

Table 15.4 from (1991AJ01): Energy levels of ^{15}N ^a

E_x (MeV \pm keV)	$J^\pi; T$	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
0	$\frac{1}{2}^-; \frac{1}{2}$	-	stable	3, 4, 5, 6, 13, 14, 16, 17, 18, 19, 20, 24, 25, 26, 27, 28, 31, 32, 33, 34, 35, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66
5.270155 ± 0.014 ^b	$\frac{5}{2}^+$	$\tau_m = 2.58 \pm 0.14$ ps $g = +(0.94 \pm 0.07)$ 25 ± 7 fs	γ	4, 5, 16, 17, 24, 25, 31, 32, 35, 40, 45, 46, 49, 50, 56, 59, 60, 64, 65
5.298822 ± 0.014 ^b	$\frac{1}{2}^+$	25 ± 7 fs	γ	4, 5, 10, 11, 12, 16, 18, 24, 25, 26, 31, 32, 35, 40, 42, 45, 49, 50, 56, 60, 64, 65
6.32378 ± 0.02 ^b	$\frac{3}{2}^-$	0.211 ± 0.012 fs	γ	4, 5, 10, 11, 12, 13, 16, 18, 24, 26, 31, 32, 35, 39, 40, 42, 44, 45, 46, 49, 50, 56, 57, 59, 60, 61, 63, 64, 65
7.15505 ± 0.02 ^b	$\frac{5}{2}^+$	18 ± 8 fs	γ	4, 5, 12, 16, 17, 18, 24, 25, 26, 31, 32, 35, 40, 45, 49, 50, 60
7.30083 ± 0.02 ^b	$\frac{3}{2}^+$	0.61 ± 0.05 fs	γ	4, 5, 12, 16, 18, 24, 25, 26, 31, 32, 35, 40, 42, 45, 49, 50, 60
7.5671 ± 1.0 ^c	$\frac{7}{2}^+$	12_{-6}^{+11} fs	γ	4, 5, 10, 11, 12, 16, 17, 18, 24, 25, 26, 31, 40, 45, 46, 49, 50, 60, 64
8.31262 ± 0.027 ^b	$\frac{1}{2}^+$	1.7 ± 1.1 fs	γ	4, 5, 18, 24, 25, 26, 31, 35, 39, 40, 42, 45, 49, 50, 56
8.5714 ± 0.12	$\frac{3}{2}^+$	0.7 ± 0.7 fs	γ	4, 5, 10, 11, 12, 16, 17, 18, 24, 25, 26, 31, 40, 42, 45, 49, 50
9.04971 ± 0.07	$\frac{1}{2}^+$	0.50 ± 0.08 fs	γ	4, 5, 24, 25, 31, 35, 40, 42, 45, 56
9.15190 ± 0.12 ^b	$\frac{3}{2}^-$	1.40 ± 0.36 fs	γ	4, 5, 10, 11, 24, 25, 31, 35, 40, 45, 49, 50
9.15490 ± 0.03 ^b	$\frac{5}{2}^+$	7_{-3}^{+6} fs	γ	4, 5, 18, 24, 31, 35, 40, 49, 50
9.2221 ± 0.8	$\frac{1}{2}^-$	< 130 fs	γ	24, 26, 31, 35, 40, 56, 60
9.760 ± 1	$\frac{3}{2}^-$	2.6 ± 0.9 fs	γ	24, 40, 45
9.829 ± 3	$\frac{7}{2}^-$	17 ± 7 fs	γ	4, 5, 10, 11, 17, 18, 24, 26, 31, 40, 49, 50

Table 15.4 from (1991AJ01): Energy levels of ^{15}N ^a (continued)

