**Nuclear Data Section**

**International Atomic Energy Agency**

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

**Memo CP-D/1025**

**Date:** 29 September 2021

**To:** Distribution

**From:** N. Otsuka

**Subject: Be-7 cumulative production data in EXFOR**

Alexander Konobeev (KIT) pointed out 27Al(p,x)7Be cumulative cross sections are compiled in EXFOR D0505.022 and O0449.004 though this product nuclide does not have a decay precursor. I found 39 datasets compiling 7Be cumulative production data in EXFOR Master 2021-09-21, and summarized proposed corrections as appended to this memo.

For D0640 and E2323, the authors confirmed that their cross sections are independent. On the other hand, some articles list 7Be with “c” or “cumulative” in their decay data or cross section table explicitly. I am therefore 100% sure if my proposal is always correct, and your comment and/or communication with the authors are appreciated.

**Distribution:**

a.koning@iaea.org

abhihere@gmail.com

aloks279@gmail.com

bknayak@barc.gov.in

daniela.foligno@oecd-nea.org

dbrown@bnl.gov

draj@barc.gov.in

exfor@oecd-nea.org

fukahori.tokio@jaea.go.jp

ganesan555@gmail.com

gezg@ciae.ac.cn

iwamoto.osamu@jaea.go.jp

jmwang@ciae.ac.cn

kaltchenko@kinr.kiev.ua

kimdh@kaeri.re.kr

kimura.atsushi04@jaea.go.jp

l.vrapcenjak@iaea.org

manuel.bossant@oecd-nea.org

masaaki@nucl.sci.hokudai.ac.jp

michael.fleming@oecd-nea.org

mmarina@ippe.ru

nicolas.soppera@oecd-nea.org

n.otsuka@iaea.org

nrdc@jcprg.org

odsurenn@gmail.com

ogritzay@ukr.net

ogrudzevich@ippe.ru

otto.schwerer@aon.at

pikulina@expd.vniief.ru

pritychenko@bnl.gov

scyang@kaeri.re.kr

selyankina@expd.vniief.ru

sonzogni@bnl.gov

stakacs@atomki.mta.hu

stanislav.hlavac@savba.sk

sv.dunaeva@gmail.com

tada@nucl.sci.hokudai.ac.jp

taova@expd.vniief.ru

tarkanyi@atomki.hu

vvvarlamov@gmail.com

v.zerkin@iaea.org

vidyathakur@yahoo.co.in

vsemkova@inrne.bas.bg

yolee@kaeri.re.kr

zholdybayev@inp.kz

**cc**:

alexander.konobeev@kit.edu

**7Be production data compiled with SF5=CUM in EXFOR Master 2021-09-21**

(Article=Y indicates that the authors mention that it is cumulative in a decay data or cross section table.)

