

^{209}Bi $Z = 83$ $N = 126$ adopted link ENSDF link

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

BE = 1640.229 (0.001) MeV

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

S-alpha=	-3.137	(0.002)	-----					
209BI 1			0.000	9/2-			1	2.01E19 Y 8
209BI 2			0.896	7/2-			2	8.2 PS 12
209BI 3	1.609	13/2+					3	0.23 NS 13
209BI 4	2.443	1/2+					4	11.3 NS 4
209BI 5	2.493	3/2+					5	31 PS AP
209BI 6					2.564	(9/2)+	6	0.015 PS 3
209BI 7					2.583	(7/2)+	7	0.31 PS 10
209BI 8	2.600	11/2+					8	36 FS 10
209BI 9	2.601	13/2+					9	0.44 PS 14
209BI 10	2.617	5/2+					10	7.2 PS 11

209BI 11	2.741	15/2+					11	9.1 PS 12
209BI 12	2.767	3/2+					12	
209BI 13			2.826	5/2-			13	6.9 FS 9
209BI 14	2.845	1/2+					14	
209BI 15					2.917	(1/2)+	15	
209BI 16					2.956	(3/2)+	16	
209BI 17	2.987	19/2+					17	17.9 NS 5
209BI 18	3.039	5/2+					18	
209BI 19					3.090	(7/2)+	19	
209BI 20			3.119	3/2-			20	0.021 PS 14

209BI 21	3.133	11/2+					21	
209BI 22					3.136	(15/2)+	22	
209BI 23					3.153	(9/2)+	23	
209BI 24	3.154	17/2+					24	
209BI 25					3.159	3/2(+)	25	
209BI 26					3.169	(13/2)+	26	
209BI 27					3.198	(1/2+,3/2+)	27	
209BI 28					3.212	(17/2)+	28	
209BI 29	3.222	5/2+					29	
209BI 30					3.270	1/2+,3/2+	30	

209BI 31					3.311	(7/2+,9/2+)	31	
209BI 32					3.355	(5/2+)	32	
209BI 33					3.362	(5/2+,7/2+,9/2+)	33	
209BI 34					3.378	(9/2+)	34	
209BI 35					3.393	(15/2+)	35	
209BI 36					3.395	5/2-,7/2,9/2,11/2-	36	
209BI 37	3.406	13/2+					37	

209BI	38					3.450	(7/2+)	38
209BI	39		3.464	11/2+				39
209BI	40		3.468	19/2+				40

209BI	41					3.487	(19/2+)	41
209BI	42					3.490	(7/2,9/2)	42
209BI	43					3.502	(15/2+)	43
209BI	44					3.505	5/2-,7/2-	44
209BI	45					3.542	(5/2-,7/2,9/2)	45
209BI	46					3.575	(5/2,7/2+)	46
209BI	47					3.579	(17/2+:21/2+)	47
209BI	48					3.591		48
209BI	49		3.597	19/2+				49
209BI	50					3.602	(5/2+,7/2+,9/2+	50)

209BI	51				3.634	1/2-		51
209BI	52					3.684	17/2+,19/2+,21/	522+
209BI	53					3.692	(11/2-)	53
209BI	54					3.704	7/2(+)	54
209BI	55					3.718	(7/2+,9/2+,11/2	55+)
209BI	56					3.735	(15/2:21/2)+	56
209BI	57					3.752		57
209BI	58					3.759		58
209BI	59					3.767	(11/2)+	59
209BI	60					3.773		60

209BI	61					3.783	(5/2,7/2,9/2)	61
S-p	=	3.799	(0.002)	-----				
209BI	62					3.801	(7/2+,9/2+)	62
209BI	63					3.808		63
209BI	64		3.812	23/2+				64
209BI	65					3.817		65
209BI	66					3.818	(11/2+,13/2+)	66
209BI	67					3.839	11/2+,13/2+	67
209BI	68					3.850		68
209BI	69					3.884		69
209BI	70					3.889		70

209BI	71					3.906		71
209BI	72					3.912	(15/2:21/2)+	72
209BI	73					3.913	(1/2:7/2+)	73
209BI	74					3.921	(7/2+,9/2+)	74
209BI	75					3.937	(13/2-)	75
209BI	76					3.950	(13/2+:17/2+)	76
209BI	77					3.962	(7/2,9/2)	77
209BI	78					3.980	(11/2,13/2)-	78
209BI	79					4.001	9/2+,11/2,13/2-	79
209BI	80					4.002	(15/2:23/2)+	80

209BI	81					4.009		81

209BI 82				4.021		82
209BI 83				4.036		83
209BI 84				4.047		84
209BI 85				4.065		85
209BI 86				4.079		86
209BI 87				4.088	(5/2:13/2)-	87
209BI 88				4.091	(1/2-,3/2-)	88
209BI 89				4.096	(9/2+,11/2,13/2	89-)
209BI 90				4.097	(1/2:7/2-)	90

209BI 91				4.116	(+)	91
209BI 92				4.123		92
209BI 93				4.134		93
209BI 94				4.142	21/2(+)	94
209BI 95				4.148	(9/2+,11/2-)	95
209BI 96				4.159	-	96
209BI 97				4.161	(13/2-)	97
209BI 98				4.168	(11/2-:15/2-)	98
209BI 99				4.176	(7/2,9/2,11/2)+	99
209BI 100				4.207		100

209BI 101				4.223		101
209BI 102				4.225	(15/2:21/2)+	102
209BI 103				4.234	(13/2)-	103
209BI 104				4.237		104
209BI 105				4.257	(15/2:21/2)+	105
209BI 106				4.263		106
209BI 107				4.286	15/2-,17/2-,19/	1072-
209BI 108				4.298		108
209BI 109				4.301	(+)	109
209BI 110				4.313		110

