

Table 19.10 from (1987AJ02): Resonances in $^{15}\text{N}(\alpha, \gamma)^{19}\text{F}$ ^a

E_α (MeV \pm keV)	$\Gamma_{\text{c.m.}}$ (keV)	$\omega\gamma$ (eV)	J^π	E_x (MeV \pm keV)
0.85	$(42.8 \pm 8.5) \times 10^{-6}$ ^b	$(6.0 \pm 1.0) \times 10^{-3}$	$\frac{5}{2}^-$	4.681 ± 1
1.385 \pm 3		$(13 \pm 8) \times 10^{-3}$ ^c	$\frac{5}{2}^+$	5.105 ± 2
1.678 \pm 3	i	1.64 ± 0.16	$\frac{1}{2}^{(+)}$	5.337 ± 2
1.790		0.42 ± 0.09 ^c	$\frac{7}{2}^-$	5.427
1.839 \pm 2	< 1	2.5 ± 0.4 ^c	$\frac{7}{2}^+$	5.465
1.883 \pm 3	4 ± 1	4.2 ± 1.1 ^c	$\frac{3}{2}^+$	5.500
1.930		0.48 ± 0.11 ^c	$\frac{5}{2}^+$	5.54
2.035 \pm 4		0.37 ± 0.09	$\frac{3}{2}^-$	5.620
2.441 \pm 4		0.53 ± 0.13	$\frac{1}{2}^+$	5.938 ± 3
2.608 \pm 2		2.70 ± 0.54	$\frac{7}{2}^+$	6.070 ± 1
2.631 \pm 4		4.50 ± 0.90	$\frac{3}{2}^-$	6.088 ± 3
2.722 \pm 2		2.40 ± 0.60	$\frac{7}{2}^-$	6.160 ± 1
2.873 \pm 3		1.0 ± 0.2	$\frac{5}{2}^+$	6.282 ± 2
2.935 \pm 3		0.76 ± 0.15	$\frac{7}{2}^+$	6.330 ± 2
3.1468 \pm 1.5		1.7 ± 0.3	$\frac{3}{2}^+$	6.4976 ± 1.5
3.1498 \pm 1.5		2.3 ± 0.4	$\frac{11}{2}^+$	6.5000 ± 1.5
3.183 \pm 2		2.4 ± 0.4	$\frac{3}{2}^+$	6.526 ± 2
3.218 \pm 2		0.63 ± 0.13	$\frac{7}{2}^-$	6.554 ± 2
3.267 \pm 2		1.6 ± 0.3	$\frac{9}{2}^+$	6.592 ± 2
3.511 \pm 3		10.9 ± 1.5	$\frac{3}{2}^-$	6.785 ± 2
3.576 \pm 3		1.0 ± 0.2	$\frac{5}{2}^-$	6.836 ± 2
3.645 \pm 5		6.1 ± 1.3	$\frac{3}{2}^-$	6.891 ± 4
3.688 \pm 3		9.7 ± 1.4	$\frac{7}{2}^-$	6.925 ± 2
3.993 \pm 2		1.00 ± 0.12 ^j	$\frac{11}{2}^-$	7.1662 ± 0.7
4.465		17.0 ± 2.7	$\frac{5}{2}^+; T = \frac{3}{2}$	7.538 ± 2
4.618		3.7 ± 0.9	$\frac{3}{2}^+; T = \frac{3}{2}$	7.659 ± 2
4.96 \pm 3		2.3 ± 0.4	$\frac{7}{2}^+, \frac{9}{2}$	7.929
4.97 \pm 3		3.1 ± 0.5	$\frac{11}{2}^+$	7.937
5.413 \pm 5	< 1	0.53 ± 0.08	$\frac{13}{2}^-$	8.288 ± 2
5.438 ^e	< 1	2.1 ± 0.5 ^d	$\frac{5}{2}^+$	8.306 ± 4
5.519 ^e	7.5 ± 1.5	0.54 ± 0.2	$\frac{7}{2}, \frac{5}{2}^+$	8.370 ± 4

Table 19.10 from (1987AJ02): Resonances in $^{15}\text{N}(\alpha, \gamma)^{19}\text{F}$ ^a (continued)

