

Table 1. MCDF calculated energy levels relative to the ground energy of Fe XX with spectroscopic identifications. The leading percentage compositions of levels which contributions exceed 10% are presented in the last column.

Index	Configuration	LS	J	E (cm ⁻¹)	Composition
1	2s ² 2p ³	⁴ S	1.5	-219052141.	88%
2	2s ² 2p ³	² D	1.5	141715.	74% + 18% 2s ² 2p ³ ² P
3	2s ² 2p ³	² D	2.5	179537.	100%
4	2s ² 2p ³	² P	0.5	263209.	98%
5	2s ² 2p ³	² P	1.5	325962.	71% + 24% 2s ² 2p ³ ² D
6	2s ¹ 2p ⁴	⁴ P	2.5	753649.	97%
7	2s ¹ 2p ⁴	⁴ P	1.5	821409.	98%
8	2s ¹ 2p ⁴	⁴ P	0.5	843536.	95%
9	2s ¹ 2p ⁴	² D	1.5	1050924.	94%
10	2s ¹ 2p ⁴	² D	2.5	1066222.	97%
11	2s ¹ 2p ⁴	² S	0.5	1205489.	73% + 23% 2s ¹ 2p ⁴ ² P
12	2s ¹ 2p ⁴	² P	1.5	1255768.	94%
13	2s ¹ 2p ⁴	² P	0.5	1352396.	77% + 22% 2s ¹ 2p ⁴ ² S
14	2p ⁵	² P	1.5	1971784.	98%
15	2p ⁵	² P	0.5	2079179.	98%
16	2s ² 2p ² (³ P) 3s ¹	⁴ P	0.5	7155228.	77% + 13% 2s ² 2p ² (³ P) 3s ¹ ² P
17	2s ² 2p ² (³ P) 3s ¹	⁴ P	1.5	7221726.	92%
18	2s ² 2p ² (³ P) 3s ¹	² P	0.5	7252311.	82% + 16% 2s ² 2p ² (³ P) 3s ¹ ⁴ P
19	2s ² 2p ² (³ P) 3s ¹	⁴ P	2.5	7264310.	79% + 19% 2s ² 2p ² (¹ D) 3s ¹ ² D
20	2s ² 2p ² (³ P) 3s ¹	² P	1.5	7296115.	65% + 30% 2s ² 2p ² (¹ D) 3s ¹ ² D
21	2s ² 2p ² (³ P) 3p ¹	⁴ D	0.5	7356141.	51% + 18% 2s ² 2p ² (³ P) 3p ¹ ² S
22	2s ² 2p ² (³ P) 3p ¹	⁴ D	1.5	7400441.	60% + 22% 2s ² 2p ² (³ P) 3p ¹ ⁴ P
23	2s ² 2p ² (¹ D) 3s ¹	² D	2.5	7400563.	79% + 19% 2s ² 2p ² (³ P) 3s ¹ ⁴ P
24	2s ² 2p ² (¹ D) 3s ¹	² D	1.5	7410643.	67% + 27% 2s ² 2p ² (³ P) 3s ¹ ² P
25	2s ² 2p ² (³ P) 3p ¹	² S	0.5	7418613.	43% + 36% 2s ² 2p ² (³ P) 3p ¹ ⁴ D + 19% 2s ² 2p ² (³ P) 3p ¹ ⁴ P
26	2s ² 2p ² (³ P) 3p ¹	⁴ D	1.5	7448372.	30% + 29% 2s ² 2p ² (³ P) 3p ¹ ⁴ P + 19% 2s ² 2p ² (³ P) 3p ¹ ² D
27	2s ² 2p ² (³ P) 3p ¹	⁴ D	2.5	7458331.	84% + 11% 2s ² 2p ² (³ P) 3p ¹ ⁴ P
28	2s ² 2p ² (³ P) 3p ¹	⁴ P	0.5	7470872.	66% + 19% 2s ² 2p ² (³ P) 3p ¹ ² S
29	2s ² 2p ² (³ P) 3p ¹	⁴ P	2.5	7477776.	45% + 21% 2s ² 2p ² (³ P) 3p ¹ ² D + 19% 2s ² 2p ² (¹ D) 3p ¹ ² D
