

^{140}Ba $Z = 56$ $N = 84$ [link to full NNDC output](#)

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

BE = 1169.442 (0.008) MeV

Qbeta- = 1.047 (0.008) MeV

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

S-alpha=	-0.735	(0.000)	-----		
140BA 1	0.000	0+			1 12.7527 D 23
140BA 2	0.602	2+			2 9.7 PS 41
140BA 3	1.131	4+			3
140BA 4	1.511	2+			4
140BA 5	1.660	6+			5
140BA 6			1.803	3-	6
140BA 7	1.824	0+			7
140BA 8				1.952 (3+)	8
140BA 9	1.994	2+			9
140BA 10				2.138 3(+)	10

140BA 11				2.152 (5-)	11
140BA 12				2.204 2+,3	12
140BA 13	2.237	2+			13
140BA 14				2.310 2+,1	14
140BA 15				2.321 (3,4+)	15
140BA 16				2.430 1,2+	16
140BA 17				2.468 (8+)	17
140BA 18				2.522 (1,2+)	18
140BA 19				2.664	19
140BA 20				2.692 (1+,2+)	20

140BA 21				2.704 1	21
140BA 22				2.723 (7-)	22
140BA 23				2.782 (3)	23
140BA 24				2.788 (2+)	24
140BA 25				2.871 2	25
140BA 26				2.874 (1+,2+)	26
140BA 27			2.933	2-	27
140BA 28				2.974	28
140BA 29				3.098 (1+,2+)	29
140BA 30				3.297 (9-)	30

140BA 31				3.384 (10+)	31
140BA 32				3.451 (1-)	32
140BA 33				3.521 (1+,2)	33
140BA 34				3.527 (1+,2+)	34
140BA 35				3.602 (1-)	35
140BA 36				3.656 2	36

140BA 37				3.770	(11-)	37
140BA 38				3.845		38
140BA 39				3.851	1	39
140BA 40				3.944	1	40

140BA 41				3.973	2(-)	41
140BA 42				4.033	(2+)	42
140BA 43				4.037	(2-)	43
140BA 44				4.080	(2-)	44
140BA 45				4.103	(12+)	45
140BA 46				4.275	(2-)	46
140BA 47				4.358	2	47
140BA 48				4.388	(1-,2-)	48
140BA 49				4.396		49
140BA 50				4.416	(1-)	50

140BA 51				4.500	(1-)	51
140BA 52				4.531	(13-)	52
140BA 53				4.801	(2-)	53
140BA 54				4.982	(1-)	54
140BA 55				5.110	(1-,2-)	55
140BA 56				5.174	(2-)	56
140BA 57				5.183	(2-)	57
140BA 58		5.310	2-			58
140BA 59				5.389	(2-)	59
140BA 60		5.588	2-			60

140BA 61		5.611	2-			61
140BA 62		5.651	2-			62
140BA 63		5.765	2-			63

S-p = 9.857 (0.009)-----
S-n = 6.427 (0.008)-----
S-2p = 17.875 (0.008)-----
S-2n = 11.150 (0.008)-----
S-alpha= -0.735 (0.000)-----

S+p = -6.951 (0.009)
S+n = -4.535 (0.010)
S+2p = -15.842 (0.008)
S+2n = -10.715 (0.010)
S+alpha = 0.413 (0.008)

gap p = 2.906 (0.012)
gap n = 1.892 (0.012)
gap 2p = 2.033 (0.012)
gap 2n = 0.435 (0.013)
gap alpha = -0.322 (0.008)