

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

Based on ENSDF from Oct 2022, 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)