

Memo CP-D/259

To: Distribution

7 September 1995

From: O.Schwerer

Subject: Comments on TRANS A031

Please find below our comments on TRANS A031. Entries for which we consider correction and retransmission by CAJaD very important are labelled with *). Several corrections were done by NDS before transmitting this TRANS to the other centres; these are mentioned here for information to CAJaD and are marked in the list below with "CORR.NDS". CAJaD is asked to check the remaining errors for necessary correction and potential retransmission.

Distribution:

SMTP% "DUNFORD@BNLND2.DNE.BNL.GOV"
SMTP% "MCLANE@BNLND2.DNE.BNL.GOV"
SMTP% "TUBBS@NEA.FR"
SMTP% "KONIECZNY@NEA.FR"
SMTP% "MANOKHIN@CJD.OBNINSK.SU"
SMTP% "OLGA@CJD.OBNINSK.SU"
SMTP% "CHUKREEV@CAJAD.KIAE.SU"
SMTP% "CBETA@CAJAD.KIAE.SU"
SMTP% "VARLAMOV@CDFE.NPI.MSU.SU"
SMTP% "CHIBA@NUCL.PHYS.HOKUDAI.AC.JP"
SMTP% "KATO@NUCL.PHYS.HOKUDAI.AC.JP"
SMTP% "TENDOW@POSTMAN.RIKEN.GO.JP"
SMTP% "CIAEDNP@BEPC2.IHEP.AC.CN"
SMTP% "H3817TAR@ELLA.HU"
SMTP% "KIKUCHI@CRACKER.TOKAI.JAERI.GO.JP"

NDS:

SMTP% "AUNG@RIPO1.IAEA.OR.AT"
ARCILLA
LAMMER
LEMMEL

OBLOZINSKY
PASHCHENKO
SCHWERER
WIENKE

Comments on TRANS A031

General comments:

Alter flags in col.80:

On this TRANS only used in ENTRY and SUBENT records. It would be helpful to the receiving centers if alter flags C, I, D, R would be used in col.80 of individual lines as described on page 2.5 of the Exfor Manual.

Codes IND and UND in REACTION SF5:

There have been discussions about the correct use of these codes for years and I am aware that existing CPND entries, particularly from the B area, are not completely consistent with each other. Therefore I will not comment on all "doubtful" usages, in particular since these codes are normally not used as essential retrieval criteria (with some exceptions). However, to keep inconsistencies to a minimum, I want to restate the following:

- IND should be used only if the same reaction (SF1 to SF4) exists also in CUMulative form, giving a different value (at least in principle). It makes only sense if the reaction channel is not specifically defined (i.e. SF3 = X or = F). If a certain channel, e.g. (P,2N+2P), is given, production by beta decay is excluded (because in this case SF3 is different) and therefore IND and CUM are not applicable. (CUM also includes internal transition; however, if only internal transition but no beta decay is included, the correct code is M+ for partial contribution, and no code is needed for total sum of isomers.)

If e.g. SF4 = Be-7 or Be-10 (entries A0529, A0530), production by beta decay is not possible and therefore IND should not be used (because the REACTION code without IND means exactly the same).

- UND means that the sum of particles in SF3 is not meant as individual particles but as sum of emitted nucleons, e.g. 3 neutrons and 3 protons. Therefore UND is redundant, and should not be used, if SF3 = X (e.g. several subentries of A0536).

DECAY-DATA:

An entry under DECAY-DATA giving only the nuclide but no other information is not meaningful although it is not illegal (entries A0535, A0536). At least the half-life should be coded (if the values used by authors are known); or give only free text "no information given by authors" without nuclide code.

Detailed comments

<u>Entry</u>	<u>Subentry</u>	<u>Comments</u>
A0514	1	Line 30: -G missing (CORR.NDS)
A0529	12	Why is UND missing in SF5 ? Not consistent with other subents.
A0530	7	Lines 27,28 identical
A0531	2	REACTION43-TC-96,IND/M+,SIG should be either43-TC-96-G,M+,SIG (g.s. with partial m.s.contribution) or43-TC-96,,SIG (if measured quantity (almost) equal total c.s.)
A0532*)	2-4	Isomeric cross section ratios must be coded as IMPLICIT ratios, e.g. (subentry 2): (78-PT-198(D,2N)79-AU-198-M/G,,SIG/RAT,,EXP) Also the REL modifier in SF8 should be unnecessary since it is a ratio anyway.
A0535	2	RAD-DET: 9-F-19 should be 9-F-18 (CORR.NDS)
A0536*)	5,20,21	Metastable state given as -M in REACTION SF4 should not be defined by heading LVL-NUMB but by it's half-life (under DECAY-DATA).
	6	REACTION SF4 has -G but DATA section and LEVEL-PROP give LVL-NUMB = 2: this is a contradiction. Anyway LVL-NUMB should be used with PAR in SF5 but not for -G and -M states. Units PER-CENT illegal for LVL-NUMBER, use NO-DIM. (CORR.NDS)
	7	See comment on A0529.012

<u>Entry</u>	<u>Subentry</u>	<u>Comments</u>
	15,17	Check whether REACTION SF4 should contain -G or -M extension (metastable states exist which partly decay by beta decay, partly by isomeric transition, therefore it is unlikely that the total cs - which is coded without -G or -M - was measured).
A0538	4	IND/M+ in SF5 should be deleted - probably total cs measured (-M has 100% isomeric transition, and no cumul.production by beta decay possible)
A0540	2	The angles explained in lines 5-8 should be given in COMMON section too, using headings ANG1, ANG2 etc.