

^{138}Gd $Z = 64$ $N = 74$ adopted link ENSDF link

Based on ensdf_240402 (Apr 2024), and mass evaluation from 2020

BE = 1119.456 (-0.138) MeV

Qbeta+ = 6.065 (0.141) MeV

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

S-alpha=	-3.218	(-0.192)	-----					

138GD	1 0.000	0+					1	4.7 S 9
138GD	2 0.221	2+					2	215 PS 12
138GD	3 0.605	4+					3	9.2 PS 12
138GD	4 1.080	(4+)					4	
138GD	5 1.094	6+					5	3.4 PS 11
138GD	6 1.608	(6+)					6	
138GD	7 1.649	8+					7	1.3 PS 3
138GD	8 2.203	(8+)					8	
138GD	9			2.233	(8-)		9	6.2 US 2
138GD	10 2.266	10+					10	

138GD	11			2.300	(7-)		11	
138GD	12			2.628	(9-)		12	
138GD	13 2.633	(10+)					13	
138GD	14			2.728	(8-)		14	
138GD	15			2.756	(9-)		15	
S-p	= 2.827	(-0.138)	-----					
138GD	16 2.952	12+					16	
138GD	17			3.044	(10-)		17	
138GD	18 3.176	(12+)					18	
138GD	19			3.295	(11-)		19	
S-2p	= 3.451	(-0.139)	-----					
138GD	20			3.471	(11-)		20	

138GD	21 3.714	14+					21	
138GD	22 3.786	(14+)					22	
138GD	23			3.904	(12-)		23	
138GD	24			3.908	(13-)		24	
138GD	25			4.306	(13-)		25	
138GD	26			4.362	(13-)		26	
138GD	27 4.468	(16+)					27	
138GD	28 4.551	16+					28	
138GD	29			4.567	(14-)		29	
138GD	30			4.591	(15-)		30	

138GD	31			4.685	(14-)		31	
138GD	32			4.776	(15-)		32	
138GD	33			4.857	(15-)		33	

138GD 34				5.029	(16-)		34
138GD 35				5.087	(16-)		35
138GD 36		5.269	(18+)				36
138GD 37				5.329	(17-)		37
138GD 38				5.342	(17-)		38
138GD 39				5.372	(17-)		39
138GD 40		5.460	18+				40

138GD 41				5.682	(18-)		41
138GD 42				5.714	(18-)		42
138GD 43				6.072	(19-)		43
138GD 44				6.135	(19-)		44
138GD 45				6.165	(19-)		45
138GD 46		6.168	(20+)				46
138GD 47		6.429	(20+)				47
138GD 48				6.501	(20-)		48
138GD 49		7.146	(22+)				49
138GD 50		7.443	(22+)				50

S-p = 2.827 (-0.138) -----
S-n = 12.496 (-0.307) -----
S-2p = 3.451 (-0.139) -----
S-2n = 22.752 (-0.305) -----
S-alpha = -3.218 (-0.192) -----

S+p = 0.228 (-0.310)
S+n = -10.058 (-0.196)
S+2p = -1.664 (-0.442)
S+2n = -22.241 (-0.141)
S+alpha = 3.090 (-0.723)

gap p = 3.055 (0.340)
gap n = 2.438 (0.364)
gap 2p = 1.787 (0.463)
gap 2n = 0.511 (0.336)
gap alpha = -0.128 (0.748)