E_x (MeV \pm keV)	$J^\pi; T$	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
9.9250 \pm 0.2	$\frac{3}{2}^-$	0.31 \pm 0.05 fs	γ	18, 24, 31, 35, 40, 45
10.0660 \pm 0.2 ^c	$\frac{3}{2}^+$	0.100 \pm 0.006 fs	γ	18, 35, 40, 44, 45, 49, 50
10.4497 \pm 0.3	$\frac{5}{2}^-$	$\Gamma < 0.5$ keV	γ, p	5, 10, 11, 24, 28, 40
10.5333 \pm 0.5	$\frac{5}{2}^+$		γ, p	5, 10, 11, 18, 24, 25, 28, 31, 40
10.6932 \pm 0.3	$\frac{9}{2}^+$	$\tau_m = 18 \pm 9$ fs	γ, p	5, 11, 16, 28, 46
10.7019 \pm 0.3	$\frac{9}{2}^-$	$\Gamma = 0.2$ keV	γ, p	10, 11, 17, 18, 24, 26, 28, 60
10.804 \pm 2	$\frac{3}{2}^+$	$< 1 \times 10^{-3}$	γ, p	4, 5, 10, 11, 18, 24, 28, 40, 45
11.235 \pm 5 ^b	$\frac{3}{2}^+$	3.3	n	16, 31, 36, 40
11.2928 \pm 0.7	$\frac{1}{2}^-$	8 \pm 3	γ, n, p	16, 18, 28, 29, 30, 31, 36, 38, 49
11.4376 \pm 0.7	$\frac{1}{2}^+$	41.4 \pm 1.1	γ, n, p, α	6, 7, 10, 11, 18, 25, 28, 29, 30, 31, 36, 38, 64
11.615 \pm 4	$\frac{1}{2}^+; T = \frac{3}{2}$	405 \pm 6	γ, n, p	28, 29, 30
11.763 \pm 3	$\frac{3}{2}^+$	40	n, p, α	7, 29, 30, 36, 38
11.876 \pm 3	$\frac{3}{2}^-$	25	γ, n, p, α	7, 29, 30, 36, 38, 48
11.942 \pm 6	$\frac{5}{2}^-$	≤ 3.0	n, α	5, 16, 17, 18, 25, 26, 36
11.965 \pm 3	$\frac{1}{2}^-$	17	n, p, α	5, 7, 10, 11, 29, 30, 36, 38
12.095 \pm 3	$\frac{3}{2}^+$	14 \pm 5	n, p, α	7, 25, 29, 30, 36, 38
12.145 \pm 3	$\frac{3}{2}^-$	41 \pm 5	n, p, α	7, 10, 11, 29, 30, 36, 38
12.327 \pm 4	$\frac{3}{2}^+ (+)$	22	n, p	17, 18, 25, 29, 30, 36, 38
12.493 \pm 4	$\frac{5}{2}^+; \frac{1}{2}^+$	40 \pm 5	n, p, α	7, 18, 25, 29, 30, 36, 38
12.522 \pm 8	$\frac{3}{2}^+; \frac{5}{2}^+$	58 \pm 4	γ, p	28, 45
12.551 \pm 10	$\frac{9}{2}^+$			5, 11, 16, 17, 25, 46
12.920 \pm 4	$\frac{3}{2}^-$	56 \pm 11	n, p, α	7, 9, 18, 29, 30, 36, 38
12.940 \pm 10	$\frac{3}{2}^+$	81	p, α	7, 9, 29, 30
13.004 \pm 10	$\frac{11}{2}^-$			5, 10, 11, 16, 18, 25, 26
13.149 \pm 10		7 \pm 3	n, p, α	7, 38
13.174 \pm 7	$(\frac{9}{2})$	7 \pm 3	n, p, α	5, 7, 11, 16, 17, 18, 29, 36, 38
13.362 \pm 8	$\frac{3}{2}^-$	16 \pm 8	n, p, α	7, 9, 29, 30, 38
13.390 \pm 10	$\frac{3}{2}^+$	56	γ, n, p, α	7, 9, 28, 29, 30, 38
13.537 \pm 10	$\frac{3}{2}^-$	85 \pm 30	n, p, α	7, 9, 29, 30
13.608 \pm 7	$\frac{3}{2}^+ (+)$	18 \pm 4	n, p, α	7, 18, 36, 38
(13.612 \pm 10)	$(\frac{1}{2}^+)$	90	n, p, α	9, 29, 30
13.713 \pm 10		26 \pm 8	n, p, α	7, 29, 38

Table 15.4 from (1991AJ01): Energy levels of ^{15}N ^a (continued)

