

Table 17.10 from (1993TI07): Energy levels of ^{17}O

E_x in ^{17}O (MeV \pm keV)	J^π, T	τ_m or $\Gamma_{\text{c.m.}}$ (keV)	Decay	Reactions
0	$\frac{5}{2}^+; \frac{1}{2}$		stable	1, 2, 7, 8, 9, 13, 14, 17, 18, 20, 21, 22, 23, 28, 29, 30, 31, 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
0.87073 ± 0.10^a	$\frac{1}{2}^+$	$\tau_m = 258.6 \pm 2.6$ psec	γ	1, 2, 7, 8, 9, 10, 11, 13, 14, 17, 18, 20, 21, 22, 23, 28, 29, 30, 31, 36, 37, 38, 39, 40, 42, 45, 46, 48, 50, 53, 54, 55, 57, 58, 59
3.05536 ± 0.16	$\frac{1}{2}^-$	$\tau_m = 120_{-60}^{+80}$ fsec	γ	7, 8, 9, 13, 14, 20, 22, 23, 28, 30, 31, 36, 37, 38, 39, 40, 42, 45, 53, 54, 58
3.84276 ± 42^a	$\frac{5}{2}^-$	$\tau_m \leq 25$ fsec	γ	7, 8, 9, 13, 14, 15, 16, 20, 22, 23, 28, 29, 37, 38, 42, 43, 53, 54, 58
4.5538 ± 1.6^a	$\frac{3}{2}^-$	$\Gamma = 40 \pm 5$	γ, n	7, 9, 13, 14, 20, 22, 23, 28, 29, 32, 37, 38, 40, 41, 42, 43, 53, 54, 58
5.0848 ± 0.9^a	$\frac{3}{2}^+$	96 ± 5	γ, n	2, 8, 9, 13, 14, 22, 23, 28, 32, 37, 40, 41, 42, 53, 54
5.21577 ± 0.45^a	$\frac{9}{2}^-$	< 0.1	γ, n	8, 9, 13, 14, 15, 16, 22, 23, 28, 29, 30, 32, 37, 42, 43, 53, 58
5.3792 ± 1.4^a	$\frac{3}{2}^-$	28 ± 7	γ, n	9, 22, 23, 28, 32, 37, 38, 40, 41, 42, 53, 54, 58

Table 17.10 from (1993TI07): Energy levels of ^{17}O (continued)

E_x in ^{17}O (MeV \pm keV)	$J^\pi; T$	τ_m or $\Gamma_{\text{c.m.}}$ (keV)	Decay	Reactions
5.69726 ± 0.33^a	$\frac{7}{2}^-$	3.4 ± 0.3	γ, n	2, 4, 13, 14, 20, 22, 23, 28, 29, 32, 37, 41, 42, 43, 54
5.73279 ± 0.52^a	$(\frac{5}{2}^-)$	< 1	n	2, 7, 8, 13, 14, 20, 22, 23, 32, 37, 58
5.86907 ± 0.55^a	$\frac{3}{2}^+$	6.6 ± 0.7	n	8, 9, 13, 14, 22, 23, 28, 32, 37, 58
5.939 ± 4	$\frac{1}{2}^-$	32 ± 3	γ, n	7, 8, 13, 14, 22, 23, 28, 32, 37, 40, 42, 54, 58
6.356 ± 8	$\frac{1}{2}^+$	124 ± 12	γ, n	7, 9, 20, 22, 28, 32, 41, 42
6.862 ± 2	$(\frac{5}{2}^+)$	< 1	γ, n	7, 8, 9, 13, 14, 22, 23, 28, 32, 37, 42, 54, 58
6.972 ± 2	$(\frac{7}{2}^-)$	< 1	γ, n	8, 9, 13, 14, 22, 23, 28, 32, 42, 58
7.1657 ± 0.8	$\frac{5}{2}^-$	1.38 ± 0.05	n, α	7, 8, 9, 12, 13, 14, 22, 28, 32, 35
7.202 ± 10	$\frac{3}{2}^+$	280 ± 30	n, α	13, 14, 22, 32, 35
7.3792 ± 1.0	$\frac{5}{2}^+$	0.64 ± 0.23	γ, n, α	7, 8, 9, 10, 11, 28, 29, 32, 35, 42, 54, 58
7.3822 ± 1.0	$\frac{5}{2}^-$	0.96 ± 0.20	γ, n, α	6, 9, 12, 13, 14, 22, 29, 32, 35, 41, 42, 54, 58
7.559 ± 20	$\frac{3}{2}^-$	500 ± 50	n, α	32, 35, 37
7.576 ± 2	$(\frac{7}{2}^+)^e$	< 0.1	γ, n, α	7, 8, 12, 13, 14, 22, 28, 32, 42
7.6882 ± 0.9	$\frac{7}{2}^-$	14.4 ± 0.3	γ, n, α	7, 8, 12, 13, 14, 28, 32, 35, 41
7.757 ± 9	$\frac{11}{2}^-$		γ	20, 28, 29, 30, 42, 43
7.956 ± 6	$\frac{1}{2}^+$	90 ± 9	n, α	12, 28, 32, 35
7.99 ± 50	$\frac{1}{2}^-$	270 ± 30	n, α	32, 35

