

^{109}Pd $Z = 46$ $N = 63$ adopted link ENSDF link

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

BE = 931.392 (0.001) MeV

Qbeta- = 1.113 (0.002) MeV

	Energy T	J+	J-	J-other	T1/2
109PD 1	0.000	5/2+			1 13.59 H 12
109PD 2	0.113	1/2+			2 380 NS 50
109PD 3			0.189 11/2-		3 4.703 M 9
109PD 4				0.245 (7/2)-	4 1.528 NS 56
109PD 5	0.248	9/2+			5
109PD 6	0.266	1/2+			6
109PD 7	0.276	7/2+			7 11.3 PS 34
109PD 8			0.287 9/2-		8
109PD 9	0.291	3/2+			9 136.5 PS 23
109PD 10	0.325	3/2+			10 39.6 PS 35
109PD 11	0.327	5/2+			11 0.832 NS 27
109PD 12			0.340 5/2-		12
109PD 13				0.370 (1/2-, 3/2-)	13
109PD 14				0.382 1/2+, 3/2+, 5/2+	14
109PD 15	0.404	1/2+			15
109PD 16	0.426	7/2+			16 73.6 PS 42
109PD 17	0.434	3/2+			17
109PD 18	0.492	3/2+			18 62.9 PS 42
109PD 19	0.541	5/2+			19 29.3 PS 43
109PD 20				0.597 (9/2)+	20
109PD 21			0.605 5/2-		21
109PD 22	0.623	1/2+			22
109PD 23				0.625 (15/2-)	23
109PD 24				0.646 7/2+, 9/2+	24
109PD 25			0.673 3/2-		25
109PD 26				0.712 (7/2+, 9/2+)	26
109PD 27				0.718 (13/2-)	27
109PD 28				0.722 3/2+, 5/2+	28
109PD 29				0.729 3/2+, 5/2+	29
109PD 30	0.742	1/2+			30
109PD 31				0.791 5/2+, 3/2+	31
109PD 32	0.811	3/2+			32
109PD 33	0.846	5/2+			33
109PD 34				0.883 9/2-, 11/2-	34
109PD 35				0.907 (11/2+)	35
109PD 36	0.911	5/2+			36
109PD 37			0.941 3/2-		37

109PD	38	0.945	1/2+				38
109PD	39	0.954	1/2+				39
109PD	40	0.982	5/2+				40

109PD	41				1.006		41
109PD	42	1.054	3/2+				42
109PD	43	1.066	1/2+				43
109PD	44	1.091	5/2+				44
109PD	45				1.112	1/2,3/2	45
109PD	46				1.135	1/2,3/2	46
109PD	47	1.148	3/2+				47
109PD	48				1.176	5/2-,7/2-	48
109PD	49	1.233	1/2+				49
109PD	50				1.241	5/2-,7/2-	50

109PD	51				1.244	1/2,3/2	51
109PD	52				1.267	(13/2+)	52
109PD	53				1.270	5/2+,3/2+	53
109PD	54				1.289	(19/2-)	54
109PD	55				1.308		55
109PD	56				1.317		56
109PD	57				1.328	5/2	57
109PD	58				1.329	(1/2-,3/2-)	58
109PD	59	1.348	1/2+				59
109PD	60				1.359	1/2,3/2	60

109PD	61				1.361	(17/2-)	61
109PD	62	1.371	5/2+				62
109PD	63				1.378	1/2,3/2	63
109PD	64				1.399	1/2,3/2	64
109PD	65				1.448	3/2+,5/2+	65
109PD	66	1.479	1/2+				66
109PD	67				1.485	(1/2,3/2,5/2+)	67
109PD	68				1.499		68
109PD	69	1.537	1/2+				69
109PD	70				1.540	3/2	70

