

$^{160}\text{Gd}(\text{t,p})$ 1986Lo15

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 195,1 (2024)	19-Sep-2023

Additional information 1.

$^{160}\text{Gd}(\text{t,p})$ on enriched (94.8%) target with $E(\text{t})=17$ MeV and reaction products measured in magnetic spectrograph with $\text{FWHM}\approx 25$ keV. $p(\theta)$ measured from 10° to 65° at 5° increments.

 ^{162}Gd Levels

Additional information 2.

E(level) [†]	J^π [‡]	L	$d\sigma/d\Omega(\mu\text{b/sr})$ [#]	Comments
0.0 ^{&}	0 ⁺	0	188	
71 ^{& 7}	2 ⁺		19	
237 ^{& 7}	4 ⁺		9	
484 ^{& 7}	6 ⁺		3	
864 ^{a 7}	2 ⁺	2	3	
930 ^{a 7}	(3 ⁺)		2	
1015 ^{a 7}	4 ⁺		≈ 23	
1427 ^{b 7}	0 ⁺	0	39	
1461 ⁷			10	
1492 ^{b 7}	(2 ⁺)		4	J^π : from energy spacings and similarity of angular distribution with that for the 2 ⁺ member of the g.s. band, 1986Lo15 propose this to be the 2 ⁺ member of the $K^\pi=0^+$ band at 1427 keV.
1641 ⁷			2 [@]	
1702 ⁷	0 ⁺	0	18	
1749 ⁷			3 [@]	
2163 ⁷			26	
2346 ⁷			8	
2432 ⁷			5	
2464 ⁷			15	

[†] Uncertainties of 7 keV assigned by evaluator based on authors' statement that they are "about 7 keV".

[‡] Authors' assignments and based on the following. The L=0 angular distributions uniquely define the $J^\pi=0^+$ levels. The other members of the ground-state band are assigned from the energy spacings and the (t,p) populations. The γ -vibrational band assignments are based on comparison with the (t,p) results for the well-known levels in ^{160}Gd .

[#] Values at $\theta=30^\circ$, unless noted otherwise.

[@] Value at $\theta=25^\circ$.

[&] Band(A): Ground-state band.

^a Band(B): γ -vibrational band.

^b Band(C): $K^\pi=0^+$ band.

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		Band(C): $K^\pi=0^+$ band	
		<u>(2⁺)</u>	<u>1492</u>
		<u>0⁺</u>	<u>1427</u>
		Band(B): γ-vibrational band	
		<u>4⁺</u>	<u>1015</u>
		<u>(3⁺)</u>	<u>930</u>
		<u>2⁺</u>	<u>864</u>
Band(A): Ground-state band			
		<u>6⁺</u>	<u>484</u>
		<u>4⁺</u>	<u>237</u>
		<u>2⁺</u>	<u>71</u>
		<u>0⁺</u>	<u>0.0</u>