**Nuclear Data Section**

**International Atomic Energy Agency**

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**Memo CP-D/1114**

**Date:** 27 June 2024

**To:** Distribution

**From:** N. Otsuka

**Subject: Dictionary transmission 9130**

Dictionary transmission 9130 is available in three formats (Trans, Archive and Backup) from the NDS open area: [http://nds.iaea.org/nrdc/ndsx4/trans/dicts/](http://nds.iaea.org/nrdc/ndsx4/trans/dictionaries/). These dictionaries are also available in zipped form (dicts-2024-06-27.zip) at <http://nds.iaea.org/exfor-master/backup/?C=M;O=D>. The JSON dictionary (an intermediate file to produce the Trans Dictionary from the Archive Dictionary) is placed on <https://nds.iaea.org/nrdc/file/dson.html>.

Following Conclusion 9 of the NRDC 2024 meeting, I completely moved the dictionary processing system from the legacy NNDC Fortran codes (dan2x4, make\_back, nuc\_dict) which are now replaced by Python scripts in the EXFOR Utility Codes (c.f. IAEA-NDS-0244).

Major general changes are

* Adoption of E11.4 and E12.5 for real numbers in Dictionary 25 (Units) and 227 (Nuclides) as proposed in WP2024-12.
* Revision and addition of the internal numerical equivalents as well as elimination of the compound flag in Dictionary 209 (Compounds) as proposed in WP2024-11. The new internal numerical equivalent 10000*Z*+10*A* (I7) was placed at column 56 to 62.
* Removal of the \* at column 55 (“Presently not in use”) of Dictionary 213 (Reaction types).

**Revision of the format of Dictionary 209 (Compounds) c.f. CP-D/1109=WP2024-11**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Line** | **Contents** | **Format** | **Archive** | **Trans** | **CHEX** |
| 1 | Code | A10 | 13-22 | 1-10 | x |
|  | CINDA code | A5 | 44-48 | N/A |  |
|  | Internal numerical equivalent 1 | ~~I6~~I7 | 49-~~54~~55 | N/A | x |
|  | Internal numerical equivalent 2 (*new*) | I7 | 56-62 | N/A |  |
|  | ~~(Field not currently used)~~ | ~~A13~~ | ~~55-67~~ | ~~N/A~~ |  |
|  | ~~(presently not in use)~~ | ~~E5~~ | ~~68-72~~ | ~~N/A~~ |  |
|  | ~~(presently not in use)~~ | ~~E11~~ | ~~73-83~~ | ~~N/A~~ |  |
|  | Expansion | A25 | 84-108 | (12-38) |  |
|  | ~~Compound flag~~  ~~\* compound~~ | ~~A1~~ | ~~114~~ | ~~N/A~~ |  |
| ~~2+~~ | ~~Output dictionary number for DANIEL~~  ~~(presently not used)~~ | ~~I2~~ | ~~44-45~~ | ~~N/A~~ |  |
|  | Comment | A55 | 46-100 | 12-66 |  |

Conclusions from the NRDC 2024 meeting, all memos submitted no later than 13 May (for dictionary 1, 2, 4, 16, 24-25, 30-35, 37, 236) or 13 June (for other dictionaries) are considered in this update.

Additional changes introduced in this memo are summarized below:

**Dictionary 6 (Reports)**

EUR- (Institute code changed from 2ZZISP to 2ZZZEC.)

**Dictionary 236 (Quantities)**

,SIG,,TTA (Expansion changed from “Reaction yield divided by areal density”.)

All changes are summarized below. “Status” gives alteration flags and status codes defined in EXFOR/CINDA Dictionary Manual. To minimize the table, major systematic format changes in real numbers introduced in Dictionaries 025 and 227 mentioned above are omitted in this table.