Table 17.10 from (1993TI07): Energy levels of ^{17}O (continued)

E_x in ^{17}O (MeV \pm keV)	J^π, T	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
8.070 \pm 10	$\frac{3}{2}^+$	85 \pm 9	n, α	12, 28, 32, 35
8.200 \pm 7	$\frac{3}{2}^-$	60	γ , n, α	12, 20, 28, 32, 35, 41, 54
8.3424 \pm 0.9	$\frac{1}{2}^+$	11.4 \pm 0.5	γ , n, α	12, 28, 32, 35, 42
8.4023 \pm 0.8	$\frac{5}{2}^+$	6.17 \pm 0.13	γ , n, α	8, 12, 13, 14, 28, 32, 35, 42
8.4660 \pm 0.8	$(\frac{9}{2}^+)^f$	2.13 \pm 0.11	(γ) , n, α	7, 8, 12, 13, 14, 28, 32, 35, 42, 54
8.5007 \pm 0.8	$\frac{5}{2}^-$	6.89 \pm 0.22	γ , n, α	8, 12, 13, 14, 28, 32, 35, 41, 42
8.6870 \pm 1.0	$\frac{3}{2}^-$	55.3 \pm 0.6	γ , n, α	12, 28, 32, 35, 41, 54
8.885 \pm 14 ^b	$\frac{7}{2}^-, \frac{9}{2}^-$	6	γ	42
8.897 \pm 8	$\frac{3}{2}^+$	101 \pm 3	n, α	8, 12, 13, 14, 28, 29, 32, 35, 42
8.9672 \pm 1.7	$\frac{7}{2}^-$	26 \pm 2	γ , n, α	8, 12, 13, 14, 28, 32, 35, 41, 42
9.147 \pm 4	$\frac{1}{2}^-$	4 \pm 3	γ , n, α	8, 11, 12, 13, 14, 54
9.15 \pm 20	$\frac{9}{2}^-$		γ	28, 29, 30, 32
9.18	$\frac{7}{2}^-$	3	α	12, 13, 14
9.1939 \pm 0.8	$\frac{5}{2}^+$	3.53 \pm 0.13	n, α	12, 13, 14, 32
9.42	$\frac{3}{2}^-$	120	n	32
9.492 \pm 4	$\frac{5}{2}^-$	15 \pm 1	n, α	7, 11, 14, 28, 32, 54
9.7119 \pm 0.9	$\frac{7}{2}^+$	23.1 \pm 0.3	n, α	12, 14, 20, 28, 32
9.7833 \pm 0.9	$\frac{3}{2}^+$	11.7 \pm 0.3	n, α	12, 14, 32
9.8589 \pm 0.9	$(\frac{5}{2}^-)$	4.01 \pm 0.23	n, α	12, 14, 28, 32
9.8765 \pm 1.3	$(\frac{1}{2}^-)$	16.7 \pm 1.7	n, α	12, 14, 28, 32
9.976 \pm 20	$\frac{5}{2}^+$	\approx 80	n, α	12
10.045 \pm 20		\approx 100	n, α	12
10.1678 \pm 1.0	$\frac{7}{2}^-$	49.1 \pm 0.8	n, α	12, 32
10.336 \pm 15	$\frac{5}{2}^+, \frac{7}{2}^-$	150	n, α	12, 28