30	2s ² 2p ² (³ P) 3p ¹	² D	1.5	7490910.	46% + 25% 2s ² 2p ² (³ P) 3p ¹ ⁴ P + 15% 2s ² 2p ² (¹ D) 3p ¹ ² D
31	2s ² 2p ² (³ P) 3p ¹	⁴ D	3.5	7500615.	81% + 17% 2s ² 2p ² (¹ D) 3p ¹ ² F
32	2s ² 2p ² (³ P) 3p ¹	⁴ S	1.5	7524796.	58% + 19% 2s ² 2p ² (¹ D) 3p ¹ ² P
33	2s ² 2p ² (¹ S) 3s ¹	² S	0.5	7530985.	86%
34	2s ² 2p ² (³ P) 3p ¹	² P	1.5	7549587.	57% + 11% 2s ² 2p ² (¹ D) 3p ¹ ² P
35	2s ² 2p ² (³ P) 3p ¹	² D	2.5	7554153.	33% + 31% 2s ² 2p ² (³ P) 3p ¹ ⁴ P + 27% 2s ² 2p ² (¹ D) 3p ¹ ² F
36	2s ² 2p ² (³ P) 3p ¹	² P	0.5	7575128.	65% + 16% 2s ² 2p ² (³ P) 3p ¹ ² S
37	2s ² 2p ² (¹ D) 3p ¹	² F	2.5	7627214.	48% + 24% 2s ² 2p ² (¹ D) 3p ¹ ² D + 10% 2s ² 2p ² (³ P) 3p ¹ ² D
38	2s ¹ 2p ³ (⁵ S) 3s ¹	⁶ S	2.5	7632881.	87%
39	2s ² 2p ² (³ P) 3d ¹	⁴ F	1.5	7638491.	62% + 12% 2s ² 2p ² (³ P) 3d ¹ ⁴ D
40	2s ² 2p ² (¹ D) 3p ¹	² F	3.5	7643413.	82% + 16% 2s ² 2p ² (³ P) 3p ¹ ⁴ D
41	2s ² 2p ² (¹ D) 3p ¹	² D	1.5	7652328.	47% + 23% 2s ² 2p ² (¹ D) 3p ¹ ² P + 13% 2s ² 2p ² (³ P) 3p ¹ ² D
42	2s ² 2p ² (³ P) 3d ¹	⁴ F	2.5	7661516.	49% + 26% 2s ² 2p ² (³ P) 3d ¹ ⁴ D
43	2s ² 2p ² (¹ D) 3p ¹	² D	2.5	7670515.	51% + 31% 2s ² 2p ² (³ P) 3p ¹ ² D
44	2s ² 2p ² (¹ D) 3p ¹	² P	0.5	7678905.	90%
45	2s ² 2p ² (³ P) 3d ¹	² P	1.5	7712273.	42% + 28% 2s ² 2p ² (³ P) 3d ¹ ⁴ F + 20% 2s ² 2p ² (³ P) 3d ¹ ⁴ D
46	2s ² 2p ² (³ P) 3d ¹	⁴ F	3.5	7712951.	71% + 24% 2s ² 2p ² (³ P) 3d ¹ ⁴ D
47	2s ² 2p ² (³ P) 3d ¹	⁴ D	0.5	7720580.	81% + 14% 2s ² 2p ² (³ P) 3d ¹ ² P
48	2s ² 2p ² (³ P) 3d ¹	⁴ F	2.5	7721355.	40% + 20% 2s ² 2p ² (³ P) 3d ¹ ² F + 15% 2s ² 2p ² (¹ D) 3d ¹ ² F
49	2s ² 2p ² (¹ D) 3p ¹	² P	1.5	7736971.	32% + 25% 2s ² 2p ² (³ P) 3p ¹ ² P + 21% 2s ¹ 2p ³ (⁵ S) 3s ¹ ⁴ S
50	2s ² 2p ² (³ P) 3d ¹	⁴ D	1.5	7746320.	50% + 29% 2s ² 2p ² (³ P) 3d ¹ ² P
51	2s ² 2p ² (³ P) 3d ¹	⁴ D	3.5	7748360.	39% + 22% 2s ² 2p ² (¹ D) 3d ¹ ² F + 18% 2s ² 2p ² (³ P) 3d ¹ ⁴ F
52	2s ² 2p ² (³ P) 3d ¹	⁴ F	4.5	7750981.	83% + 15% 2s ² 2p ² (¹ D) 3d ¹ ² G
53	2s ² 2p ² (³ P) 3d ¹	² F	2.5	7751030.	38% + 25% 2s ² 2p ² (³ P) 3d ¹ ⁴ P + 15% 2s ² 2p ² (³ P) 3d ¹ ⁴ D

Table 1. continued.

