

Table 8.4 from (1984AJ01): Energy levels of ^8Be ^a

E_x (MeV \pm keV)	$J^\pi; T$	$\Gamma_{\text{c.m.}}$ (keV)	Decay	Reactions
g.s.	$0^+; 0$	6.8 ± 1.7 eV	α	1, 2, 4, 12, 13, 14, 15, 20, 21, 22, 23, 24, 26, 29, 30, 31, 32, 33, 34, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60
3.04 ± 30	$2^+; 0$	1500 ± 20	α	2, 4, 12, 13, 14, 15, 20, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 36, 37, 38, 39, 40, 41, 42, 43, 45, 46, 47, 48, 49, 50, 54
11.4 ± 300	$4^+; 0$	≈ 3500 ^b	α	4, 13, 14, 20, 23, 28, 30, 31, 32, 33, 39, 41, 48, 49, 50
16.626 ± 3	$2^+; 0 + 1$	108.1 ± 0.5	γ, α	2, 4, 12, 14, 15, 20, 22, 23, 28, 32, 33, 38, 39, 44, 45, 49
16.922 ± 3	$2^+; 0 + 1$	74.0 ± 0.4	γ, α	2, 4, 12, 14, 15, 20, 22, 23, 31, 32, 33, 38, 39, 44, 45, 49
17.640 ± 1.0	$1^+; 1$	10.7 ± 0.5	γ, p	5, 12, 15, 17, 20, 22, 31, 32, 33, 39, 44, 49
18.150 ± 4	$1^+; 0$	138 ± 6	γ, p	12, 15, 17, 20, 22, 31, 32, 33, 39
18.91	2^-	48 ± 20	$\gamma, \text{n}, \text{p}$	12, 15, 16, 17, 20
19.07 ± 30	$3^+; (1)$	270 ± 20	γ, p	12, 15, 17, 20, 32
19.24 ± 25	$3^+; (0)$	230 ± 30	n, p	16, 17, 20, 31, 32, 33, 39
19.4	1^-	≈ 650	n, p	12, 16, 17
19.86 ± 50	$4^+; 0$	700 ± 100	p, α	4, 12, 14, 19, 23, 32, 33, 39
20.1	$2^+; 0$	≈ 1100	$\text{n}, \text{p}, \alpha$	3, 4, 16, 19, 32, 39
20.2	$0^+; 0$	< 1000	α	4

Table 8.4 from (1984AJ01): Energy levels of ${}^8\text{Be}$ ^a (continued)

E_x (MeV \pm keV)	$J^\pi; T$	$\Gamma_{\text{c.m.}}$ (keV)	Decay	Reactions
20.9	4^-	1600 ± 200	p	17
21.5	$3^{(+)}$	1000	γ, n, p	15, 16
22.0 ^c	$1^-; 1$	≈ 4000	γ, p	15
22.05 ± 100		270 ± 70		33
22.2	$2^+; 0$	≈ 800	n, p, d, α	3, 4, 10, 16, 17, 19, 33
22.63 ± 100		100 ± 50		14, 33
22.98 ± 100		230 ± 50		31, 33
24.0 ^c	$(1, 2)^-; 1$	≈ 7000	γ, p, α	15, 19
25.2	$2^+; 0$		p, d, α	4, 10, 19, 39
25.5	$4^+; 0$	broad	d, α	4, 10
27.4941 ± 1.8 ^d	$0^+; 2$	5.5 ± 2.0	$\gamma, n, p, d, t, {}^3\text{He}, \alpha$	3, 5, 7, 10, 35, 39
(28.6)		broad	γ, p	15, 39

^a See also [Table 8.8](#) and [reaction 4](#).

^b I am greatly indebted to Prof. F.C. Barker for enlightening discussions concerning the width of ${}^8\text{Be}^*(11.4)$. See however [reaction 31](#).

^c Giant resonance: see [reaction 15](#).

^d See http://www.tunl.duke.edu/nuclldata/HTML/A=8/08_05_1984.pdf *Table 8.5*.