**Nuclear Data Section**

**International Atomic Energy Agency**

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**Memo CP-D/986**

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**To:** Distribution

**From:** N. Otsuka

**Subject: Shielded product coded with CUM or (CUM)**

The branch code CUM is never used for the nuclides shielded against decay of another nuclide (see the list of nuclides in LEXFOR **Independent and Cumulative Data**). I extracted all REACTION codes against this rule for removal of CUM and (CUM) by the originating centres.

In some cases, the authors use *cumulative* in the sense that the data set was obtained by measuring the ground state activity including contribution of the metastable state decay via isomeric transition. In such a case, delete -G,CUM (if IT~100%) or replace CUM with M+ (IT<<100%).

The remarks below were prepared assuming typical experimental condition (e.g., cooling time), and the originating centres are encouraged to visit the source articles before corrections.

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| **Data ID** | **REACTION** | **Remark** |
| 13402.002 | (92-U-235(N,F)35-BR-82,CUM,FY,,SPA) | CUM -> IND |
| 13402.003 | (92-U-235(N,F)37-RB-86,CUM,FY,,SPA) | CUM -> IND |
| 14092.014 | (28-NI-0(N,X)27-CO-58,CUM,SIG) | Remove CUM. |
| A0026.070 | (82-PB-0(6-C-12,X)79-AU-198-G,CUM,SIG) | Use -G,M+? |
| A0431.089 | (73-TA-181(6-C-12,X)63-EU-150-G,CUM,SIG) | Remove CUM. |
| A0501.009 | (22-TI-0(P,X)21-SC-46-G,CUM,SIG) | Remove -G,CUM. |
| A0501.069 | (27-CO-59(P,X)21-SC-46-G,CUM,SIG) | Remove -G,CUM. |
| A0501.097 | (29-CU-0(P,X)21-SC-46-G,CUM,SIG) | Remove -G,CUM. |
| A0931.036 | (50-SN-112(6-C-12,X)37-RB-84-G,CUM,SIG) | Remove -G,CUM. |
| C0068.010 | (42-MO-0(P,X)43-TC-96,CUM,SIG) | Remove CUM. |
| C0537.004 | (29-CU-0(P,X)27-CO-58,CUM,SIG) | Remove CUM. |
| C0537.010 | (29-CU-0(P,X)25-MN-54,CUM,SIG) | Remove CUM. |
| C0537.017 | (29-CU-0(P,X)21-SC-46,CUM,SIG) | Remove CUM. |
| D0305.019 | (45-RH-103(6-C-12,X)43-TC-96-G,CUM,SIG) | Remove -G,CUM. |
| D0305.052 | (45-RH-103(8-O-16,X)43-TC-96-G,CUM,SIG) | Remove -G,CUM. |
| D0420.013 | (45-RH-103(8-O-16,X)43-TC-96-G,CUM,SIG) | Remove -G,CUM. |
| D0420.045 | (45-RH-103(8-O-16,X)47-AG-106-G,CUM,SIG) | Remove CUM. |
| D0517.004 | (47-AG-0(P,X)47-AG-106-M,CUM,SIG) | Remove CUM. |
| D0529.031 | (45-RH-103(6-C-12,X)43-TC-96-G,CUM,SIG) | Remove -G,CUM. |
| D4011.008 | (28-NI-0(HE3,X)27-CO-58,CUM,SIG) | Remove CUM. |
| D4149.012 | (30-ZN-0(P,X)27-CO-58,CUM,SIG,,,EXP) | Remove CUM. |
| D4231.014 | (48-CD-0(A,X)49-IN-114-M,CUM,SIG) | Remove CUM. |
