**Nuclear Data Section**

**International Atomic Energy Agency**

**P.O.Box 100, A-1400 Vienna, Austria**

**Memo CP-D/1124**

**Date:** 16 January 2025

**To:** Distribution

**From:** N. Otsuka

**Subject: Format errors (opening parenthesis of free text at col. 12 etc.)**

I analysed the EXFOR contents by using EXFOR-2024 converted to JSON (J4) and validated it with a draft of the JSON schema. It checks a few basic format items for coded information (e.g., presence of (sub)fields, number or string), and I got some error messages.

1. They are mainly for presence of an **opening parenthesis “(“ at column 12 of free text**.

*Example*:

CORRECTION Method 1 data corrected for detector efficiency and 1369800100055

internal conversion. 1369800100056

***(APRVD) Approved by A. Ramayya, 28 August 1998. 1369800100057***

HISTORY (19980807C) 1369800100058

Both ZCHEX and JANIS Trans checker do not detect this error. I guess they do not check presence of an opening parenthesis if the keyword does not take coded information (i.e., TITLE, CORRECTION, COVARIANCE, COMMENT and CRITIQUE).

2. Other typical errors are for a **wrong field identifier under SAMPLE and wrong level energy value under LEVEL-PROP**.

*Examples*:

SAMPLE (92-U-235,***93.***) Square platelet of 93% enrichment, 2061600800013

LEVEL-PROP (24-CR-49,E-LVL=2.578***MEV***,SPIN=0.5,PARITY=+1.) E093100200004

The wrong SAMPLE coding is detected by JANIS Trans Checker (but not by ZCHEX), and the wrong LEVEL-PROP coding is detected by ZCHEX (but not by JANIS Trans Checker).

All detected errors are listed in the appendix of this memo. The JSON schema file is still very preliminary, but I can share it with you if you are interested in it.

**Distribution:**

[nrdc.memo-distribution@iaea.org](mailto:nrdc.memo-distribution@iaea.org)

