

Table 14.15 from (1976AJ04): Resonances in $^{12}\text{C} + \text{d}$

E_d (MeV \pm keV)	$\Gamma_{\text{c.m.}}$ (keV)	Particles out	$^{14}\text{N}^*$ ^a (MeV)	$J\pi; T$	Refs. ^b
0.92	95	n, p ₀ , p ₁	11.06	1 ⁺ ; 0	A, (1972SE09, 1975SE07)
1.13		p ₀ , p ₁	11.24	; 1	A
1.19	190	n, p ₀ , p ₁ , d	11.29	2 ⁻ ; 0	A, (1972SE09, 1975SE07)
1.23		p ₀	11.33	(3 ⁺)	(1969BO32)
1.30	30	n, p ₀ , p ₁ , d	11.39	1 ⁺ ; 0	A
1.39		p ₀	11.46	(2 ⁻)	(1969BO32)
1.4495 \pm 1.5	7.0 \pm 0.5	p ₀ , p ₁ , d	11.5136	2 ⁺ , 3 ⁺	A, (1970AL26, 1973TR02, 1975TR07)
1.55		p ₀	11.60	(2 ⁻)	(1969BO32)
1.640 \pm 20	150 \pm 20	n, p ₁	11.68	1 ⁻ , 2 ⁻	(1969BO32, 1969JA06, 1975TR07)
1.715 \pm 6	40 \pm 9	p ₂	11.741	1 ⁻ , 2 ⁻	(1975TR07)
1.738 \pm 6	78 \pm 6	p ₁	11.761	3 ⁻ , 4 ⁻ , (2 ⁻)	(1975TR07)
1.792 \pm 7	119 \pm 9	n, p ₀ , p ₁ , p ₂ , d ₀	11.807	2 ⁻ , (1 ⁺)	A, (1970AL26, 1971ME18, 1975TR07)
1.870 \pm 6	101 \pm 9	p ₀ , p ₁ , p ₂	11.874	2 ⁻ , (1 ⁻)	(1969BO32, 1974GM01, 1975TR07)
			^c		
2.250 \pm 19	300 \pm 30	n, p ₀ \rightarrow p ₃	12.20	1 ⁻ , 2 ⁻	A, (1974GM01, 1975TR07)
2.494 \pm 3 ^d	37 \pm 4	n, p ₀ \rightarrow p ₃ , d ₀	12.408	3 ⁺ , (3 ⁻ , 4 ⁻)	A, (1971ME18, 1974DA06, 1974ST05, 1975TR07)
2.506 \pm 3	41 \pm 4	p ₁	12.418	3 ⁻ , 4 ⁻ , (2 ⁺ , 3 ⁺)	(1975TR07)
2.610 \pm 20	30 \pm 20	n, p ₁ , p ₂ , p ₃	12.507		A, (1975TR07)
2.712 \pm 3	48 \pm 2	(n), p ₀ \rightarrow p ₃ , d	12.594	3 ⁺	A, (1975TR07)
(2.817 \pm 7)	27 \pm 6	n, p ₁ , p ₂ , p ₃ , d	(12.684)		A
2.844 \pm 9	43 \pm 15	p ₂ , p ₃	12.708		(1975TR07)
2.940 \pm 10	30 \pm 10	p ₂ , p ₃ , d	12.790		A, (1975TR07)

Table 14.15 from (1976AJ04): Resonances in $^{12}\text{C} + \text{d}$ (continued)

