

Table 8.3 from (74AJ01): Energy levels of ^8Be

E_x (MeV \pm keV)	$J^\pi; T$	$\Gamma_{\text{c.m.}}$	Decay	Reactions
g.s.	$0^+; 0$	6.8 ± 1.7 eV	α	1, 4, 12, 13, 14, 15, 22, 23, 24, 25, 27, 30, 31, 32, 33, 34, 36, 37, 38, 39, 40, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 60, 62, 64
2.94 ± 30^a	$2^+; 0$	1.56 ± 0.03 MeV	α	4, 13, 14, 15, 22, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 36, 37, 38, 39, 40, 42, 44, 45, 46, 47, 48, 49, 50, 51, 52, 55
(6.0 ± 3000)	$0^+; 0$	(9 ± 4) MeV	α	4
(10.0 ± 3000)	$2^+; 0$	(12_{-2}^{+4}) MeV	α	4, 29
11.4 ± 300	$4^+; 0$	≈ 3.5 MeV ^d	α	4, 14, 22, 24, 31, 32, 33, 38, 42, 49, 51
16.627 ± 4^b	$2^+; 0 + 1$	107 ± 3 keV	$(\gamma), \alpha$	2, 4, 13, 15, 22, 23, 24, 28, 29, 33, 37, 38, 42, 46, 49
16.911 ± 4^b	$2^+; 0 + 1$	77 ± 3 keV	$(\gamma), \alpha$	2, 4, 13, 15, 22, 23, 24, 31, 32, 33, 37, 38, 42, 46, 49
$17.642 \pm 1.5^{b,c}$	$1^+; 1$	10.7 ± 0.5 keV	γ, p	13, 16, 18, 22, 23, 31, 32, 33, 38, 42
$18.154 \pm 4^{b,c}$	$1^+; 0$	138 ± 6 keV	γ, p	13, 16, 18, 22, 31, 33, 38, 42
18.91^c	$2^-; 0$	48 ± 20 keV	γ, n, p	13, 16, 17, 18, 22, 31, 32, 42
19.06 ± 20^c	3^+	270 ± 20 keV	γ, p	13, 16, 18, 22, 31, 32, 42
19.22	$3^+; (1)$	208 ± 30 keV	n, p	13, 17, 18, 22, 31, 33, 38
19.4	1^-	≈ 650 keV	n, p	13, 17, 18
19.9	$4^+; 0$	< 1 MeV	α	4, 13, 24, 32, 33
20.1	$2^+; 0$	≈ 1.1 MeV	n, p, α	4, 17, 18, 21, 32

Table 8.3 from (74AJ01): Energy levels of ${}^8\text{Be}$ (continued)

E_x (MeV \pm keV)	$J^\pi; T$	$\Gamma_{\text{c.m.}}$ (keV)	Decay	Reactions
20.2	$0^+; 0$	< 1 MeV	α	4
20.9 ± 200	4^-	1.6 ± 0.2 MeV	p	18
21.5 ± 300	(3^+)	1 MeV	γ, p, n	16, 17, 31
22.0	$1^-; 1$	4 – 5 MeV	γ, p	16
22.2	$2^+; 0$	≈ 0.8 MeV	n, p, d, α	4, 6, 7, 11, 15, 18, 21, 33
23.6			γ, p	16
24.0	$1^-, 2^-$	≈ 8 MeV	γ, p	16
25.2	$2^+; 0$	≈ 1 MeV	p, d, α	4, 7, 11, 21
25.5	$4^+; 0$		α	4
27.483 ± 10	$0^+; 2$	10 ± 3 keV	p, d, α	7, 11
(28.6)		broad	γ, p	16

^a See also [Table 8.4](#).

^b See also [Table 8.5](#).

^c See also [Table 8.7](#).

^d We are greatly indebted to Prof. F.C. Barker for enlightening discussions concerning the width of ${}^8\text{Be}^*(11.4)$.