I would like thank Nicolas Soppera for valuable comments on a draft of the new dictionary.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Dict.** | **Status** | **Code** | **Expansion** | **Remark** |
| 001 | MINT | DICTION | First record of a transmission dictionary | CP-D/1092(Rev.) |
| 001 | MINT | ENDDICTION | Last record of a transmission dictionary | CP-D/1092(Rev.) |
| 001 | AINT | ENDMASTER | Last record of a master file | CP-D/1094 |
| 001 | AINT | ENDSUBDICT | Last record of each dictionary | CP-D/1092(Rev.) |
| 001 | AINT | MASTER | First record of a master file | CP-D/1094 |
| 001 | AINT | SUBDICT | First record of each dictionary | CP-D/1092(Rev.) |
| 005 | ATRA | JFE | Journal of Fusion Energy | CP-C/0502 |
| 005 | ATRA | SUTP | Teoreticheskaya Fizika | CP-M/0042 |
| 006 | MTRA | EUR- | Euratom Reports | This memo |
| 006 | MTRA | UCRL-TR- | U.C., Lawrence Radiation Lab., Reports | CP-D/1083 |
| 007 | ATRA | 70HOUSTON | 159th American Chem.Soc.National Meeting,Houston 1970 | CP-D/1108 |
| 007 | ATRA | 74LOSANG | 167th American Chem.Soc.Nat.Meeting,Los Angeles, 1974 | CP-D/1108 |
| 007 | ATRA | 82KHARKIV | Conf.Nucl.Phys.50th Anniv.Nucl.Fis.USSR, Kharkov 1982 | CP-F/0024 |
| 024 | MTRA | E-NM-ERR | Error in outgoing part. en., REACTION ratio numerator | Editorial |
| 024 | MTRA | E-NRM1 | Energy of first outgoing part. used for normalization | Editorial |
| 024 | MTRA | E-NRM2 | Energy of second outgoing part. used for normalization | Editorial |
| 024 | MTRA | E-RL-MAX | Upper limit of relative energy of outgoing part. | Editorial |
| 024 | MTRA | E-RL-MIN | Lower limit of relative energy of outgoing part. | Editorial |
| 024 | MTRA | EN-NRM1-MN | Lower limit of 1st incident en.range for normalization | Editorial |
| 024 | MTRA | EN-NRM1-MX | Upper limit of 1st incident en.range for normalization | Editorial |
| 024 | MTRA | EN-RSL-DN | Inc.proj.en. resol.(FWHM), REACTION ratio denominator | Editorial |
| 213 | MTRA | ALF | Alpha (capture-to-fission cs ratio) | This memo |
| 213 | MTRA | ALR | Alpha at resonance | This memo |
| 213 | MTRA | ETA | Neutron yield (Eta) | This memo |
| 213 | MTRA | ETR | Neutron yield (Eta) at resonance | This memo |
| 213 | MTRA | KER | Kerma factor | This memo |
| 213 | MTRA | KRP | Partial kerma factor | This memo |
| 213 | MTRA | MLT | Multiplicity | This memo |
| 213 | MTRA | MTA | Multiplicity d/dA | This memo |
| 213 | MTRA | MTE | Multiplicity, partial or d/dE | This memo |
| 213 | MTRA | MTR | Multiplicity at resonance | This memo |
| 213 | MTRA | NAE | Neutron yield d/dAngle/dE' | This memo |
| 213 | MTRA | NU | Neutron yield (nu-bar) | This memo |
| 213 | MTRA | NUA | Neutron yield dep.on angle | This memo |
| 213 | MTRA | NUD | Delayed neutron yield (nu-bar delayed) | This memo |
| 213 | MTRA | NUE | Neutron yield dep.on sec.particle energy | This memo |
| 213 | MTRA | NUN | Probability for emission of N neutrons | This memo |
| 213 | MTRA | NUP | Partial neutron yield (nu-bar) | This memo |
| 213 | MTRA | NUR | Neutron yield at resonance | This memo |
| 213 | MTRA | PN | Delayed neutron emission probability | This memo |
| 213 | MTRA | PNE | Delayed neutron spect. from individ. precursor | This memo |
| 213 | MTRA | PNP | Partial delayed neutron emission probability | This memo |
| 213 | MTRA | PO | Polarization | This memo |
| 213 | MTRA | PY | Product yield (other than fission) | This memo |
| 213 | MTRA | RP | Resonance parameter | This memo |
| 213 | MTRA | SP | Secondary energy spectrum | This memo |
| 213 | MTRA | TT | Thick target yield | This memo |
| 236 | ATRA | (CUM)/M-,SIG | Cross section excluding isomeric transition, uncertain if cumulative | CP-D/1104 |
| 236 | MTRA | ,SIG,,TTA | Cross section in thin target approximation | This memo |
| 236 | ATRA | ,SIG,G,RES | Gamma-production cross section at resonance | CP-F/0024 |
| 236 | ATRA | BA/INC,AMP | Bound-atom incoherent scattering length | CP-N/0175 |
| 236 | ATRA | ISP/SEC,AP,\*F | Most probable mass of frag. specified, partial for intermediate product | CP-E/0170 |
| 236 | ATRA | M+,SIG,,RAB | Cs \* abund.(nat)/abund.(nucl.of 1st term) including isomeric transition | CP-D/1100 |

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