Table 14.10 from (1991AJ01): Energy Levels of ^{14}N [a]

E_x in ^{14}N [b] (MeV ± keV)	J^π; T	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
g.s.	1^+; 0	stable	-	6, 7, 8, 9, 10, 18, 19, 20, 21, 22, 23, 24, 25, 31, 32, 33, 34, 35, 36, 37, 38, 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
2.312798 ± 0.011	0^+; 1	$\tau_m = 98.7 \pm 4.5$ fs [c]	γ	8, 10, 18, 19, 20, 21, 24, 25, 31, 32, 33, 34, 36, 37, 38, 39, 42, 44, 45, 47, 57, 58, 59, 60, 61, 64, 65
3.94810 ± 0.20	1^+; 0	7.0 ± 2.5 fs [d]	γ	6, 7, 8, 10, 18, 19, 20, 21, 25, 31, 32, 33, 34, 37, 38, 39, 43, 44, 45, 46, 47, 48, 57, 58, 59, 60, 61
4.9151 ± 1.4	0^-; 0	7.6 ± 1.4 fs	γ	6, 7, 18, 19, 20, 21, 31, 32, 33, 34, 38, 43, 44, 45, 46, 47, 48, 59, 60, 61
5.10589 ± 0.10	2^-; 0	6.27 ± 0.07 ps $\|g\| = 0.66 \pm 0.04$	γ	1, 6, 7, 8, 10, 18, 19, 20, 21, 31, 32, 33, 34, 38, 39, 43, 44, 45, 46, 47, 48, 59, 60, 61, 64

Table 14.10 from (1991AJ01): Energy Levels of ^{14}N [a] (continued)

E_x in ^{14}N [b] (MeV ± keV)	J^π; T	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
5.69144 ± 0.13	1^-; 0	16 ± 8 fs	γ	6, 7, 18, 19, 20, 21, 25, 31, 32, 34, 38, 43, 44, 45, 46, 47, 48, 59, 60, 61
5.83425 ± 0.14	3^-; 0	11.98 ± 0.23 ps	γ	1, 6, 7, 11, 18, 19, 20, 21, 23, 24, 31, 32, 34, 38, 39, 43, 44, 45, 46, 47, 48, 59, 60, 61
6.2035 ± 0.6	1^+; 0	160 ± 20 fs	γ	6, 7, 18, 19, 20, 21, 25, 31, 32, 38, 39, 45, 46, 47, 48, 59, 60, 61
6.44617 ± 0.10	3^+; 0	620 ± 60 fs	γ	6, 7, 18, 19, 20, 21, 25, 31, 32, 38, 45, 46, 48, 59, 60, 61
7.02912 ± 0.12	2^+; 0	5.4 ± 0.5 fs	γ	6, 7, 18, 19, 20, 21, 25, 31, 32, 34, 38, 39, 43, 44, 45, 46, 47, 48, 59, 60, 61
7.9669 ± 0.5	2^-; 0	$\Gamma = (2.5 \pm 0.7) \times 10^{-3}$	γ, p	6, 7, 18, 19, 20, 21, 25, 32, 45, 48, 59, 60, 61
8.062 ± 1.0	1^-; 1	23 ± 1	γ, p	18, 19, 25, 26, 31, 32, 41, 45, 47, 59, 61
8.490 ± 2	4^-; 0	$\tau_m = 19 \pm 3$ fs	γ, p	6, 7, 18, 19, 20, 21, 25, 31, 32, 39, 43, 45, 48, 60
8.618 ± 2	0^+; 1	$\Gamma = 3.8 \pm 0.3$	γ, p	8, 18, 19, 25, 26, 31, 32, 45, 59, 61
8.776 ± 7	0^-; 1	410 ± 20	γ, p	25, 26, 32
8.907 ± 3	3^-; 1	16 ± 2	γ, p	19, 25, 26, 31, 32, 42, 45, 59, 61

Table 14.10 from (1991AJ01): Energy Levels of ^{14}N [a] (continued)

