

Table 17.7 from (1982AJ01): Energy levels of ^{17}O

| E_x in ^{17}O (MeV \pm keV) | $J^\pi; T$ | τ_m or $\Gamma_{\text{c.m.}}$ (keV) | Decay | Reactions |
|---|------------------------------|---|--------------------|---|
| 0 | $\frac{5}{2}^+; \frac{1}{2}$ | | stable | 1, 2, 5, 6, 7, 8, 9, 12, 13, 15, 16, 18, 19, 20, 21, 22, 23, 24, 29, 30, 31, 32, 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, 66, 67, 68, 69, 70, 71, 72, 73 |
| 0.87081 ± 0.12 | $\frac{1}{2}^+$ | $\tau_m = 258.6 \pm 2.6$ psec | γ | 1, 2, 5, 6, 7, 12, 13, 15, 16, 18, 19, 20, 21, 22, 29, 30, 31, 32, 38, 39, 42, 43, 44, 46, 47, 48, 50, 52, 54, 56, 57, 61, 62, 63, 68, 69, 70, 71, 72, 73 |
| 3.0552 ± 0.3 | $\frac{1}{2}^-$ | $\tau_m = 120_{-60}^{+80}$ fsec | γ | 5, 6, 7, 12, 13, 18, 21, 22, 29, 31, 32, 38, 39, 42, 48, 50, 52, 61, 62, 70, 71 |
| 3.841 ± 3 | $\frac{5}{2}^-$ | $\tau_m \leq 25$ fsec | γ | 5, 6, 7, 12, 13, 14, 18, 21, 22, 29, 30, 39, 42, 50, 61, 62, 70, 71 |
| 4.552 ± 2 | $\frac{3}{2}^-$ | $\Gamma = 40 \pm 5$ | γ, n | 5, 7, 12, 13, 21, 22, 29, 30, 33, 39, 42, 48, 49, 50, 61, 62, 71 |
| 5.085 ± 2 | $\frac{3}{2}^+$ | 96 ± 5 | γ, n | 2, 6, 7, 12, 13, 21, 22, 29, 33, 39, 48, 49, 50, 61, 62 |

Table 17.7 from (1982AJ01): 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 |
|---|-------------------|---|------------------------------|--|
| 5.218 | $(\frac{9}{2}^-)$ | < 0.1 | γ, n | 6, 7, 12, 13, 14, 21, 22, 29, 30, 33, 39, 50, 61, 71 |
| 5.378 ± 2 | $\frac{3}{2}^-$ | 28 ± 7 | γ, n | 7, 21, 22, 29, 33, 39, 42, 48, 49, 50, 61, 62, 71 |
| 5.697 ± 2 | $\frac{7}{2}^-$ | 3.4 ± 0.3 | γ, n | 2, 6, 12, 13, 21, 22, 29, 30, 33, 39, 49, 50, 62 |
| 5.733 ± 2 | | < 1 | n | 2, 5, 6, 12, 13, 21, 22, 33, 39, 71 |
| 5.868 ± 2 | $\frac{3}{2}^+$ | 6.6 ± 0.7 | n | 6, 7, 12, 13, 21, 22, 29, 33, 39, 71 |
| 5.939 ± 4 | $\frac{1}{2}^-$ | 32 ± 3 | γ, n | 5, 6, 12, 13, 21, 22, 29, 33, 39, 48, 50, 62, 71 |
| 6.356 ± 8 | $\frac{1}{2}^+$ | 124 ± 12 | γ, n | 5, 7, 21, 29, 33, 50 |
| 6.862 ± 2 | $(\frac{1}{2}^-)$ | < 1 | γ, n | 5, 6, 7, 12, 13, 21, 22, 29, 33, 39, 50, 62, 71 |
| 6.972 ± 2 | $(\frac{5}{2}^+)$ | < 1 | γ, n | 6, 7, 12, 13, 21, 22, 29, 33, 50, 71 |
| 7.1657 ± 0.8 | $\frac{5}{2}^-$ | 1.38 ± 0.05 | n, α | 5, 6, 7, 10, 12, 13, 21, 29, 33, 37 |
| 7.202 ± 10 | $\frac{3}{2}^+$ | 280 ± 30 | n, α | 12, 13, 21, 33, 37 |
| 7.3792 ± 1.0 | $\frac{5}{2}^+$ | 0.64 ± 0.23 | $(\gamma), \text{n}, \alpha$ | 5, 6, 7, 10, 12, 13, 29, 30, 33, 37, 50, 62, 71 |
| 7.3822 ± 1.0 | $\frac{5}{2}^-$ | 0.96 ± 0.20 | γ, n, α | 5, 7, 10, 12, 13, 21, 30, 33, 49, 50, 62, 71 |
| 7.559 ± 20 | $\frac{3}{2}^-$ | 500 ± 50 | n, α | 33, 37, 39 |
| 7.576 ± 2 | $\frac{7}{2}^-$ | < 0.1 | γ, n, α | 5, 6, 10, 12, 13, 21, 29, 33, 50 |

