

$^{236}\text{U}(\text{}^3\text{He,d}), ^{236}\text{U}(\alpha,t)$ 1970EI02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 107, 2323 (2006)	15-Mar-2006

$E(^3\text{He})=30$ MeV, $E(\alpha)=30$ MeV.

$\theta=60^\circ$ for the ($^3\text{He,d}$), $\theta=45^\circ$ for the (α,t) measurements.

Disagreement between experimental and calculated spectroscopic factors for the 5/2[642] band was observed. Possible mixing with the 7/2[633] and 3/2[651] bands was suggested in 1970EI02.

 ^{237}Np Levels

E(level)	J^π [†]	S^\ddagger	Comments
(0 [#])	5/2 ⁺	0	S: 0 for (α,t).
30 [#] 4	7/2 ⁺	0.08	S: (0.02) for (α,t).
74 [#] 2	9/2 ⁺	0.22	S: 0.23 for (α,t).
98 [?] @	(7/2 ⁻)		S: (0.10) for (α,t).
131 [#] 2	11/2 ⁺		S: (0.97) for (α,t).
156 [@] 2	9/2 ⁻	2.12	S: 2.36 for (α,t).
189 [#] 1	13/2 ⁺	3.12	S: 4.6 for (α,t).
269 ^{&} 2	3/2 ⁻ & (1/2 ⁻)	0.21	Level assumed doublet. S: 0.19 for (α,t).
328 ^{&} 2	7/2 ⁻	0.43	S: 0.39 for (α,t). S values given as doublets for the 5/2 ⁻ and 7/2 ⁻ states of the 1/2[530] band.
346 3			
365?			
438 ^{&} 4	11/2 ⁻	0.27	S: 0.74 for (α,t).
466?			
484 ^{&} 4	(9/2 ⁻)	(0.45)	
514 ^a 3	3/2 ⁻	0.12	
545 ^a 3	5/2 ⁻	0.16	S: 0.13 for (α,t).
589 ^a 1	7/2 ⁻	1.28	S: 1.42 for (α,t).
713 ^a 3	(11/2 ⁻)	0.37	S: 0.19 for (α,t).
758 6			
914 4			
961 3			
1020 3			
1046?			
1072 6			
1112 4			
1137?			

[†] Spin and state assignments were confirmed for the levels below 514 keV and proposed for the higher levels from comparison of experimental spectroscopic factors with theory (1970EI02). See 1970EI02 for deduced spectroscopic factors for both reactions, and the calculated ones computed by using the harmonic oscillator and the woods-Saxon potentials.

[‡] for ($^3\text{He,d}$). S for (α,t) is given in comment section.

[#] 5/2[642] band.

[@] 5/2[523] band.

[&] 1/2[530] band.

^a 3/2[521] band.