

$^{17}\text{O}(\alpha,\gamma)$ 2011Be17

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	R. B. Firestone	NDS 127, 1 (2015)	15-Jan-2015

$E(\alpha)=750-1650$ keV, target= $\text{Ta}_2(^{17}\text{O}_5)$, 90.1% enriched in ^{17}O , with thickness equivalent to 12 keV for $E\alpha=1$ MeV. Beam current= $10-30 \mu\text{A}$. Measured $E\gamma$, $I\gamma$, excitation function, yields, Deduced α resonances, resonance strengths, stellar reaction rates.

 ^{21}Ne Levels

<u>$E(\text{level})^\ddagger$</u>	<u>J^π</u>	<u>Comments</u>
0 [#]	3/2 ⁺ †#	
350 [#]	5/2 ⁺ †#	
1746		
2866		
6033		
8159 2	5/2 to 11/2	E(level): from $E\alpha(\text{lab})=1002$ 2 resonance. Resonance strength $\omega\gamma=7.6$ meV 9.
8470 2		E(level): from $E\alpha(\text{lab})=1386$ 2 resonance. Resonance strength $\omega\gamma=1.2$ meV 2.
8659 2	7/2,9/2,11/2	E(level): from $E\alpha(\text{lab})=1002$ 2 resonance. Resonance strength $\omega\gamma=136$ meV 17.

† From Adopted Levels for ^{21}Ne in ENSDF database.

‡ From $E\alpha(\text{c.m.})+S(\alpha)$, where $S(\alpha)(^{21}\text{Ne})=7347.93$ 4 (2011AuZZ). $E\alpha(\text{c.m.})$ is deduced from $E\alpha(\text{lab})$.

From Adopted Levels for ^{21}Ne in ENSDF database.

 $\gamma(^{21}\text{Ne})$

<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ^\ddagger</u>	<u>I_γ</u>	<u>E_f</u>	<u>J_f^π</u>
350	5/2 ⁺	350		0	3/2 ⁺
1746		1396		350	5/2 ⁺
2866		1120		1746	
		2516		350	5/2 ⁺
6033		3167		2866	
		4287		1746	
8159	5/2 to 11/2	2125	100 12	6033	
		5291	40 10	2866	
		6412	28 6	1746	

† Read from spectral figure 3a in 2011Be17 with recoil correction removed when near 1 keV.

$^{17}\text{O}(\alpha,\gamma)$ **2011Be17**Level Scheme

Intensities: Relative photon branching from each level