E_α (MeV \pm keV)	$\Gamma_{\text{c.m.}}$ (keV)	$\omega\gamma$ (eV)	J^π	E_x (MeV \pm keV)
5.784	≈ 1	5.1 ± 1.3	$\frac{5}{2}$	8.579 ± 4
5.794		1.6 ± 0.35 ^f	$\frac{3}{2}$	8.587 ± 3
5.847 ^e	< 1	2.5 ± 0.4	$\frac{7}{2}^-$	8.629 ± 4
6.145	< 1	0.2 ± 0.05	$< \frac{9}{2}$	8.864 ± 4
6.259 ^e	≈ 1	0.85 ± 0.2	$\frac{11}{2}^-, (\frac{9}{2}^+)$	8.953 ± 3
6.356	4.2 ± 1	0.53 ± 0.26	$\frac{5}{2}, \frac{7}{2}$	9.030 ± 5
6.442		0.48 ± 0.15 ^g	$\frac{7}{2}^+$	9.098 ± 4
6.445	≈ 1	0.40 ± 0.1	$\frac{7}{2}, \frac{9}{2}$	9.101 ± 4
6.526	9.9 ± 1.5	1.4 ± 1	$\frac{1}{2}, \frac{3}{2}$	9.165 ± 5
6.576	10.2 ± 1.5	1.5	$\frac{3}{2}$	9.204 ± 7
6.656	2 ± 1	0.15 ± 0.04	$\frac{11}{2}^+, \frac{9}{2}^+$	9.267 ± 4
6.672	< 1.5	0.38 ± 0.09	$\frac{7}{2}, \frac{9}{2}$	9.280 ± 5
6.723 ^e	3.4 ± 1	3.4 ± 1.7	$\frac{1}{2}^+$	9.320 ± 4
6.735	≈ 6		$< \frac{5}{2}$	9.329 ± 4
6.963	< 1	0.7 ± 0.2	$\frac{5}{2}^+, \frac{7}{2}^+$	9.509 ± 4
6.993	6.3 ± 1.5	0.5	$\frac{3}{2} \rightarrow \frac{7}{2}$	9.533 ± 6
7.057	9.6 ± 1.5	5.2 ± 3	$\frac{7}{2}$	9.584 ± 4
7.131	≈ 8	≈ 1	$\frac{3}{2}, \frac{5}{2}$	9.642 ± 6
7.146	≈ 6	≈ 2	$\frac{3}{2}, \frac{5}{2}$	9.654 ± 6
7.179	≈ 4	≈ 1	$\frac{1}{2}, \frac{3}{2}$	9.680 ± 6
7.217	< 1	4 ± 0.7	$\frac{9}{2}^+, \frac{11}{2}$	9.710 ± 4
7.349	< 1.5	3.5 ± 0.8 ^h	$\frac{5}{2}^+$	9.814 ± 4
7.375 ^e	< 1	0.51 ± 0.1	$\frac{11}{2} \rightarrow \frac{15}{2}$	9.834 ± 3
7.422	≈ 1.5	3.6 ± 0.6	$\frac{9}{2}^+, \frac{11}{2}^-$	9.872 ± 3
7.491	≈ 1	19.3 ± 3.0	$\frac{9}{2}^+$	9.926 ± 3
7.696	< 1.5	2.37 ± 0.5	$\frac{5}{2}, \frac{7}{2}$	10.088 ± 5
7.749	3.2 ± 1	1.3 ± 0.4	$\frac{3}{2}, \frac{5}{2}$	10.130 ± 6
8.047	3 ± 1.5	0.9 ± 0.4	$\frac{7}{2} \rightarrow \frac{11}{2}$	10.365 ± 4
8.105	< 1.5	15.0 ± 3.0	$\frac{11}{2}^+, \frac{13}{2}^+$	10.411 ± 3

^a For references see [Tables 19.8 in \(1978AJ03\)](#) and [19.9 in \(1983AJ01\)](#). For branching ratios see [Table 19.7](#) here. $\omega\gamma \equiv (\Gamma_\alpha\Gamma_\gamma/\Gamma)\frac{1}{2}(2J+1)$. Preliminary results by [\(1987MAZV\)](#) for $^{19}\text{F}^*(4.550, 4.556 [J^\pi = \frac{5}{2}^+, \frac{3}{2}^-])$ are $\omega\gamma = (9.7 \pm 2.0) \times 10^{-5}$ eV [$\Gamma_\alpha = (3.2 \pm 0.7) \times 10^{-5}$ eV] and $\omega\gamma < 1 \times 10^{-5}$ eV [$\Gamma_\alpha < 5 \times 10^{-6}$ eV], respectively.

^b $\Gamma_\alpha = 2.1 \pm 0.7$ meV, $\Gamma_\gamma = 40.7 \pm 8.1$ meV.

^c See also [Table 19.7 in \(1972AJ02\)](#).

^d $\omega\gamma$ (55°) for this value and all values below.

^e Value recalculated by reviewer from E_x .

^f $\Gamma_\alpha/\Gamma_p = 0.026 \pm 0.008$.

^g $\Gamma_\alpha/\Gamma_p = 0.1 \pm 0.04$. Using $\Gamma = 0.57 \pm 0.03$ keV ([Table 19.18](#)), $\Gamma_\alpha = 0.052 \pm 0.03$, $\Gamma_p = 0.52 \pm 0.03$ keV.

^h $\Gamma_\alpha/\Gamma_p = 0.55 \pm 0.16$.

ⁱ See [\(1982KR05\)](#).

^j See also [\(1985DI16\)](#).