

^{176}Hf $Z = 72$ $N = 104$ [link to full NNDC output](#)

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

BE = 1418.799 (0.001) MeV

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

S-alpha=	-2.255	(0.000)	-----					
176HF	1	0.000	0+					1 STABLE
176HF	2	0.088	2+					2 1.43 NS 4
176HF	3	0.290	4+					3
176HF	4	0.597	6+					4
176HF	5	0.998	8+					5
176HF	6	1.150	0+					6
176HF	7	1.227	2+					7 0.8 PS 1
176HF	8			1.248	2-			8 4.66 NS 17
176HF	9	1.293	0+					9
176HF	10			1.313	3-			10

176HF	11	1.333	6+					11 9.6 US 3
176HF	12	1.341	2+					12 0.29 PS 3
176HF	13					1.362		13
176HF	14	1.379	2+					14
176HF	15	1.390	4+					15
176HF	16			1.405	4-			16
176HF	17					1.413		17
176HF	18	1.446	3+					18
176HF	19	1.481	10+					19
176HF	20	1.506	7+					20

176HF	21			1.509	5-			21
176HF	22					1.533		22
176HF	23					1.540	(4+)	23
176HF	24			1.559	8-			24 9.9 US 2
176HF	25					1.578	(3+)	25
176HF	26					1.592	(4+)	26
176HF	27					1.609		27
176HF	28	1.629	6+					28
176HF	29			1.643	1-			29
176HF	30					1.653	(6)-	30

176HF	31					1.672	(1)+	31
176HF	32					1.676	(4+)	32
176HF	33					1.692	(2+)	33
176HF	34					1.700	(8+)	34
176HF	35					1.705	(2+)	35
176HF	36					1.710	(3-)	36
176HF	37			1.722	1-			37

176HF	38					1.728	(5+)	38
176HF	39					1.732	(5+,6+,7+)	39
176HF	40	1.749	0+					40

176HF	41					1.761	(6+)	41
176HF	42					1.767	(3,4,5)+	42
176HF	43					1.768	2-,3-	43
176HF	44					1.784	(7)-	44
176HF	45			1.785	9-			45
176HF	46					1.786		46
176HF	47					1.794		47
176HF	48					1.798	(7)-	48
176HF	49					1.798	(5+)	49
176HF	50					1.815		50

176HF	51					1.819	(0)-	51
176HF	52					1.830	5	52
176HF	53					1.854	(3+,4+,5+)	53
176HF	54					1.857	(2)-	54
176HF	55					1.860	(8)-	55
176HF	56					1.862	(6+)	56
176HF	57	1.863	1+					57
176HF	58					1.867		58
176HF	59					1.878	(5+,6+,7+)	59
176HF	60					1.886		60

176HF	61					1.902	(3-,4-,5-)	61
176HF	62	1.912	2+					62
176HF	63					1.914	(9+)	63
176HF	64					1.925	(2,3)-	64
176HF	65					1.927	(7+)	65
176HF	66					1.931	(8-)	66
176HF	67					1.933	(8+)	67
176HF	68					1.944	(6+)	68
176HF	69					1.950		69
176HF	70			1.958	2-			70

176HF	71					1.964	(5,6,7)-	71
176HF	72					1.977		72
176HF	73					1.978	(1)	73
176HF	74					1.984	(6+)	74
176HF	75					1.993	(8)-	75
176HF	76					2.014	(9)-	76
176HF	77					2.024	(+)	77
176HF	78			2.031	10-			78
176HF	79					2.035	(12+)	79
176HF	80					2.045	(1+)	80

176HF	81					2.048	(2,3,4-)	81
176HF	82					2.066	(1,2,3)+	82

176HF 83				2.086	(9-)	83
176HF 84				2.086	(5,6,7)+	84
176HF 85				2.097	(5,6,7)+	85
176HF 86				2.106	(7)+	86
176HF 87				2.113	(8+)	87
176HF 88				2.117	(7+)	88
176HF 89				2.136	(9)-	89
176HF 90				2.148	(10+)	90

176HF 91				2.161		91
176HF 92				2.173		92
176HF 93				2.174	(7+)	93
176HF 94				2.194	(10-)	94
176HF 95				2.259	(6-,7-,8-)	95
176HF 96				2.262	(10-)	96
176HF 97				2.265	(2)-	97
176HF 98				2.281	(2)	98
176HF 99				2.285	(8+)	99
176HF 100		2.294	11-			100

