

Table 20.23 from (1998TI06): States of ^{20}Ne from $^{16}\text{O}(^6\text{Li}, \text{d})$, $^{16}\text{O}(^7\text{Li}, \text{t})$ and $^{16}\text{O}(^{12}\text{C}, ^8\text{Be})$ ^a

E_x (MeV \pm keV)			Γ_{cm} (keV)	Γ_{α_0}/Γ	S^b	J^π
$(^6\text{Li}, \text{d})$	$(^7\text{Li}, \text{t})$	$(^{12}\text{C}, ^8\text{Be})$				
0	0	0			1.00	0^+
1.63	1.63	1.63			0.41	2^+
4.25	4.25	4.25			0.22	4^+
4.97						2^-
5.62					0.06	3^-
5.79	5.79	5.79			0.54	1^-
6.73					0.56	0^+
7.00						4^-
7.16	7.16	7.16			0.26	3^-
7.43					0.13	2^+
8.46					0.04	5^-
8.78	8.78	8.78			0.20	6^+
10.3 ± 100	10.26	10.26	145 ± 40	1	0.15	5^-
10.7 ± 100						4^+
11.95	11.95	11.95		0.85 ± 0.15	0.51	8^+
12.14					0.05	6^+
12.6 ± 100	12.591 ± 10	12.59	110 ± 40	0.80 ± 0.10		6^+
13.9	13.904 ± 20		≈ 100			6^+
14.3	14.310 ± 20	14.3^d	< 100			6^+
15.35 ± 100	15.336 ± 15	15.34	380 ± 60	0.90 ± 0.10		7^-
15.9 ± 100		15.87	< 250			7^-
16.7 ± 100	16.63 ± 20	16.63	190 ± 40	0.90 ± 0.10		7^-^e
17.35 ± 100	17.30 ± 20	17.30	220 ± 40	$\geq 0.40 \pm 0.10$		8^+^e
18.7 ± 100						7^-
19.4 ± 100			400			7^-
19.9 ± 100			400			7^-
	20.67 ± 40	20.5^d				
20.8 ± 100						$7^- (6^+)$
	21.08 ± 30	21.08	100 ± 50	0.65 ± 0.15		9^-

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E_x (MeV \pm keV)			Γ_{cm} (keV)	Γ_{α_0}/Γ	S^b	J^π
$(^6\text{Li}, \text{d})$	$(^7\text{Li}, \text{t})$	$(^{12}\text{C}, ^8\text{Be})$				
21.3 \pm 100			300			8 ⁺
21.8 \pm 100			300			8 ⁺
22.3 \pm 100			300			8 ⁺
	22.87 \pm 40	22.87	225 \pm 40	0.90 \pm 0.10		9 ⁻
23.5 \pm 100	23.70 \pm 30		\leq 200			9 ⁻ (8 ⁺)
	24.21 \pm 25		\approx 500			
	25.10 \pm 50		\leq 200			
	25.67 \pm 50		\approx 500			
27.1 \pm 100 ^c		27.0 ^d				9 ⁻
28.1 \pm 100 ^c						10 ⁺
(29.4) ^c						(10 ⁺)
(33.4)						(10 ⁺)

^a For complete references see Tables 20.24 in (1978AJ03) and 20.22 in (1983AJ01).

^b Relative α -particle spectroscopic factors (DWBA). Other S_α values have also been reported, see, e.g. (1996MA07) for levels up to $E_x = 5.79$ MeV.

^c (1982AR20, 1988AL07).

^d (1983SH26).

^e An admixture of 6⁺ or 8⁺ in the d- α angular correlation involving $^{20}\text{Ne}^*$ (16.6) and a doublet (8⁺ + 7⁻) at $E_x = 17.4$ MeV have been suggested. See also Table 20.22.