

Table 15.20 from (1981AJ01): Resonances in  $^{12}\text{C} + ^3\text{He}$ 

$E(^3\text{He})$ (MeV $\pm$ keV)	Resonant for	$\Gamma_{\text{c.m.}}$ (keV)	$J^\pi$	$E_x$ (MeV)	Refs.
1.21	$p_0, p_2$		$(\frac{5}{2})^-$	13.04	A
1.3	$p_0 \rightarrow p_3$			13.1	A
2.15	$n, p_0$		$(> \frac{5}{2})$	13.79	A
$2.45 \pm 40$	$n_0, p_0 \rightarrow p_3$	$160 \pm 20$	$(\frac{1}{2}^-, \frac{3}{2}^-)$	14.03	A
$2.75 \pm 40$	$n_0, p_1, p_2, ^3\text{He}, \alpha_0$	$340 \pm 30$	$\frac{1}{2}^+$	14.27	A
(2.87)	$p_0, p_2$	240		(14.37)	A
$2.990 \pm 10$	$n_0, p_0, p_1, p_2, p_4, p_5, p_8, ^3\text{He}, \alpha_0$	$100 \pm 10$	$\frac{3}{2}^+, \frac{5}{2}^+$	14.465	A
$3.28 \pm 40$	$p_0, (p_1, p_2)$	$180 \pm 40$		14.70	A
$3.60 \pm 40$	$p_0, p_1, p_2$	$400 \pm 25$		14.95	A
$4.20 \pm 10$	$p_5, p_6, \alpha_0$	$65 \pm 15$		15.43	A
$4.37 \pm 40$	$p_0, p_1, p_2, p_4, p_7, p_8, \alpha_0$	$80 \pm 25$		15.57	A
$4.65 \pm 50$	$n_0$			15.79	A
$4.78 \pm 50$	$^3\text{He}, \alpha_0$	350	$\frac{1}{2}^-, \frac{3}{2}^-$	15.90	A
$4.97 \pm 20$	$\alpha_0$			16.05	A
$5.03 \pm 20$	$n_0, ^3\text{He}, \alpha_0$			16.10	A
$5.15 \pm 20$	$n_0, ^3\text{He}, \alpha_0$			16.19	A
$5.45 \pm 50$	$^3\text{He}, \alpha_0$	170	$\frac{1}{2}^+$	16.43	A
$5.85 \pm 50$	$n_0, ^3\text{He}$			16.75	A
$6.23 \pm 70$	$\gamma_0$	$700 \pm 70$	a	$17.05 \pm 0.06^b$	(1978DE33)
$6.80 \pm 50$	$n_0, ^3\text{He}, \alpha_0$	600	$\frac{1}{2}^-, \frac{3}{2}^-$	17.51	A
$7.40 \pm 50$	$^3\text{He}$	200	$\frac{1}{2}^-, \frac{3}{2}^-$	17.99	A
$7.70 \pm 50$	$n_0, p_0$			18.23	A
$8.25 \pm 70$	$\gamma_0$	$520 \pm 110$	$(\frac{1}{2}, \frac{3}{2})^+ \text{ A}$	$18.65 \pm 0.06^b$	(1978DE33)
$8.70 \pm 50$	$n_0$			19.03	A
$9.38 \pm 100$	$\gamma_0$	$780 \pm 270$	a	$19.55 \pm 0.08$	(1978DE33)
$9.80 \pm 50$	$n_0$			19.91	A
$10.45 \pm 90$	$\gamma_0, (p_0)$	$970 \pm 240$	a	$20.40 \pm 0.07$	A, (1978DE33)
$11.87 \pm 80$	$\gamma_0$	$730 \pm 120$	a	$21.61 \pm 0.07$	(1978DE33)
(17.0) <sup>c</sup>	$^3\text{He}$	$\approx 600$	$(\frac{13}{2}^-)$	(26.0)	A
(20.0) <sup>c</sup>	$^3\text{He}$	$\approx 2500$	$(\frac{9}{2}^-, \frac{11}{2}^-)$	(28.0)	A
(21.5)	$^3\text{He}$ to $^{12}\text{C}^*(15.1)$	$\approx 2500$		(29.0)	A

A: See references listed for this state in Table 15.21 (1976AJ01).

<sup>a</sup> See text.

<sup>b</sup>  $\Gamma_{^3\text{He}}/\Gamma_p = 0.17 \pm 0.07$  and  $0.09 \pm 0.04$  for  $^{15}\text{O}^*(17.04, 18.65)$ .

<sup>c</sup>  $\Gamma_p = 0.06$  and  $\geq 0.1$  MeV for  $^{15}\text{O}^*(26, 28)$  (1972MC01).