E_x in ^{14}N [b] (MeV ± keV)	J^π; T	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
8.964 ± 2	5^+; 0	$\tau_m = 105 \pm 17$ fs	γ, p	7, 11, 19, 20, 21, 23, 25, 31, 32, 52, 59
8.980 ± 3	2^+; (0)	$\Gamma = 8 \pm 2$	γ, p	6, 7, 19, 25, 26, 31, 32, 59
9.1290 ± 0.5 [e]	3^+; 0	$\tau_m = 13 \pm 5$ fs	γ, p	6, 7, 19, 20, 25, 31, 32, 48
9.17225 ± 0.12	2^+; 1	$\Gamma = 0.122 \pm 0.008$ [h]	γ, p	19, 25, 31, 32, 42, 45, 59, 60, 61
9.388 ± 3	2^-; 0	13 ± 3	p	6, 7, 19, 20, 21, 26, 31, 32, 45, 48, 59, 60, 61
9.509 ± 3	2^-; 1	41 ± 2	γ, p	19, 25, 26, 31, 32, 45, 59, 60, 61
9.703 ± 4	1^+; 0	15 ± 3	p	6, 19, 21, 25, 26, 31, 32, 45, 59, 60, 61
10.079 ± 10	(3^+)	< 10		6, 7, 11, 19, 21, 32
10.101 ± 15	2^+, 1^+; 0	12 ± 3	γ, p	19, 21, 25, 26, 32, 45, 59, 60
10.226 ± 8	$1^{(-)}$; 0	80 ± 15	γ, p	19, 21, 25, 26, 32, 59
10.432 ± 7	2^+; 1	33 ± 3	γ, p	11, 19, 25, 26, 38, 42, 59, 60, 61
10.534 ± 20	(1^-)	140	p	19, 26, 32
10.812 ± 15	5^+; 0	$(0.39 \pm 0.16) \times 10^{-3}$	γ	6, 7, 11, 19, 20, 21, 32, 48
11.00 ± 30		165 ± 30	γ, p	25
11.050 ± 5	3^+	1.2 ± 0.4	γ, p	6, 7, 11, 19, 21, 25, 32, 59, 60
11.07	1^+; 0	100	n, p, d	13, 26, 27
11.21 ± 30	$T = 1$	220 ± 30	γ, p, d	13

Table 14.10 from (1991AJ01): Energy Levels of ^{14}N [a] (continued)

E_x in ^{14}N [b] (MeV ± keV)	J^π; T	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
11.24 ± 15	3^-; 0	11	γ, n, p	11, 19, 26, 27, 32, 42, 43, 45, 46, 47, 48, 59
11.27 ± 15	2^-; 0	180	n, p, d	6, 13, 14, 21, 26, 27, 32, 59
11.357 ± 15	1^+; 0	30	n, p, d	13, 14, 19, 26, 27, 59
11.5135 ± 1.5	2^+; 3^+	7.0 ± 0.5	p, d	6, 7, 11, 13, 14, 19, 21, 32, 42, 59, 60
11.676 ± 18	1^-; 2^-	150 ± 20	n, p, d	13, 14, 27, 32, 59
11.741 ± 6	1^-; 2^-	40 ± 9	(γ), p, d	13
11.761 ± 6	3^-; 4^-	78 ± 6	(γ), p, d	13
11.807 ± 7	2^-; (1^+)	119 ± 9	n, p, d	13, 14
11.874 ± 6	2^-, (1^-)	101 ± 9	n, p, d	13, 27
12.20 ± 19	1^-, 2^-	300 ± 30	n, p, d	13, 14, 27, 59
12.408 ± 3	(4^-)	34 ± 3	n, p, d, α	3, 4, 13, 14, 21, 38
12.418 ± 3	3^-, 4^-	41 ± 4	p, d	6, 11, 13, 19, 38
12.495 ± 9	(1^+; 1)	39 ± 5	γ, n, p, d, α	3, 13, 19, 25, 42, 59, 60, 61
12.594 ± 3	3^+	48 ± 2	(n), p, d, α	3, 13, 14, 19, 27, 48, 59
12.690 ± 5	3^-	18 ± 5	n, p, d, α	3, 4, 5, 6, 7, 11, 13, 14, 19, 21, 27, 48
(12.708 ± 9)		(43 ± 15)	p, d	13
12.789 ± 5	4^+	16 ± 3	n, p, d, α	3, 4, 5, 7, 11, 13, 14, 19, 45, 46, 47, 48, 59
12.813 ± 4	4^-	5 ± 2	γ, p, d, α	3, 4, 6, 7, 13, 14, 38, 42, 43, 45, 46, 47, 48, 59, 60
12.826 ± 6		11 ± 3	n, p, d	13, 14
12.857 ± 6		78 ± 10	n, p, d	13, 21, 27