Index	Configuration	LS	J	E (cm ⁻¹)	Composition
54	2s ¹ 2p ³ (⁵ S) 3s ¹	⁴ S	1.5	7760467.	59% + 13% 2s ² 2p ² (³ P) 3p ¹ ⁴ S
55	2s ² 2p ² (¹ S) 3p ¹	² P	0.5	7778931.	78% + 13% 2s ² 2p ² (³ P) 3p ¹ ² P
56	2s ² 2p ² (³ P) 3d ¹	⁴ P	2.5	7785892.	44% + 34% 2s ² 2p ² (³ P) 3d ¹ ⁴ D + 15% 2s ² 2p ² (¹ D) 3d ¹ ² D
57	2s ² 2p ² (¹ S) 3p ¹	² P	1.5	7792929.	73%
58	2s ² 2p ² (³ P) 3d ¹	⁴ P	1.5	7798298.	72% + 10% 2s ² 2p ² (³ P) 3d ¹ ⁴ D
59	2s ² 2p ² (³ P) 3d ¹	² P	0.5	7799638.	59% + 23% 2s ² 2p ² (³ P) 3d ¹ ⁴ P
60	2s ² 2p ² (³ P) 3d ¹	⁴ P	0.5	7807843.	60% + 22% 2s ² 2p ² (³ P) 3d ¹ ² P
61	2s ² 2p ² (³ P) 3d ¹	² F	3.5	7819869.	43% + 25% 2s ² 2p ² (³ P) 3d ¹ ⁴ D + 23% 2s ² 2p ² (¹ D) 3d ¹ ² G
62	2s ² 2p ² (³ P) 3d ¹	² D	1.5	7844676.	68%
63	2s ² 2p ² (³ P) 3d ¹	² D	2.5	7846514.	62% + 14% 2s ² 2p ² (¹ D) 3d ¹ ² F + 11% 2s ² 2p ² (¹ D) 3d ¹ ² D
64	2s ¹ 2p ³ (⁵ S) 3p ¹	⁶ P	1.5	7851456.	94%
65	2s ¹ 2p ³ (⁵ S) 3p ¹	⁶ P	2.5	7858264.	90%
66	2s ¹ 2p ³ (⁵ S) 3p ¹	⁶ P	3.5	7875859.	89%
67	2s ² 2p ² (¹ D) 3d ¹	² G	3.5	7883951.	44% + 36% 2s ² 2p ² (¹ D) 3d ¹ ² F
68	2s ² 2p ² (¹ D) 3d ¹	² G	4.5	7900299.	83% + 15% 2s ² 2p ² (³ P) 3d ¹ ⁴ F
69	2s ² 2p ² (¹ D) 3d ¹	² D	1.5	7915116.	75%
70	2s ² 2p ² (¹ D) 3d ¹	² D	2.5	7919464.	50% + 24% 2s ² 2p ² (¹ D) 3d ¹ ² F
71	2s ² 2p ² (¹ D) 3d ¹	² P	0.5	7936656.	87%
72	2s ² 2p ² (³ P) 3d ¹	² F	3.5	7941761.	36% + 35% 2s ² 2p ² (¹ D) 3d ¹ ² F + 21% 2s ² 2p ² (¹ D) 3d ¹ ² G
73	2s ¹ 2p ³ (⁵ S) 3p ¹	⁴ P	1.5	7941831.	86%
74	2s ¹ 2p ³ (⁵ S) 3p ¹	⁴ P	2.5	7942381.	84%
75	2s ¹ 2p ³ (³ D) 3s ¹	⁴ D	1.5	7948577.	83% + 11% 2s ¹ 2p ³ (³ P) 3s ¹ ⁴ P
76	2s ¹ 2p ³ (⁵ S) 3p ¹	⁴ P	0.5	7949929.	90%
