

Table 18.5 from (1978AJ03): Resonances in  $^{14}\text{C}(\alpha, \gamma)^{18}\text{O}$ ,  $^{14}\text{C}(\alpha, n)^{17}\text{O}$  and  $^{14}\text{C}(\alpha, \alpha)^{14}\text{C}$

$E_\alpha$ (MeV $\pm$ keV)	$\Gamma_{\text{lab}}$ (keV)	Particles out <sup>a</sup>	$^{18}\text{O}^*$ (MeV)	$J^\pi$	Refs.
1.140 $\pm$ 2		$\gamma$	7.114	4 <sup>+</sup>	(1959GO74, 1966LE1B, 1967LE02)
1.790 $\pm$ 2	< 3	$\gamma$	7.620	1 <sup>-</sup>	(1958PH37, 1959GO74, 1966LE1B, 1967LE02)
2.330 $\pm$ 2	< 3	$\gamma, \alpha_0$	8.040	1 <sup>-</sup>	(1958PH37, 1958WE29, 1966LE1B, 1967LE02)
2.440 $\pm$ 12		$\gamma$	8.125	5 <sup>-</sup>	(1966LE1B, 1967LE02)
2.554 $\pm$ 4	1.3 $\pm$ 1	n, $\alpha_0$	8.214	2 <sup>+</sup>	(1956SA06, 1958WE29, 1966BA03)
2.643 $\pm$ 3	10 $\pm$ 1	n, $\alpha_0$	8.283	3 <sup>-</sup>	(1956SA06, 1958WE29, 1966BA03)
2.800 $\pm$ 7	10 $\pm$ 7	n	8.405		(1956SA06, 1966BA03)
3.330 $\pm$ 12	90 $\pm$ 15	n, $\alpha_0$	8.817		(1956SA06, 1958WE29, 1966BA03)
3.508 $\pm$ 4	55 $\pm$ 3	n, $\alpha_0$	8.956 <sup>g</sup>		(1956SA06, 1958WE29, 1966BA03)
4.030 $\pm$ 15	35 $\pm$ 20	n, ( $\alpha_0$ )	9.362		(1966BA03, 1970MO13)
4.07 $\pm$ 40	$\approx$ 150	n, ( $\alpha_0$ )	9.39		(1966BA03, 1970MO13)
4.17 $\pm$ 40	$\approx$ 70	n, ( $\alpha_0$ )	9.47		(1966BA03, 1970MO13)
4.434 $\pm$ 10	80 $\pm$ 40	n, ( $\alpha_0$ )	9.676		(1966BA03, 1970MO13)
4.70 $\pm$ 40	$\approx$ 200	n, ( $\alpha_0$ )	9.88		(1966BA03, 1970MO13)
5.004 $\pm$ 10	21 $\pm$ 5	n, $\alpha_0$	10.119	3 <sup>-</sup>	(1966BA03, 1970MO13)
5.23 <sup>f</sup>	b	n, $\alpha_0$	10.29	4 <sup>+</sup>	(1970MO13)
5.34	b	n, $\alpha_0$	10.38	3 <sup>-</sup>	(1970MO13)
5.60	c	n, $\alpha_0$	10.58		(1970MO13)
5.90	d	n, $\alpha_0$	10.82		(1970MO13)
6.02	d	n, $\alpha_0$	10.91		(1970MO13)
6.13	d	n, $\alpha_0$	10.99		(1970MO13)
6.30	c	n, $\alpha_0$	11.13		(1970MO13)
6.64	b	n, $\alpha_0$	11.39	(2 <sup>+</sup> )	(1970MO13)
6.67	b	n, $\alpha_0$	11.41	(4 <sup>+</sup> )	(1970MO13)
6.93	b	n, $\alpha_0$	11.62	5 <sup>-</sup>	(1970MO13)
7.03	b	n, $\alpha_0$	11.69	6 <sup>+</sup>	(1970MO13)
7.19	d	n, $\alpha_0$	11.82	(3 <sup>-</sup> )	(1970MO13)
7.47	d	n, $\alpha_0$	12.04	(2 <sup>+</sup> )	(1970MO13)
7.75	c	n, $\alpha_0$	12.25	(0 <sup>+</sup> , 1 <sup>-</sup> )	(1970MO13)
7.85	b	n, $\alpha_0$	12.33	5 <sup>-</sup>	(1970MO13)
8.06	b	n, $\alpha_0$	12.50	4 <sup>+</sup>	(1970MO13)
8.10	b	n, $\alpha_0$	12.53	6 <sup>+</sup>	(1970MO13)

<sup>a</sup> For the first four states, see also [Table 18.3](#).

<sup>b</sup>  $\Gamma_\alpha$ , large;  $\Gamma_n$ , large.

<sup>c</sup>  $\Gamma_\alpha$ , small;  $\Gamma_n$ , small.

<sup>d</sup>  $\Gamma_\alpha$ , small;  $\Gamma_n$ , large.

<sup>e</sup>  $\Gamma_\alpha$ , large;  $\Gamma_n$ , small.

<sup>f</sup>  $\pm 10 - 20$  keV for this and all higher resonances (G.E. Mitchell, private communication).

<sup>g</sup> Two states with  $E_x = 9.0$  to  $9.2$  MeV and  $J^\pi = (2^+, 3^-)$  or  $(4^+, 3^-)$  are reported by [\(1958WE29\)](#).