E_d (MeV \pm keV)	$\Gamma_{\text{c.m.}}$ (keV)	Particles out	$^{14}\text{N}^* \text{ }^a$ (MeV)	$J^\pi; T$	Refs. b
2.967 ± 5	37 ± 6	p_1	12.813		(1975TR07)
2.982 ± 6	11 ± 3	n, p_3, d	12.826		A
3.018 ± 6	78 ± 10	n, p_0, p_1	12.857		A, (1975TR07)
3.049 ± 8	134 ± 11	p_1	12.883		(1975TR07)
3.100 ± 10	20 ± 14	p_1, p_2, p_3, d	12.927	$(3^-, 4^-)$	A, (1975TR07)
3.39 ± 12	47 ± 15	n, p_2, p_3, d	13.17	$(0^-, 1^-)$	A
3.97 ± 30	< 200	$p_0, p_2, p_3, (d)$	13.67	$(2^+, 3^+)$	A
4.02^{+20}_{-10}	≈ 235	$n, (p), d$	13.71	(1^+)	A
4.40		$p_0 \rightarrow p_3, d$	14.04		A
4.55		n, p_2, d	14.17		A
4.80		p_0, p_2, d	14.38		A
5.17		d	14.70		A
5.34	≈ 100	$p_0 \rightarrow p_3, d, \alpha$	14.84		A
5.65		d	15.11		A
5.83		p_1, p_3, d	15.26		A
6.07		p_1, p_2, α	15.47		A
6.3		p_0, p_3, d, α	15.7		A
7.2		α	16.4		A
7.6^e	≈ 300	α_2	16.8	4^+ ^f	(1972SM07) e
7.8	≈ 100	α_2	16.9	(5^-)	(1972SM07)
8.1	≈ 300	p_0, p_2, d, α_2	17.2	4^+	A, (1972SM07)
9.1	(≈ 300)	α_2	18.1	$(1^-, 2^+)$	(1972SM07)

Table 14.15 from (1976AJ04): Resonances in $^{12}\text{C} + \text{d}$ (continued)

E_d (MeV \pm keV)	$\Gamma_{\text{c.m.}}$ (keV)	Particles out	$^{14}\text{N}^*$ ^a (MeV)	$J^\pi; T$	Refs. ^b
9.2	≈ 600	α_2	18.1	4^+	(1972SM07)
9.3	(≈ 400)	α_2	18.2	3^-	(1972SM07)
9.5	(≈ 300)	α_2	18.4	3^-	(1972SM07)
9.61	≈ 60	α_2	18.50	5^-	(1972SM07)
10.0 ^g	(≈ 400)	α_2	18.8	4^+	(1972SM07)
11.5	(≈ 500)	α_2, α_3	20.1	1^-	(1972SM07)
12.3	≈ 600	α_2	20.8	5^-	(1972SM07)
12.3	(≈ 500)	α_2	20.8	($3^-, 4^+$)	(1972SM07)
12.9	(≈ 1000)	α_2	21.3	4^+	A, (1972SM07)
13.1	(≈ 500)	α_2	21.5	3^-	(1972SM07)
13.4	≈ 200	α_2	21.7	5^-	(1972SM07)
14.29 ± 100	610 ± 100	α_2	22.5	5^- ^h	(1974JO01) ⁱ
15.28 ± 100	500 ± 100	α_2	23.3	5^- ^h	(1974JO01)

A: See references quoted for this state in (1970AJ04).

^a (1963JE02) report 39 excited states of ^{14}N with $11.2 < E_x < 14.2$ MeV.

^b See also (1959AJ76, 1970AJ04).

^c (1974GM01) also report a state at 12.05 MeV with $\Gamma = 190$ keV in the p_0 yield.

^d A study of this resonance shows that either f-shell components are present in the wave function or that the coupling is very strong or that both effects are present (1974DA06).

^e For all states reported by (1972SM07) see their discussion of the S -matrix analysis of their α_2 data: the resonances shown below correspond to one possible (albeit the most reasonable) solution. The α_2 channel is sensitive only to ^{14}N states that have natural parity and are isospin mixed.

^f These, and all the states shown below, are isospin mixed. (1972SM07) notes that the average spacing of these states, as observed via the α_2 channel, $D \approx 400$ keV, as is the average width of the states, so $\Gamma \approx D$.

^g See also Table 14.10 in (1970AJ04) for states reported at $^{14}\text{N}^*(17.2, 19.6, 20.4)$ by (1963OH02, 1965BA06, 1968KL06, 1969CO02).

^h These states appear to be an isospin mixed pair with $\langle H_c \rangle \geq 40$ keV (1974JO01).

ⁱ See also (1968JA09).