77	2s ¹ 2p ³ (³ D) 3s ¹	⁴ D	0.5	7950408.	88%
78	2s ¹ 2p ³ (³ D) 3s ¹	⁴ D	2.5	7950442.	81% + 15% 2s ¹ 2p ³ (³ P) 3s ¹ ⁴ P
79	2s ² 2p ² (¹ D) 3d ¹	² S	0.5	7969218.	81% + 10% 2s ² 2p ² (³ P) 3d ¹ ⁴ P
80	2s ² 2p ² (³ P) 3d ¹	² D	2.5	7971406.	31% + 26% 2s ² 2p ² (¹ D) 3d ¹ ² F + 21% 2s ² 2p ² (¹ D) 3d ¹ ² D
81	2s ¹ 2p ³ (³ D) 3s ¹	⁴ D	3.5	7972586.	98%
82	2s ² 2p ² (¹ D) 3d ¹	² P	1.5	7974014.	71% + 11% 2s ² 2p ² (³ P) 3d ¹ ² P
83	2s ¹ 2p ³ (³ D) 3s ¹	² D	1.5	8022125.	78% + 13% 2s ¹ 2p ³ (³ P) 3s ¹ ² P
84	2s ¹ 2p ³ (³ D) 3s ¹	² D	2.5	8037734.	80%
85	2s ² 2p ² (¹ S) 3d ¹	² D	2.5	8051967.	80%
86	2s ² 2p ² (¹ S) 3d ¹	² D	1.5	8063693.	76% + 14% 2s ² 2p ² (³ P) 3d ¹ ² D
87	2s ¹ 2p ³ (³ P) 3s ¹	⁴ P	0.5	8088857.	93%
88	2s ¹ 2p ³ (³ P) 3s ¹	⁴ P	1.5	8100269.	78% + 11% 2s ¹ 2p ³ (³ D) 3s ¹ ⁴ D
89	2s ¹ 2p ³ (⁵ S) 3d ¹	⁶ D	0.5	8107989.	97%
90	2s ¹ 2p ³ (⁵ S) 3d ¹	⁶ D	1.5	8108247.	97%
91	2s ¹ 2p ³ (⁵ S) 3d ¹	⁶ D	2.5	8108618.	96%
92	2s ¹ 2p ³ (⁵ S) 3d ¹	⁶ D	3.5	8109382.	96%
93	2s ¹ 2p ³ (⁵ S) 3d ¹	⁶ D	4.5	8111483.	97%
94	2s ¹ 2p ³ (³ P) 3s ¹	⁴ P	2.5	8120216.	66% + 16% 2s ¹ 2p ³ (³ D) 3s ¹ ² D + 10% 2s ¹ 2p ³ (³ D) 3s ¹ ⁴ D
95	2s ¹ 2p ³ (³ D) 3p ¹	⁴ D	0.5	8146165.	67% + 14% 2s ¹ 2p ³ (³ D) 3p ¹ ² P
96	2s ¹ 2p ³ (³ D) 3p ¹	⁴ D	1.5	8148253.	53% + 16% 2s ¹ 2p ³ (³ D) 3p ¹ ² P
97	2s ¹ 2p ³ (³ P) 3s ¹	² P	0.5	8159507.	88%
98	2s ¹ 2p ³ (³ D) 3p ¹	⁴ F	2.5	8161933.	50% + 32% 2s ¹ 2p ³ (³ D) 3p ¹ ⁴ D + 11% 2s ¹ 2p ³ (³ P) 3p ¹ ⁴ D
99	2s ¹ 2p ³ (³ D) 3p ¹	⁴ F	1.5	8164556.	61% + 14% 2s ¹ 2p ³ (³ D) 3p ¹ ² P
100	2s ¹ 2p ³ (³ P) 3s ¹	² P	1.5	8173327.	69% + 11% 2s ¹ 2p ³ (¹ D) 3s ¹ ² D + 11% 2s ¹ 2p ³ (³ D) 3s ¹ ² D
