

Table 13.8 from (1976AJ04): Resonances in ${}^9\text{Be}(\alpha, n){}^{12}\text{C}$

E_α^a (MeV)	E_α^b (MeV)	E_α^c (MeV)	Γ_{cm} (keV)	J^π	${}^{13}\text{C}^*{}^d$ (MeV)	Refs.
0.52	0.52		$\approx 55^e$	$(\frac{1}{2}^+)$	11.01	(1956JA28, 1968DA05)
0.60	0.60		$< 4^e$		11.06	(1968DA05)
1.9	1.905	1.92	130	$(\frac{7}{2}^-)$	11.97	(1953TA06, 1954BE08, 1955TA28, 1956BO61, 1956JA28, 1965GI02, 1970VA23)
2.24		2.25	280		12.20	(1956BO61, 1965GI02)
2.58	2.6	2.58	≈ 200	$(\frac{1}{2}^-)$	12.43	(1953TA06, 1956BO61, 1956JA28, 1965GI02, 1965GR22)
4.00	3.98	4.00	35 ± 3^g		13.41	(1956BO61, 1959GI47, 1963SE04, 1965GI02, 1965GR22, 1972OB01)
4.18			570	$(\frac{3}{2}^+)$	13.54	(1957RI38, 1965GR22, 1973DE14)
4.50	4.47	4.50	≈ 350	$(\frac{5}{2}^+)$	13.76	(1956BO61, 1959GI47, 1963SE04, 1965GI02, 1965GR22, 1973DE14)
5.0	5.02	5.0	≈ 200		14.12	(1956BO61, 1963SE04, 1965GI02)
5.40 ± 0.10	5.3^f		260	$(\frac{1}{2}^-, \frac{5}{2}^-)$	14.39 ± 0.1	(1963SE04, 1965GR22, 1966MI12, 1973DE14)
	5.75	5.75	210		14.63	(1959GI47, 1963SE04, 1965GI02, 1965GR22, 1966MI12)
6.20 ± 0.05			380	$(\frac{3}{2}^+)$	14.94 ± 0.05	(1965GR22, 1966MI12, 1973DE14)
		(6.7)	broad		(15.29)	(1965GI02)
7.10 ± 0.05	7.00		220		15.56 ± 0.05	(1963SE04, 1965GR22, 1966MI12)
	7.75	7.8	210		16.01	(1959GI47, 1963SE04, 1965GI02, 1965GR22)
7.95 ± 0.05			230		16.15 ± 0.05	(1965GR22, 1966MI12)
9.10 ± 0.05		9.1	330		16.95 ± 0.05	(1965GI02, 1965GR22, 1966MI12)
9.7 ± 0.10	9.70		190		17.36 ± 0.1	(1965GR22, 1966MI12)
10.2 ± 0.05			170		17.71 ± 0.05	(1965GR22, 1966MI12)
(10.60)			40		(17.99)	(1965GR22)
11.05 ± 0.05			300		18.30 ± 0.05	(1965GR22, 1966MI12)
11.70 ± 0.03	11.60		70		18.75 ± 0.03	(1965GR22, 1966MI12)

- ^a Resonances in neutron yield.
- ^b Resonances in n_1 group and for 4.4 MeV γ -rays.
- ^c Resonances in total cross section.
- ^d Not corrected for effects of Coulomb barrier penetration.
- ^e $\omega\gamma = 3.79$ and 0.88 eV, respectively ([1968DA05](#)).
- ^f ([1973DE14](#)) suggest the possibility that $^{13}\text{C}^*(14.4)$ is composed of two states with the same J^π .
- ^g J.L. Weil, private communication.