Table 17.7 from (1982AJ01): 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 |
|---|-------------------|---|---------------------|--------------------------------------|
| 7.6882 ± 0.9 | $\frac{7}{2}^-$ | 14.4 ± 0.3 | γ, n, α | 5, 6, 10, 12, 13, 29, 33, 37, 49 |
| 7.757 ± 9 | $\frac{11}{2}^-$ | | γ | 29, 30, 50 |
| 7.956 ± 6 | $\frac{1}{2}^+$ | 90 ± 9 | n, α | 10, 29, 33, 37 |
| 7.99 ± 50 | $\frac{1}{2}^-$ | 270 ± 30 | n, α | 33, 37 |
| 8.070 ± 10 | $\frac{3}{2}^+$ | 85 ± 9 | n, α | 10, 29, 33, 37 |
| 8.200 ± 7 | $\frac{3}{2}^-$ | 60 | γ, n, α | 10, 29, 33, 37, 49, 62 |
| 8.3424 ± 0.9 | $\frac{1}{2}^+$ | 11.4 ± 0.5 | n, α | 10, 29, 33, 37, 50 |
| 8.4023 ± 0.8 | $\frac{5}{2}^+$ | 6.17 ± 0.13 | n, α | 6, 10, 12, 13, 29, 33, 37, 50 |
| 8.4660 ± 0.8 | $\frac{7}{2}^+$ | 2.13 ± 0.11 | n, α | 5, 6, 10, 12, 13, 29, 33, 37, 50, 62 |
| 8.5007 ± 0.8 | $\frac{5}{2}^-$ | 6.89 ± 0.22 | γ, n, α | 6, 10, 12, 13, 29, 33, 37, 49, 50 |
| 8.6870 ± 1.0 | $\frac{3}{2}^-$ | 55.3 ± 0.6 | γ, n, α | 10, 29, 33, 37, 49, 62 |
| 8.897 ± 8 | $\frac{3}{2}^+$ | 101 ± 3 | n, α | 6, 10, 12, 13, 29, 30, 33, 37 |
| 8.9672 ± 1.7 | $\frac{7}{2}^-$ | 26 ± 2 | γ, n, α | 6, 10, 12, 13, 29, 33, 37, 49 |
| 9.147 ± 4 | $\frac{1}{2}^-$ | 4 ± 3 | n, α | 6, 10, 12, 13, 62 |
| 9.15 ± 20 | $\frac{9}{2}^-$ | | | 29, 30 |
| 9.18 | $\frac{7}{2}^-$ | 3 | α | 10, 12, 13 |
| 9.1939 ± 0.8 | $\frac{5}{2}^+$ | 3.53 ± 0.13 | n, α | 10, 12, 13, 33 |
| 9.42 | $\frac{3}{2}^-$ | 120 | n | 33 |
| 9.492 ± 4 | $\frac{5}{2}^-$ | 15 ± 1 | n, α | 5, 10, 13, 29, 33, 62 |
| 9.7119 ± 0.9 | $\frac{7}{2}^+$ | 23.1 ± 0.3 | n, α | 10, 13, 29, 33 |
| 9.7833 ± 0.9 | $\frac{3}{2}^+$ | 11.7 ± 0.3 | n, α | 10, 13, 33 |
| 9.8589 ± 0.9 | $(\frac{5}{2}^-)$ | 4.01 ± 0.23 | n, α | 10, 13, 29, 33 |
| 9.8765 ± 1.3 | $(\frac{1}{2}^-)$ | 16.7 ± 1.7 | n, α | 10, 13, 29, 33 |

