

^{40}Ar $Z = 18$ $N = 22$ [link to full NNDC output](#)

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

BE = 343.810 (0.000) MeV

	Energy T	J+	J-	J-other	T1/2
40AR 1	0.000	0+			1 STABLE
40AR 2	1.461	2+			2 1.15 PS 5
40AR 3	2.121	0+			3 104 PS 14
40AR 4	2.524	2+			4 0.23 PS 4
40AR 5	2.893	4+			5 1.95 PS 28
40AR 6	3.208	2+			6 34 FS 7
40AR 7	3.465	6+			7 0.680 NS 21
40AR 8	3.512	2+			8 59 FS 12
40AR 9	3.515	4+			9 0.139 PS 28
40AR 10			3.681 3-		10 0.132 PS 28
40AR 11	3.919	2+			11 0.29 PS 3
40AR 12				3.942	12
40AR 13				4.042	13 NATURAL
40AR 14			4.083 3-		14 40 FS 14
40AR 15				4.179	15
40AR 16				4.230	16 4(-)
40AR 17				4.232	17 (1+,2-,3+)
40AR 18				4.301	18 (3)-
40AR 19	4.325	2+			19 16 FS 6
40AR 20				4.358	20
40AR 21				4.420	21 (2+,3-)
40AR 22				4.427	22 (4+)
40AR 23				4.473	23 1
40AR 24			4.481 1-		24 0.07 PS LT
40AR 25			4.494 5-		25 0.50 PS 7
40AR 26				4.562	26 (1,3)-
40AR 27				4.578	27 3(-)
40AR 28				4.602	28 53 FS 20
40AR 29				4.674	29 (1+,2-,3+)
40AR 30				4.738	30
40AR 31			4.769 1-		31 0.82 EV 6
40AR 32	4.794	4+			32 52 FS 14
40AR 33			4.858 5-		33 37 FS 10
40AR 34			4.870 3-		34
40AR 35				4.901	35
40AR 36				4.929	36 (1-:4+)
40AR 37				4.943	37
40AR 38	4.959	6+			38 0.10 PS 4

40AR 39				4.972	(2+,3,4+)	39	
40AR 40				4.991	4(-)	40	2.1 PS 7

40AR 41				5.110		41	
40AR 42				5.115	(5-)	42	
40AR 43				5.143	(5)	43	10 FS LT
40AR 44				5.166	(2)+	44	
40AR 45				5.191		45	
40AR 46				5.245	(0+:4+)	46	
40AR 47				5.270	(1-,3-)	47	
40AR 48				5.293	(2+)	48	
40AR 49				5.310	(2+)	49	
40AR 50				5.350		50	

40AR 51				5.378	(4+,5,6+)	51	
40AR 52		5.400	1-			52	0.030 EV 7
40AR 53				5.454	3-,4+	53	
40AR 54				5.508	NATURAL	54	
40AR 55				5.544	(0+:4+)	55	
40AR 56				5.559	(4+,5-,6+)	56	
40AR 57				5.609	(1,2,3)	57	
40AR 58				5.611		58	
40AR 59				5.630		59	
40AR 60				5.654		60	

40AR 61				5.662		61	
40AR 62				5.675	(3-,4+)	62	
40AR 63				5.718		63	
40AR 64				5.766		64	
40AR 65				5.818	(3-,4+)	65	
40AR 66		5.880	1-			66	0.117 EV 13
40AR 67		5.885	3-			67	
40AR 68				5.906	(1-)	68	
40AR 69				5.912	1	69	0.050 EV 17
40AR 70				5.912	(1-:4+)	70	

40AR 71				5.931	(2+,3,4+)	71	
40AR 72				5.951	(1,2)	72	
40AR 73				5.973	(6-)	73	
40AR 74				6.013	(7-)	74	
40AR 75				6.054	1(-)	75	0.41 EV 6
40AR 76		6.054	4+			76	
40AR 77				6.100	(1,2+)	77	
40AR 78				6.104		78	
40AR 79				6.138		79	
40AR 80				6.158	(4+,5,6+)	80	

40AR 81				6.185		81	
40AR 82				6.203		82	
40AR 83				6.208	(1,2)	83	

40AR 84				6.270		84
40AR 85				6.276	1-,2-,3-	85
40AR 86				6.305	(4+,5,6+)	86
40AR 87		6.339	1-			87 0.29 EV 3
40AR 88				6.356	(4+:7-)	88
40AR 89				6.421	(8-)	89
40AR 90				6.450		90