E_x (MeV \pm keV)	$J^\pi; T$	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
13.84 \pm 30	$\frac{3}{2}^+$	75	n, p, α	5, 7, 9, 11, 25, 36, 38
13.9	$\frac{1}{2}^+$	930	γ , p	28, 29
13.99 \pm 30	$\frac{5}{2}^+$	98 \pm 10	n, p, α	7, 11, 29, 30
14.090 \pm 7	$(\frac{9}{2}^+, \frac{7}{2}^+)$	22 \pm 6	n, p, α	5, 7, 10, 11, 18, 25, 36, 38, 46
14.10 \pm 30	$\frac{3}{2}^+$	\approx 100	n, α	5, 7, 9, 30
14.162 \pm 10	$\frac{3}{2}^+(+)$	27 \pm 6	n, α	5, 7, 36, 38
14.24 \pm 40	$\frac{5}{2}^+$	150	α	9, 10
14.38 \pm 40	$\frac{7}{2}^+$	100	α	9
14.4		\approx 1900	n, p, α	36, 38
14.55 \pm 20		200 \pm 50	n, (p), α	7
14.647 \pm 10		33 \pm 6	n, p, α	7, 36, 38
14.71		750	γ , p	28
14.720 \pm 10	$\frac{5}{2}^-$	110 \pm 50	γ , n, (p), α	7, 10, 11, 18, 36, 38, 45
14.86 \pm 20		48 \pm 11	n, α	7, 9, 18
14.920 \pm 10		12 \pm 3	n, α	7, 10, 38
15.025 \pm 10		13 \pm 3	n, α	7, 18
15.09 \pm 20		80 \pm 25	n, α	7, 9, 49
15.288 \pm 10		26 \pm 6	n, α	7, 9
15.373 \pm 10	$\frac{13}{2}^+$			5, 10, 11, 16, 17, 18
15.38 \pm 20		75 \pm 25	n, t, α	7, 9, 14
15.43 \pm 20		\approx 100	n, (α)	7, 9
15.45		750	γ , p	28
15.53 \pm 20		\approx 35	n, α	7, 10, 11, 38
15.60 \pm 20		95 \pm 25	n, α	7
15.782 \pm 10			p, t, α	7, 14, 18
15.93 \pm 20		35 \pm 5	n, t, α	7, 14, 17
15.944 \pm 15		21 \pm 6	n, t, α	7, 14
16.026 \pm 10		62 \pm 12	n, p, t, α	7, 9, 14, 18, 38
16.190 \pm 10	$\frac{3}{2}^+$	450 \pm 100	γ , n, p, t, α	10, 14, 18
16.26 \pm 20	$\frac{5}{2}^+$	150 \pm 28	γ , n, t, α	6, 7, 9, 14, 17, 18
16.32 \pm 20		\approx 30	n, p, t, α	7, 14
16.39 \pm 20		44 \pm 11	n, p, t, α	7, 14, 17, 38
16.46		560	γ , p, d	21, 28
16.576 \pm 15		27 \pm 15	n, α	7, 38
16.59 \pm 25	$\frac{3}{2}^-$	490	γ , n, p, t, α	14

Table 15.4 from (1991AJ01): Energy levels of ^{15}N ^a (continued)

E_x (MeV \pm keV)	$J^\pi; T$	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
16.677 \pm 15	$\frac{1}{2}^+; \frac{1}{2}$	80 \pm 20	$\gamma, n, p, d, t, \alpha$	6, 7, 14, 17, 21, 23, 28, 30, 36, 38, 43
16.85 \pm 30	$\frac{5}{2}$	110 \pm 50	t, α	14
16.91 (17.05)		\approx 350	n, p, d, t, α	14, 21, 36, 38
17.11		broad	p, t	14
17.15 \pm 50	$(\frac{1}{2}^+, \frac{3}{2}^+)$	250 \pm 60	d, α	23
17.23 \pm 40		\approx 175	γ, t, α	6, 14
17.37 \pm 40		\approx 250	d, t, (α)	23
17.58 \pm 40	$\frac{3}{2}^+$	450 \pm 120	p, d, t, α	14, 21, 23, 36, 38
17.67 \pm 40	$\frac{3}{2}^+; \frac{1}{2}$	600 \pm 80	γ, d, t, α	14, 23, 38
17.72 \pm 10		48 \pm 10	γ, n, d, α	6, 20, 21, 23
17.95 \pm 20		167	n, (p), d, t, α	18, 21, 23, 38
18.06 \pm 10		19 \pm 4	n, α	18
18.09 \pm 20		\approx 40	(n), d, α	17, 21, 23
18.22		158	(n), p, d, t	21, 23
18.27 \pm 20		235 \pm 60	n, α	36, 38
18.70 \pm 20			n, p, d, α	18, 21, 23, 38
18.91 \pm 150	$\frac{3}{2}^+ + \frac{1}{2}^+$	750 \pm 70		11, 18
19.20 \pm 35	$(\frac{1}{2}^+; \frac{1}{2})$	\approx 130	γ, α	6
19.5	$\frac{3}{2}^+; (\frac{3}{2})$	\approx 400	n, d	18, 21
19.72 \pm 40		d	γ, p, t	14, 28, 29
20.12 \pm 50	$(T = \frac{3}{2})$			11, 17, 18
20.5	$\frac{3}{2}^+$	\approx 400	γ, α	16, 46
20.96 \pm 65	$\frac{3}{2}^+ + \frac{1}{2}^+$	1740 \pm 150	γ, n, p, d	21, 28
21.82		\approx 600	γ, α	6, 18
23.19 \pm 60	$(T = \frac{3}{2})$		γ, p, d	20, 28, 43
23.6		broad	γ, p	28, 46
24.75 \pm 150		d	γ, n, d	20, 43
25.5 (26.8)	$\frac{3}{2}^-; (T = \frac{3}{2})$			18
\approx 37			γ, n, p	28, 43
			t	14
			γ, p	28

- ^a See also [Tables 15.5](#) and [15.12](#) here, and [Table 15.6 in \(1986AJ01\)](#) [τ_m].
- ^b Revisions in the values of the fundamental constants and of the binding energy of the deuteron, as well as a reevaluation of earlier work, lead ([1990WA22](#)) to suggest values for E_x which differ from the ones shown by, typically, 40 eV [lower].
- ^c See also [reaction 40](#).
- ^d Wide or unresolved.