^{154}Sm(^{3}He,d) 1969Un04

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 160, 1 (2019)	21-Oct-2019

E(^{3}He)=28 MeV. Enriched (99.30% ^{154}Sm) Sm_2O_3 targets. Enge-type split-pole magnetic spectrograph with photographic emulsions used to analyze and record the deuterons. Widths of deuteron peaks ranged from 15 to 25 keV (FWHM). Measured σ(E(d′),θ) at nine angles between θ=10° and 70°.

^{155}Eu Levels

E(level)	J^{π}[†]	L	S[‡#]	Comments
0.0[&]	$5/2^+$		≈4	
(85[a])	$7/2^+$ & $5/2^-$		≈12	Probable doublet. The peaks corresponding to the levels at 78.5 and 104.3 were not resolved in (^{3}He,d). S: 1969Un04 report cross-section values of ≈8 μb/sr and ≈4 μb/sr, respectively, for population of the 78.5 and 104.3 levels. The listed value is the sum of these two.
169[a]	$7/2^-$		8.0	
251[b]	$3/2^+$		15	E(level),J^{π}: the 251 peak observed by 1969Un04 may be an unresolved doublet consisting of the 3/2[411] Nilsson state and the $9/2^-$ member of the 5/2[532] band. These states were observed at 246 keV and 256 keV, respectively, in ^{156}Gd(pol t,α) and ^{154}Sm(α,t) by 1979Bu03.
307[b]	$5/2^+$	2	178	
357[a]	$11/2^-$	5	28	
392[b]	$7/2^+$			S: peak not observed at this angle.
502[b]	$9/2^+$	4	9.8	
876[c]	$(1/2)^+$		12[@]	
≈910[c]	$3/2^+$	2	84[@]	E(level): unresolved doublet.
955	$5/2^+$	2	34	
978		4,5	33	Possibly the 7/2[404] bandhead, the $9/2^-$ member of the 3/2[541] band or a combination of these.
1024			24	
1067		2,3	48	
1109			27	
1118				
1201		3	23	
1233		2	70	
1265			15	
1318		1	29	
1374		1	58	
1402			17	
1482		2	69	

[†] From Adopted Values.
[‡] Label=dσ/dΩ(μb/sr).
[#] Values at θ=30°.
[@] The measured cross sections are approximately one-third as much as expected for a pure 1/2[411] band.
[&] Band(A): 5/2[413] band member.
[a] Band(B): 5/2[532] band member.
[b] Band(C): 3/2[411] band member.
[c] Band(D): 1/2[411] band member.

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Band(D): 1/2[411] band member

3/2$^+$ ≈910

(1/2)$^+$ 876

Band(C): 3/2[411] band member

9/2$^+$ 502

7/2$^+$ 392

Band(B): 5/2[532] band member

11/2$^-$ 357

5/2$^+$ 307

3/2$^+$ 251

7/2$^-$ 169

Band(A): 5/2[413] band member

7/2$^+$ & 5/2$^-$ 85 **7/2$^+$ & 5/2$^-$ 85**

5/2$^+$ 0.0

$^{155}_{63}Eu_{92}$