

**Memo issued on behalf of
National Nuclear Data Center
Brookhaven National Laboratory
USA**

Memo CP-C/407

Date: 28 July 2012
To: Distribution
From: O. Schwerer and N.Otsuka
Subject: **Update of dict. 33 (Particles): Short nuclide code B8 for REACTION SF7, and related revision of Manual**
Reference: **CP-D/734 (WP2012-10) and CP-D/648 (WP2011-28)**

Memos CP-D/734 and CP-D/648 proposed the use of short nuclide codes BE10, C14, CA40 and LI6 in place of the corresponding long codes (Z-S-A) for exclusive use in REACTION SF7, and for addition to dictionary 33. The proposal was approved at the 2012 NRDC meeting, and those codes will be added to dictionary 33 in the next update.

Now we propose another short code, B8, for dictionary 33, for use in SF7 (needed in retransmission of entry C0820 on Prelim C119).

Memo CP-D/734 says

“...if we should be ready to include any combination of mass number and elemental symbol (e.g., PU239)”, but neither the wording proposed in CP-D/648 for the Manual section on REACTION SF7, nor the conclusions of the NRDC meeting say explicitly that, from now on, we want only short nuclide codes to be used in SF7, and that the particle dictionary 33 (which so far needed to be updated only rarely) will be updated with new short nuclide codes whenever they come up.

For clarification, we therefore propose the following **update of the EXFOR Formats Manual**, p.6.6 (REACTION SF7), which supersedes the proposal of CP-D/648:

SF7 Particle Considered. Provides particle or nuclide code(s) indicating to which of several outgoing particles or nuclides the quantity refers.¹ When more than one particle/nuclide is entered, e.g., for a quantity describing the correlation between outgoing particles, all codes are entered, separated by a slash. For the case where a variable is given for a correlated pair, e.g., the center-of-mass energy of two or more emitted particles, the codes are separated by a plus sign (+).

¹ Note that the particle considered is not necessarily identical to the particle detected, e.g., the angular distribution of an outgoing particle that has been deduced from a recoil particle detected.

Contains ~~either~~ a code from Dictionary 33 with an “allowed SF7 flag” (7) (see **LEXFOR, Outgoing Particles**)².

. The code RSD is used in SF7 when the reaction product (SF4) is the particle considered.

Examples of SF7 entries:

(... (..., P) 4-BE-9, , DA, RSD) angular distribution of ⁹Be product.

(... (..., N+P) ... , DA/DA/DE, N/P/N+P) triple differential cross section as a function of the angle of the emitted neutron and proton and the center-of-mass energy of the emitted neutron-proton pair.

20-CA-40 (P, P+X) 2-HE-4, , DA/DE, P/CA40 double-differential cross section with respect to angle of proton and excitation energy of Ca-40

The particle considered should be omitted if there is no ambiguity. For integral data this subfield is in most cases not used.

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² For particles heavier than α , codes in the form Z-S-A-X have been used in SF7 and may still exist in older entries; currently, short nuclide codes (for exclusive use in REACTION SF7) such as BE10, C14, CA40, LI6 are introduced, and are being added to dictionary 33 as needed.

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