209BI 111				4.326		111
209BI 112				4.335		112
209BI 113				4.341		113
209BI 114				4.349	(15/2:21/2)+	114
209BI 115				4.362	(11/2,13/2,15/2	115)-
209BI 116				4.377		116
209BI 117				4.381		117
209BI 118				4.388		118
209BI 119				4.398		119
209BI 120				4.409		120

209BI 121		4.415	1/2-			121
209BI 122				4.417	(15/2:21/2)+	122
209BI 123				4.427		123
209BI 124				4.442	(7/2)-	124
209BI 125				4.471	(9/2+,11/2,13/2	125-)
209BI 126				4.478		126
209BI 127				4.485		127

209BI 128			4.507		128
209BI 129			4.515	(9/2+, 11/2, 13/2	129-)
209BI 130			4.516		130

209BI 131			4.522		131
209BI 132			4.532	(13/2-, 15/2-)	132
209BI 133			4.588		133
209BI 134			4.603	(5/2-, 7/2, 9/2+)	134
209BI 135			4.613	5/2-, 7/2-	135
209BI 136			4.646		136
209BI 137			4.682		137
209BI 138			4.700		138
209BI 139			4.740		139
209BI 140			4.751		140

209BI 141			4.756	(7/2, 9/2, 11/2)	141
209BI 142			4.762		142
209BI 143			4.786		143
209BI 144			4.790	(9/2+, 11/2, 13/2	144-)
209BI 145			4.796	(7/2, 9/2, 11/2)	145
209BI 146			4.830	(7/2, 9/2, 11/2)	146
209BI 147			4.838		147
209BI 148			4.853		148
209BI 149			4.879		149
209BI 150			4.886	13/2-, 15/2-	150

209BI 151			4.904		151
209BI 152			4.948		152
209BI 153			4.968		153
209BI 154			4.996	(13/2)-	154
209BI 155			5.054		155
209BI 156			5.057	(11/2)+	156
209BI 157			5.087	5/2-, 7/2-	157
209BI 158			5.131		158
209BI 159			5.152		159
209BI 160			5.167	(9/2+, 11/2, 13/2	160-)

209BI 161			5.183	5/2-, 7/2-	161
209BI 162			5.191		162
209BI 163			5.235	(7/2, 9/2, 11/2)	163
209BI 164			5.256	+	164
209BI 165			5.277	13/2-, 15/2-	165
209BI 166			5.282	(7/2, 9/2, 11/2)	166
209BI 167			5.293		167
209BI 168			5.293	(7/2, 9/2, 11/2)	168
209BI 169			5.313	(7/2, 9/2, 11/2)	169
209BI 170			5.333		170

209BI 171			5.354	(7/2, 9/2, 11/2)	171
209BI 172			5.367	+	172

209BI 173				5.370	(1/2,3/2,5/2+)	173			
209BI 174				5.380	13/2-,15/2-	174			
209BI 175				5.405	(11/2)+	175			
209BI 176				5.411		176			
209BI 177				5.425	(9/2+,11/2)	177			
209BI 178				5.440	(7/2,9/2,11/2)	178			
209BI 179	5.465	11/2+				179	0.39 FS	11	
209BI 180				5.484	(7/2,9/2,11/2)	180			

209BI 181				5.498	(7/2,9/2,11/2)	181			
209BI 182				5.511	(9/2+,11/2,13/2)	182-			
209BI 183				5.523		183			
209BI 184				5.538	(7/2,9/2,11/2)	184			
209BI 185				5.560	(7/2,9/2,11/2)	185			
209BI 186				5.563		186			
209BI 187				5.571	(11/2+)	187	0.32 FS	19	
209BI 188				5.589	(11/2+)	188	0.17 FS	5	
209BI 189		5.609	11/2-			189	0.48 FS	10	
209BI 190				5.610		190			

209BI 191				5.653	(11/2)+	191			
209BI 192				5.662	(7/2,9/2,11/2)	192			
209BI 193				5.668		193			
209BI 194				5.693	(3/2+,5/2+)	194			
209BI 195				5.769		195			
209BI 196				5.789		196			
209BI 197				5.795		197			
209BI 198				5.835		198			
209BI 199				5.925	(11/2)+	199			
209BI 200				6.301		200			

209BI 201				6.382		201			
209BI 202				6.392		202			
209BI 203				6.556		203			
209BI 204				6.712		204			
209BI 205				6.900		205			
209BI 206				6.911	(7/2,9/2,11/2)	206			
209BI 207				6.945	(7/2,9/2,11/2)	207			
209BI 208				6.983	(7/2,9/2,11/2)	208			
209BI 209				7.106	(7/2,9/2,11/2)	209			
209BI 210	7.168	9/2+				210	0.56 FS	3	

209BI 211				7.171	(7/2,9/2,11/2)	211			
209BI 212				7.177	(7/2,9/2,11/2)	212			
209BI 213				7.202	11/2+,13/2+	213			
209BI 214				7.244	(7/2,9/2,11/2)	214			
209BI 215				7.264	(7/2,9/2,11/2)	215			
209BI 216				7.279		216			

S-p = 3.799 (0.002)-----
S-n = 7.460 (0.003)-----
S-2p = 11.802 (0.006)-----
S-2n = 14.347 (0.003)-----
S-alpha= -3.137 (0.002)-----

S+p = -4.984 (0.002)
S+n = -4.605 (0.002)
S+2p = -7.967 (0.003)
S+2n = -9.743 (0.006)
S+alpha = 9.254 (0.005)

gap p = -1.185 (0.003)
gap n = 2.855 (0.003)
gap 2p = 3.836 (0.006)
gap 2n = 4.604 (0.006)
gap alpha = 6.117 (0.005)