960	6	2
REACTION	(40-ZR-94(N,G)40-ZR-95,, PY /DE) Units gamma-rays/MEV		22960	6	3
		/capture	22960	6	4
ERR-ANALYS	(E-ERR-DIG)	Gamma energy digitizing error	22960	6	5
	(ERR-DIG)	Data digitizing error	22960	6	6
	(DATA-ERR)	Error from the graphic bars	22960	6	7
STATUS	(CURVE) Fig.5 of main reference (Lower curve)		22960	6	8
ENDBIB	6	0	22960	6	9
COMMON	3	3	22960	6	10
EN	E-ERR-DIG	ERR-DIG	22960	6	11
KEV	MEV	PER-CENT	22960	6	12
546.	5.5054E-03	5.4585E-03	22960	6	13
ENDCOMMON	3	0	22960	6	14
DATA	3	135	22960	6	15
E	DATA	DATA-ERR	22960	6	16
MEV	PT/RCT/MEV	PT/RCT/MEV	22960	6	17
0.62096	0.23656	0.2263	22960	6	18
0.66127	0.48725	0.39558	22960	6	19
0.70642	0.38889	0.36468	22960	6	20

Distribution:

S. Babykina, CAJaD	A. Blokhin, CJD	J.H. Chang, KAERI	M. Chiba, JCPRG
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