

^{140}Ce $Z = 58$ $N = 82$ adopted link ENSDF link

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

BE = 1172.683 (0.001) MeV

	Energy T	J+	J-	J-other	T1/2	
140CE 1	0.000	0+			1 STABLE	
140CE 2	1.596	2+			2 0.0910 PS +48-44	
S-alpha= 1.612 (0.001)						
140CE 3	1.903	0+			3 0.40 NS 3	
140CE 4	2.083	4+			4 3.45 NS 3	
140CE 5	2.108	6+			5 7.3 US 15	
140CE 6	2.348	2+			6 0.2 NS LE	
140CE 7	2.350	5+			7 12 PS LE	
140CE 8	2.412	3+			8 1.3 PS 4	
140CE 9			2.464	3-	9 0.15 PS 3	
140CE 10	2.481	4+			10 22 PS 7	
140CE 11	2.516	4+			11 2.5 PS LE	
140CE 12	2.521	2+			12 2.4 PS LE	
140CE 13	2.547	1+			13 0.19 PS +11-5	
140CE 14	2.629	6+			14	
140CE 15				2.658	15	
140CE 16	2.900	2+			16 49 FS 9	
140CE 17	3.001	2+			17 0.16 PS +10-5	
140CE 18	3.017	0+			18 0.14 PS GE	
140CE 19			3.039	3-	19	
140CE 20	3.119	2+			20 27.5 FS 85	
140CE 21	3.120	2+			21	
140CE 22	3.122	4+			22	
140CE 23				3.168	23	
140CE 24				3.220	(0+)	24
140CE 25	3.226	0+			25	
140CE 26			3.256	5-	26	
140CE 27	3.320	2+			27 58 FS +19-12	
140CE 28	3.335	4+			28	
140CE 29				3.360	29	
140CE 30				3.391	30	
140CE 31				3.395	(4-)	31 0.042 PS +49-21
140CE 32				3.395	(4+)	32
140CE 33				3.408	(2+)	33 0.062 PS GE
140CE 34			3.425	7-	34	
140CE 35	3.433	7+			35	
140CE 36				3.437	(2+,1)	36
140CE 37				3.471	(2+)	37 0.097 PS +76-35

140CE	38			3.474	3-			38	0.066	PS	+21-13
140CE	39			3.476	8-			39			
140CE	40	3.484	6+					40			

140CE	41					3.491		41			
140CE	42			3.492	9-			42	1.7	NS	2
140CE	43	3.512	8+					43			
140CE	44					3.521	(4+)	44			
140CE	45					3.522	(5)	45			
140CE	46					3.535	(3,4)	46			
140CE	47	3.539	2+					47	0.21	PS	GE
140CE	48					3.551	2+,3-	48			
140CE	49					3.568	(2+)	49			
140CE	50					3.602		50			

140CE	51	3.621	8+					51			
140CE	52			3.643	1-			52	1.45	FS	19
140CE	53					3.647	(1,2+)	53	0.062	PS	GE
140CE	54					3.648	(2+,3,4+)	54			
140CE	55					3.653	2+,3-	55			
140CE	56					3.658	(4+,5,6+)	56			
140CE	57					3.661	(7,8)	57			
140CE	58					3.684	(1-,2+)	58			
140CE	59					3.709	(2+)	59			
140CE	60			3.710	5-			60			

140CE	61	3.714	10+					61	23.1	NS	4
140CE	62					3.724	(2+)	62	0.097	PS	GE
140CE	63	3.729	2+					63			
140CE	64					3.735	(1,2+)	64			
140CE	65					3.746		65			
140CE	66					3.768	(2+,3+,4+)	66			
140CE	67					3.780	(3+,4+)	67			
140CE	68			3.793	3-			68			
140CE	69					3.836	(2+,3,4+)	69			
140CE	70					3.847	(4+,5,6+)	70			

140CE	71					3.853	(1,2+)	71			
140CE	72					3.879	(1,2+)	72			
140CE	73	3.895	9+					73			
140CE	74					3.911		74			
140CE	75			3.911	5-			75			
140CE	76			3.912	2-			76			
140CE	77					3.956		77			
140CE	78					3.958		78			
140CE	79					3.971		79			
140CE	80			3.980	3-			80			

140CE	81					3.984	(2+,3,4+)	81			
140CE	82			4.000	4-			82			

140CE 83						4.017				83
140CE 84						4.053	(1)			84
140CE 85						4.061				85
140CE 86		4.125	2+							86
140CE 87					4.158	2-				87
140CE 88										88
140CE 89										89
140CE 90										90

140CE 91					4.182	1-				91
140CE 92										92
140CE 93										93
140CE 94		4.242	2+							94
140CE 95		4.262	10+							95
140CE 96										96
140CE 97										97
140CE 98										98
140CE 99										99
140CE 100										100

140CE 101										101
140CE 102					4.364	1-				102
140CE 103										103
140CE 104										104
140CE 105										105
140CE 106										106
140CE 107										107
140CE 108										108
140CE 109										109
140CE 110										110

140CE 111					4.538	3-				111
140CE 112										112
140CE 113					4.580	2-				113
140CE 114										114
140CE 115										115
140CE 116										116
140CE 117										117
140CE 118										118
140CE 119					4.748	2-				119
140CE 120										120