101	2s ¹ 2p ³ (³ D) 3p ¹	⁴ F	3.5	8182113.	65% + 26% 2s ¹ 2p ³ (³ D) 3p ¹ ⁴ D
102	2s ¹ 2p ³ (³ D) 3p ¹	⁴ D	2.5	8187364.	58% + 30% 2s ¹ 2p ³ (³ D) 3p ¹ ⁴ F
103	2s ¹ 2p ³ (³ D) 3p ¹	² P	1.5	8197506.	33% + 33% 2s ¹ 2p ³ (³ D) 3p ¹ ⁴ D + 16% 2s ¹ 2p ³ (³ D) 3p ¹ ⁴ F
104	2s ¹ 2p ³ (³ D) 3p ¹	⁴ D	3.5	8199598.	60% + 21% 2s ¹ 2p ³ (³ D) 3p ¹ ⁴ F + 12% 2s ¹ 2p ³ (³ D) 3p ¹ ² F
105	2s ¹ 2p ³ (³ D) 3p ¹	² P	0.5	8207601.	74% + 15% 2s ¹ 2p ³ (³ D) 3p ¹ ⁴ D
106	2s ¹ 2p ³ (³ D) 3p ¹	² F	2.5	8212124.	80%
107	2s ¹ 2p ³ (³ D) 3p ¹	⁴ F	4.5	8214081.	99%

Table 1. continued.

Index	Configuration	<i>LS</i>	<i>J</i>	<i>E</i> (cm ⁻¹)	Composition
108	2s ¹ 2p ³ (⁵ S) 3d ¹	⁴ D	2.5	8220814.	86%
109	2s ¹ 2p ³ (³ D) 3p ¹	² F	3.5	8222998.	79% + 14% 2s ¹ 2p ³ (³ D) 3p ¹ ⁴ D
110	2s ¹ 2p ³ (⁵ S) 3d ¹	⁴ D	1.5	8223557.	88%
111	2s ¹ 2p ³ (⁵ S) 3d ¹	⁴ D	3.5	8227372.	89%
112	2s ¹ 2p ³ (⁵ S) 3d ¹	⁴ D	0.5	8228189.	91%
113	2s ¹ 2p ³ (³ D) 3p ¹	⁴ P	1.5	8251590.	50% + 27% 2s ¹ 2p ³ (³ P) 3p ¹ ⁴ S
114	2s ¹ 2p ³ (³ D) 3p ¹	⁴ P	0.5	8258722.	74% + 18% 2s ¹ 2p ³ (³ P) 3p ¹ ⁴ P
115	2s ¹ 2p ³ (³ D) 3p ¹	⁴ P	2.5	8272663.	79%
116	2s ¹ 2p ³ (³ D) 3p ¹	² D	1.5	8278129.	55% + 16% 2s ¹ 2p ³ (³ D) 3p ¹ ² P + 11% 2s ¹ 2p ³ (³ P) 3p ¹ ² P
117	2s ¹ 2p ³ (³ S) 3s ¹	⁴ S	1.5	8279560.	79% + 14% 2s ¹ 2p ³ (¹ P) 3s ¹ ² P
118	2s ¹ 2p ³ (³ D) 3p ¹	² D	2.5	8299597.	68%
119	2s ¹ 2p ³ (³ P) 3p ¹	⁴ D	0.5	8306291.	67% + 24% 2s ¹ 2p ³ (³ P) 3p ¹ ² P
120	2s ¹ 2p ³ (³ S) 3s ¹	² S	0.5	8312866.	72% + 19% 2s ¹ 2p ³ (¹ P) 3s ¹ ² P
121	2s ¹ 2p ³ (³ P) 3p ¹	⁴ D	1.5	8319106.	73%
122	2s ¹ 2p ³ (¹ D) 3s ¹	² D	2.5	8321423.	92%
123	2s ¹ 2p ³ (¹ D) 3s ¹	² D	1.5	8328453.	85%
124	2s ¹ 2p ³ (³ P) 3p ¹	⁴ D	2.5	8331131.	72% + 11% 2s ¹ 2p ³ (³ D) 3p ¹ ⁴ F
