

$^9\text{Be}(^{18}\text{O}, ^{13}\text{Be})$ [2001Th01](#)

| Type | Author | History | Citation | Literature Cutoff Date |
|-----------------|--|---------|------------------|------------------------|
| Full Evaluation | J. H. Kelley, C. G. Sheu and J. E. Purcell | | NDS 198,1 (2024) | 1-Aug-2024 |

[2001Th01](#): $^9\text{Be}(^{18}\text{O}, ^{13}\text{Be} \rightarrow ^{12}\text{Be} + n)$ $E(^{18}\text{O}) = 80$ MeV/nucleon. The authors impinged ^{18}O ions onto a 94 mg/cm^2 beryllium foil and momentum analyzed the residual ^{12}Be and neutron reaction products that were emitted along $\theta \approx 0^\circ$. The decay products were analyzed using typical sequential decay neutron spectroscopy techniques. Monte Carlo analysis of the $n + ^{12}\text{Be}$ relative energy spectrum is most consistent with a low-lying s-wave state with a scattering length $a_s < -10$ fm, which corresponds to $E_{\text{res}} \leq 200$ keV. The analysis explores the possibility for participation of ^{12}Be excited states. In the best fit, there is also a contribution from a $d_{5/2}$ state at $E_{\text{res}} \approx 2.0$ MeV.

See also ([1995ThZZ](#)).

 ^{13}Be Levels

| $E(\text{level})^\dagger$ | J^π^\ddagger | $E_{\text{c.m.}}(^{12}\text{Be} + n) \text{ (MeV)}$ | Comments |
|----------------------------|------------------|---|--|
| x | $1/2^+$ | <0.2 | E(level): This group was later associated with decay from the high-energy tail of the $J^\pi = 5/2^+$ state to $^{12}\text{Be}^*$ (2.1 MeV; $J^\pi = 2^+$). |
| $\approx 1.55 \times 10^3$ | $5/2^+$ | ≈ 2.0 | |

[†] The ground state is taken as $E_{\text{c.m.}}(n + ^{12}\text{Be}_{\text{g.s.}}) = 0.45$ MeV *I*; see Adopted Levels.

[‡] From analysis of the $n + ^{12}\text{Be}$ energy distributions of ([2001Th01](#)).