

^{152}Gd $Z = 64$ $N = 88$ [link to full NNDC output](#)

Based on ENSDF from Dec 2018, and mass evaluation from 2016

BE = 1251.477 (0.001) MeV

	Energy T	J+	J-	J-other	T1/2

S-alpha=	-2.204	(0.002)	-----		
152GD 1	0.000	0+			1 1.08E14 Y 8
152GD 2	0.344	2+			2 32.0 PS 27
152GD 3	0.615	0+			3 37 PS 8
152GD 4	0.755	4+			4 7.3 PS 4
152GD 5	0.931	2+			5 7.3 PS 6
152GD 6	1.048	0+			6
152GD 7	1.109	2+			7
152GD 8			1.123	3-	8
152GD 9	1.227	6+			9 2.5 PS 5
152GD 10				1.274 1,2+	10

152GD 11	1.282	4+			11
152GD 12			1.315	1-	12
152GD 13	1.318	2+			13
152GD 14	1.434	3+			14
152GD 15				1.461 (1,2+)	15
152GD 16			1.470	5-	16
152GD 17	1.471	2+			17
152GD 18				1.534	18
152GD 19	1.550	4+			19
152GD 20	1.606	2+			20

152GD 21			1.643	2-	21
152GD 22	1.668	6+			22
152GD 23	1.681	0+			23
152GD 24				1.692 2+,3+	24
152GD 25				1.734	25
152GD 26	1.747	8+			26
152GD 27			1.756	1-	27
152GD 28	1.772	2+			28
152GD 29	1.785	2+			29
152GD 30				1.808	30

152GD 31				1.809	31
152GD 32	1.840	2+			32
152GD 33	1.862	5+			33
152GD 34	1.862	2+			34
152GD 35	1.862	2+			35
152GD 36			1.880	7-	36
152GD 37				1.915 (4)+	37

152GD	38					1.916	2+,3,4+	38
152GD	39	1.941	2+					39
152GD	40					1.962	(0+)	40

152GD	41					1.976	1+,2+	41
152GD	42	1.998	6+					42
152GD	43					2.012	1+,2+	43
152GD	44					2.069		44
152GD	45					2.121	2+,3-,4+	45
152GD	46					2.133	1+,2+	46
152GD	47	2.139	8+					47
152GD	48	2.170	2+					48
152GD	49			2.173	6-			49
152GD	50					2.190	(2+)	50

152GD	51	2.202	2+					51
152GD	52					2.234		52
152GD	53	2.247	2+					53
152GD	54					2.258	2+,3,4+	54
152GD	55					2.265	1-,2,3-	55
152GD	56					2.265	1+,2+,3+	56
152GD	57					2.268		57
152GD	58	2.299	10+					58
152GD	59					2.300	2,3-	59
152GD	60	2.302	7+					60

152GD	61					2.326		61
152GD	62					2.330		62
152GD	63					2.331	2+,3,4+	63
152GD	64			2.331	9-			64
152GD	65	2.363	0+					65
152GD	66					2.387	(2)+	66
152GD	67	2.394	7+					67
152GD	68					2.395		68
152GD	69					2.402	1+,2,3-	69
152GD	70					2.414		70

152GD	71	2.421	0+					71
152GD	72	2.437	2+					72
152GD	73					2.448	+	73
152GD	74	2.461	8+					74
152GD	75					2.492	(0+)	75
152GD	76					2.495		76
152GD	77					2.514	1,2+	77
152GD	78	2.524	2+					78
152GD	79					2.529	2+,3+	79
152GD	80			2.537	8-			80

152GD	81					2.540	2+,3+	81
152GD	82					2.544		82

152GD 83						2.551		83	
152GD 84		2.558	2+					84	
152GD 85		2.580	0+					85	
152GD 86						2.599	1+,2+	86	
152GD 87						2.604	1-,2,3-	87	
152GD 88						2.642	1-,2-,3-	88	
152GD 89					2.668	1-		89	
152GD 90		2.687	2+					90	

152GD 91		2.692	10+					91	
152GD 92					2.697	8-		92	
152GD 93		2.709	2+					93	
152GD 94		2.720	2+					94	
152GD 95		2.729	2+					95	
152GD 96							2.734	96	
152GD 97					2.744	1-		97	
152GD 98							2.749	2+,3+	98
152GD 99		2.768	0+					99	
152GD 100		2.772	2+					100	

152GD 101		2.774	9+					101	
152GD 102		2.810	0+					102	
152GD 103					2.814	11-		103	
152GD 104							2.863	1-,2,3-	104
152GD 105							2.870		105
152GD 106					2.875	8-		106	
152GD 107		2.881	2+					107	
152GD 108		2.884	12+					108	
152GD 109					2.889	10-		109	
152GD 110		2.914	2+					110	

152GD 111							2.920	1-,2,3,4+	111
152GD 112							2.928	2+,3+	112
152GD 113							2.929		113
152GD 114		2.933	2+						114
152GD 115					2.964	2-			115
152GD 116							2.981	2+,3,4+	116
152GD 117							2.989		117
152GD 118							3.000	1+,2+	118
152GD 119		3.007	2+						119
152GD 120					3.009	3-			120

