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Memo CP-E/040

Date: April 26, 2004
To: Distribution
From: OTSUKA Naohiko and KATO Kiyoshi
Subject: Thick target product yields (E1756, E1759, E1788)
Reference: CP-C/334, CP-D/391

Along the recent discussion of thick target yields, we made some corrections to E1756 and E1759, and compiled a new entry E1788. In these entries, we compiled quantities measured for $SF1(SF2, X)0-NN-1$ as follows:

Quantity	Unit	Subentries
, PY/DA/DE, , TT	P / IN/MEVSR	E1756.002-015 E1759.002-013 E1788.002-013
, PY/DA, , TT	PRD/ INC/ SR (new)	E1756.016-029
, PY/DA, , TT/ IPA (new)	PRD/ INC	E1756.030-043 E1759.014-017

In terms of EXFOR, a neutron in the final state of an inclusive reaction (i.e. $SF3=X$) is not an *outgoing particle* ($SF3$) but a *reaction product* ($SF4$). Therefore we did two corrections:

- Parameter code is PY rather than MLT.
- Unit code is PRD rather than PRT.
- "P" in "P / IN/MEV/ SR" is kept, but read as "product" .

Namely, we stick "SF3 vs. SF4 rule" even for the light particle emission in an inclusive measurement. We propose one unit code and one quantity code:

Dictionary 25 (Units)

PRD/ INC/ SR 1 / A products/inc. projectile/ steradian

Dictionary 36 (Quantities)

, PY/DA, , TT/ IPA YLD Diff. product d/DA for thick target integrated over angular range

Summary for codes for thick target product yields and thick target yield multiplicity:

Outgoing particle (SF3)		Reaction product (SF4)		Dimension
, MLT , , TT	PRT / INC	, PY , , TT	PRD / INC	YLD
, MLT / DA , , TT	PRT / INC / SR	, PY / DA , , TT	(PRD / INC / SR)	1 / A
, MLT / DE , , TT	PRT / IN / MEV	(not used yet)	(not used yet)	1 / E (*)
, MLT / DA / DE , , TT	P / IN / MEVSR	, PY / DA / DE , , TT	P / IN / MEV / SR	1 / AE
, TTY / MLT	PART / MUAHR	, TTY / PY	PRD / MUAHR PRD / MUCOUL	PYT (†)
(, TTY / MLT / DA)	(PRT / MUC / SR)	(, TTY / PY / DA)	(PRD / MUC / SR)	PYTA
, TTY / MLT / DA / DE	P / MEVMUCSR	(, TTY / PY / DA / DE)	P / MEVMUCSR	YAE (‡)

Note: Codes with brackets are not in present dictionary but proposed in recent memos.

- , TTY / MLT / DA (PYTA) CP-D/389 (with PAR in SF5)
- PRT / MUC / SR (PYTA) CP-D/389
- , PRD / INC / SR (1 / A) CP-E/040
- , TTY / PY / DA (PYTA) CP-D/391 (with PAR in SF5)
- PRD / MUC / SR (PYTA) CP-D/391
- , TTY / PY / DA / DE (YAE) CP-C/340

Corrections of the dictionary are needed for the following

- *) YLD is assigned for , MLT / DE , , TT in the dictionary, must be 1 / E.
c.f. F0341.002,004,006,008,010,012,014
- †) TTY is assigned for PART / MUAHR and PRD / MUAHR in the dictionary, must be PYT.
c.f. B0173.002, C0006.003
- ‡) TD2 is assigned for , TTY / MLT / DA / DE and P / MEVMUCSR in the dictionary, must be YAE.

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