

^{142}Sm $Z = 62$ $N = 80$ [link to full NNDC output](#)

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

BE = 1176.608 (0.003) MeV

Qbeta+ = 2.156 (0.024) MeV

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

S-alpha=	-0.607	(0.012)	-----		
142SM 1	0.000	0+			1 72.49 M 5
142SM 2	0.768	2+			2
142SM 3				1.451 (0+)	3
142SM 4				1.572	4
142SM 5				1.658 (2)+	5
142SM 6			1.784 3-		6
142SM 7	1.791	4+			7
142SM 8	2.056	2+			8
142SM 9	2.173	0+			9
142SM 10	2.280	0+			10

142SM 11			2.348 5-		11
142SM 12				2.354 (2+)	12
142SM 13			2.372 7-		13 170 NS 2
142SM 14				2.374 (2+)	14
142SM 15				2.416 (4)	15
142SM 16	2.420	6+			16 2 NS LT
142SM 17				2.439 (0+)	17
142SM 18				2.497	18
142SM 19				2.522 (0+)	19
142SM 20	2.582	4+			20

142SM 21				2.656	21
142SM 22				2.747 (2+)	22
142SM 23	2.867	4+			23
142SM 24			2.912 7-		24
142SM 25	2.955	4+			25
142SM 26				3.003 (6+)	26
142SM 27				3.007	27
142SM 28				3.032 (0+)	28
142SM 29				3.052	29
142SM 30			3.113 8-		30

142SM 31				3.118	31
142SM 32				3.182	32
142SM 33				3.188 (0+)	33
142SM 34				3.220	34
142SM 35				3.245	35
142SM 36	3.326	8+			36

142SM	37			3.387	9-				37
142SM	38						3.571		38
142SM	39			3.640	11-				39
142SM	40	3.662	10+						40 480 NS 60

142SM	41						3.714		41
142SM	42						3.799		42
142SM	43	3.826	10+						43
142SM	44			3.975	10-				44
142SM	45						4.072	(7-)	45
142SM	46						4.211		46
142SM	47			4.294	11-				47
142SM	48						4.309	(7-)	48
142SM	49			4.372	11-				49
142SM	50	4.542	11+						50

142SM	51			4.547	13-				51 2.6 NS 6
142SM	52						4.630		52
142SM	53	4.746	12+						53
142SM	54						4.970	(11+)	54
142SM	55						5.048	12	55
142SM	56						5.134	13	56
142SM	57						5.224	14	57
142SM	58						5.418	15	58
S-p	=	5.752 (0.014)			-----				
142SM	59						5.764	16	59
142SM	60						5.803	16	60

142SM	61						6.090		61
142SM	62						X		62
142SM	63						679.70+X		63
142SM	64						1419.10+X		64
142SM	65						2218.81+X		65
142SM	66						3078.8+X		66
142SM	67						3999.2+X		67
142SM	68						4979.8+X		68
142SM	69						6021.1+X		69
142SM	70						7122.9+X		70

142SM	71						8285.8+X		71
142SM	72						9510.2+X		72
142SM	73						10796.4+X		73
142SM	74						12144.6+X		74
142SM	75						13555.6+X		75
142SM	76						15030.1+X		76
142SM	77						16568.4+X		77
142SM	78						18171.2+X		78
142SM	79						19838.8+X		79
142SM	80						21571.6+X		80

142SM	81			23369.9+X	81
142SM	82			Y	82
142SM	83			726.2+Y	83
142SM	84			1512.6+Y	84
142SM	85			2357.0+Y	85
142SM	86			3258.3+Y	86
142SM	87			4216.2+Y	87
142SM	88			5228.8+Y	88
142SM	89			6302.5+Y	89
142SM	90			7431.5+Y	90

142SM	91			8617.6+Y	91
142SM	92			9861.1+Y	92
142SM	93			11163.0+Y	93
142SM	94			12523.4+Y	94
142SM	95			13942.0+Y	95
142SM	96			15419.8+Y	96
142SM	97			16955.2+Y	97
142SM	98			18544.8+Y	98
142SM	99			20180.1+Y	99

S-p = 5.752 (0.014)-----
S-n = 11.124 (0.009)-----
S-2p = 9.306 (0.005)-----
S-2n = 19.673 (0.013)-----
S-alpha= -0.607 (0.012)-----

S+p = -2.544 (0.011)
S+n = -8.602 (0.004)
S+2p = -7.351 (0.028)
S+2n = -19.122 (0.004)
S+alpha = 0.476 (0.005)

gap p = 3.209 (0.018)
gap n = 2.522 (0.010)
gap 2p = 1.955 (0.028)
gap 2n = 0.552 (0.013)
gap alpha = -0.131 (0.013)