

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

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

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

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

<sup>a</sup> 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.

<sup>b</sup>  $\Gamma_\alpha = 2.1 \pm 0.7$  meV,  $\Gamma_\gamma = 40.7 \pm 8.1$  meV.

<sup>c</sup> See also [Table 19.7 in \(1972AJ02\)](#).

<sup>d</sup>  $\omega\gamma$  ( $55^\circ$ ) for this value and all values below.

<sup>e</sup> Value recalculated by reviewer from  $E_x$ .

<sup>f</sup>  $\Gamma_\alpha/\Gamma_p = 0.026 \pm 0.008$ .

<sup>g</sup>  $\Gamma_\alpha/\Gamma_p = 0.1 \pm 0.04$ . 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.

<sup>h</sup>  $\Gamma_\alpha/\Gamma_p = 0.55 \pm 0.16$ .

<sup>i</sup> See [\(1982KR05\)](#).

<sup>j</sup> See also [\(1985DI16\)](#).