Table 17.10 from (1993TI07): Energy levels of ^{17}O (continued)

E_x in ^{17}O (MeV \pm keV)	$J^\pi; T$	τ_m or $\Gamma_{\text{c.m.}}$ (keV)	Decay	Reactions
10.423 \pm 3		14 \pm 3	n, α	12, 20
10.49	$\frac{5}{2}^+, \frac{7}{2}^-$	75 \pm 30	n, α	12
10.5591 \pm 1.0	$(\frac{7}{2}^-)$	42.5 \pm 1.1	n, α	12, 16, 28, 32, 33
10.777 \pm 3	$\frac{1}{2}^+, \frac{7}{2}^-$	74 \pm 3	n, α	12, 14, 23, 28, 33
10.9129 \pm 2.8	$(\frac{5}{2}^+)$	41.7 \pm 1.4	n, α	12, 28, 32, 33
11.036 \pm 3	$T = \frac{1}{2}$	31 \pm 3	n, α	12, 28
11.0787 \pm 0.8 ^c	$\frac{1}{2}^-; \frac{3}{2}$	2.4 \pm 0.3	γ , n, α	11, 12, 28, 32, 42, 54, 55
11.238		80 \pm 3	n, α	7, 12, 20
11.51	$\geq \frac{3}{2}$	190	n	32, 33
11.622		65 \pm 2	n, α	12
11.750 \pm 10		40 \pm 25	γ , n, α	12, 42
11.815 \pm 15		12 \pm 3	n, α	12, 20
12.005 \pm 15	$\geq \frac{3}{2}$	270	γ , n, α	12, 20, 23, 32, 33, 42
12.11 \pm 20		150 \pm 50	n, α	12, 16, 33
12.22 \pm 20		\leq 20	γ	42
12.274 \pm 15		100 \pm 30	n, α	12, 20
12.38 \pm 20			n, α	12, 32
12.420 \pm 15			n, α	12
12.4660 \pm 1.0	$\frac{3}{2}^-; \frac{3}{2}$	6.9 \pm 1.1	γ , n, α	12, 32, 33, 42, 54, 55
12.595 \pm 15		75 \pm 30	n, α	12
12.669 \pm 15		\approx 5	γ , n, α	12, 32, 33, 42
12.81 \pm 25			n, α	12
12.93 \pm 20		\geq 150	n, α	12
12.944 \pm 5	$\frac{1}{2}^+; \frac{3}{2}$	6 \pm 2	n, α	12, 32, 33, 54, 55
12.9982 \pm 1.0	$\frac{5}{2}^-; \frac{3}{2}$	2.5 \pm 1.0	γ , n, α	12, 32, 42, 55
13.076 \pm 15		16 \pm 4	n, α	12
13.484 \pm 15		\approx 120	n, α	12
13.58 \pm 20	$(\frac{11}{2}^-, \frac{13}{2}^-)$	68 \pm 19	(γ)	13, 14, 42
13.609 \pm 15		250 \pm 100	n, α	12

Table 17.10 from (1993TI07): Energy levels of ^{17}O (continued)

