

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

$E_x$ (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	$\beta^-$	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	$\gamma$	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, $\alpha$	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, $\alpha$	15, 16
17.50	a		(n)	16

Table 11.4 from (2012KE01): Energy Levels of  $^{11}\text{Be}$  (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, $\alpha$	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

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

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

<sup>c</sup> From  $^{11}\vec{\text{Li}}$   $\beta$ -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  $^{11}\text{Be}^*(3.41)$ .