

^{138}Sm $Z = 62$ $N = 76$ [link to full NNDC output](#)

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

BE = 1136.834 (0.012) MeV

Qbeta+ = 3.443 (0.030) MeV

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

S-alpha=	-1.724	(0.017)	-----		
138SM 1	0.000	0+			1 3.1 M 2
138SM 2	0.347	2+			2 40 PS 6
138SM 3				0.746 (2+)	3
138SM 4	0.891	4+			4
138SM 5				1.084 (3+)	5
138SM 6				1.399 (4+)	6
138SM 7	1.577	6+			7
138SM 8				1.656 (4+)	8
138SM 9				1.733 (5+)	9
138SM 10				2.097	10

138SM 11				2.105 (6+)	11
138SM 12				2.237	12
138SM 13				2.258	13
138SM 14	2.352	8+			14
138SM 15				2.501 (7+)	15
138SM 16				2.509 (7-)	16
138SM 17				2.560	17
138SM 18				2.652 (8+)	18
138SM 19				2.654 (7)-	19
138SM 20	2.905	10+			20 0.55 NS 3

138SM 21				2.956 (8+)	21
138SM 22				3.029 (9-)	22
138SM 23	3.107	10+			23
138SM 24	3.261	12+			24 26 PS 4
138SM 25				3.300 (9)-	25
138SM 26				3.640 (11-)	26
138SM 27	3.820	12+			27
138SM 28	3.918	14+			28
138SM 29				3.921 (11)-	29
138SM 30				4.071 (13)+	30

138SM 31				4.342 (13-)	31
138SM 32	4.489	14+			32
138SM 33	4.616	14+			33
S-p	= 4.714	(0.018)	-----		
138SM 34				4.735 (13-)	34
138SM 35	4.781	16+			35

138SM	36					4.804	(15)+	36
138SM	37		4.833	16+				37
138SM	38					4.925	(15)+	38
138SM	39					5.075	(15-)	39
138SM	40					5.200	(15-)	40

138SM	41					5.257	(16+)	41
138SM	42		5.328	18+				42
138SM	43		5.440	16+				43
138SM	44					5.705	(17-)	44
138SM	45					5.722	(15-)	45
138SM	46					5.767	(17+)	46
138SM	47					5.859	(17+)	47
138SM	48		5.937	18+				48
138SM	49		6.014	20+				49
138SM	50					6.167	(18+)	50

138SM	51					6.260	(17-)	51
138SM	52		6.342	18+				52
138SM	53					6.489	(19-)	53
S-2p	=		6.876	(0.017)	-----			
138SM	54		6.885	22+				54
138SM	55					6.914	(19+)	55
138SM	56					6.986	(20+)	56
138SM	57					7.208	(20+)	57
138SM	58					7.377	(20+)	58
138SM	59					7.443	(21-)	59
138SM	60					7.905	(22+)	60

138SM	61					7.975	(24+)	61
138SM	62					8.564	(23-)	62
138SM	63					8.861	(24+)	63
138SM	64					9.261	(26+)	64
138SM	65					9.851	(25-)	65
138SM	66					9.880	(26+)	66
138SM	67					10.964	(28+)	67
S-n	=		11.543	(0.044)	-----			
138SM	68					12.110	(30+)	68
138SM	69					13.310	(32+)	69
138SM	70					X		70

138SM	71					X+139.7		71
138SM	72					X+317.9		72
138SM	73					X+545.4		73
138SM	74					X+845.0		74
138SM	75					X+1178.6		75
138SM	76					X+1598.9		76
138SM	77					X+2043.3		77
138SM	78					X+2553.1		78
138SM	79					X+3109.2		79

138SM 80				X+3675.2		80

138SM 81				X+4212.2		81
138SM 82				X+4848.2		82
138SM 83				X+6067		83

S-p	=	4.714 (0.018)	-----
S-n	=	11.543 (0.044)	-----
S-2p	=	6.876 (0.017)	-----
S-2n	=	20.829 (0.017)	-----
S-alpha	=	-1.724 (0.017)	-----

S+p	=	-1.189 (0.018)
S+n	=	-8.954 (0.016)
S+2p	=	-4.863 (0.030)
S+2n	=	-20.101 (0.017)
S+alpha	=	2.113 (0.030)

gap p	=	3.525 (0.025)
gap n	=	2.589 (0.047)
gap 2p	=	2.014 (0.035)
gap 2n	=	0.729 (0.024)
gap alpha	=	0.390 (0.035)