

Table 11.4 from (2012KE01): Energy levels of ^{11}Be

E_x (MeV \pm keV)	$J^\pi; T$	$T_{\frac{1}{2}}$ or $\Gamma_{\text{c.m.}}$ (keV)	Decay	Reactions
0	$\frac{1}{2}^+; \frac{3}{2}$	$T_{\frac{1}{2}} = 13.76 \pm 0.07$ s	β^-	1, 3, 4, 5, 6, 8, 9, 10, 12, 14, 16, 17, 19, 23, 24, 25, 26, 27, 28, 30, 31, 32
0.32004 \pm 0.1	$\frac{1}{2}^-$	$T_{\frac{1}{2}} = 115 \pm 10$ fs	γ	4, 5, 6, 8, 9, 10, 14, 15, 16, 17, 19, 21, 22, 23, 26, 28, 29, 30, 33
1.783 \pm 4	$\frac{5}{2}^+$	$\Gamma = 100 \pm 10$	n	4, 5, 6, 9, 10, 14, 23, 26, 28
2.654 \pm 10	$\frac{3}{2}^-$ a	206 \pm 8	n	5, 6, 9, 10, 15, 16, 21, 22, 23, 28, 29
3.40 \pm 6	$(\frac{3}{2}^-, \frac{3}{2}^+)$ c	122 \pm 8	n	5, 9, (10), 15, 23, 26
3.889 \pm 1	$\frac{5}{2}^-$ c	< 8	n	5, (6), 10, 11, 15, 21, 22, 23, (28), (29)
3.955 \pm 1	$\frac{3}{2}^-$ c	10 \pm 5	n	5, (6), 9, 10, 11, 15, 23, (28), (29)
5.255 \pm 3	$\frac{5}{2}^-$ a	45 \pm 10	n	5, 6, 9, 10, 15, 16
5.40			(n)	(21)
5.849 \pm 10	$(\frac{1}{2}^-)$	139 \pm 17	(n)	5
5.980 \pm 40			(n)	9, 10
6.050 \pm 40		320 \pm 40	(n)	23
6.30			(n)	21
6.510 \pm 50		120 \pm 50	(n)	5
6.705 \pm 21	$(\frac{7}{2}^-)$ a, b	40 \pm 20	n	5, 6, 9, 10, 16
7.030 \pm 50	$(\frac{5}{2}^-)$	300 \pm 100	n	5, 15
7.10			(n)	10, (21)
8.020 \pm 20	$\frac{3}{2}^-$	230 \pm 55	n	15
8.20	$\frac{1}{2}^-$		(n)	21
8.813 \pm 25	$\frac{3}{2}^-$, $(\frac{9}{2}^-)$ b)	200 \pm 50	n	5, 6, 9, 10, 15
9.40 \pm 500		7000 \pm 500	(n)	20, 21, 22, 23
9.60	a		(n)	9, 16, 21
10.59 \pm 50	$\frac{5}{2}^-$	210 \pm 40	n, α	5, 6, 15
10.73	$(\frac{11}{2}^-)$ b		(n)	9, 10
12.0	a		(n)	9, 16, 20, 21
(13.20)			(n)	(21)
13.60	$(\frac{13}{2}^-)$ b		(n)	9
16.30 \pm 100	a	700 \pm 100	n, α	15, 16
17.50	a		(n)	16

Table 11.4 from (2012KE01): Energy Levels of ^{11}Be (continued)

E_x (MeV \pm keV)	$J^\pi; T$	$T_{\frac{1}{2}}$ or $\Gamma_{\text{c.m.}}$ (keV)	Decay	Reactions
18.19 \pm 140		1500 \pm 400	n, d, t, α	15
(18.60)	$(\frac{15}{2}^-)^b$		(n)	9
21.16 \pm 20	$\frac{3}{2}^-; \frac{5}{2}$	490 \pm 70	(n, p)	2
21.50	$(\frac{17}{2}^-)^b$		(n)	9
25.0	$(\frac{19}{2})^b$		(n)	9

^a Alternate J^π values for these levels are deduced in reaction $^{11}\text{B}(e, e'\pi^+)$.

^b A speculative J^π is assumed based on a systematic level spacing analysis considering that the $K = \frac{3}{2}$ molecular rotational band is based on $^{11}\text{Be}^*(3.96, 5.25, 6.70, \text{etc.})$.

^c From $^{11}\vec{\text{Li}}$ β -decay study (2005HI03). For $^{11}\text{Be}^*(3.41)$ (2005HI03) deduce $J^\pi = (\frac{3}{2}^-)$; also see Pb($^{11}\text{Be}, ^{10}\text{Be} + \text{n}$) (2004FU29) who deduce $J^\pi = \frac{3}{2}^+$ for $^{11}\text{Be}^*(3.41)$.