Table 18.24 from (1995TI07): Energy levels of ^{18}F [a]

E_x (MeV ± keV)	$J^\pi; T$	K^π	τ or $\Gamma_{c.m.}$	Decay	Reactions
0	$1^+; 0$	0^+	$\tau_{1/2} = 109.77 \pm 0.05$ min	β^+	1, 4, 5, 6, 9, 10, 12, 13, 15, 21, 23, 24, 25, 29, 31, 34, 35, 36, 37, 38, 40, 41, 42, 43, 44
0.93720 ± 0.06	$3^+; 0$	0^+	$\tau_m = 67.6 \pm 2.5$ ps ($g = +0.56 \pm 0.05$)	γ	2, 6, 9, 10, 13, 21, 23, 25, 30, 31, 35, 36, 38, 40, 41, 42, 44
1.04155 ± 0.08	$0^+; 1$		$\tau_m = 2.55 \pm 0.45$ fs	γ	6, 9, 21, 25, 30, 31, 34, 35, 37, 38, 40, 42, 43
1.08054 ± 0.12	$0^-; 0$	0^-	$\tau_m = 27.5 \pm 1.9$ fs	γ	6, 9, 10, 21, 25, 35, 37, 38, 40, 41, 42, 44
1.12136 ± 0.15	$5^+; 0$	0^+	$\tau_m = 234 \pm 10$ ns ($\mu = +2.86 \pm 0.03$ nm) ($Q = 0.13 \pm 0.036$ b)	γ	5, 6, 9, 10, 13, 14, 21, 22, 25, 30, 31, 32, 35, 37, 40, 42, 44
1.70081 ± 0.18	$1^+; 0$	1^+	$\tau_m = 955 \pm 27$ fs	γ	6, 10, 21, 25, 34, 35, 40, 42, 43, 44
2.10061 ± 0.10	$2^-; 0$	0^-	$\tau_m = 5.1 \pm 0.5$ ps	γ	6, 10, 13, 21, 23, 25, 35, 40, 42, 44
2.52335 ± 0.18	$2^+; 0$	1^+	$\tau_m = 590 \pm 24$ fs	γ	6, 10, 21, 25, 30, 31, 40, 42
3.06184 ± 0.18	$2^+; 1$		$\tau_m < 1.2$ fs	γ	6, 21, 25, 30, 31, 35, 38, 40, 42, 43
3.13387 ± 0.15	$1^-; 0$	1^-	$\tau_m = 0.39 \pm 0.02$ ps	γ	6, 10, 21, 25, 35, 38, 40, 42
3.3582 ± 1.0	$3^+; 0$	1^+	$\tau_m = 0.44 \pm 0.03$ ps	γ	6, 10, 21, 35, 40, 42, 44
3.72419 ± 0.22	$1^+; 0$		$\tau_m = 2.7^{+4.1}_{-2.7}$ fs	γ	6, 10, 21, 23, 25, 31, 34, 35, 40, 42, 44
3.79149 ± 0.22	$3^-; 0$	1^-	$\tau_m = 1.91 \pm 0.13$ ps	γ	5, 10, 21, 23, 25, 35, 40, 42, 44
3.83917 ± 0.22	$2^+; 0$		$\tau_m = 19.0 \pm 2.7$ fs	γ	6, 10, 21, 23, 25, 30, 35, 40, 42, 44
4.11590 ± 0.25	$3^+; 0$		$\tau_m = 91 \pm 22$ fs	γ	6, 10, 21, 23, 25, 30, 31, 35, 40, 42, 44
4.2258 ± 0.7	$2^-; 0$	(1^-)	$\tau_m = 110 \pm 15$ fs	γ	6, 10, 21, 23, 35, 40, 42, 44
4.36015 ± 0.26	$1^+; 0$		$\tau_m = 27 \pm 10$ fs	γ	10, 21, 25, 34, 35, 40, 42, 44
4.3981 ± 0.7	$4^-; 0$	0^-	$\tau_m = 58 \pm 12$ fs	γ	6, 10, 13, 14, 21, 35, 40, 42, 44
4.652 ± 2	$4^+; 1$		$\tau_m < 10$ fs	γ	6, 21, 24, 30, 31, 35, 40, 42
4.753 ± 3	$0^+; 1$			γ	21, 35, 38, 40, 42, 44
4.8483 ± 0.5	$5^-; 0$	1^-	$\tau_m = 5.2 \pm 0.9$ ps	γ	5, 23
4.860 ± 2	$1^-; 0$		$\tau_m = 66 \pm 18$ fs	γ, α	6, 21, 40, 42, 44
4.9636 ± 0.8	$2^+; 1$		$\tau_m < 4$ fs	γ	6, 21, 30, 40, 42

Table 18.24 from (1995TI07): Energy levels of ^{18}F [a] (continued)

