

$^{176}\text{Yb}(^3\text{He},\alpha)$ 1971Bu01

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 102, 719 (2004)	1-Jun-2004

1971Bu01: 28-MeV ^3He beam. Enriched target $\approx 96\%$ ^{176}Yb . Measured α spectra and angular distributions with a magnetic spectrograph. FWHM=20-30 keV. Measured elastic scattering of ^3He at 45° for absolute normalization.

 ^{175}Yb Levels

E(level) [†]	J^π [‡]	L	C ² S	Comments
105 [#]	(9/2) ⁻	5	0.31	
≈ 260 [@]	(9/2) ⁺			
386				
≈ 460				
520 [@]	(13/2) ⁺	6	0.49	
727 ^{&}	(7/2) ⁻	3	0.47	
≈ 770 ^b	(9/2) ⁻			
≈ 844 ^{&}	(9/2) ⁻			
917 ^a	(1/2) ⁻			
1000 ^e				May contain $J^\pi=7/2^+$, 7/2[633].
≈ 1030				
1093 ^c	(9/2) ⁺			
1176 ^a	(7/2) ⁻			
1202 ^a	(9/2) ⁻			
≈ 1259				
1302		5,6	0.44,0.36	
1342 ^c	(13/2) ⁺	6	0.70	
≈ 1429				
≈ 1490				
1617				
1690 ^d	(5/2) ⁻			
≈ 1742				
1774 ^d	(7/2) ⁻			
≈ 1812				
1830				
1861				
≈ 1898				
≈ 1939				
1977				
≈ 2006				
2047	(6)	0.50		Possible 13/2 ⁺ , 5/2[642] state.

[†] Uncertainties are ≈ 3 keV for strongly populated states. E(level) are normalized to the previously known 105 level.

[‡] Spin assignments are mainly based on the experimental ratio of cross sections for the ($^3\text{He},\alpha$) and the (d,t) reactions that show a strong L dependence as predicted by DWBA calculations.

[#] 7/2(514) band.

[@] 9/2(624) band.

[&] 5/2(512) band.

^a 1/2(521) band.

^b 1/2(510) band.

^c 7/2(633) band.

^d 3/2(521) band.

^e Doublet, 991.1 + 1008.2 states observed in the (d,t) reaction.