

Table 17.23 from (1993TI07): Energy levels of  $^{17}\text{F}$  <sup>a</sup>

$E_x$ in $^{17}\text{F}$ (MeV $\pm$ keV)	$J^\pi; T$	$\tau$ or $\Gamma_{\text{c.m.}}$ (keV)	Decay	Reactions
0	$\frac{5}{2}^+; \frac{1}{2}$	$\tau_{1/2} = 64.49 \pm 0.16$ sec	$\beta^+$	1, 2, 3, 4, 5, 6, 7, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
$0.49533 \pm 0.10$	$\frac{1}{2}^+$	$\tau_m = 412 \pm 9$ psec	$\gamma$	2, 3, 4, 5, 6, 7, 13, 14, 15, 16, 17, 18, 19, 20, 22
$3.104 \pm 3$	$\frac{1}{2}^-$	$\Gamma = 19 \pm 1$	$\gamma, p$	3, 4, 5, 6, 7, 8, 13, 14, 20, 22
$3.857 \pm 4$	$\frac{5}{2}^-$	$1.5 \pm 0.2$	$\gamma, p$	3, 4, 5, 6, 7, 8, 13, 14, 22
$4.64 \pm 20$	$\frac{3}{2}^-$	225	p	5, 6, 8, 13, 17, 20
$5.00 \pm 20$	$\frac{3}{2}^+$	1530	p	8
$5.220 \pm 10$	$\frac{9}{2}^-$			5, 6, 16
$5.488 \pm 11$	$\frac{3}{2}^-$	68	p	5, 6, 8, 20
$5.672 \pm 20$	$\frac{7}{2}^-$	40	p	5, 6, 8
$5.682 \pm 20$	$(\frac{5}{2}^-)^b$	$< 0.6$	p	5, 6, 8
$5.82 \pm 20$	$\frac{3}{2}^+$	180	p	5, 8, 17
$6.037 \pm 9$	$\frac{1}{2}^-$	30	p	5, 6, 8, 20
$6.56 \pm 20$	$\frac{1}{2}^+$	200	p	8
$6.697 \pm 7$	$\frac{5}{2}^+$	$\leq 1.6 \pm 0.2$	p	5, 6, 8
$6.774 \pm 20$	$(\frac{3}{2}^+)$	4.5	p	8
$7.027 \pm 20$	$\frac{5}{2}^-$	3.8	p	6, 8
$7.356 \pm 20$	$(\frac{3}{2}^+)$	$10 \pm 2$	p, $\alpha$	6, 8, 12
$7.448 \pm 20$		$\leq 5$	p	8
$7.454 \pm 20$		$7 \pm 2$	p, $\alpha$	8, 12
$7.471 \pm 20$		$5 \pm 2$	p	8
$7.479 \pm 20$	$\frac{3}{2}^+$	795	p	8
$7.546 \pm 20$	$\frac{7}{2}^-$	30	p	8
$7.75 \pm 40$	$(\frac{1}{2}^+)$	$179 \pm 30$	p, $\alpha$	8, 12
$7.95 \pm 30$		$10 \pm 3$	p	8
$8.01 \pm 40$		$50 \pm 20$	p, $\alpha$	7, 11
$8.07 \pm 30$	$\frac{5}{2}^{(+)}$	$100 \pm 20$	p, $\alpha$	6, 8, 12

