

Table 9.8 from (1988AJ01): Levels of ${}^9\text{Be}$ from ${}^9\text{Be}(e, e'){}^9\text{Be}^*$ ^a

| E_x in ${}^9\text{Be}$ (MeV \pm keV) | $\Gamma_{\text{c.m.}}$ (keV) | Transition | J^π | Γ_{γ_0} (eV) |
|---|---------------------------------|-----------------|------------------------------|---|
| $1.684 \pm 7^{\text{b}}$ | $217 \pm 10^{\text{b}}$ | C1 | $\frac{1}{2}^+$ | 0.30 ± 0.12 |
| 2.44 ± 20 | < 30 | M1 | $\frac{5}{2}^-$ | 0.089 ± 0.010 |
| | | C2 | | $(1.89 \pm 0.14) \times 10^{-3}^{\text{c}}$ |
| 3.04 ± 20 | 450 ± 150 | C1 ^d | $\frac{5}{2}^+$ ^d | $0.30 \pm 0.25^{\text{e}}$ |
| 4.7 ± 200 | 700 ± 300 | C(1) | | $2.4 \pm 1.2^{\text{f}}$ |
| 6.4 ± 100 | 1000 ± 300 | C2 | $\frac{7}{2}^-$ | 0.082 ± 0.035 |
| $13.84 \pm 50^{\text{g}}$ | | | | |
| $14.388 \pm 15^{\text{h}}$ | < 70 | M1 | $\frac{3}{2}^-$ | 6.9 ± 0.5 |
| $15.10 \pm 50^{\text{g}}$ | | | | |
| $15.97 \pm 30^{\text{g}}$ | ≈ 300 | M1 | | $3.7 \pm 0.8^{\text{f}}$ |
| $16.631 \pm 15^{\text{h}}$ | < 70 | M2 ⁱ | $\leq \frac{7}{2}^+$ | $0.26 \pm 0.02^{\text{f}}$ |
| | | M1 | $\leq \frac{5}{2}^-$ | $2.0 \pm 0.5^{\text{f}}$ |
| $16.961 \pm 15^{\text{h}}$ | < 70 | M1 | $\frac{1}{2}^-$ | 11.5 ± 1.4 |
| 17.28 | | M1 | $\leq \frac{5}{2}^-$ | $7.3 \pm 1.3^{\text{f}}$ |
| $17.480 \pm 20^{\text{h}}$ | ≈ 100 | M2 ⁱ | $\leq \frac{7}{2}^+$ | $0.40 \pm 0.03^{\text{f}}$ |
| $18.02 \pm 50^{\text{g}}$ | | | | |
| $18.62 \pm 50^{\text{g}}$ | | | | |
| $19.51 \pm 50^{\text{g}}$ | | | | |
| $20.76 \pm 50^{\text{g}}$ | | | | |
| j | | | | |

^a For references see [Table 9.8 in \(1979AJ01\)](#). See also [\(1984AJ01\)](#).

^b $B(\text{C1})\uparrow = 0.027 \pm 0.002 e^2 \cdot \text{fm}^2$ and $B(\text{M2})\uparrow = 8.8 \pm 1.5 \mu_N^2 \cdot \text{fm}^2$ [\(1987KU05\)](#).

^c $B(\text{C2}, \omega)\uparrow = 45.7 \pm 3.5 e^2 \cdot \text{fm}^4$.

^d Assumed.

^e The group may consist of two unresolved states, the second one reached by an M1 transition [$J^\pi = (\frac{1}{2})^-$] with $\Gamma_{\gamma_0} = 0.18 \pm 0.09$ eV. I am indebted to Dr. L.W. Fagg for his help in understanding this point.

^f $g\Gamma_{\gamma_0}$; where $g = (2J_f + 1)/(2J_i + 1)$.

^g Weak transition.

^h [\(1983LO11\)](#).

ⁱ Or pure spin-flip E1. [\(1984WO09\)](#) assign $J^\pi = \frac{5}{2}^+$ and $\frac{7}{2}^+$, respectively, for ${}^9\text{Be}^*(16.67, 17.49)$.

^j See [\(1974AJ01, 1984AJ01\)](#) for states reported at higher excitation energies.