## $^{9}$Be($^{19}$N,$^{18}$N) 2012Ro22

History

| Type | Author | Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | R. Spitzer, J. H. Kelley | ENSDF | 30-Jun-2021 |

2012Ro22: XUNDL dataset compiled by TUNL (2012).

The authors produced beams of $^{19}$N by fragmenting a 700 MeV/nucleon $^{40}$Ar beam on a thick $^{9}$Be target and magnetically filtering the products in the first half of the FRS at GSI. The secondary beam particles were easily identified at the intermediate focal plane by their energy loss and time of flight in a set of standard detectors.

The beams impinged on a 1.72 g/cm$^2$ Be target and underwent further reactions, including one-neutron knockout reactions. Analysis of the FRS final focal plane detectors, coupled with measurements from the MINIBALL $\gamma$-ray spectrometer which was located at the 1.72 g/cm$^2$ target permitted identification of $^{18}$N levels populated in the 1n knockout reactions.

### $^{18}$N Levels

| E(level) | $J^{\pi}$[†] | $\sigma$ (mb) | Comments |
|---|---|---|---|
| 0[‡] | $1^-$ | 41 *10* | Cross section value deduced by the compilers from total cross section of 65 mb *10*. |
| 115[‡] | $(2^-)$ | | |
| 587 | $(2^-)$ | 6 *2* | $\sigma$ (mb): <6 mb *2*.<br>This level is populated in Branching<0.09 *2* of 1n-knockout reactions at E/nucleon≈700 MeV. |
| 728 *40* | $(3^-)$ | 15 *2* | $\sigma$ (mb): >15 mb *2*.<br>This level is populated in Branching>0.23 *1* of 1n-knockout reactions at E/nucleon≈700 MeV. If this is the only level populated then Branching<0.32 *4*. |

[†] From Adopted Levels.

[‡] Branching ratio (Branching) of 0.64 assigned by compilers to 0+115 levels, assuming a maximum branching=0.36 for 587+728 levels. (2012Ro22) do not mention the population of g.s. and 115 levels.