

$^{140}\text{Sm}$        $Z = 62$        $N = 78$       adopted link      ENSDF link

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

BE = 1156.935 ( 0.013) MeV

Qbeta+ = 2.756 ( 0.027) MeV

	Energy T	J+	J-	J-other	T1/2
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S-alpha=	-1.318	( 0.017)	-----		
140SM 1	0.000	0+			1 14.82 M 12
140SM 2	0.531	2+			2 6.10 PS 32
140SM 3	0.990	2+			3 7.7 PS 12
140SM 4	1.246	4+			4 1.00 PS 7
140SM 5				1.420 (1,2)	5
140SM 6	1.599	0+			6
140SM 7				1.628 0,1,2	7
140SM 8				1.933 0,1,2	8
140SM 9				2.015 5	9
140SM 10	2.082	6+			10
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140SM 11	2.284	2+			11
140SM 12				2.290 (1,2)	12
140SM 13				2.326 7	13
140SM 14				2.482 (1,2)+	14
140SM 15				2.596 0,1,2	15
140SM 16				2.959 (6,7,8)	16
140SM 17	2.970	8+			17
140SM 18				3.128 9	18
140SM 19	3.172	10+			19 19.4 NS 7
140SM 20				3.194 8(+)	20
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140SM 21	3.211	10+			21 5.20 NS 14
140SM 22	3.653	12+			22 15.2 NS 21
140SM 23	3.791	12+			23 7.6 NS 21
140SM 24				3.892 11	24
140SM 25				4.024 11	25
140SM 26				4.044 11	26
140SM 27	4.404	14+			27 1.2 PS 5
140SM 28				4.446 (13)	28
140SM 29				4.488	29
140SM 30				4.622 15	30
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140SM 31				4.683 11,12,13	31
140SM 32				4.854 13	32
140SM 33				4.914 14(+)	33
140SM 34				4.947 16	34
140SM 35				4.990 13	35
140SM 36				5.088 (14)	36

140SM	37			5.194	14	37
S-p	=	5.244	( 0.018)	-----		
140SM	38			5.254	15	38
140SM	39			5.329	17	39
140SM	40			5.373	(15)	40
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140SM	41			5.394		41
140SM	42			5.398	16	42
140SM	43			5.479	15	43
140SM	44			5.490	16	44
140SM	45			5.499	15	45
140SM	46			5.572	15	46
140SM	47			5.706	16	47
140SM	48			5.794	(18)	48
140SM	49			5.811	16	49
140SM	50			5.893		50
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140SM	51			5.998		51
140SM	52			6.024	17	52
140SM	53			6.039	17	53
140SM	54			6.166	16	54
140SM	55			6.272	18	55
140SM	56			6.397	18	56
140SM	57			6.420		57
140SM	58			6.436		58
140SM	59			6.549	18	59
140SM	60			6.726		60
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140SM	61			6.755	19	61
140SM	62			6.779		62
140SM	63			6.864	19	63
140SM	64			7.092		64
140SM	65			7.269		65
140SM	66			7.320	(20)	66
140SM	67			7.546		67
140SM	68			7.752		68
140SM	69			7.773	(20)	69
S-2p	=	8.017	( 0.017)	-----		
140SM	70			8.041		70
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140SM	71			8.101		71
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S-p	=	5.244	( 0.018)	-----		
S-n	=	11.147	( 0.017)	-----		
S-2p	=	8.017	( 0.017)	-----		
S-2n	=	20.101	( 0.017)	-----		
S-alpha	=	-1.318	( 0.017)	-----		
S+p	=	-1.759	( 0.018)	-----		

S+n = -8.549 ( 0.015)  
S+2p = -6.081 ( 0.031)  
S+2n = -19.668 ( 0.013)  
S+alpha = 1.272 ( 0.031)

gap p = 3.485 ( 0.026)  
gap n = 2.598 ( 0.022)  
gap 2p = 1.935 ( 0.035)  
gap 2n = 0.432 ( 0.021)  
gap alpha = -0.047 ( 0.035)