|  |  |  |
| --- | --- | --- |
| **Subentry#** | **Keyword** | **Remark** |
| 10835.005 | SAMPLE | Open paren of free text at col.12 |
| 10993.002 | CORRECTION | Open paren of free text at col.12 |
| 11504.006 | CRITIQUE | HISTORY record coded under CRITIQUE |
| 11540.009 | SAMPLE | ENR= missing |
| 11540.010 | SAMPLE | ENR= missing |
| 11540.011 | SAMPLE | ENR= missing |
| 11934.001 | TITLE | Open paren of free text at col.12 |
| 11954.001 | TITLE | Open paren of free text at col.12 |
| 12866.178 | COMMENT | Open paren of free text at col.12 |
| 13698.001 | CORRECTION | STATUS record coded under CORRECTION |
| 13733.002 | SAMPLE | Open paren of free text at col.12 |
| 13733.003 | SAMPLE | Open paren of free text at col.12 |
| 13901.001 | CORRECTION | Open paren of free text at col.12 |
| 14248.001 | COMMENT | Open paren of free text at col.12 |
| 14250.002 | CRITIQUE | Open paren of free text at col.12 |
| 14273.001 | CORRECTION | Open paren of free text at col.12 |
| 14319.002 | SAMPLE | Open paren of free text at col.12 |
| 14319.003 | SAMPLE | Open paren of free text at col.12 |
| 14744.001 | COMMENT | Open paren of free text at col.12 |
| 14829.001 | CORRECTION | Open paren of free text at col.12 |
| 20175.001 | SAMPLE | ENR= missing |
| 20352.017 | CORRECTION | ERR-ANALYS ecord coded under CORRECTION |
| 20385.001 | SAMPLE | ENR= missing |
| 20602.027 | CORRECTION | STATUS record coded under CORRECTION |
| 20616.008 | SAMPLE | ENR= missing, normalized to 100 instead of 1 |
| 20616.009 | SAMPLE | ENR= missing, normalized to 100 instead of 1 |
| 20616.010 | SAMPLE | ENR= missing, normalized to 100 instead of 1 |
| 20616.011 | SAMPLE | ENR= missing, normalized to 100 instead of 1 |
| 20996.001 | SAMPLE | ENR= missing, normalized to 100 instead of 1 |
| 21532.002 | SAMPLE | ENR= missing |
| 21532.003 | SAMPLE | ENR= missing |
| 22121.029 | COMMON | E-EXC-MX-A : empty number field |
| 22186.081 | COMMENT | STATUS record coded under COMMENT |
| 22360.001 | SAMPLE | ENR= missing |
| 22882.010 | COMMENT | Open paren of free text at col.12 |
| 23112.002 | COMMENT | Open paren of free text at col.12 |
| 23112.003 | COMMENT | Open paren of free text at col.12 |
| 23260.087 | SAMPLE | NAT= missing |
| 23286.002 | COMMENT | STATUS record coded under COMMENT |
| 23560.005 | COMMENT | Open paren of free text at col.12 |
| 30330.002 | COMMENT | STATUS record coded under COMMENT |
| 31438.003 | COMMENT | HISTORY record coded under COMMENT |
| 31515.001 | CORRECTION | Open paren of free text at col.12 |
| 32245.001 | CORRECTOIN | Open paren of free text at col.12 |
| 32762.001 | CORRECTION | Open paren of free text at col.12 |
| 32782.001 | CORRECTION | Open paren of free text at col.12 |
| 32910.001 | CORRECTION | Open paren of free text at col.12 |
| 33034.006 | CORRECTION | Open paren of free text at col.12 |
| 33034.007 | CORRECTION | Open paren of free text at col.12 |
| 33045.002 | SAMPLE | Open paren of free text at col.12 |
| 33071.001 | CORRECTION | Open paren of free text at col.12 |
| 33077.003 | CORRECTION | Open paren of free text at col.12 |
| 40023.007 | COMMENT | Open paren of free text at col.12 |
| 40023.013 | COMMENT | Open paren of free text at col.12 |
| 40023.019 | COMMENT | Open paren of free text at col.12 |
| 40023.025 | COMMENT | Open paren of free text at col.12 |
| 40023.031 | COMMENT | Open paren of free text at col.12 |
| 40054.002 | SAMPLE | ENR= missing |
| 40054.003 | SAMPLE | ENR= missing |
| 40071.001 | COMMENT | Open paren of free text at col.12 |
| 40091.004 | COMMENT | Open paren of free text at col.12 |
| 40112.001 | CORRECTION | Open paren of free text at col.12 |
| 40334.002 | CRITIQUE | Open paren of free text at col.12 |
| 40359.003 | COMMENT | Open paren of free text at col.12 |
| 41502.002 | COMMENT | Open paren of free text at col.12 |
| 41561.003 | CORRECTION | Open paren of free text at col.12 |
| A0059.003 | COMMENT | Open paren of free text at col.12 |
| A0092.007 | COMMENT | Open paren of free text at col.12 |
| A0383.002 | COMMENT | Open paren of free text at col.12 |
| A0566.009 | COMMENT | Open paren of free text at col.12 |
| A0596.001 | CORRECTION | HISTORY record coded under CORRECTION |
| B0084.009 | COMMENT | STATUS record coded under COMMENT |
| C0098.002 | LEVEL-PROP | ISO-NUMB -> IAS-NUMB |
| C0098.003 | LEVEL-PROP | ISO-NUMB -> IAS-NUMB |
| C0098.004 | LEVEL-PROP | ISO-NUMB -> IAS-NUMB |
| C0098.005 | LEVEL-PROP | ISO-NUMB -> IAS-NUMB |
| C0098.006 | LEVEL-PROP | ISO-NUMB -> IAS-NUMB |
| C0244.005 | SAMPLE | ENR+0.9984 -> ENR=0.984 |
| C0244.006 | SAMPLE | ENR+0.991 -> ENR=0.991 |
| C0982.002 | COMMENT | Open paren of free text at col.12 |
| C0995.003 | COMMENT | Open paren of free text at col.12 |
| C1021.001 | COMMENT | Open paren of free text at col.12 |
| C1471.001 | SAMPLE | Open paren of free text at col.12 |
| C1790.002 | COMMENT | Open paren of free text at col.12 |
| C1858.001 | SAMPLE | Open paren of free text at col.12 |