152GD 121					3.011	9-			121
152GD 122							3.012	2+,3+,4+	122
152GD 123							3.033	(11)	123
152GD 124		3.042	2+						124
152GD 125							3.060		125
152GD 126					3.067	3-			126
152GD 127							3.075	2+,3,4+	127
152GD 128							3.080	2+,3+,4+	128

152GD 129					3.090		129
152GD 130					3.099	1+,2+,3+	130

152GD 131	3.106	2+					131
152GD 132					3.111	1+,2+	132
152GD 133					3.113	1+,2+	133
152GD 134					3.140	1,2+	134
152GD 135			3.144	3-			135
152GD 136			3.153	3-			136
152GD 137			3.157	10-			137
152GD 138					3.214		138
152GD 139			3.226	10-			139
152GD 140					3.232		140

152GD 141					3.237	2+,3,4+	141
152GD 142	3.249	12+					142
152GD 143	3.285	2+					143
152GD 144	3.294	11+					144
152GD 145			3.317	11-			145
152GD 146			3.338	13-			146
152GD 147					3.341	1-,2,3,4+	147
152GD 148			3.345	12-			148
152GD 149	3.358	2+					149
152GD 150	3.499	14+					150

152GD 151			3.508	12-			151
152GD 152			3.586	13-			152
152GD 153	3.699	14+					153
152GD 154			3.728	13-			154
152GD 155	3.829	13+					155
152GD 156			3.897	14-			156
152GD 157			3.938	15-			157
152GD 158			3.975	14-			158
152GD 159					4.103		159
152GD 160	4.142	16+					160

152GD 161	4.195	16+					161
152GD 162			4.246	15-			162
152GD 163			4.247	15-			163
152GD 164					4.363		164
152GD 165			4.526	16-			165
152GD 166			4.540	16-			166
152GD 167			4.609	17-			167
152GD 168	4.746	18+					168
152GD 169	4.836	18+					169
152GD 170			4.852	17-			170

152GD 171			5.010	17-			171
152GD 172			5.184	18-			172
152GD 173			5.214	18-			173

152GD 174				5.334	19-				174	
152GD 175		5.385	20+						175	
152GD 176					5.530	19-			176	
152GD 177		5.550	20+						177	
152GD 178					5.853	21-			178	
152GD 179					5.889	20-			179	
152GD 180					5.924	20-			180	

152GD 181					6.081	21-			181	
152GD 182		6.096	22+						182	
152GD 183					6.259	21-			183	
152GD 184		6.302	22+						184	
152GD 185					6.599	22-			185	
152GD 186					6.627	23-			186	
152GD 187					6.637	22-			187	
152GD 188					6.835	23-			188	
152GD 189		6.876	24+						189	
152GD 190					7.025	23-			190	

152GD 191		7.091	24+						191	
152GD 192					7.265	25-			192	
152GD 193					7.280	24-			193	
S-p	=	7.343	(0.002)	-----						
152GD 194					7.421	24-			194	
152GD 195					7.533	25-			195	
152GD 196		7.721	26+						196	
152GD 197					7.831	25-			197	
152GD 198		7.861	26+						198	
152GD 199					7.990	26-			199	
152GD 200					8.129	27-			200	

152GD 201						8.246	(26)-		201	
152GD 202					8.292	27-			202	
S-n	=	8.590	(0.003)	-----						
152GD 203		8.620	28+						203	
152GD 204		8.638	28+						204	
152GD 205						8.677	(27)-		205	
152GD 206					8.726	28-			206	
152GD 207					9.027	29-			207	
152GD 208						9.106	(28)-		208	
152GD 209		9.436	30+						209	
152GD 210					9.544	30-			210	

152GD 211					9.957	31-			211	
152GD 212		10.225	32+						212	
152GD 213						10.353	(32)+		213	
152GD 214					10.452	32-			214	
152GD 215					10.918	33-			215	
152GD 216		11.064	34+						216	
152GD 217					11.522	34-			217	

152GD 218				11.889	35-		218
152GD 219				11.931	35-		219
152GD 220		11.952	36+				220

S-2p = 12.234 (0.002)-----

152GD 221				12.268	36-		221
152GD 222				12.712	37-		222
152GD 223		13.065	38+				223
152GD 224				13.088	38-		224
152GD 225				13.547	39-		225
152GD 226				13.944	40-		226
152GD 227		14.120	40+				227
152GD 228				14.400	41-		228

S-2n = 15.086 (0.006)-----

152GD 229		15.125	42+				229
152GD 230				15.486	43-		230

152GD 231		16.184	44+				231
152GD 232		17.361	46+				232
152GD 233		18.722	48+				233

S-p = 7.343 (0.002)-----

S-n = 8.590 (0.003)-----

S-2p = 12.234 (0.002)-----

S-2n = 15.086 (0.006)-----

S-alpha= -2.204 (0.002)-----

S+p = -3.895 (0.004)

S+n = -6.247 (0.002)

S+2p = -10.265 (0.007)

S+2n = -15.142 (0.002)

S+alpha = 1.753 (0.002)

gap p = 3.448 (0.005)

gap n = 2.343 (0.004)

gap 2p = 1.969 (0.008)

gap 2n = -0.056 (0.007)

gap alpha = -0.451 (0.003)