109PD	71				1.602	(1/2+)	71
109PD	72				1.616	(1/2,3/2,5/2+)	72
109PD	73				1.624	(1/2,3/2,5/2+)	73
109PD	74				1.635	(15/2+)	74
109PD	75				1.645	(3/2+,5/2+)	75
109PD	76				1.648	(1/2,3/2,5/2+)	76
109PD	77				1.656	(1/2+)	77
109PD	78				1.664		78
109PD	79	1.684	1/2+				79
109PD	80	1.692	1/2+				80

109PD	81				1.710	(1/2,3/2,5/2+)	81
109PD	82				1.737		82

109PD 83				1.773	5/2-,7/2-	83
109PD 84	1.789	1/2+				84
109PD 85	1.800	1/2+				85
109PD 86				1.819		86
109PD 87				1.836	5/2-,7/2-	87
109PD 88				1.846		88
109PD 89	1.848	1/2+				89
109PD 90				1.863	(5/2-,7/2-)	90

109PD 91				1.873	(17/2+)	91
109PD 92				1.877	1/2-,3/2-	92
109PD 93				1.878	3/2+,5/2+	93
109PD 94				1.915	1/2-,3/2-	94
109PD 95				1.923	1/2-,3/2-	95
109PD 96				1.941	5/2-,7/2-	96
109PD 97				1.954		97
109PD 98				1.972	5/2-,7/2-	98
109PD 99				1.977	1/2-,3/2-	99
109PD 100				1.999		100

109PD 101	2.014	1/2+				101
109PD 102				2.021	1/2-,3/2-	102
109PD 103				2.053		103
109PD 104				2.091	3/2+,5/2+	104
109PD 105				2.101	(3/2+,5/2+)	105
109PD 106				2.103	(23/2-)	106
109PD 107				2.117	1/2-,3/2-	107
109PD 108	2.120	1/2+				108
109PD 109				2.135	(1/2-,3/2-)	109
109PD 110				2.155	(21/2-)	110

109PD 111				2.160	1/2-,3/2-	111
109PD 112				2.174	3/2+,5/2+	112
109PD 113	2.188	1/2+				113
109PD 114				2.209	5/2-,7/2-	114
109PD 115				2.240	(3/2+,5/2+)	115
109PD 116				2.245	1/2-,3/2-	116
109PD 117				2.259	1/2-,3/2-	117
109PD 118				2.280	3/2+,5/2+	118
109PD 119	2.282	1/2+				119
109PD 120				2.295	1/2-,3/2-	120

109PD 121				2.301	(1/2-,3/2-)	121
109PD 122				2.320	3/2+,5/2+	122
109PD 123				2.346	(5/2-,7/2-)	123
109PD 124				2.357	(1/2-,3/2-)	124
109PD 125				2.364	(19/2+)	125
109PD 126				2.371		126
109PD 127	2.380	1/2+				127
109PD 128				2.391	5/2-,7/2-	128

109PD 129				2.415	1/2-, 3/2-	129
109PD 130				2.465	5/2-, 7/2-	130

109PD 131				2.473	1/2-, 3/2-	131
109PD 132				2.478	(21/2+)	132
109PD 133				2.493	(5/2-, 7/2-)	133
109PD 134				2.522	3/2+, 5/2+	134
109PD 135				2.541		135
109PD 136				3.030	(27/2-)	136
109PD 137				3.975	(31/2-)	137
S-alpha=	4.097	(0.003)	-----			
109PD 138				4.958	(35/2-)	138

S-p = 9.864 (0.014)-----
 S-n = 6.154 (0.002)-----
 S-2p = 18.322 (0.009)-----
 S-2n = 15.377 (0.002)-----
 S-alpha= 4.097 (0.003)-----

S+p = -7.140 (0.002)
 S+n = -8.796 (0.001)
 S+2p = -16.224 (0.001)
 S+2n = -14.522 (0.001)
 S+alpha = -3.862 (0.001)

gap p = 2.725 (0.014)
 gap n = -2.642 (0.002)
 gap 2p = 2.098 (0.009)
 gap 2n = 0.855 (0.002)
 gap alpha = 0.235 (0.003)