Table 17.7 from (1982AJ01): 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 |
|---|--------------------------------|---|------------------------|--------------------|
| 9.976 \pm 20 | $\frac{5}{2}^+$ | ≈ 80 | n, α | 10 |
| 10.045 \pm 20 | | ≈ 100 | n, α | 10 |
| 10.1678 \pm 1.0 | $\frac{7}{2}^-$ | 49.1 \pm 0.8 | n, α | 10, 33 |
| 10.336 \pm 15 | $\frac{5}{2}^+, \frac{7}{2}^-$ | 150 | n, α | 10, 29 |
| 10.423 \pm 3 | | 14 \pm 3 | n, α | 10 |
| 10.49 | $\frac{5}{2}^+, \frac{7}{2}^-$ | 75 \pm 30 | n, α | 10 |
| 10.5591 \pm 1.0 | $(\frac{7}{2}^-)$ | 42.5 \pm 1.1 | n, α | 10, 14, 29, 33, 34 |
| 10.777 \pm 3 | $\frac{1}{2}^+, \frac{7}{2}^-$ | 74 \pm 3 | n, α | 10, 13, 29, 34 |
| 10.9129 \pm 2.8 | $(\frac{5}{2}^+)$ | 41.7 \pm 1.4 | n, α | 10, 29, 33, 34 |
| 11.036 \pm 3 | $T = \frac{1}{2}$ | 31 \pm 3 | n, α | 10, 29 |
| 11.0787 \pm 0.9 ^a | $\frac{1}{2}^-; \frac{3}{2}$ | 2.4 \pm 0.3 | n, α | 10, 29, 33, 62, 63 |
| 11.238 | | 80 \pm 3 | n, α | 5, 10 |
| 11.51 | $\geq \frac{3}{2}$ | 190 | n | 33, 34 |
| 11.622 | | 65 \pm 2 | n, α | 10 |
| 11.750 \pm 10 | | 40 \pm 25 | γ , n, α | 10, 50 |
| 11.815 \pm 15 | | 12 \pm 3 | n, α | 10 |
| 12.005 \pm 15 | $\geq \frac{3}{2}$ | 270 | n, α | 10, 33, 34, 50 |
| 12.11 \pm 20 | | 150 \pm 50 | n, α | 10, 14, 34 |
| 12.274 \pm 15 | | 100 \pm 30 | n, α | 10 |
| 12.38 \pm 20 | | | n, α | 10, 33 |
| 12.420 \pm 15 | | | n, α | 10 |
| 12.4660 \pm 1.0 | $\frac{3}{2}^-; \frac{3}{2}$ | 6.9 \pm 1.1 | n, α | 10, 33, 34, 62, 63 |
| 12.595 \pm 15 | | 75 \pm 30 | n, α | 10 |
| 12.669 \pm 15 | | ≈ 5 | n, α | 10, 33, 34 |
| 12.81 \pm 25 | | | n, α | 10 |
| 12.93 \pm 20 | | ≥ 150 | n, α | 10 |
| 12.944 \pm 5 | $\frac{1}{2}^+; \frac{3}{2}$ | 6 \pm 2 | n, α | 10, 33, 34, 62, 63 |
| 12.9982 \pm 1.0 | $\frac{5}{2}^-; \frac{3}{2}$ | 2.5 \pm 1.0 | n, α | 10, 33, 63 |
| 13.076 \pm 15 | | 16 \pm 4 | n, α | 10 |
| 13.484 \pm 15 | | ≈ 120 | n, α | 10 |

