

Table 12.9 from (1968AJ02): ^{12}C states from $^{10}\text{B}(^3\text{He}, \text{p})^{12}\text{C}$

E_x^a (MeV \pm keV)	Γ (keV)	Γ_γ/Γ	Gamma branching to		Alpha decay ^c to		Parity ^{c,g}	$J^\pi; T$
			$^{12}\text{C}_{\text{g.s.}}$	$^{12}\text{C}^*(4.43)$	$^8\text{Be}_{\text{g.s.}}$	$^8\text{Be}^*(2.9)$		
4.43								
7.655 \pm 6		$3 \times 10^{-4}^d$			yes		natural	0^+
9.645 \pm 6	36 ± 6^b				yes		natural	
10.849 \pm 25	320 ± 30^b				strong	no	natural	
11.841 \pm 25	245 ± 30^b				no	yes	unnatural	
12.713 \pm 6		0.025 ± 0.01		0.20 ± 0.07^f	no	yes	unnatural	1^+
13.29 \pm 30	430 ± 100^b				no	yes	unnatural	$\geq 1^c$
	290 ± 70^c							
14.083 \pm 15	252 ± 15^b				yes	yes	natural	$(2^-)^c$
	320 ± 50^c							
15.108 \pm 6		$> 0.95^g$	0.97^e	$0.034 \pm 0.005^{e,f}$	$(\Gamma_\alpha/\Gamma < 0.05)^g$			$1^+; 1$
16.108 \pm 6					weak	strong	natural	(2^-)
16.57					yes	yes	natural	
≈ 20.6	≈ 200							
≈ 24.5	≈ 50							

^a (1962BR10): excitation energies based on $Q_0 = 19.693$ MeV and $\text{Po } \alpha = 5.3056$ MeV; see also (1958MO99, 1959AL96, 1967CO1F).

^b (1962BR10).

^c (1966WA16).

^d (1961AL23): the cascade decay (via 4.44) is $(3.3 \pm 0.9) \times 10^{-4}$ of the total decay. This is 50 times stronger than the direct g.s. decay (via pairs). $\Gamma_{\text{rad}}/\Gamma = (3.5 \pm 1.2) \times 10^{-4}$ (1964HA23); see Table 12.8.

^e (1959AL96).

^f (1960AL14).

^g (1965AL1B).