

$^{148}\text{Sm}(\text{d}, ^3\text{He})$ **1981Le21,1979Do06**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica and B. Singh	NDS 181, 1 (2022)	9-Mar-2022

Additional information 1.

1981Le21: E(d)=50 MeV. Measured ^3He spectra, $\sigma(\theta)$ at KVI-AVF cyclotron facility. FWHM $\approx$ 45 keV. DWBA analysis of $\sigma(\theta)$ data.

1979Do06: E(d)=52 MeV. Measured ^3He spectra, $\sigma(\theta)$ using surface barrier detectors at Karlsruhe facility. Spectra collected up to 35 MeV excitation. FWHM=270 keV. DWBA analysis of $\sigma(\theta)$ data. Five groups were assigned to ^{147}Pm excitations.

 ^{147}Pm Levels

E(level) [†]	L [†]	C ² S [‡]	Comments
0 [#]	4 [#]	5.4 [#]	
91 [#] 10	2 [#]	2.1 [#]	
340 10	2	0.10	
380 10	2	0.10	
500	2+4	0.08,0.30	E(level),L: 489+531 doublet.
620 10	5+2+0	0.66,0.33,0.1	1979Do06 analyzed a 640 group, deduced L=(2+4) and C ² S=0.6 for L=2, d _{3/2} or d _{5/2} orbital, 3.5 for L=4, g _{7/2} orbital and 1.6 for L=4, g _{9/2} orbital.
700	2	0.65	E(level),L: 680+730 doublet.
880 10	2	0.26	
940 10	2	0.17	
1350 10	2+5	0.13,0.70	1979Do06 analyzed a 1320 group, deduced L=2 and C ² S=0.33 for L=2, d _{3/2} or d _{5/2} orbital, 0.27 for L=2, d _{5/2} orbital.
1600 10	2+5	0.12,0.29	1979Do06 analyzed a 1560 group, deduced L=(2+4) and C ² S=0.1 for L=2, d _{3/2} or d _{5/2} orbital, 0.08 for L=4, g _{7/2} orbital.
1660 10	2+5	0.05,0.11	
1820 10	1+2	0.08,0.07	
$\approx 4.0 \times 10^3$	4	8.3	E(level),L,C ² S: from 1979Do06 . Spectroscopic factor is for g _{9/2} orbital, for less likely g _{7/2} orbital, authors give 17.

[†] From **1981Le21** unless otherwise stated. L-transfer deduced from comparison of experimental angular distribution data with DWBA theoretical calculations.

[‡] Deduced from ratio of experimental and DWBA theoretical cross sections using a normalization factor of 2.95. Orbitals considered are s_{1/2} for L=0, d_{3/2} or d_{5/2} for L=2, g_{7/2} for L=4 and h_{11/2} for L=5. Experimental summed strength for L=0 to 5 is 11.8 as compared to expected value of 12.

[#] **1979Do06** analyzed 0+91 group, deduced L=4+2 and C²S=7.8 20 for g.s. with L=4, g_{7/2} orbital and 1.55 30 for 91 with L=2, d_{5/2} orbital.