Table 14.10 from (1991AJ01): Energy Levels of ^{14}N [a] (continued)

E_x in ^{14}N [b] (MeV ± keV)	J^π; T	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
12.883 ± 8		134 ± 11	p, d	13
12.922 ± 5	4^+	22 ± 4	p, d, α	3, 4, 11, 13, 14
13.007 ± 17		120 ± 30	γ, p	6, 7, 25
13.167 ± 5	1^+	15 ± 5	γ, n, p, d, α	3, 4, 5, 6, 19, 42, 59
13.192 ± 9	3^+	65 ± 10	α	5, 11, 59
13.243 ± 10	2^-	92 ± 5	γ, n, p, α	2, 3, 27, 42, 48, 59
13.30 ± 40	(2^-); 1	1000 ± 150	γ, p	25
13.656 ± 5	$(2^+, 3^+)$	≈ 90	n, p, d, α	3, 5, 13, 14
13.714 ± 5	$2^-, 3^+$	105 ± 25	γ, n, p, d, α	2, 3, 4, 6, 11
13.74 ± 10	1^+; 1	180 ± 20	(γ), n, p, d, α	2, 3, 5, 13, 14, 25, 27, 37, 42, 59, 60, 61
13.77 ± 10	(1^+)	120	p, α	3
14.04 ± 30		100	n, p, d, α	2, 3, 13, 14, 27
14.16 ± 30		230	n, p, d, α	2, 3, 13, 14
14.25 ± 50	3^+	420 ± 100	p, α	3, 5
14.30 ± 20		150	p, α	3
14.56 ± 20		100	n, p, α	2, 3, 11
14.59 ± 30		50	n, p, α	2, 3, 11
14.66 ± 10	5^-; 0	100 ± 20	α	5, 43
14.73 ± 25	$(2^-$; 1)	125	γ, n, p, α	2, 3
14.86 ± 30		140	n, p, d, α	2, 3, 6, 11, 13, 14, 16, 21, 27
14.92 ± 30		43 ± 8	n, p, α	2, 3, 11, 19, 27
15.02 ± 20	$3^-, 4^-$; 1	≈ 60	γ, n, p, α	2, 6, 20, 27, 42, 43
15.24 ± 20		100	p, d, α	3, 6, 7, 11, 13, 14
15.43 ± 20		100	n, p, d, α	2, 3, 13, 16, 21
15.70 ± 50		350	γ, n, p, d, α	6, 13, 14, 16, 19, 21, 27, 42
16.21 ± 20		125	n, p, α	2, 3, 21, 27, 60

Table 14.10 from (1991AJ01): Energy Levels of ^{14}N [a] (continued)

