KARLSRUHE
CHARGED
PARTICLE
GROUP

Information

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Memo CP-B/3

29.10.1976

Reference: CP-D/9; CP-D/10
CP-C/3; CP-C/5
DICT-UP 761008 + 761013

1. DICT.-UPDATE

1.1 Dict. 36 (CP-D/10)

1.1.1 We accept the concept of Dict. 36 and the brackets for the expansions in Dict. 30 to 33 may be omitted

The following combination already contained in Dict. 36 will be used for CPND:

, SIG	IND, FY
PAR, SIG	CUM, FY
DI, SIG	CHN, FY
CN, SIG	TER, SIG
BIN, SIG	TER, RTB
PRE, FY	TER, RBT
SEC, FY	

The following combinations should be corrected:

CUM, SIG
IND, SIG
} These combinations should be shifted to the section 'INTEGRAL CROSS SECTIONS, GENERAL USE' because they are used also for reactions others than fission.

M+, SIG (CROSS SECTION FOR THE PRODUCT NUCLEUS INCLUDING FORMATION VIA ISOMERIC TRANSITIONS)

M-, SIG (CROSS SECTION FOR THE PRODUCT NUCLEUS EXCLUDING FORMATION VIA ISOMERIC TRANSITIONS)

(M), SIG (CROSS SECTION FOR THE PRODUCT NUCLEUS, INCLUDING/EXCLUDING FORMATION VIA ISOMERIC TRANSITIONS REGARDED UNCERTAIN BY COMPILER)

The following combinations should be added in the section 'INTERNAL CROSS SECTIONS, GENERAL USE':

(CUM), SIG (CS OF THE PRODUCT NUCLEUS, WHERE THE CUMULATIVE CONTRIBUTION WAS ASSUMED BY THE COMPILER TO BE VERY LIKELY)

CUM/M-, SIG (CUMULATIVE CS OF THE PRODUCT NUCLEUS EXCLUDING THE FORMATION VIA ISOMERIC TRANSITIONS)

IND/M+, SIG (INDEPENDENT CS OF THE PRODUCT NUCLEUS INCLUDING FORMATION VIA ISOMERIC TRANSITIONS)

CUM/(M), SIG (CUMULATIVE CS OF THE PRODUCT NUCLEUS, BUT INCLUSION/EXCLUSION OF FORMATION VIA ISOMERIC TRANSITIONS UNCERTAIN)

PAR/IND, SIG (PARTIAL INDEPENDENT CS)

PAR/CUM, SIG (PARTIAL CUMULATIVE CS)

All combinations containing SIG in Subfield 6, which are used for CPND, should also be available with TTY instead of SIG.

1.1.2 We accept ratio-codes for very common quantities, like RTB or RBT, but the long version ((....)/(....)) should still be available for coding more complicated cases. The long version must be used if the two reactions differ in any of the SF 5 to 9 in 'REACTION'. In this context we would like to add the following codes in Dict. 36 (and 32).

, RMG (CROSS SECTION RATIO OF METASTABLE TO GROUND STATE)

, RGM (CROSS SECTION RATIO OF GROUND TO METASTABLE STATE)

, RMT (CROSS SECTION RATIO OF METASTABLE STATE TO SUM OF METASTABLE + GROUND STATE)

1.2 Dict. 32 (CP-D/10)

The code EM can be deleted in Dict. 32

1.3 Dict. 20

For 'ADD-RES' we propose the following new codes:

POT (PARAMETERS OF NUCLEAR POTENTIAL)
LIKE BARRIER HEIGHTS OR DEFORMATION

STRUC (NUCLEAR STRUCTURE DATA)

LD (LEVEL DENSITY)

1.4 Dict. 31

CUM/M- has a more logical construction (see 2.) than DCUM, which therefore should be deleted.

1.5 Dict. 2 (CP-C/5)

The explanation of 'REACTION' should be expanded by the following sentence: IN CASE OF FISSION OR SPALLATION THE CODES FF OR SPF CAN BE USED IN SF4 IF EITHER THE TOTAL REACTION YIELD WAS MEASURED OR THE FORMATION OF THE INDIVIDUAL PRODUCT NUCLIDES SPECIFIED IN THE DATA SECTION.