E_x (MeV ± keV)	$J^\pi; T$	K^π	τ or $\Gamma_{c.m.}$	Decay	Reactions
5.2976 ± 1.5	$4^+; 0$	1^+	$\tau_m = 30 \pm 5$ fs	γ, α	6, 9, 10, 11, 21, 40, 42
5.502 ± 2	$3^{(-)}; 0$		$\tau_m = 63 \pm 25$ fs	γ, α	6, 10, 21, 40, 42
5.60338 ± 0.27	1^+		$\Gamma = 43.3 \pm 1.6$ eV	γ, α	6, 8, 25, 40, 42, 44
5.60486 ± 0.28	$1^-; 0+1$		$\Gamma < 1.2$ keV	γ, α	6, 8, 10, 21, 25, 40, 42, 44
5.67257 ± 0.32 [d]	$1^-; 0+1$		$\Gamma < 0.8$ keV	γ, α	6, 8, 10, 21, 25, 40, 42, 44
5.786 ± 2.4	$2^-; 0$		$\tau_m = 15 \pm 10$ fs	γ, α	6, 21, 40, 42, 44
6.0964 ± 1.1	$4^-; 0$	1^-	$\Gamma = 0.24 \pm 0.03$ keV	γ, p, α	6, 10, 21, 25, 29, 40, 42, 44
6.108 ± 3	$(1^+); 0$		$\Gamma = 0.034 \pm 0.003$ keV	γ, p, α	6, 8, 21, 23, 29, 42, 44
6.13647 ± 0.33	$0^+; 1$		$\Gamma \leq 1$ keV	γ, p	21, 25, 27, 42, 44
6.1632 ± 0.9	$3^+; 1$		$\Gamma = 14 \pm 0.5$ keV	γ, p, α	21, 25, 27, 42, 44
6.2404 ± 0.8	$3^-; 0+1$		$\Gamma = 0.19 \pm 0.03$ keV	γ, p, α	6, 21, 25, 27, 29, 42
6.242 ± 3	$3^-; 0+1$		$\Gamma = 0.18 \pm 0.04$ keV	γ, p, α	6, 8, 21, 25, 29, 42
6.262 ± 2.5	$1^+; 0$		$\Gamma = 0.60 \pm 0.12$ keV	γ, p, α	6, 8, 10, 21, 29, 34, 42
6.2832 ± 0.9	$2^+; 1$		$\Gamma = 10.0 \pm 0.5$ keV	γ, p, α	21, 25, 27, 29
6.3105 ± 0.8	$3^+; 0$		$\Gamma = 0.95 \pm 0.14$ keV	γ, p, α	6, 21, 25, 27, 29, 44
6.3855 ± 1.7	$2^+; 0+1$		$\Gamma = 0.49 \pm 0.09$ keV	γ, p, α	6, 21, 25, 29, 42
6.4849 ± 1.5	$3^+; 0$		$\Gamma = 0.40 \pm 0.10$ keV	γ, p, α	6, 21, 25, 29, 42, 44
6.5670 ± 1.5	$5^+; 0$	1^+	$\Gamma = 0.56 \pm 0.13$ keV	γ, p, α	6, 8, 9, 10, 11, 21, 29, 42
6.633 ± 10	1		$\Gamma = 80 \pm 2$ keV	p, α	29, 42
6.6437 ± 0.8	$2^-; 1$		$\Gamma = 0.60 \pm 0.07$ keV	γ, p, α	6, 7, 21, 25, 29
6.647 ± 4	1^-		$\Gamma = 91 \pm 4$ keV	p, α	8, 10, 29
6.777 ± 1.4	$4^+; 0$		$\Gamma = 9.2 \pm 1.0$ keV	γ, p, α	21, 25, 27, 29, 42
6.8031 ± 1.5	$1^+, 2, 3^+; 0$		$\Gamma \leq 2$ keV	γ, p	10, 21, 25, 27, 42
6.809 ± 5	2^-		$\Gamma = 88 \pm 2$ keV	p, α	7, 8, 29
6.811	(2^+)		$\Gamma = 3.0 \pm 0.5$ keV	p, α	29
6.857 ± 10	(3^-)		$\Gamma = 5.0 \pm 1.0$ keV	p, α	29, 42
6.8774 ± 1.7	$3, 4^-; 0$		$\Gamma \leq 2$ keV	γ, p, α	21, 25, 29
7.201 ± 2	$(4^+); 0$		$\Gamma = 6.5$ keV	p, α	8, 20, 42
7.247 ± 2	$(1^+); 0$		$\Gamma = 46.5$ keV	p, α	8, 29
7.291 ± 2	3^-		$\Gamma = 38$ keV	p, α	7, 8, 27, 29
7.315 ± 4	$(3^-; 0)$		$\Gamma = 52$ keV	p, α	29, 40
7.336 ± 2	$1^-; 1$		$\Gamma = 16 \pm 2$ keV	γ, p	25, 27
7.406 ± 2	1^+		$\Gamma = 14.6 \pm 1.4$ keV	p	27
7.447 ± 10			$\Gamma = 140$ keV	p, α	29, 31
7.454 ± 2	1^-		$\Gamma = 6$ keV	p	27
7.478 ± 2	(2)		$\Gamma = 12 \pm 3$ keV	γ, p, α	25, 27, 29
(7.485 ± 2)	(1^-)		$\Gamma = 32$ keV	p	27

