

$^{152}\text{Gd(d,p)}$ 1967Tj01

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 170, 1 (2020)	16-Aug-2020

E=12.1 MeV, magnetic spectrometer, FWHM \geq 13 keV, measured protons at 60°, 90°, and 125°. Measured Q(d,p)=4015 keV *10*.

 $^{153}\text{Gd Levels}$

E(level) [†]	J^{π} [‡]	$d\sigma/d\Omega$ (60°)($\mu\text{b/sr}$)	Comments
0.0		94	
43 <i>3</i>		\approx 6	
93 <i>3</i>		630	
110 <i>3</i>		60	
138 [#] <i>3</i>	(11/2 ⁻)	52	J^{π} : In ^{153}Gd Adopted Levels this J^{π} is (13/2 ⁺) and the 11/2 ⁻ ,11/2[505] state is assigned to a level at 171 keV.
182 <i>3</i>		23	
217 [@] <i>3</i>	(3/2 ⁺)	110	J^{π} : ^{153}Gd Adopted Levels has 7/2 ⁻ at 215 and (9/2 ⁻) at 219.
315 <i>3</i>		31	
328 ^{&} <i>3</i>	(1/2 ⁺)	25	
363 ^a <i>3</i>	(3/2 ⁻)	445	
435 <i>3</i>		369	
507 <i>3</i>		189	
530 <i>3</i>		136	
548 <i>3</i>		65	
575 <i>3</i>		10	
606 <i>3</i>		24	
634 <i>3</i>		14	
648 <i>3</i>		29	
678 <i>3</i>		37	
721 <i>3</i>		71	
736 <i>3</i>		11	
772 <i>3</i>		147	
856 ^b <i>3</i>	(1/2 ⁻)	427	J^{π} : ^{153}Gd Adopted Levels has 3/2 ⁻ at 857.
876 <i>3</i>		27	
889 <i>3</i>		28	
905 <i>3</i>		52	
943 ^b <i>3</i>	(3/2 ⁻)	55	J^{π} : ^{153}Gd Adopted Levels has 3/2 ⁺ at 945.
960 ^b <i>3</i>	(5/2 ⁻)	175	J^{π} : ^{153}Gd Adopted Levels has 5/2 ⁺ at 955 and (1/2,3/2) ⁻ at 962.
994 <i>3</i>		89	
1034 <i>5</i>		19	
1052 <i>5</i>		64	
1081 <i>5</i>		9	
1099 <i>5</i>		22	
1115 <i>5</i>		8	
1143 <i>5</i>		24	
1155 ^b <i>5</i>	(7/2 ⁻)	82	
1171 <i>5</i>		193	
1194 ^b <i>5</i>	(9/2 ⁻)	12	
1235 <i>5</i>		27	
1251 <i>5</i>		27	
1296 <i>5</i>		60	
1339 <i>5</i>		19	
1361 <i>5</i>		139	
1384 <i>5</i>		76	
1400 <i>5</i>		67	

Continued on next page (footnotes at end of table)

$^{152}\text{Gd(d,p)}$ 1967Tj01 (continued) ^{153}Gd Levels (continued)

<u>E(level)[†]</u>	<u>dσ/dΩ (60°)(μb/sr)</u>	<u>E(level)[†]</u>	<u>dσ/dΩ (60°)(μb/sr)</u>	<u>E(level)[†]</u>	<u>dσ/dΩ (60°)(μb/sr)</u>
1421 5	65	1564 5	39	1686 5	34
1448 5	58	1584 5	51	1701 5	18
1482 5	49	1597 5	28	1720 5	65
1496 5	37	1615 5	47	1738 5	47
1509 5	43	1631 5	13	1755 5	69
1533 5	42	1655 5	51	1772 5	34
1548 5	71	1669 5	22		

[†] Uncertainties are from author's general statement.

[‡] Deduced (1967Tj01) from absolute cross-section values and probable Nilsson states in conjunction with (d,t) reaction results. Some of these J^π and band assignments differ from those in the ^{153}Gd Adopted Levels; significant differences are noted.

Band(A): 11/2[505] band.

@ Band(B): 3/2[402] band.

& Band(C): 1/2[400] band.

^a Band(D): 1/2[530] band.

^b Band(E): 1/2[521] band.

$^{152}\text{Gd(d,p)} \quad 1967\text{Tj01}$ **Band(E): 1/2[521] band**(9/2⁻) 1194(7/2⁻) 1155(5/2⁻) 960(3/2⁻) 943(1/2⁻) 856**Band(D): 1/2[530] band**(3/2⁻) 363**Band(C): 1/2[400] band**(1/2⁺) 328**Band(B): 3/2[402] band**(3/2⁺) 217**Band(A): 11/2[505] band**(11/2⁻) 138 $^{153}_{64}\text{Gd}_{89}$