140CE 121					4.770	1-				121
140CE 122										122
140CE 123										123
140CE 124										124
140CE 125		4.851	12+							125
140CE 126										126
140CE 127										127
140CE 128										128

140CE 129				4.883	(1)		129
140CE 130		4.905	11-				130

140CE 131				4.910			131
140CE 132				4.951	(1)		132
140CE 133				4.958	(11+)		133
140CE 134				4.979	2+,3-		134
140CE 135				5.000			135
140CE 136				5.026	2-,3-		136
140CE 137				5.050			137
140CE 138				5.069	(9,11)		138
140CE 139				5.093	(12-)		139
140CE 140				5.101	GE 5		140

140CE 141		5.102	13-				141
140CE 142				5.140			142
140CE 143				5.157	1(-)	2.6 FS	5
140CE 144				5.160			144
140CE 145				5.190	1(-)	2.1 FS	4
140CE 146				5.196	2-,3-		146
140CE 147				5.212	1(-)	3.6 FS	9
140CE 148				5.230			148
140CE 149				5.245	(1)		149
140CE 150				5.295	5-,6+		150

140CE 151				5.330	(1)		151
140CE 152				5.335	(12-)		152
140CE 153				5.337	1(-)	1.8 FS	4
140CE 154				5.377	4+,5-		154
140CE 155				5.419	(14-)		155
140CE 156				5.424	2-,3-		156
140CE 157				5.449			157
140CE 158				5.466	2-,3-		158
140CE 159				5.470	(1)		159
140CE 160				5.494	(1)		160

140CE 161				5.548	1(-)	0.97 FS	17
140CE 162				5.574	1(-)	1.7 FS	4
140CE 163				5.574	(0+)		163
140CE 164				5.624	(1)		164
140CE 165				5.650	2+,3-		165
140CE 166		5.660	1-			0.0121 EV	29
140CE 167				5.693			167
140CE 168				5.703	1-,2+		168
140CE 169				5.721	(1)		169
140CE 170				5.759	(1)		170

140CE 171				5.789			171
140CE 172				5.809	(1)		172
140CE 173				5.823	(1)		173

140CE 174				5.896	1-,2+	174			
140CE 175				5.929	1(-)	175	1.16	FS	24
140CE 176				5.940	(1)	176			
140CE 177				5.989	(3-,4+)	177			
140CE 178				6.029	(1)	178			
140CE 179				6.078	2+,3-	179			
140CE 180		6.119	1-			180	0.69	FS	12

140CE 181				6.131	1	181	1.5	FS	3
140CE 182				6.162	1(-)	182	1.08	FS	20
140CE 183				6.187	2+,3-	183			
140CE 184				6.226	(1)	184			
140CE 185				6.233		185			
140CE 186				6.245	(1)	186			
140CE 187				6.255	(1)	187			
140CE 188				6.268		188			
140CE 189				6.274	1	189	1.05	FS	20
140CE 190		6.295	1-			190	0.46	FS	8

140CE 191				6.304	(15-)	191			
140CE 192				6.328	1	192	1.3	FS	5
140CE 193				6.343	1	193	0.78	FS	15
140CE 194				6.353	1	194	0.69	FS	13
140CE 195				6.364	3-,4+	195			
140CE 196		6.397	1-			196	0.28	FS	5
140CE 197				6.440	1(-)	197	0.53	FS	9
140CE 198				6.450	1(-)	198	0.90	FS	18
140CE 199				6.458	1(-)	199	1.00	FS	20
140CE 200				6.485	1	200	1.00	FS	20

140CE 201		6.497	1-			201	0.33	FS	6
140CE 202		6.536	1-			202	0.22	FS	3
140CE 203				6.549	1	203	1.3	FS	3
140CE 204				6.575	1	204	1.16	FS	23
140CE 205				6.606	1(-)	205	0.69	FS	12
140CE 206				6.616	1(-)	206	0.74	FS	13
140CE 207				6.678		207			
140CE 208				6.772	(2+)	208			
140CE 209				6.782	1	209	0.85	FS	19
140CE 210				6.797	(16-)	210			

140CE 211				6.842	1	211	0.79	FS	22
140CE 212		6.862	1-			212	0.24	FS	4
140CE 213				6.889	(15,16)	213			
140CE 214				6.906	1	214	0.45	FS	10
140CE 215				6.933	1	215	0.52	FS	11
140CE 216				6.960	1	216	0.47	FS	10
140CE 217				7.038	(17-)	217			
140CE 218				7.050		218			
140CE 219				7.206	1	219	0.31	FS	5

140CE 220				7.215	1		220	0.34	FS	6

140CE 221				7.341	1		221	0.9	FS	2
140CE 222		7.370					222			
140CE 223				7.673	1		223	0.76	FS	18

S-p = 8.141 (0.001)-----
 S-n = 9.188 (0.002)-----
 S-2p = 14.390 (0.001)-----
 S-2n = 16.651 (0.001)-----
 S-alpha= 1.612 (0.001)-----

S+p = -5.229 (0.002)
 S+n = -5.428 (0.002)
 S+2p = -12.454 (0.002)
 S+2n = -12.601 (0.003)
 S+alpha = 1.901 (0.002)

gap p = 2.911 (0.002)
 gap n = 3.760 (0.003)
 gap 2p = 1.937 (0.002)
 gap 2n = 4.050 (0.003)
 gap alpha = 3.513 (0.002)