

<sup>237</sup>Np(d,d') 1976Th01

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

Target: Enriched <sup>237</sup>Np; projectile: d, E=16 MeV; scattered deuterons detected by Kodak NTB50 photographic plate; Measured: excitation energy, deduced cross sections at 90° and 125°.

<sup>237</sup>Np Levels

E(level) <sup>†</sup>	J <sup>π</sup> <sup>‡</sup>	dσ/dΩ (μb/sr) <sup>c</sup>	Comments
0 <sup>#</sup>	5/2 <sup>+</sup>	47200	dσ/dΩ = 10000 μb/sr (θ=150°).
32 <sup>#</sup> 1	7/2 <sup>+</sup>	3339	dσ/dΩ = 1357 μb/sr (θ=150°).
75 <sup>#</sup> 1	9/2 <sup>+</sup>	1452	dσ/dΩ = 508 μb/sr (θ=150°).
131 <sup>#</sup> 1	11/2 <sup>+</sup>	164	dσ/dΩ = 95 μb/sr (θ=150°).
160 <sup>@</sup> 3	9/2 <sup>-</sup>	22	dσ/dΩ = 4 μb/sr (θ=150°).
193 <sup>@</sup> 1	13/2 <sup>+</sup>	72	dσ/dΩ = 40 μb/sr (θ=150°).
227 <sup>@</sup> 2	11/2 <sup>-</sup>	12	dσ/dΩ = 4 μb/sr (θ=150°).
268 <sup>#</sup> 1	15/2 <sup>+</sup>	23	dσ/dΩ = 12 μb/sr (θ=150°).
323 3		6	dσ/dΩ = 3 μb/sr (θ=150°).
348 2		7	dσ/dΩ = 7 μb/sr (θ=150°).
362 <sup>#b</sup> 3	(17/2 <sup>+</sup> )	5	
452 3		4	dσ/dΩ = 3 μb/sr (θ=150°).
516 <sup>&amp;</sup> 2	3/2 <sup>-</sup>	6	dσ/dΩ = 3 μb/sr (θ=150°).
545 <sup>&amp;</sup> 1	5/2 <sup>-</sup>	12	dσ/dΩ = 6 μb/sr (θ=150°).
588 <sup>&amp;</sup> 1	7/2 <sup>-</sup>	21	dσ/dΩ = 10 μb/sr (θ=150°).
618 2		12	dσ/dΩ = 4 μb/sr (θ=150°).
644 <sup>&amp;</sup> 1	9/2 <sup>-</sup>	14	dσ/dΩ = 6 μb/sr (θ=150°).
666 2		7	dσ/dΩ = 4 μb/sr (θ=150°).
705 <sup>&amp;</sup> 3	11/2 <sup>-</sup>	6	dσ/dΩ = 4 μb/sr (θ=150°).
721 <sup>a</sup> 2	5/2 <sup>-</sup>	30	dσ/dΩ = 16 μb/sr (θ=150°).
755 <sup>a</sup> 2	7/2 <sup>-</sup>	35	dσ/dΩ = 22 μb/sr (θ=150°).
768 4		19	dσ/dΩ = <50 μb/sr (θ=150°).
797 <sup>a</sup> 1	9/2 <sup>-</sup>	41	dσ/dΩ = 22 μb/sr (θ=150°).
823 3		17	dσ/dΩ = 5 μb/sr (θ=150°).
853 <sup>a</sup> 1	11/2 <sup>-</sup>	16	dσ/dΩ = 11 μb/sr (θ=150°).
863 4		6	
906 2		17	dσ/dΩ = 10 μb/sr (θ=150°).
920 3		9	dσ/dΩ = 5 μb/sr (θ=150°).
946 2		16	dσ/dΩ = 10 μb/sr (θ=150°).
963 2		25	dσ/dΩ = 11 μb/sr (θ=150°).
984 2		37	dσ/dΩ = 20 μb/sr (θ=150°).
1013 3		10	dσ/dΩ = 5 μb/sr (θ=150°).
1030 3		20	dσ/dΩ = 16 μb/sr (θ=150°).
1040 4		16	dσ/dΩ = ~5 μb/sr (θ=150°).
1066 3		29	dσ/dΩ = 13 μb/sr (θ=150°).

<sup>†</sup> From 1976Th01.

<sup>‡</sup> Spin and state assignments of 1976Th01 were based on on the relative cross sections, energy fit to the rotational bands, and previous assignments from other experiments (1976Th01). Only the dominant components of configurations are given.

<sup>#</sup> 5/2[642] band.

<sup>@</sup> 5/2[523] band.

<sup>&</sup> 3/2[521] + (5/2[642]+ 1<sup>-</sup> octupole vibration) band.

Continued on next page (footnotes at end of table)

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 $^{237}\text{Np}(\text{d,d}')$  **1976Th01 (continued)**

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 $^{237}\text{Np}$  Levels (continued)

- <sup>a</sup>  $K=5/2^-$  band:  $0^-$  octupole vibration coupled with  $5/2[642]$  state.  
<sup>b</sup> Assignment tentative.  
<sup>c</sup> At  $90^\circ$ . The  $d\sigma/d\Omega$  ( $\theta=150^\circ$ ) is given in comment sections.