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8.075 $\pm$ 10	$(\frac{1}{2}, \frac{3}{2})^-$		p	6, 20
8.2	$\frac{3}{2}^{(-)}$	700 $\pm$ 250	p, $\alpha$	8, 12
8.383 $\pm$ 10	$\frac{5}{2}^{(-)}$	11 $\pm$ 5	p, $\alpha$	8, 12
8.416 $\pm$ 20	$(\frac{7}{2}^+)$	45 $\pm$ 10	p, $\alpha$	8, 12
8.436 $\pm$ 10	$(\frac{1}{2}, \frac{3}{2})^-$		p	20
8.75 $\pm$ 60	$\frac{5}{2}^{(+)}$	170 $\pm$ 30	p, $\alpha$	8, 12
8.76	$\frac{3}{2}^+$	90 $\pm$ 20	p	8
8.825 $\pm$ 25	$(\frac{1}{2}, \frac{3}{2})^-$		p	20
8.98 $\pm$ 20	$\frac{7}{2}^-$	165 $\pm$ 30	p, $\alpha$	8, 12
9.17 $\pm$ 60	$\frac{3}{2}^{(+)}$	140 $\pm$ 30	p, $\alpha$	8, 12, 17
9.450 $\pm$ 50		200 $\pm$ 40	p	20
9.92	$\frac{9}{2}^+$	90 $\pm$ 30	p, $\alpha$	8, 12
10.030 $\pm$ 60		170 $\pm$ 40	p	20
10.04 $\pm$ 40	$\frac{7}{2}$	280 $\pm$ 100	p	8
10.22 $\pm$ 40		250 $\pm$ 80	$\alpha$	12
10.40 $\pm$ 40	$\frac{5}{2}^{(+)}$	160 $\pm$ 40	p	8
10.499 $\pm$ 30	$\frac{7}{2}^-$	165 $\pm$ 25	p, $\alpha$	8, 12
10.660 $\pm$ 20		90 $\pm$ 60	p	20
10.79 $\pm$ 40		120 $\pm$ 40	p, ( $\alpha$ )	8, 12
10.91 $\pm$ 100	$\frac{1}{2}^-$	560 $\pm$ 100	p	8
10.95 $\pm$ 40		190 $\pm$ 50	p, ( $\alpha$ )	8, 12
11.1929 $\pm$ 2.3	$\frac{1}{2}^-; \frac{3}{2}$	0.18 $\pm$ 0.03	$\gamma$ , p, $\alpha$	6, 7, 8, 12, 20
11.43 $\pm$ 40		240 $\pm$ 50	p, $\alpha$	8, 12
11.58 $\pm$ 50		160 $\pm$ 30	p	8
12.00 $\pm$ 40		120 $\pm$ 40	p, $\alpha$	8, 12
12.25 $\pm$ 40	$\frac{3}{2}^-$	300 $\pm$ 30	p	8
12.355 $\pm$ 20	$\frac{1}{2}^-$	190 $\pm$ 20	p	8
$\approx$ 12.50	$\frac{7}{2}^-$	$\approx$ 600	p	8
12.5501 $\pm$ 0.9	$\frac{3}{2}^-; \frac{3}{2}$	2.83 $\pm$ 0.12	$\gamma$ , p, $\alpha$	6, 7, 8, 12
13.061 $\pm$ 4	$\frac{5}{2}^-; \frac{3}{2}$	2 $\pm$ 1	$\gamma$ , p, $\alpha$	6, 7, 8, 12
13.080 $\pm$ 4	$(\frac{1}{2}^+); \frac{3}{2}$	2 $\pm$ 1	p, $\alpha$	8, 12

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$E_x$ in $^{17}\text{F}$ (MeV $\pm$ keV)	$J^\pi; T$	$\tau$ or $\Gamma_{\text{c.m.}}$ (keV)	Decay	Reactions
13.13 $\pm$ 100	$\frac{5}{2}^-$	520 $\pm$ 50	p	8
13.781 $\pm$ 4	$\frac{5}{2}^+; \frac{3}{2}$	12 $\pm$ 5	p, $\alpha$	8, 12
14.00 $\pm$ 50	$\frac{7}{2}^-$	260 $\pm$ 30	p	8
14.176 $\pm$ 6	$\frac{3}{2}^-; \frac{3}{2}$	30 $\pm$ 5	$\gamma$ , p	7, 8
14.3038 $\pm$ 3.1	$\frac{7}{2}^-; \frac{3}{2}$	19.3 $\pm$ 1.6	$\gamma$ , p, $\alpha$	7, 8, 12
14.38 $\pm$ 50	$\frac{5}{2}^-$	610 $\pm$ 50	p	8, 17
14.71 $\pm$ 100	$\frac{1}{2}^-$	470 $\pm$ 100	p	8
14.809 $\pm$ 20	$\frac{1}{2}^+$	190 $\pm$ 25	p	8
15.6		$\approx$ 550	p	8
17.1	$\frac{5}{2}^-$	1500	p	8
20.1 $\pm$ 200		1070 $\pm$ 60	$\gamma$ , $^3\text{He}$	3
20.4 $\pm$ 100		700 $\pm$ 100	$\gamma$ , $^3\text{He}$	3
20.9	$\frac{9}{2}^+$	600	p	8
21.3 $\pm$ 100		900 $\pm$ 100	$\gamma$ , $^3\text{He}$	3
21.8	$(\frac{9}{2}^+)$	400	p	8
22.7	$\frac{7}{2}^+$	600	p	8
23.8	$\frac{7}{2}^+$	600	p	8
25.4	$\frac{7}{2}^-$	1500	p	8
27.2	$\frac{5}{2}^-$	1500	p	8
28.9	$\frac{5}{2}^+$	2000	p	8

<sup>a</sup> See also [Table 17.25](#), and see (1986AJ04).

<sup>b</sup> Appears to be analog of  $^{17}\text{O}^*(5.733)$  (D.J. Millener, private communication).