

$^{139}\text{Sm}$        $Z = 62$        $N = 77$       adopted link      ENSDF link

Based on ENSDF from Oct 2022, and mass evaluation from 2020

BE = 1145.788 ( 0.011) MeV

Qbeta+ = 5.121 ( 0.017) MeV

	Energy T	J+	J-	J-other	T1/2
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S-alpha=	-1.409	( 0.022)	-----		
139SM 1	0.000	1/2+			1 2.57 M 10
139SM 2	0.112	3/2+			2
139SM 3				0.223 (3/2)+	3
139SM 4	0.267	5/2+			4
139SM 5			0.457 11/2-		5 10.7 S 6
139SM 6	0.531	5/2+			6
139SM 7				0.590 (9/2)-	7
139SM 8				0.687	8
139SM 9				0.721 (7/2+)	9
139SM 10				0.787	10
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139SM 11				0.920	11
139SM 12				1.020	12
139SM 13			1.047 15/2-		13
139SM 14				1.066 (13/2-)	14
139SM 15				1.067	15
139SM 16				1.075 (9/2+)	16
139SM 17				1.137 (11/2+)	17
139SM 18				1.158	18
139SM 19				1.176	19
139SM 20				1.346 (9/2+)	20
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139SM 21				1.380	21
139SM 22				1.454 (13/2+)	22
139SM 23				1.581 (15/2-)	23
139SM 24				1.779 (17/2-)	24
139SM 25				1.781 (15/2+)	25
139SM 26				1.870 (19/2-)	26
139SM 27				1.879 (13/2+)	27
139SM 28				1.969 (17/2+)	28
139SM 29				2.198 (19/2+)	29 1 NS LT
139SM 30				2.250 (19/2-)	30
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139SM 31				2.290 (17/2+)	31
139SM 32				2.550 (19/2+)	32
139SM 33				2.567 (19/2+)	33
139SM 34				2.583 (23/2+)	34
139SM 35				2.658 (21/2+)	35
139SM 36				2.671 (21/2-)	36

139SM	37				2.820	(23/2-)	37		
139SM	38				2.868	(23/2+)	38		
139SM	39				2.909	(21/2+)	39		
139SM	40				3.100	(25/2+)	40		
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139SM	41				3.255	(23/2-)	41		
139SM	42				3.284	(25/2)	42		
139SM	43				3.315	(27/2)	43		
139SM	44				3.327	(25/2-)	44		
139SM	45				3.331	(25/2)	45		
139SM	46				3.349	(27/2+)	46		
139SM	47				3.410	(27/2+)	47		
139SM	48				3.445	(27/2-)	48		
139SM	49				3.518	(25/2+)	49		
139SM	50				3.554	(29/2)	50		
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139SM	51				3.710	(29/2-)	51	0.69 PS	+42-21
139SM	52				3.736	(31/2)	52		
139SM	53				4.014	(33/2)	53		
139SM	54				4.048	(31/2-)	54	0.59 PS	+15-12
139SM	55				4.120	(29/2)	55		
139SM	56				4.124	(31/2+)	56		
139SM	57				4.164	(29/2+)	57		
139SM	58				4.339	(31/2+)	58		
139SM	59				4.362	(31/2+)	59		
139SM	60				4.444	(35/2)	60		
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139SM	61				4.457	(33/2-)	61	0.54 PS	+10-7
139SM	62				4.582	(33/2)	62		
139SM	63				4.696	35/2	63		
S-p	=	4.755	(	0.016)	-----				
139SM	64				4.844	(33/2+)	64		
139SM	65				4.857	(33/2+)	65		
139SM	66				4.881	(33/2)	66		
139SM	67				4.930	(35/2-)	67	0.34 PS	+8-6
139SM	68				5.089	(39/2)	68		
139SM	69				5.146	(35/2+)	69		
139SM	70				5.164	(33/2)	70		
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139SM	71				5.280	(37/2)	71		
139SM	72				5.323	(35/2)	72		
139SM	73				5.407	(35/2)	73		
139SM	74				5.412	(39/2)	74		
139SM	75				5.443	(37/2-)	75	0.62 PS	+42-21
139SM	76				5.484	(39/2)	76		
139SM	77				5.579	(37/2+)	77		
139SM	78				5.714	(43/2)	78		
139SM	79				5.726	(37/2)	79		
139SM	80				5.935	(39/2)	80	0.7 PS	GT
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139SM 81				5.963	(41/2)	81
139SM 82				6.103		82
139SM 83				6.122	(39/2)	83
139SM 84				6.126	(39/2)	84
139SM 85				6.155		85
139SM 86				6.247		86
139SM 87				6.387	(41/2+)	87
139SM 88				6.490	(47/2)	88
139SM 89				6.495	(41/2)	89
139SM 90				6.602		90
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139SM 91				6.616	(41/2)	91
139SM 92				6.900	(45/2)	92
139SM 93				7.177	(43/2)	93
139SM 94				7.193	(43/2)	94
139SM 95				7.234		95
139SM 96				7.273	(45/2+)	96
139SM 97				7.367	(51/2)	97
S-2p	=	7.374	( 0.016)	-----		
139SM 98				7.407	(51/2)	98
139SM 99				8.031	(49/2)	99
139SM 100				8.069		100
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139SM 101				8.175	(49/2+)	101
139SM 102				8.287	(55/2)	102
139SM 103				8.525		103
S-n	=	8.954	( 0.016)	-----		
139SM 104				9.083	(53/2+)	104
139SM 105				9.395	(59/2)	105
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S-p	=	4.755	( 0.016)	-----		
S-n	=	8.954	( 0.016)	-----		
S-2p	=	7.374	( 0.016)	-----		
S-2n	=	20.531	( 0.031)	-----		
S-alpha	=	-1.409	( 0.022)	-----		
S+p	=	-1.895	( 0.053)			
S+n	=	-11.147	( 0.017)			
S+2p	=	-5.422	( 0.023)			
S+2n	=	-19.696	( 0.014)			
S+alpha	=	1.724	( 0.201)			
gap p	=	2.860	( 0.055)			
gap n	=	-2.193	( 0.023)			
gap 2p	=	1.952	( 0.028)			
gap 2n	=	0.835	( 0.034)			
gap alpha	=	0.315	( 0.202)			