40AR 91		6.476	1-			91 0.43 EV 5
40AR 92				6.652		92
40AR 93				6.703	1	93
40AR 94				6.760	3-,4+	94
S-alpha=	6.801	(0.000)	-----			
40AR 95				6.806	(8+)	95
40AR 96				6.835	3-,4+	96
40AR 97				6.979	(8-)	97
40AR 98				7.070		98
40AR 99				7.168	1	99
40AR 100				7.246	1	100

40AR 101				7.281	1	101
40AR 102				7.519	1	102
40AR 103				7.626	1	103
40AR 104	7.640	2+				104
40AR 105				7.688	(9-)	105
40AR 106		7.708	1-			106
40AR 107				7.730		107
40AR 108		7.918	1-			108
40AR 109		7.993	1-			109
40AR 110				7.999	(10-)	110

40AR 111		8.032	1-			111
40AR 112		8.163	1-			112
40AR 113		8.191	1-			113
40AR 114		8.303	1-			114
40AR 115		8.552	1-			115
40AR 116		8.585	1-			116
40AR 117		8.644	1-			117
40AR 118				8.676	1,2+	118
40AR 119		8.834	1-			119
40AR 120		8.884	1-			120

40AR 121		8.918	1-			121 0.34 EV 14
40AR 122				8.946	(11-)	122
40AR 123				9.070	(10+)	123
40AR 124		9.127	1-			124 0.71 EV 14
40AR 125				9.138	(1-,2+)	125
40AR 126		9.147	1-			126
40AR 127		9.178	1-			127
40AR 128				9.197	(1-,2+)	128

40AR 129				9.216	1-					129	
40AR 130				9.234	1-					130	

40AR 131				9.240	1-					131	
40AR 132							9.264	(1-,2+)		132	
40AR 133				9.273	1-					133	
40AR 134							9.287			134	
40AR 135							9.296	(1-,2+)		135	
40AR 136				9.314	1-					136	
40AR 137				9.330	1-					137	
40AR 138				9.337	1-					138	
40AR 139				9.355	1-					139	
40AR 140							9.373			140	

40AR 141				9.416	1-					141	
40AR 142							9.425	(1-,2+)		142	
40AR 143							9.433	(1-,2+)		143	
40AR 144				9.450	1-					144	
40AR 145							9.472	(1-,2+)		145	
40AR 146				9.485	1-					146	
40AR 147							9.491			147	
40AR 148				9.504	1-					148	
40AR 149							9.527			149	
40AR 150				9.565	1-					150	

40AR 151				9.583	1-					151	
40AR 152							9.596			152	
40AR 153							9.608			153	
40AR 154				9.617	1-					154	
40AR 155				9.656	1-					155	
40AR 156				9.669	1-					156	
40AR 157							9.690	(1-,2+)		157	
40AR 158				9.736	1-					158	
40AR 159		9.757	1+							159	
40AR 160							9.769	(1-,2+)		160	

40AR 161				9.787	1-					161	
40AR 162				9.813	1-					162	
40AR 163				9.825	1-					163	
40AR 164				9.840	1-					164	
40AR 165				9.851	1-					165	
40AR 166							9.866			166	

S-n	=	9.869	(0.005)	-----							
40AR 167				9.881	1-					167	
40AR 168				9.893	1-					168	
40AR 169							9.912	(1-,2+)		169	
40AR 170				9.944	1-					170	

40AR 171				9.952	1-					171	
40AR 172				10.090	1-					172	

40AR 173				10.151	1-				173
40AR 174				10.179	1-				174
40AR 175							10.362	1,2+	175
40AR 176				10.745	1-				176
40AR 177				10.857	1-				177
40AR 178							11.769	(12+)	178
S-p	=	12.529	(0.002)	-----				
S-2n	=	16.468	(0.000)	-----				
40AR 179		17.700	2+						179

S-p = 12.529 (0.002)-----
S-n = 9.869 (0.005)-----
S-2p = 22.757 (0.007)-----
S-2n = 16.468 (0.000)-----
S-alpha= 6.801 (0.000)-----

S+p = -7.809 (0.000)
S+n = -6.099 (0.000)
S+2p = -18.085 (0.000)
S+2n = -15.525 (0.006)
S+alpha = -8.854 (0.000)

gap p = 4.720 (0.002)
gap n = 3.770 (0.005)
gap 2p = 4.671 (0.007)
gap 2n = 0.942 (0.006)
gap alpha = -2.053 (0.000)