

$^{65}\text{Cu}$        $Z = 29$        $N = 36$       [link to full NNDC output](#)

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

BE = 569.211 ( 0.001) MeV

	Energy T	J+	J-	J-other	T1/2
65CU 1			0.000	3/2-	1 STABLE
65CU 2			0.771	1/2-	2 103 FS 4
65CU 3			1.116	5/2-	3 0.282 PS 6
65CU 4			1.482	7/2-	4 0.41 PS 7
65CU 5			1.623	5/2-	5 1.6 PS 5
65CU 6			1.725	3/2-	6 92 FS 12
65CU 7				2.094 (7/2)-	7 1 PS GT
65CU 8				2.107 (5/2)-	8 0.17 PS +7-5
65CU 9				2.213 (1/2)-	9 0.11 PS +7-4
65CU 10				2.279 (7/2)-	10 0.84 FS GT
65CU 11			2.329	3/2-	11 26 FS 6
65CU 12				2.407	12
65CU 13	2.526	9/2+			13
65CU 14				2.533 1/2,3/2,5/2-	14
65CU 15				2.534 (7/2+,9/2+)	15
65CU 16				2.593 (1/2-,5/2-)	16
65CU 17				2.620	17
65CU 18				2.644	18
65CU 19				2.650 (5/2-,7/2-)	19 8 FS +4-3
65CU 20				2.655	20 58 FS +18-13
65CU 21				2.669	21 4 FS 3
65CU 22				2.753 (7/2+,9/2+)	22 30 FS 10
65CU 23				2.839 (7/2+,9/2+)	23 18 FS +8-6
65CU 24				2.863	24 19 FS 2
65CU 25				2.867 3/2-,5/2,7/2-	25 12 FS +4-3
65CU 26				2.874 (3/2-)	26 12 FS 2
65CU 27				2.894 1/2-,3/2,5/2-	27 50 FS 7
65CU 28				2.902 (3/2,5/2)	28 97 FS 20
65CU 29				2.948	29
65CU 30				2.977	30 9 FS 4
65CU 31				2.990	31
65CU 32				2.997 (11/2-)	32
65CU 33				3.036	33
65CU 34				3.079 1/2-,3/2-	34
65CU 35				3.080 (3/2,5/2)+	35 83 FS +55-42
65CU 36				3.086 (3/2-)	36 143 FS 40
65CU 37				3.116 (1/2-,3/2-)	37 0.21 PS +28-7
65CU 38				3.120	38

65CU 39						3.127				39
65CU 40						3.132				40
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65CU 41						3.143				41
65CU 42						3.157				42
65CU 43						3.167				43
65CU 44						3.173				44
65CU 45						3.240	(1/2+,3/2,5/2+)			45
65CU 46						3.261	(1/2-,5/2-,7/2-)	46	210 FS	20
65CU 47						3.274				47
65CU 48						3.278	(11/2-)			48
65CU 49						3.326	(3/2,5/2)			49
65CU 50						3.338				50
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65CU 51						3.347				51
65CU 52		3.355	5/2+							52 106 FS 50
65CU 53						3.399				53
65CU 54						3.402	(7/2,9/2)			54
65CU 55						3.407				55
65CU 56						3.427	5/2-,7/2-	56	50 FS	10
65CU 57						3.449				57
65CU 58						3.457				58
65CU 59						3.482	(7/2,9/2)			59
65CU 60						3.504				60
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65CU 61						3.513	(9/2+)			61
65CU 62						3.541				62
65CU 63						3.563	(5/2,7/2)			63
65CU 64						3.576				64
65CU 65						3.595	3/2+,5/2+			65
65CU 66						3.606	(9/2,7/2)			66
65CU 67						3.632	(1/2+,3/2+)			67
65CU 68						3.646	(5/2-,7/2,9/2+)			68
65CU 69						3.656	(9/2,7/2)			69
65CU 70						3.685				70
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65CU 71						3.714				71
65CU 72						3.728				72
65CU 73				3.740	7/2-					73
65CU 74						3.753				74
65CU 75						3.777				75
65CU 76						3.796				76
65CU 77						3.808				77
65CU 78						3.825				78
65CU 79						3.851				79
65CU 80						3.881				80
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65CU 81		3.895	1/2+							81 17 FS 3
65CU 82						3.901	(5/2,7/2)-			82
65CU 83						3.904	(9/2)			83