E_x in ^{17}O (MeV \pm keV)	$J^\pi; T$	τ_m or $\Gamma_{\text{c.m.}}$ (keV)	Decay	Reactions
13.6353 \pm 2.5 (13.67)	$(\frac{5}{2})^+; \frac{3}{2}$	9 \pm 5 400	n, α n	32, 54, 55 32
14.15 \pm 100	$(\frac{9}{2}^+, \frac{11}{2}^+)$	\approx 100		13
14.2303 \pm 1.7	$\frac{7}{2}^-; \frac{3}{2}$	20.5 \pm 1.6	γ , n, α	32, 42, 55
14.286 \pm 3	$T = \frac{1}{2}^d$	7.5 \pm 4	n, α	32, 55
14.451 \pm 3		40 \pm 6	γ , n, α	32
14.72	$\frac{9}{2}^-; \frac{3}{2}$	35 \pm 11		
14.76 \pm 100	$(\geq \frac{3}{2})$	340	γ , n	32, 42
14.791 \pm 3	$(\frac{1}{2}^-; \frac{3}{2})$	36 \pm 13	(γ) , n, α	32, 41
15.00		180	n, d, α	27, 32
15.1 \pm 100	$(\frac{9}{2}^+, \frac{11}{2}^+)$	\approx 500		13
15.199 \pm 3	$T = \frac{1}{2}^d$	52 \pm 14	γ , n, d, α	20, 27, 32, 42
15.368 \pm 3	$(\frac{5}{2}^+; \frac{3}{2})$	40 \pm 6	n, d, α	26, 32
(15.6)	$T = \frac{1}{2}^d$	\approx 300	p, d, α	25, 26, 27
15.78 \pm 20	$(\frac{13}{2}^-; \frac{3}{2})^e$	\leq 30	γ	42
15.95 \pm 150	$(\frac{9}{2}^+, \frac{11}{2}^+)$	\approx 700		13
16.243 \pm 4	$(\frac{9}{2}^+; \frac{3}{2})$	21 \pm 10	n, p, d, α	25, 32
16.58 \pm 10	$(\frac{1}{2}, \frac{3}{2})^-; \frac{3}{2}$	\approx 300	γ	42, 54
16.6 \pm 150	$(\frac{11}{2}^-, \frac{13}{2}^-)$			13
17.06 \pm 20	$\frac{11}{2}^-; \frac{1}{2}^e$	\leq 20	γ	13, 42, 43
17.436 \pm 11	$(T = \frac{3}{2})$	66 \pm 20	n, α	32
17.92 \pm 20		98 \pm 16	γ	42
18.110 \pm 4	$\frac{3}{2}^-; \frac{3}{2}$	46 \pm 12	n, α	32, 54
18.72 \pm 20		87 \pm 33		42
19.6 \pm 150	$(\frac{13}{2}^+, \frac{15}{2}^+)$	\approx 250		13
19.82 \pm 40	$\frac{3}{2}$	550 \pm 50	γ , t	21, 42
20.14 \pm 20	$\frac{11}{2}^-; \frac{1}{2}^e$	31 \pm 5	γ	42
20.2 \pm 150	$(\frac{13}{2}^+, \frac{15}{2}^+)$	\approx 250		13
20.39 \pm 50	$\frac{5}{2}, \frac{7}{2}^-$	660 \pm 70	γ , t	21
20.58 \pm 50	$\frac{1}{2}$	570 \pm 80	γ , t	21
20.70 \pm 20	$(\frac{9}{2}^-; \frac{3}{2})^e$	\leq 20	γ	42

Table 17.10 from (1993TI07): Energy levels of ^{17}O (continued)

E_x in ^{17}O (MeV \pm keV)	$J^\pi; T$	τ_m or $\Gamma_{c.m.}$ (keV)	Decay	Reactions
21.05 \pm 50	$\frac{3}{2}$	470 \pm 60	γ, t	21
21.2	$(\frac{13}{2}^+, \frac{15}{2}^+)$			13
21.7 \pm 100	$\frac{5}{2}^+$	\approx 750	$\gamma, ^3\text{He}, \alpha$	18, 19
22.1 \pm 100	$\frac{7}{2}^-$	\approx 750	$\gamma, n, ^3\text{He}, \alpha$	13, 18, 19
22.5 \pm 200	$\frac{3}{2}^{(-)}$	\approx 1000	$\gamma, ^3\text{He}$	18
23		\approx 6000	γ, n	41, 42
23.0	$\frac{1}{2}^+$	\approx 400	$\gamma, ^3\text{He}$	18, 19
23.5			$\gamma, ^3\text{He}$	18
24.4			$\gamma, ^3\text{He}$	18

^a (1990PI05).

^b See also (1971AJ02).

^c See also Tables 17.16 and 17.19, and see Table 17.6 in (1977AJ02).

^d $T = \frac{1}{2}$ assignments based on evidence of excitation in $^{17}\text{O}(\gamma, n_0)$ reported in (1990MC06).

^e (1987MI25) and private communication from D.M. Manley.

^f (1987MA52) and private communication from D.J. Millener.