Table 18.24 from (1995TI07): Energy levels of ^{18}F [a] (continued)

E_x (MeV ± keV)	$J^\pi; T$	K^π	τ or $\Gamma_{c.m.}$	Decay	Reactions
7.506 ± 2	4^-		$\Gamma = 12 \pm 2$ keV	p, α	27, 29
7.513 ± 2			$\Gamma < 4$ keV	γ, p	25
7.528 ± 2	$2^-; 1$		$\Gamma = 16.5 \pm 3.0$ keV	γ, p, α	25, 27, 29
7.532 ± 5			$\Gamma = 75$ keV	p, α	27, 29
7.555 ± 2	(1^-)		$\Gamma = 30$ keV	p	27
7.584 ± 2			$\Gamma = 9 \pm 2$ keV	γ, p, α	25, 27, 29
7.685 ± 2	$3^+, 4^+$		$\Gamma = 36 \pm 4$ keV	p, α	27, 29
7.729 ± 4	≥ 1		$\Gamma = 66 \pm 5$ keV	p, α	27, 29
7.763 ± 4			$\Gamma = 70$ keV	p	27
7.878 ± 3	≥ 2		$\Gamma = 20$ keV	p, α	27, 29
7.899 ± 2	(2^-)		$\Gamma = 38$ keV	p, α	7, 8, 29
7.941 ± 12	(1^+)		$\Gamma = 112$ keV	p, α	7, 8, 29
8.064 ± 6	≥ 4		$\Gamma = 60$ keV	p, α	27, 29
8.115 ± 8			$\Gamma = 96$ keV	p	27
8.209 ± 2	2^-		$\Gamma = 52$ keV	p, α	27, 29
8.238 ± 2	4^+		$\Gamma = 20$ keV	p	27
9.02	$(5^-; 1)$				31
9.207 ± 15 [b]	$3, 4^-; 0$			p, d, α	16, 17, 18
9.50	$2, 3^+; 0$			n, d, α	16, 18
9.58 ± 20 [c]	6^+	1^+		d, α	9, 10, 11, 22, 31
10.58 ± 50					11
11.22 ± 30	7^+	1^+		d, α	9, 10, 11
12.75	$(6^-; 1)$				31
13.83	$4^-, 5^+$		$\Gamma = 60$ keV	d, α	18
14.02	$4^-, 5^+$		$\Gamma = 60$ keV	d, α	18
14.10	$4^-, 5^+$		$\Gamma = 60$ keV	d, α	18
14.18 ± 40	(8^+)	(1^+)		d, α	9, 10, 11
14.65	(7^+)				31
15.09	$4^-, 5^+$			d, α	18
15.34	$5^+, 6^-$			d, α	18
15.79 ± 100	$(6^-; 1)$				11, 31
16.07	$4^-, 5^+$		$\Gamma = 220$ keV	d, α	18
16.72	$4^-, 5^+$		$\Gamma = 60$ keV	d, α	18
17.43	$4^-, 5^+, 6^-$		$\Gamma = 70$ keV	d, α	18
18.62 ± 120					11
(19.00 ± 150)			$\Gamma = (500 \pm 150)$ keV	γ, ^{3}He	12
20.1 ± 200	$(2^-; 1)$		$\Gamma = 1600 \pm 100$ keV	γ, ^{3}He	12

Table 18.24 from (1995TI07): Energy levels of ^{18}F [a] (continued)

E_x (MeV ± keV)	$J^\pi; T$	K^π	τ or $\Gamma_{c.m.}$	Decay	Reactions
22.7 ± 200	$(2^-; 1)$		$\Gamma = 1200 \pm 100$ keV	γ, ^{3}He	12
(24.1 ± 200)			$\Gamma = (1400 \pm 300)$ keV	γ, ^{3}He	12

[a] See also Table 18.25 for radiative transitions and 18.26 for τ_m.

[b] Uncertainty estimated by evaluators.

[c] For other states with $E_x < 9.6$ MeV see footnote [e] in Table 18.17 of (1978AJ03) and Table 18.27 here. For other states with $10.0 < E_x < 19.6$ MeV see Table 18.27 here, and Tables 18.14 and 18.16 in (1978AJ03). These two tables in (1978AJ03) display the states deduced from the yields of the isospin-forbidden α_1 groups in ^{14}N + α and ^{16}O + d, respectively. (1976CH24) reports 151 isospin-mixed natural-parity states with $10.4 < E_x < 17.5$ MeV [^{14}N(α, α_1)] and (1973JO13) reports 138 such states with $9.2 < E_x < 19.4$ MeV [^{16}O(d, α_1)] of which 16 have $E_x > 17.5$ MeV. In the region $10.4 < E_x < 20.8$ MeV some 167 states with mixed isospin and natural parity have been reported. See also reaction 29.

[d] (1989BO01).