

^{42}Ar $Z = 18$ $N = 24$ adopted link ENSDF link

Based on ensdf_240402 (Apr 2024), and mass evaluation from 2020

BE = 359.336 (0.006) MeV

Qbeta- = 0.599 (0.006) MeV

	Energy T	J+	J-	J-other	T1/2
42AR 1	0.000	0+			1 32.9 Y 11
42AR 2	1.208	2+			2 2.6 PS +7-6
42AR 3	2.414	(4+)			3
42AR 4	2.486	2+			4 0.28 PS 11
42AR 5				2.513 (0+:4+)	5 2.8 PS +21-8
42AR 6				3.014 (1,2+)	6 83 FS LT
42AR 7	3.096	4+			7 3.5 PS GT
42AR 8	3.558	2+			8 62 FS LT
42AR 9	3.564	(6+)			9
42AR 10	3.705	(2+)			10
42AR 11				3.820	11
42AR 12	4.005	2+			12 0.23 PS 6
42AR 13				4.014	13
42AR 14				4.046	14
42AR 15				4.128 (0+,1,2)	15 0.97 PS 21
42AR 16				4.287 (1,2,3)	16 35 FS LT
42AR 17				4.405 3-,4+	17
42AR 18				4.417	18
42AR 19			4.634 (3-)		19 35 FS LT
42AR 20				4.887 (3-,4+)	20
42AR 21				4.896 (3-,4+)	21
42AR 22				5.000	22
42AR 23				5.230	23
42AR 24				5.292	24
42AR 25	5.553	2+			25
42AR 26				5.763	26
42AR 27				5.945	27
42AR 28				6.090	28
42AR 29				6.170	29
42AR 30				6.357	30
42AR 31				6.490	31
42AR 32				6.614	32
42AR 33				6.742	33
42AR 34				6.880	34
42AR 35				7.060	35
42AR 36				7.140	36

42AR 37			7.275	37
42AR 38			7.355	38
42AR 39			7.540	39
42AR 40			7.630	40

42AR 41			7.793	41
42AR 42			7.987	42
42AR 43			8.080	43
42AR 44			8.230	44
42AR 45			8.380	45
42AR 46			8.520	46
42AR 47			8.690	47
42AR 48			8.790	48
42AR 49			8.940	49
42AR 50			9.020	50

42AR 51			9.130	51
42AR 52			9.210	52
42AR 53			9.320	53
42AR 54			9.410	54
S-n = 9.427 (0.006)	-----			
42AR 55			9.535	55
42AR 56			9.640	56
42AR 57			9.820	57
42AR 58			9.905	58
S-alpha= 9.986 (0.009)	-----			
42AR 59			10.015	59
42AR 60			10.060	60

42AR 61			10.140	61
42AR 62			10.300	62
42AR 63			10.540	63
42AR 64			10.590	64
42AR 65			10.670	65
42AR 66			10.850	66
42AR 67			0.000	67

0

S-p = 14.405 (0.069) -----
S-n = 9.427 (0.006) -----
S-2p = 26.163 (0.007) -----
S-2n = 15.525 (0.006) -----
S-alpha= 9.986 (0.009) -----

S+p = -9.442 (0.006)
S+n = -5.658 (0.008)
S+2p = -21.624 (0.006)
S+2n = -14.393 (0.006)
S+alpha = -11.142 (0.006)

gap p = 4.963 (0.069)
gap n = 3.768 (0.010)
gap 2p = 4.539 (0.009)
gap 2n = 1.132 (0.008)
gap alpha = -1.155 (0.011)