176HF 101				2.295	(10)+	101
176HF 102				2.305	(8+)	102
176HF 103				2.308		103
176HF 104				2.308	1-,2-,3-	104
176HF 105				2.319	(9+)	105
176HF 106				2.361	(1)	106
176HF 107				2.389		107
176HF 108				2.399	(11+)	108
176HF 109				2.399	(11-)	109
176HF 110				2.405	1	110

176HF 111				2.415		111
176HF 112				2.432	-	112
176HF 113				2.447		113
176HF 114				2.452		114
176HF 115		2.471	2-			115
176HF 116				2.483	(1)	116
176HF 117				2.514	1(+)	117
176HF 118				2.530	1	118
176HF 119				2.541	(10+)	119
176HF 120				2.548	1	120

176HF 121		2.564	12-			121
176HF 122				2.568		122
176HF 123				2.602		123
176HF 124				2.638	(12-)	124
176HF 125				2.647	(14+)	125
176HF 126				2.690	1	126
176HF 127				2.722	1(+)	127
176HF 128				2.763		128

176HF 129				2.792		129
176HF 130				2.818	(2)+	130

176HF 131			2.827	13-		131
176HF 132				2.831	1	132
176HF 133			2.866	14-		133 401 US 6
176HF 134				2.878		134
176HF 135				2.886	1(+)	135
176HF 136				2.906		136
176HF 137				2.912	(0)-	137
176HF 138			2.920	1-		138
176HF 139				2.921	1+,2+	139
176HF 140				2.940	1(+)	140

176HF 141			2.944	2-		141
176HF 142				2.969	(2-)	142
176HF 143				2.994	1(+)	143
176HF 144				3.044	1(-)	144
176HF 145				3.059	1	145
176HF 146	3.080	15+				146 0.20 NS +12-8
176HF 147				3.098	(1)	147
176HF 148				3.107	1(+)	148
176HF 149				3.115	1(-)	149
176HF 150				3.159	1(+)	150

176HF 151			3.161	15-		151
176HF 152				3.200	1	152
176HF 153				3.218	1	153
176HF 154				3.222	1(+)	154
176HF 155				3.232	1(+)	155
176HF 156				3.261	1(+)	156
176HF 157	3.266	16+				157
176HF 158				3.306	(1)	158
176HF 159				3.308	(16+)	159
176HF 160				3.322	1	160

176HF 161				3.343	1	161
176HF 162				3.361	1(-)	162
176HF 163				3.372	1(-)	163
176HF 164				3.385	1	164
176HF 165				3.406	(1)	165
176HF 166				3.438	1	166
176HF 167				3.454	1	167
176HF 168			3.467	16-		168
176HF 169				3.485	1	169
176HF 170				3.490	1	170

176HF 171				3.519	(1)	171
176HF 172	3.540	17+				172
176HF 173				3.550	1(+)	173

176HF 174				3.580	(1)	174
176HF 175				3.602	1	175
176HF 176				3.608	1	176
176HF 177				3.627	1(+)	177
176HF 178				3.662	1(+)	178
176HF 179				3.671	1(+)	179
176HF 180				3.689	(1)	180

176HF 181				3.695	(2)	181
176HF 182				3.722	(1)	182
176HF 183				3.746	1	183
176HF 184				3.767	1(+)	184
176HF 185				3.774	1	185
176HF 186		3.787	17-			186
176HF 187				3.805	1(+)	187
176HF 188				3.816	1(+)	188
176HF 189				3.824	(1)	189
176HF 190				3.838	1(-)	190

176HF 191				3.844	(1)	191
176HF 192		3.847	18+			192
176HF 193				3.856	(1)	193
176HF 194				3.916	(1)	194
176HF 195				4.010	(18+)	195
176HF 196		4.120	18-			196
176HF 197		4.179	19+			197
176HF 198				4.377	(19)+	198 34 NS
176HF 199				4.467	(19-)	199
176HF 200		4.532	20+			200

176HF 201				4.766	(20)-	201
176HF 202				4.826	(20-)	202
176HF 203				4.864	(22)-	203 43 US

S-p = 6.700 (0.002)-----
S-n = 8.166 (0.003)-----
S-2p = 12.210 (0.001)-----
S-2n = 14.874 (0.003)-----
S-alpha= -2.255 (0.000)-----

S+p = -4.427 (0.004)
S+n = -6.376 (0.002)
S+2p = -10.409 (0.015)
S+2n = -14.002 (0.002)
S+alpha = 2.515 (0.002)

gap p = 2.272 (0.004)
gap n = 1.790 (0.003)
gap 2p = 1.801 (0.015)

gap 2n = 0.873 (0.003)
gap alpha = 0.261 (0.002)