

$^{144}\text{Gd}$        $Z = 64$        $N = 80$       [link to full NNDC output](#)

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

BE = 1183.959 ( 0.028) MeV

Qbeta+ = 3.860 ( 0.030) MeV

	Energy T	J+	J-	J-other	T1/2
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S-alpha=	-1.272	( 0.031)	-----		
144GD 1	0.000	0+			1 4.47 M 6
144GD 2	0.743	2+			2
144GD 3				1.702 (3-)	3
144GD 4				1.745 (4+)	4
144GD 5				1.876 (2+)	5
144GD 6				1.887 (0+)	6
144GD 7				2.227 (2+)	7
144GD 8				2.303 (5-)	8
144GD 9				2.330 (4-,5-)	9
144GD 10				2.354 (6+)	10
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144GD 11				2.442 (5-)	11
144GD 12				2.462 (0+,1+,2+)	12
144GD 13				2.472 (7-)	13 13 NS 2
144GD 14				2.787 (7-)	14
144GD 15				2.788	15
144GD 16				2.862 (6+)	16
144GD 17				2.912	17
144GD 18				3.015 (5-,6-,7-)	18
144GD 19				3.018 (8-)	19
144GD 20				3.244 (8-)	20
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144GD 21				3.346 (9-)	21
144GD 22				3.433 (10+)	22 145 NS 30
144GD 23				3.697 (10+)	23
144GD 24				3.910 (10-)	24
144GD 25				4.144 (11+)	25
144GD 26				4.267 (11-)	26
144GD 27				4.451 (12+)	27
144GD 28				4.756 (12+)	28
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S-p	= 4.807	( 0.030)	-----		
144GD 29				4.954 (12+)	29
144GD 30				5.086 (13+)	30
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144GD 31				5.134 (13+)	31
144GD 32				5.180 (14+)	32
144GD 33				5.228 (14+)	33
144GD 34				5.370 (14+)	34
144GD 35				5.455 (14+)	35

144GD 36				5.487	(14+)	36
144GD 37				5.497	(13+)	37
144GD 38				5.613	(14+)	38
144GD 39				5.626	(14+)	39
144GD 40				5.723	(15+)	40
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144GD 41				5.835	(15+)	41
144GD 42				6.214	(16+)	42
144GD 43				6.233	(16+)	43
144GD 44				6.264	(17+)	44
144GD 45				6.325		45
144GD 46				6.381		46
144GD 47				6.382	(17+)	47
144GD 48				6.432	(17+)	48
144GD 49				6.443		49
144GD 50				6.618	(17+)	50
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144GD 51				6.670	(16+)	51
144GD 52				6.703	(16+)	52
144GD 53				6.748		53
144GD 54				6.825	(16+)	54
144GD 55				6.928	(18+)	55
144GD 56				7.014	(18+)	56
144GD 57				7.339		57
144GD 58				7.349	(19+)	58
144GD 59				7.350	(18+)	59
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S-2p	=	7.351	( 0.028)	-----		
144GD 60				7.352	(19+)	60
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144GD 61				7.419	(19+)	61
144GD 62				7.569	(20+)	62
144GD 63				7.607	(20+)	63
144GD 64				7.756	(20+)	64
144GD 65				7.761		65
144GD 66				7.886		66
144GD 67				7.923	(20+)	67
144GD 68				8.104	(20+)	68
144GD 69				8.189	(21+)	69
144GD 70				8.221	(21+)	70
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144GD 71				8.476	(22+)	71
144GD 72				8.540	(22+)	72
144GD 73				8.595	(22+)	73
144GD 74				8.642	(24+)	74
144GD 75				8.993	(23+)	75
144GD 76				9.070	(22+)	76
144GD 77				9.079	(23+)	77
144GD 78				9.199	(24+)	78
144GD 79				9.603		79
144GD 80				9.862	(24+)	80

144GD 81			9.959	(24+)	81
144GD 82			10.066		82
144GD 83			10.424		83
144GD 84			10.441	(26+)	84
144GD 85			10.795	(26+)	85
144GD 86			11.178	(28+)	86
S-n = 11.599 ( 0.202)-----					
144GD 87			11.724	(28+)	87
144GD 88			12.843	(30+)	88
144GD 89			13.941	(32+)	89
144GD 90			X		90
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144GD 91			802.8+X		91
144GD 92			1649.0+X		92
144GD 93			2528.2+X		93
144GD 94			3430.7+X		94
144GD 95			4323.3+X		95
144GD 96			5257.5+X		96
144GD 97			6237.5+X		97
144GD 98			7268.8+X		98
144GD 99			8353.4+X		99
144GD 100			9492.9+X		100
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144GD 101			10687.6+X		101
144GD 102			11937.4+X		102
144GD 103			13243.0+X		103
144GD 104			14605.0+X		104
144GD 105			16022.8+X		105
144GD 106			17497.3+X		106
144GD 107			19029.1+X		107
144GD 108			20617.1+X		108
144GD 109			22262+X		109
144GD 110			Y		110
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144GD 111			774.5+Y		111
144GD 112			1609.3+Y		112
144GD 113			2503.5+Y		113
144GD 114			3456.9+Y		114
144GD 115			4468.5+Y		115
144GD 116			5538.1+Y		116
144GD 117			6666.0+Y		117
144GD 118			7852.6+Y		118
144GD 119			9098.1+Y		119
144GD 120			10402.0+Y		120
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144GD 121			11764.6+Y		121
144GD 122			13186.6+Y		122
144GD 123			14668+Y		123
144GD 124			16208+Y		124

144GD 125			Z	125
144GD 126			743.6+Z	126
144GD 127			1548.3+Z	127
144GD 128			2409.7+Z	128
144GD 129			3332.8+Z	129
144GD 130			4316.0+Z	130
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144GD 131			5357.4+Z	131
144GD 132			6457.6+Z	132
144GD 133			7617.6+Z	133
144GD 134			8833.6+Z	134
144GD 135			10110.7+Z	135
144GD 136			11443.7+Z	136
144GD 137			12837+Z	137
144GD 138			14289+Z	138
144GD 139			U	139
144GD 140			852.9+U	140
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144GD 141			1764.6+U	141
144GD 142			2735.3+U	142
144GD 143			3764.5+U	143
144GD 144			4850.0+U	144
144GD 145			5994.0+U	145
144GD 146			7194.1+U	146
144GD 147			8452.6+U	147
144GD 148			9769.1+U	148
144GD 149			11144.6+U	149
144GD 150			12581.6+U	150
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144GD 151			V	151
144GD 152			936.8+V	152
144GD 153			1935.2+V	153
144GD 154			2993.1+V	154
144GD 155			4105.7+V	155
144GD 156			5277.7+V	156
144GD 157			6507.7+V	157
144GD 158			7794.7+V	158
144GD 159			9144+V	159
144GD 160			10554+V	160
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S-p = 4.807 ( 0.030)-----  
S-n = 11.599 ( 0.202)-----  
S-2p = 7.351 ( 0.028)-----  
S-2n = 20.943 ( 0.040)-----  
S-alpha= -1.272 ( 0.031)-----  
  
S+p = -1.918 ( 0.113)  
S+n = -9.238 ( 0.034)

S+2p = -5.374 ( 0.029)  
S+2n = -20.469 ( 0.028)  
S+alpha = 1.475 ( 0.029)

gap p = 2.889 ( 0.117)  
gap n = 2.361 ( 0.205)  
gap 2p = 1.977 ( 0.040)  
gap 2n = 0.474 ( 0.049)  
gap alpha = 0.203 ( 0.042)