Table 17.7 from (1982AJ01): 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 |
|---|---|---|--|------------|
| 13.58 \pm 20 | $(\frac{11}{2}^-, \frac{13}{2}^-)$ | | | 12, 13 |
| 13.609 \pm 15 | | 250 \pm 100 | n, α | 10 |
| 13.6353 \pm 2.5 | $(\frac{5}{2})^+; \frac{3}{2}$ | 9 \pm 5 | n, α | 33, 62, 63 |
| (13.67) | | 400 | n | 33 |
| 14.15 \pm 100 | $(\frac{9}{2}^+, \frac{11}{2}^+)$ | \approx 100 | | 12 |
| 14.2303 \pm 1.7 | $(\frac{7}{2}^-); \frac{3}{2}$ | 20.5 \pm 1.6 | n, α | 33, 63 |
| 14.286 \pm 3 | $T = \frac{3}{2}$ | 7.5 \pm 4 | n, α | 33, 63 |
| 14.451 \pm 3 | | 40 \pm 6 | n, α | 33 |
| 14.76 \pm 100 | $(\geq \frac{3}{2})$ | 340 | γ , n | 33, 50 |
| 14.791 \pm 3 | $(\frac{1}{2}^-, \frac{3}{2})$ | 36 \pm 13 | n, α | 33 |
| 15.00 | | 180 | n, d, α | 28, 33 |
| 15.1 \pm 100 | $(\frac{9}{2}^+, \frac{11}{2}^+)$ | \approx 500 | | 12 |
| 15.199 \pm 3 | $(\frac{3}{2}; \frac{3}{2})$ | 52 \pm 14 | γ , n, d, α | 28, 33, 50 |
| 15.368 \pm 3 | $(\frac{5}{2}^+; \frac{3}{2})$ | 40 \pm 6 | n, d, α | 27, 33 |
| (15.6) | | \approx 300 | p, d, α | 26, 27, 28 |
| 15.95 \pm 150 | $(\frac{9}{2}^+, \frac{11}{2}^+)$ | \approx 700 | | 12 |
| 16.243 \pm 4 | $(\frac{9}{2}^+; \frac{3}{2})$ | 21 \pm 10 | n, p, d, α | 26, 33 |
| 16.58 \pm 10 | $(\frac{1}{2}, \frac{3}{2})^-; \frac{3}{2}$ | | | 62 |
| 16.6 \pm 150 | $(\frac{11}{2}^-, \frac{13}{2}^-)$ | | | 12 |
| 17.1 \pm 150 | $(\frac{11}{2}^-, \frac{13}{2}^-)$ | | | 12 |
| 17.436 \pm 11 | $(T = \frac{3}{2})$ | 66 \pm 20 | n, α | 33 |
| 18.110 \pm 4 | $\frac{3}{2}^-; \frac{3}{2}$ | 46 \pm 12 | n, α | 33, 62 |
| 19.6 \pm 150 | $(\frac{13}{2}^+, \frac{15}{2}^+)$ | \approx 250 | | 12 |
| 20.2 \pm 150 | $(\frac{13}{2}^+, \frac{15}{2}^+)$ | \approx 250 | | 12 |
| 21.2 | $(\frac{13}{2}^+, \frac{15}{2}^+)$ | | | 12 |
| 21.7 \pm 100 | $\frac{5}{2}^+$ | \approx 750 | γ , ^3He , α | 16, 17 |
| 22.1 \pm 100 | $\frac{7}{2}^-$ | \approx 750 | γ , n, ^3He , α | 12, 16, 17 |
| 22.5 \pm 200 | $\frac{3}{2}^{(-)}$ | \approx 1000 | γ , ^3He | 16 |
| 23 | | \approx 6000 | γ , n | 49, 50 |
| 23.0 | $\frac{1}{2}^+$ | \approx 400 | γ , ^3He | 16, 17 |

Table 17.7 from (1982AJ01): 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 |
|---|------------|---|-----------------------|-----------|
| 23.5 | | | $\gamma, ^3\text{He}$ | 16 |
| 24.4 | | | $\gamma, ^3\text{He}$ | 16 |

^a See also [Table 17.11](#), and see [Table 17.6 in \(1977AJ02\)](#).