**Nuclear Data Section**

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**Memo CP-D/1065**

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**To:** Distribution

**From:** N. Otsuka, A. Rodrigo

**Subject: Isomeric ratios of proton induced reactions published by Skakun et al.**

During review of the isomeric ratio atlas under preparation by us, we found Skakun et al’s isomeric ratios of (p,n) and (p,γ) reactions are compiled twice or more. Note that the expression may depend on publication (e.g., M/T in one entry and M/G in another entry). We went through the following entries, and summarized such pairs: A0073, A0074, A0105, A0135, A0278, A0280, A0281, A0325, A0338, A0385, A0617, A0655, A0670

Entry 1 gives data tabulated by the authors while Entries 2 and 3 give data digitized by the compilers, and we are going to adopt it in our own analysis. The originating centre may consider deletion of Datasets 2 and 3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Target | Product | **Entry 1** | **Entry 2** | **Entry 3** | Remark |
| 77Se | 77Br | **A0073.002** | A0670.002 |  |  |
| 80Se | 80Br | **A0073.003** | A0670.004 |  |  |
| 87Sr | 87Y | **A0074.003** | A0670.003 |  |  |
| 89Y | 89Zr | **A0105.002** | A0670.005 |  |  |
| 94Mo | 94Tc | **A0338.002.4** | A0670.006 |  |  |
| 95Mo | 95Tc | **A0338.003.4** | A0670.007 |  | 1 more point in A0338.003.4. |
| 99Ru | 99Rh | **A0325.002** | A0670.008 | A0655.008 |  |
| 101Ru | 101Rh | **A0325.003** | A0670.009 | A0655.009 |  |
| 102Ru | 102Rh | **A0325.004** | A0670.010 | A0655.010 | 4 more points in A0655.010 and A0670.010. |
| 106Cd | 107In | **A0278.003** | A0670.016 |  | M/T -> G/T in A0278.003 |
| 108Cd | 109In | **A0278.005** | A0670.017 |  | M/T -> G/T in A0278.005 |
| 111Cd | 111In | **A0385.002** | A0670.015 |  | 1 more point in A0385.002. |
| 122Sn | 122Sb | **A0385.004** | A0670.021 |  | 3 more points in A0670.021. |

We also additionally found that the following isomer production cross sections in A0280, A0281 and A0617 (tabulated by the authors) and isomeric ratios in A0670 (digitized by the compilers) are most probably from the same experiment:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Target | Product | **Entry 1** | **Entry 2** | Remark |
| σm | σg | σm/(σg+σm) |
| 104Ru | 104Rh | A0281.004 | A0281.005 | A0670.011 |  |
| 116Sn | 116Sb | A0617.003 | A0617.004 | A0670.018 | 3 more points in A0617.004. |
| 118Sn | 118Sb | A0280.003 | A0280.004 | A0670.019 |  |
| 120Sn | 120Sb | A0617.005 | A0617.006 | A0670.020 | 4 more points in A0617.006 and 1 more point in A0670.020. |
| 122Sn | 122Sb | A0280.005 | A0280.006 | A0670.021 | A0385.004 is also relevant. See above. |

It is not clear if we should keep the digitized isomeric ratios in EXFOR when the corresponding isomer production cross sections tabulated by the authors are available.

Their plots (except for A0278.005/A0670.017) are appended to this memo.

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