

Table 13.6 from (1991AJ01): Parameters of the first $T = \frac{3}{2}$ states in ^{13}C and ^{13}N ^a

	$^{13}\text{C}^*(15.11)$	$^{13}\text{N}^*(15.06)$
E_x (MeV)	15.1082 ± 0.0012	15.06457 ± 0.0004
J^π	$\frac{3}{2}^-$	$\frac{3}{2}^-$
$\Gamma_{\text{c.m.}}$ (keV)	5.49 ± 0.25	0.932 ± 0.028
Γ_{γ_0} (eV)	22.4 ± 1.5 (M1), 0.6 ± 0.1 (E2)	24.2 ± 1.5 (M1) ^e , 0.32 ± 0.12 (E2) ^f
Γ_{γ_1} (eV)	4.12 ± 0.74	$\leq 2.82 \pm 0.30$ ^g
$\Gamma_{\gamma_{2+3}}$ (eV)	18.2 ± 2.4	19.6 ± 1.4 ^h
Γ_{γ_0}/Γ (%)	0.396 ± 0.030 b	
$\Gamma_{p_0}\Gamma_{\gamma_0}/\Gamma$ (eV)		5.79 ± 0.20
$\Gamma_{\gamma_0}/\Gamma_{p_0}$ (%)		12.1 ± 1.1
Γ_{n_0} or Γ_{p_0} (keV) ^c	0.38 ± 0.10	0.228 ± 0.016 ⁱ
Γ_{n_1} or Γ_{p_1} (keV) ^c	1.43 ± 0.18	0.140 ± 0.014 ⁱ
Γ_{n_2} or Γ_{p_2} (keV) ^c	0.14 ± 0.10	0.049 ± 0.015 ⁱ
Γ_{p_3} (keV) ^c		0.089 ± 0.014 ⁱ
Γ_{p_5} (keV) ^c		0.15 ± 0.04 ⁱ j
Γ_{α_0} (keV) ^d	0.104 ± 0.028	0.046 ± 0.026 ⁱ
Γ_{α_1} (keV) ^d		0.036 ± 0.036 ⁱ
Γ_{α_2} (keV) ^d		0.067 ± 0.042 ⁱ

^a For references see [Table 13.7 in \(1981AJ01\)](#).

^b The decay width to $^{13}\text{C}^*(7.55)$ is < 0.9 eV.

^c Widths for $^{13}\text{C}^*(15.11) \rightarrow ^{12}\text{C}_{\text{g.s.}} + n_0$ or $^{13}\text{N}^*(15.06) \rightarrow ^{12}\text{C}_{\text{g.s.}} + p_0$ (n_1, p_1, n_2, p_2 ; and p_3 and p_5 refer to the decays to $^{12}\text{C}^*(4.4, 7.7, 9.6, 10.8)$, respectively).

^d Widths for $^{13}\text{C}^*(15.11) \rightarrow ^9\text{Be}_{\text{g.s.}} + \alpha_0$ or $^{13}\text{N}^*(15.06) \rightarrow ^9\text{B}_{\text{g.s.}} + \alpha_0$ [α_1 and α_2 refer to the decays to $^9\text{B}^*((1.6), 2.4)$].

^e $\delta = -0.15 \pm 0.07$. Here $\delta = B(^{13}\text{C})/B(^{13}\text{N})-1$.

^f $\delta = 1.0 \pm 0.6$.

^g $\delta \geq 0.83 \pm 0.29$.

^h $\delta = -0.04 \pm 0.14$.

ⁱ Based on measured branching ratios and on $\Gamma_{\text{c.m.}} = 0.932 \pm 0.028$ keV. See also footnote ^d in [Table 13.18](#).

^j The decay width to $^{12}\text{C}^*(12.71)$ is < 0.13 keV. It is expected to be ≈ 0.03 keV. The sum of the branching ratios for all measured decays of $^{13}\text{N}^*(15.06)$ is $(92 \pm 8)\%$. It is apparent from the character of the decay modes of this state that 2s1d shell isospin admixtures are important.