| C1886.001 | SAMPLE | Open paren of free text at col.12 |
| C1919.001 | SAMPLE | Open paren of free text at col.12 |
| C1936.001 | SAMPLE | Open paren of free text at col.12 |
| C1964.001 | SAMPLE | Open paren of free text at col.12 |
| C2017.002 | SAMPLE | Open paren of free text at col.12 |
| C2017.003 | SAMPLE | Open paren of free text at col.12 |
| C2113.001 | SAMPLE | Open paren of free text at col.12 |
| C2271.004 | CORRECTION | Open paren of free text at col.12 |
| C2317.003 | COMMENT | Open paren of free text at col.12 |
| C2317.005 | COMMENT | Open paren of free text at col.12 |
| C2478.001 | CORRECTION | Open paren of free text at col.12 |
| C2535.004 | LEVEL-PROP | Delete or move to COMMENT etc. Level energy absent. |
| C2535.005 | LEVEL-PROP | Delete or move to COMMENT etc. Level energy absent. |
| C2536.004 | LEVEL-PROP | Delete or move to COMMENT etc. Level energy absent. |
| D0658.001 | SAMPLE | ENR= missing |
| D0933.003 | CORRECTION | Open paren of free text at col.12 |
| D4250.001 | SAMPLE | Open paren of free text at col.12. Enrichment normalized to 100 instead of 1. |
| D4300.001 | SAMPLE | Open paren of free text at col.12 |
| D4308.001 | SAMPLE | Open paren of free text at col.12 |
| D4314.001 | SAMPLE | Illegal field identifiers ENR< and ENR< |
| D6075.001 | COMMENT | Open paren of free text at col.12 |
| D6092.001 | COMMENT | Open paren of free text at col.12 |
| D6208.006 | COMMENT | Open paren of free text at col.12 |
| E0931.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1137.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1141.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1188.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1191.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1199.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1206.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1229.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1230.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1237.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1280.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1282.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1283.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1310.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1313.003 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1316.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1325.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1355.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1360.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1361.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1362.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1364.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1366.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1371.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1388.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1407.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1413.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1416.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1419.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1423.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1425.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1436.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1441.001 | NOSUBENT | N2: Add 19950425 in 002-004. |
| E1442.001 | NOSBUENT | N2: Add 19950428 in 010-023. |
| E1440.001 | LEVEL-PROP | Illegal characters "MEV" in the level energy field in data subentries |
| E1637.024 | LEVEL-PROP | Illegal characters "MEV" in the level energy field |
| F0191.001 | COMMENT | Open paren of free text at col.12 |
| F0266.001 | COMMENT | Open paren of free text at col.12 |
| L0192.001 | SAMPLE | Open paren of free text at col.12 |
| L0207.002 | SAMPLE | Open paren of free text at col.12 |
| L0207.003 | SAMPLE | Open paren of free text at col.12 |
| M0122.001 | COMMENT | Open paren of free text at col.12 |
| M0347.002 | COMMENT | ERR-ANALYS record coded under COMMENT? |
| M0347.004 | COMMENT | ERR-ANALYS record coded under COMMENT? |
| M0347.005 | COMMENT | ERR-ANALYS record coded under COMMENT? |
| P0028.003 | SAMPLE | Open paren of free text at col.12 |
| P0028.004 | SAMPLE | Open paren of free text at col.12 |
| P0028.005 | SAMPLE | Open paren of free text at col.12 |
| P0028.006 | SAMPLE | Open paren of free text at col.12 |
| P0028.007 | SAMPLE | Open paren of free text at col.12 |
| R0032.002 | COMMENT | HISTORY record coded under COMMENT |
| R0032.003 | COMMENT | HISTORY record coded under COMMENT |
| S0063.001 | SAMPLE | Open paren of free text at col.12 |
| S0102.001 | COMMENT | Open paren of free text at col.12 |
| T0011.002 | SAMPLE | Chemical purity coded as isotopic enrichment? (Be is monoisotopic) |
| T0011.003 | SAMPLE | Chemical purity coded as isotopic enrichment? (Be is monoisotopic) |
| V0016.221 | CRITIQUE | HISTORY record coded under CRITIQUE |