For clarification the line 10I in Dict. 33 should read

FF (FISSION FRAGMENTS) = = = TO BE USED ONLY IN SF7 (AND 4)

2. During the discussion of the combinations for Dict. 36 the application of IND, (CUM), and CUM was clarified. The following explanations may be added to LEXFOR.

Combination	Applicable
IND, SIG	if it was clearly specified in the publication, that the formation via radioactive decay was excluded
IND/M+, SIG	similar to IND, SIG, but including the formation via isomeric transition
, SIG	if independent formation of the product nuclide can be assumed, but no definitive statement was given in the publication

(CUM), SIG — if the inclusion of the formation via radioactive decay is not explicitly specified in the publication but was assumed to be very likely by the compiler

CUM, SIG — if the cross section includes the formation via radioactive decay and isomeric transition

CUM/M-, SIG — similar to CUM, SIG, but excluding formation via isomeric transition

CUM/(M), SIG — similar to CUM, SIG, but inclusion/exclusion of formation via isomeric transitions uncertain

3. CP-C/3, Item IIIe

We declare deduced values by the free text 'DEDUCED VALUES' behind the corresponding 'REACTION'-code. Therefore, we do not see the need for repeating this information under 'STATUS'. However, we sould accept the following additional rule: If at least one set of the data used to obtain the deduced values was taken from another Subentry or Entry, we will give under STATUS the code DEP (if necessary with the appropriate pointer). If a multiple REACTION-entry contains deduced data as well as all the original data, the code DEP is only optional.

4. CP-C/3, Item IIIf

We definitively prefer to store the data on the tape in that form they will be needed lateron. For this reason we prefer to give EN as independent value, even if in the publication the projectile energy was given in the center of mass system (EN-CM), because for handling ICPND we need normally EN and only very occasionally EN-CM. Therefore, we will calculate EN in such cases where only EN-CM is given and store it in the data section with an appropriate remark under 'COMMENT'. We are aware that this is in conflict with the general EXFOR-rule to use, whenever possible, the values given in the publication. Therefore, we are proposing the following procedure: We will enter EN as well as EN-CM in the data section and - if absolutely necessary - the original EN-CM in the first column. For retrieval the column headings have to be identified anyway, so we see no reason why we should not go ahead with EN and EN-CM given in the same data section. The compromise proposed by H. Lemmel, that EN-CM should be entered under the heading MISC with an appropriate

comment, has the important disadvantage that the original data cannot be retrieved.

5. CP-D/10, page 2; CP-C/5

The formalism proposed for compiling fission yield data (see also Exfor Manual, page VIII. 12) by stating the mass and charge number in the data section is very appealing. However, it cannot be applied in such cases, where decay data of the different fragments, like γ-ray energies and abundances, have to be given. With the same restriction this formalism is also applicable to spallation processes as proposed in CP-C/5. In both cases a code (what does PRD mean?) in SF5 should indicate that A and/or Z of the product nuclei is given in the data-section.

If this proposal is accepted the explanation of the headings 'ELEMENT' and 'MASS' in Dict. 24 should be corrected:

ELEMENT Z-NUMBER OF FISSION OR SPALLATION PRODUCTS

MASS A-NUMBER OF FISSION OR SPALLATION PRODUCTS.

6. Transmission tape BOO2

At the end of this month we will send out copies of the KACHAPAG-File (Transmission-Tape BOO2) with 20 entries which supersedes the test tape (Transmission-Tape BOO1). All entries are now revised for the third time and we assume that the version on the tape is in agreement with the latest set of EXFOR-rules.

In the future we will send out the newest version of the KACHAPAG-File every March and October. As far as the file is comparatively small, the tapes will contain the total file and not only the additions. However, changed, inserted, or deleted lines compared to the preceding tape will be declared by the appropriate letters in column 80.

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