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| **Subentry** | **REACTION** | **Article** | **Proposed corrections** | **Remark** |
| 13060.002 | (92-U-235(N,F)ELEM/MASS,CUM,FY,,SPA) |  | CUM -> TER for all products of this subentry? |  |
| 21884.002 | (92-U-235(N,F)ELEM/MASS,CUM,FY,,MXW) |  | CUM -> TER for all products of this subentry? |  |
| A0344.015.2 | (12-MG-0(P,X)ELEM/MASS,CUM,SIG) |  | Delete these datasets. Values converted from the tabulated production rates |  |
| A0344.017.2 | (13-AL-27(P,X)ELEM/MASS,CUM,SIG) |  | Delete these datasets. Values converted from the tabulated production rates |
| A0344.019.2 | (14-SI-0(P,X)ELEM/MASS,CUM,SIG) |  | Delete these datasets. Values converted from the tabulated production rates |
| C0238.003 | (29-CU-0(18-AR-40,X)ELEM/MASS,CUM,SIG) |  | Move the 7Be production cross section to 002. |  |
| C2340.004 | (47-AG-0(P,X)ELEM/MASS,CUM,SIG) | Y | Move the 7Be production cross section to 002 or 003. |  |
| C2351.002 | (47-AG-0(P,X)ELEM/MASS,CUM,SIG) | Y | Move the 7Be production cross section to 003. |  |
| D0505.022 | (13-AL-27(P,X)4-BE-7,CUM,SIG) | Y | Delete CUM. |  |
| D0640.002 | (6-C-0(P,X)4-BE-7,CUM,SIG) | Y | Delete CUM. | Rolf Michel (The PhD supervisor of Ingo Leya) confirmed that this is evidently an error (in the thesis), and 7Be is independent. (25 Sept. 2021) |
| D0640.003 | (7-N-0(P,X)4-BE-7,CUM,SIG) | Delete CUM. |
| D0640.004 | (8-O-0(P,X)4-BE-7,CUM,SIG) | Delete CUM. |
| D0640.005 | (12-MG-0(P,X)ELEM/MASS,CUM,SIG) | Delete CUM. |
| D0640.006 | (13-AL-27(P,X)4-BE-7,CUM,SIG) | Delete CUM. |
| D0640.007 | (14-SI-0(P,X)4-BE-7,CUM,SIG) | Delete CUM. |
| D0640.012 | (22-TI-0(P,X)ELEM/MASS,CUM,SIG) | Move the 7Be production cross section to 013. |
| D0640.014 | (23-V-0(P,X)ELEM/MASS,CUM,SIG) | Move the 7Be production cross section to 015. |
| D0640.016 | (25-MN-55(P,X)ELEM/MASS,CUM,SIG) | Move the 7Be production cross section to 017. |
| D0640.018 | (26-FE-0(P,X)ELEM/MASS,CUM,SIG) | Move the 7Be production cross section to 019. |
| D0640.020 | (27-CO-59(P,X)ELEM/MASS,CUM,SIG) | Move the 7Be production cross section to 021. |
| D0640.022 | (28-NI-0(P,X)ELEM/MASS,CUM,SIG) | Move the 7Be production cross section to 023. |
| D0640.024 | (29-CU-0(P,X)ELEM/MASS,CUM,SIG) | Move the 7Be production cross section to 025. |
| D0640.028 | (39-Y-89(P,X)ELEM/MASS,CUM,SIG) | Move the 7Be production cross section to 029. |
| D0640.030 | (40-ZR-0(P,X)ELEM/MASS,CUM,SIG) | Move the 7Be production cross section to 031. |
| D0640.032 | (41-NB-93(P,X)ELEM/MASS,CUM,SIG) | Move the 7Be production cross section to 033. |
| D0640.034 | (45-RH-103(P,X)ELEM/MASS,CUM,SIG) | Move the 7Be production cross section to 035. |
| E2323.002 | (3-LI-0(D,X)4-BE-7,CUM,SIG) |  | Delete CUM. | Masayuki Hagiwara confirmed that 7Be does not have a decay precursor. (26 Sept. 2021) |
| M0620.002 | (90-TH-232(G,F)ELEM/MASS,CUM,FY,,BRA/REL) |  | Delete the 7Be yield. Could be kept under ADD-RES. |  |
| M0620.004 | (90-TH-232(G,F)ELEM/MASS,CUM,FY,,BRA/REL) |  | Delete the 7Be yield. Could be kept under ADD-RES. |  |
| O0073.008 | (26-FE-0(P,X)4-BE-7,CUM,SIG) | Y | Delete CUM. |  |
| O0073.015 | (28-NI-0(P,X)4-BE-7,CUM,SIG) | Delete CUM. |  |
| O0073.018 | (14-SI-0(P,X)4-BE-7,CUM,SIG) | Delete CUM. |  |
| O0073.022 | (12-MG-0(P,X)4-BE-7,CUM,SIG) | Delete CUM. |  |
| O0073.023 | (6-C-0(P,X)4-BE-7,CUM,SIG) | Delete CUM. |  |
| O0073.024 | (8-O-0(P,X)4-BE-7,CUM,SIG) | Delete CUM. |  |
| O0449.004 | (13-AL-27(P,X)4-BE-7,CUM,SIG) |  | Delete CUM. |  |