

$^{248}\text{Cm}(\text{d,p})$ 1971Br27

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 195,718 (2024)	12-Oct-2023

1971Br27: See also private communication of same group 1968Fr09 E(d)=12 MeV. Measured $\sigma(\theta)$ at $\theta=90^\circ$ and 140° using Browne-Buechner magnetic spectrograph and nuclear emulsions; DWBA calculations. See 1971Br27 for discussion of band assignments and deformation parameters $\beta(4),\beta(6)$. The $7/2^+$ bandhead of $7/2[613]$ band was not seen; it is not expected to be seen in (d,p) reaction (1971Br27).

 ^{249}Cm Levels

 Cross section data from 1975Er01

E(level) keV	$d\sigma(\text{d,p})/d\Omega$ 140° $\mu\text{b/sr}$	
0	171 33	
25 2	13 5	
48 1	110 19	
110 1	202 25	
146 3	45 11	
208 1	80 30	
220 5	20 10	
242 1	67 15	
288 5	175 35	combined with 300 keV 5
300 5		
350 1	79 18	
469 2	138 28	
498 3	240 48	
518 4	23 8	
528 3	60 20	
550 3	70 23	
575 3	80 25	
634 2	23 5	
668 2	81 20	
870 4	60 20	
915 2	128 28	
1030 7	160 40	
1208 7	80 20	
1353 7	190 40	
1382 7	60 15	
1528 7	120 30	
1550 7	180 45	
1570 7	120 30	
1650 7	120 30	

E(level)	J^π	Comments
0 [†]	1/2 ⁺	
25 [†] 2	3/2 ⁺	
48 [†] 1	5/2 ⁺	
110 [†] 1	7/2 ⁺ , 9/2 ⁺	E(level): Peak considered a doublet with a portion of the peak as a member of 7/2[613] band (1971Br27).
146 [†] 3	9/2 ⁺	
208 [‡] 1	3/2 ⁺	
220 [#] 5	(9/2 ⁺)	

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$^{248}\text{Cm}(\text{d,p})$ **1971Br27** (continued) ^{249}Cm Levels (continued)

<u>E(level)</u>	<u>Jπ&</u>	<u>E(level)</u>	<u>Jπ&</u>	<u>E(level)</u>	<u>E(level)</u>
242 \ddagger 1	5/2 ⁺	518? 4		870 4	1528 7
288 \ddagger 5	7/2 ⁺	528 3		915 2	1550 7
300# 5	(11/2 ⁺)	550 3		1030 7	1570 7
350 \ddagger 1	9/2 ⁺	575@ 3	(11/2 ⁻)	1208 7	1650 7
469@ 2	3/2 ⁻	634 2		1353 7	
498@ 3	7/2 ⁻	688 2		1382 7	

† Band(A): 1/2[620].

‡ Band(B): 3/2[622].

Band(C): 9/2[615].

@ Band(D): 1/2[750].

& From **1971Br27** based on DWBA analysis of cross sections and band signatures.

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Band(D): 1/2[750]

(11/2⁻) 5757/2⁻ 4983/2⁻ 469

Band(B): 3/2[622]

9/2⁺ 350

Band(C): 9/2[615]

(11/2⁺) 3007/2⁺ 2885/2⁺ 242(9/2⁺) 2203/2⁺ 208

Band(A): 1/2[620]

9/2⁺ 1467/2⁺, 9/2⁺ 1105/2⁺ 483/2⁺ 251/2⁺ 0 $^{249}_{96}\text{Cm}_{153}$