65CU 84				3.925		84
65CU 85				3.958		85
65CU 86				3.964	1/2-, 3/2-	86
65CU 87				3.965	(9/2, 11/2)	87
65CU 88				3.987		88
65CU 89				4.006		89
65CU 90				4.014	(11/2-)	90
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65CU 91				4.031		91
65CU 92				4.044		92
65CU 93				4.049		93
65CU 94				4.056	(1/2+, 3/2, 5/2+)	94
65CU 95				4.087	(1/2+, 3/2, 5/2+)	95
65CU 96				4.095	(9/2)	96 36 FS 5
65CU 97				4.119		97
65CU 98	4.126	3/2+				98 12 FS 1
65CU 99				4.141		99
65CU 100				4.176		100
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65CU 101				4.184		101
65CU 102				4.201		102
65CU 103				4.217		103
65CU 104				4.227		104
65CU 105				4.237		105
65CU 106				4.244		106
65CU 107				4.266		107
65CU 108				4.271		108
65CU 109				4.290		109
65CU 110				4.304		110
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65CU 111				4.320		111
65CU 112				4.331		112
65CU 113				4.357		113
65CU 114				4.366		114
65CU 115				4.376		115
65CU 116				4.389		116
65CU 117				4.397		117
65CU 118				4.418	5/2-, 7/2-	118
65CU 119				4.436		119
65CU 120				4.460		120
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65CU 121				4.483		121
65CU 122				4.490		122
65CU 123				4.513		123
65CU 124				4.524		124
65CU 125				4.533		125
65CU 126				4.540		126
65CU 127				4.566		127
65CU 128				4.598		128
65CU 129				4.616		129

65CU 130				4.647			130
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65CU 131				4.668			131
65CU 132				4.682			132
65CU 133				4.706			133
65CU 134				4.724			134
65CU 135				4.736			135
65CU 136				4.759			136
65CU 137				4.776			137
65CU 138				4.795			138
65CU 139				4.808			139
65CU 140				4.822			140
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65CU 141				4.848			141
65CU 142				4.863			142
65CU 143				4.892			143
65CU 144				4.923			144
65CU 145				4.932			145
65CU 146				5.017			146
65CU 147				5.063			147
65CU 148				5.077			148
65CU 149				5.083			149
65CU 150				5.100			150
-----							
65CU 151				5.217			151
65CU 152				5.230			152
65CU 153				5.236			153
65CU 154				5.244			154
65CU 155				5.262			155
65CU 156				5.296			156
65CU 157				5.305			157
65CU 158				5.310			158
65CU 159				5.320			159
65CU 160				5.335			160
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65CU 161				5.384			161
65CU 162				5.392			162
65CU 163				5.424			163
65CU 164				5.430			164
65CU 165				5.447			165
65CU 166				5.526			166
65CU 167				5.603			167
65CU 168				5.618			168
65CU 169				5.632			169
65CU 170		5.732	7/2-				170
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65CU 171				5.779			171
65CU 172				6.070	(3/2)		172 0.7 FS 3
65CU 173				6.486			173
65CU 174				6.556	(1/2)		174 7 FS 3

S-alpha= 6.791 ( 0.001)-----						
S-p = 7.454 ( 0.001)-----						
65CU 175				7.505	(3/2,5/2)+	175
65CU 176				7.939	(5/2)	176
65CU 177				8.484		177 1.38 FS 13
65CU 178		8.535			5/2+	178
65CU 179		9.483			5/2+	179
S-n = 9.910 ( 0.001)-----						
65CU 180		10.513			5/2+	180
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65CU 181				10.575		181
65CU 182				10.900	3/2-	182
65CU 183				11.288	3/2-	183
65CU 184		11.502			5/2+	184
65CU 185				11.587		185
65CU 186		11.928			1/2+	186
65CU 187				12.015	1/2-	187
65CU 188				12.337		188
65CU 189		12.477			5/2+	189
65CU 190				12.694	3/2-	190
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65CU 191				12.891		191
65CU 192		13.343			5/2+	192
65CU 193		13.391			1/2+	193
65CU 194				13.448		194
65CU 195		13.507			5/2+	195
65CU 196				13.590	(3/2+)	196
65CU 197				13.693		197
65CU 198				13.833		198
65CU 199				13.871	(5/2+)	199
65CU 200				13.915		200
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65CU 201				13.955		201
65CU 202				14.056		202
65CU 203		14.111			5/2+	203
65CU 204		14.302			5/2+	204
65CU 205				14.441		205
65CU 206		14.501			5/2+	206
65CU 207				14.537		207
65CU 208		15.498			5/2+	208

S-p = 7.454 ( 0.001)-----  
 S-n = 9.910 ( 0.001)-----  
 S-2p = 19.990 ( 0.019)-----  
 S-2n = 17.827 ( 0.001)-----  
 S-alpha= 6.791 ( 0.001)-----

S+p = -8.924 ( 0.001)  
 S+n = -7.066 ( 0.001)

S+2p = -14.193 ( 0.001)  
S+2n = -16.198 ( 0.001)  
S+alpha = -4.489 ( 0.001)

gap p = -1.471 ( 0.001)  
gap n = 2.845 ( 0.001)  
gap 2p = 5.797 ( 0.019)  
gap 2n = 1.628 ( 0.001)  
gap alpha = 2.302 ( 0.002)