| D4232.004 | (27-CO-59(D,X)27-CO-58,CUM,SIG) | Remove CUM. |
| D4256.011 | (46-PD-0(D,X)45-RH-102-G,CUM,SIG) | Remove CUM. |
| D6156.012 | (95-AM-243(P,F)53-I-130-G,CUM,SIG) | Replace CUM with M+. |
| E1411.031 | (92-U-233(P,F)53-I-130-G,(CUM)/M+,SIG) | Remove (CUM)/. |
| E1411.065 | (92-U-235(P,F)53-I-130-G,(CUM)/M+,SIG) | Remove (CUM)/. |
| E1411.100 | (92-U-236(P,F)53-I-130-G,(CUM)/M+,SIG) | Remove (CUM)/. |
| E1411.135 | (93-NP-237(P,F)53-I-130-G,(CUM)/M+,SIG) | Remove (CUM)/. |
| E1411.170 | (94-PU-239(P,F)53-I-130-G,(CUM)/M+,SIG) | Remove (CUM)/. |
| E1411.200 | (94-PU-242(P,F)53-I-130-G,(CUM)/M+,SIG) | Remove (CUM)/. |
| E1411.235 | (94-PU-244(P,F)53-I-130-G,(CUM)/M+,SIG) | Remove (CUM)/. |
| K2027.005 | (23-V-51(G,X)21-SC-46,CUM,SIG,,BRA) | Remove CUM. |
| K2027.040 | (27-CO-59(G,X)21-SC-46,CUM,SIG,,BRA) | Remove CUM. |
| K2027.066 | (39-Y-89(G,X)37-RB-84-G,CUM,SIG,,BRA) | Remove -G,CUM. |
| O0347.021 | (82-PB-0(P,X)79-AU-198-G,(CUM),SIG) | Use -G,M+? |
| O0841.008 | (95-AM-241(P,X)33-AS-76,CUM,SIG) | Remove CUM. |
| O0841.009 | (95-AM-241(P,X)35-BR-82,CUM,SIG) | Remove CUM. |
| O0841.027 | (95-AM-241(P,X)43-TC-96,CUM,SIG) | Remove CUM. |
| O0841.038 | (95-AM-241(P,X)51-SB-122,CUM,SIG) | Remove CUM. |
| O0841.039 | (95-AM-241(P,X)51-SB-124,CUM,SIG) | Use -G,M+. |
| O0841.047 | (95-AM-241(P,X)53-I-130,CUM,SIG) | Use -G,M+. |
| O0841.056 | (95-AM-241(P,X)65-TB-156,CUM,SIG) | Remove CUM. |
| O0841.057 | (95-AM-241(P,X)79-AU-198,CUM,SIG) | Use -G,M+? |
| O0842.006 | (93-NP-237(P,X)37-RB-84,CUM,SIG) | Remove CUM. |
| O0842.007 | (93-NP-237(P,X)37-RB-86,CUM,SIG) | Remove CUM. |
| O0842.017 | (93-NP-237(P,X)43-TC-96,CUM,SIG) | Remove CUM. |
| O0842.027 | (93-NP-237(P,X)51-SB-122,CUM,SIG) | Remove CUM. |
| O0842.028 | (93-NP-237(P,X)51-SB-124,CUM,SIG) | Use -G,M+. |
| O0900.057 | (83-BI-209(P,X)79-AU-198,CUM,SIG) | Use -G,M+? |
| O0911.002 | (53-I-129(P,X)21-SC-46-G,CUM,SIG) | Remove -G,CUM. |
| O0911.006 | (53-I-129(P,X)27-CO-58-G,CUM,SIG) | Remove -G,CUM. |
| O0911.010 | (53-I-129(P,X)37-RB-84-G,CUM,SIG) | Remove -G,CUM. |
| O0911.016 | (53-I-129(P,X)43-TC-96-G,CUM,SIG) | Remove -G,CUM. |
| O0911.019 | (53-I-129(P,X)45-RH-102-G,CUM,SIG) | Remove CUM. |
| O0911.023 | (53-I-129(P,X)51-SB-124-G,CUM,SIG) | Replace CUM with M+. |
| O1503.004 | (28-NI-0(P,X)27-CO-58,CUM,SIG) | Remove CUM. |
| O2001.002 | (79-AU-197(P,X)79-AU-196,CUM,SIG) | Remove CUM. |
| T0145.028 | (39-Y-89(P,X)35-BR-78,CUM,SIG) | Remove CUM. |
| T0147.002 | (42-MO-0(P,X)43-TC-96,CUM,SIG) | Remove CUM. |

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