E_x in ^{14}N [b] (MeV ± keV)	J^π; T	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
16.40 ± 20		150	p, d, α	3, 16
16.65 ± 25 [f]	$4^+; 0+1$	240 ± 25	d, α	16
16.91 ± 20	$5^-; 1$	170 ± 25	γ	11, 42, 43
16.91 ± 30	$4^+; 0+1$	290 ± 30	p, d, α	16
16.92 ± 20 [g]	$2^+; 0+1$	830 ± 170	d, α	16
17.03 ± 50	$3^-; 0+1$	245 ± 50	d, α	16
17.17 ± 30	$1^-; 0+1$	300 ± 30	γ, p, d, α	11, 16, 21, 42
17.31 ± 30	$4^+; 0+1$	275 ± 30	d, α	16, 60
17.40 ± 25	$4^+; 0+1$	245 ± 25	d, α	16
17.46	$5^-; 0$			43
17.85 ± 50 [g]	$4^+; 0+1$	475 ± 50	d, α	16
17.85 ± 50 [g]	$3^-; 0+1$	440 ± 50	d, α	16
17.93 ± 70 [g]	$2^+; 0+1$	340 ± 70	d, α	16
18.02 ± 60	$3^-; 0+1$	570 ± 60	d, α	16
18.14 ± 50	$4^+; 0+1$	480 ± 50	d, α	16
18.35 ± 60	$1^-; 0+1$	560 ± 60	d, α	16
18.43 ± 65	$4^+; 0+1$	315 ± 65	d, α	16
18.50 ± 10	$5^-; 0+1$	62 ± 10	d, α	16, 42
18.53 ± 80	$2^+; 0+1$	410 ± 80	d, α	16
18.53 ± 60	$3^-; 0+1$	310 ± 60	d, α	16
18.64 ± 70	$3^-; 0+1$	675 ± 70	d, α	16, 43
18.78 ± 35	$1^-; 0+1$	315 ± 35	d, α	16
18.88 ± 50	$4^+; 0+1$	475 ± 50	d, α	16
18.93 ± 50	$2^+, 3^-; 0+1$	450 ± 50	d, α	16
19.10 ± 90	$3^-; 0+1$	870 ± 90	d, α	16
19.90 ± 60	$2^+; 0+1$	575 ± 60	d, α	16
19.99 ± 50	$1^-; 0+1$	510 ± 50	d, α	16
(20.11 ± 20)	$3^-, 4^-; 0+1$	120 ± 20	γ	42, 43
20.63 ± 110	$4^+; 0+1$	1100 ± 110	d, α	16
20.65 ± 60	$5^-; 0+1$	610 ± 60	d, α	16

Table 14.10 from (1991AJ01): Energy Levels of ^{14}N [a] (continued)

E_x in ^{14}N [b] (MeV $\pm$ keV)	J^π; T	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
21.24 ± 50	4^+; $0+1$	415 ± 50	d, α	16
21.51 ± 25	3^-; $0+1$	235 ± 25	d, α	16
21.53 ± 75	5^-; $0+1$	360 ± 75	d, α	16
21.68 ± 40	4^+; $0+1$	360 ± 40	d, α	16
21.8	4^+; $0+1$	650	γ, ^{3}He	9
22.26 ± 15	4^+; $0+1$	65 ± 15	d, α	16
22.31 ± 60	5^-; $0+1$	570 ± 60	d, α	16
22.5	2^-; 1		γ, p	25
23.0	2^-; 1	≈ 3000	γ, n, p	25, 40
23.40 ± 70	5^-; $0+1$	640 ± 70	d, α	16
24.0		≈ 1000	n, ^{3}He, α	9

[a] See also Tables 14.13 and 14.14, and footnote [b] in Table 14.15 here (1986WA13).

[b] I am indebted to E.K. Warburton for sending me a reanalysis of the E_x of many of the states in ^{14}N with $E_x < 9.4$ MeV: see, e.g., footnote [b] in Table 14.15.

[c] Weighted mean of values displayed in Table 14.14 of (1986AJ01) but not using the value 79 ± 7 fs which has not been published, and including the value 97.7 ± 5.5 fs (1987ZI04).

[d] Adopted value, based on values shown in Table 14.14 (1986AJ01) and on 5.6 ± 1.1 fs (1987ZI04).

[e] The present evidence (1986WA13) only supports the presence of one state at $E_x \approx 9.13$ MeV, with $J^\pi = 3^+$. The only remaining evidence for a doublet is the ^{12}C(^{3}He, p′)^{14}N (p)^{13}C$_{g.s.}$ work by (1974NO01).

[f] With the exception of ^{14}N*(16.91, 17.46, 21.8, 22.5, 23.0, 24.0), this state and all higher states were derived from an S-matrix analysis of the ^{12}C(d, α_1) reaction by (1981JO02).

[g] See, however, Tables 14.20 and 14.21.

[h] See reaction 41.