125	2s ¹ 2p ³ (³ P) 3p ¹	⁴ S	1.5	8340622.	56% + 26% 2s ¹ 2p ³ (³ D) 3p ¹ ⁴ P
126	2s ¹ 2p ³ (³ P) 3p ¹	⁴ D	3.5	8350838.	74% + 11% 2s ¹ 2p ³ (³ D) 3p ¹ ⁴ F
127	2s ¹ 2p ³ (³ P) 3p ¹	² P	0.5	8352991.	53% + 17% 2s ¹ 2p ³ (³ P) 3p ¹ ⁴ D
128	2s ¹ 2p ³ (³ P) 3p ¹	⁴ P	0.5	8361583.	51% + 11% 2s ¹ 2p ³ (³ P) 3p ¹ ² P + 11% 2s ¹ 2p ³ (³ S) 3p ¹ ⁴ P
129	2s ¹ 2p ³ (³ P) 3p ¹	⁴ P	1.5	8368276.	43% + 27% 2s ¹ 2p ³ (³ P) 3p ¹ ² D
130	2s ¹ 2p ³ (³ P) 3p ¹	⁴ P	2.5	8371183.	58% + 13% 2s ¹ 2p ³ (³ P) 3p ¹ ² D
131	2s ¹ 2p ³ (³ P) 3p ¹	² D	1.5	8377003.	45% + 31% 2s ¹ 2p ³ (³ P) 3p ¹ ⁴ P
132	2s ¹ 2p ³ (³ D) 3d ¹	⁴ F	1.5	8397488.	78% + 15% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ F
133	2s ¹ 2p ³ (³ P) 3p ¹	² P	1.5	8398723.	51% + 24% 2s ¹ 2p ³ (³ D) 3p ¹ ² D
134	2s ¹ 2p ³ (³ P) 3p ¹	² D	2.5	8401303.	50% + 20% 2s ¹ 2p ³ (³ P) 3p ¹ ⁴ P
135	2s ¹ 2p ³ (³ D) 3d ¹	⁴ F	2.5	8405191.	68% + 13% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ F + 12% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ G
136	2s ¹ 2p ³ (³ D) 3d ¹	⁴ F	3.5	8415482.	52% + 30% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ G + 13% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ F
137	2s ¹ 2p ³ (³ D) 3d ¹	⁴ G	2.5	8429183.	75% + 15% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ F
138	2s ¹ 2p ³ (³ D) 3d ¹	⁴ G	4.5	8430501.	75% + 13% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ F
139	2s ¹ 2p ³ (³ D) 3d ¹	⁴ G	3.5	8431993.	54% + 35% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ F
140	2s ¹ 2p ³ (³ D) 3d ¹	⁴ F	4.5	8442788.	91%
141	2s ¹ 2p ³ (³ P) 3p ¹	² S	0.5	8446089.	57% + 12% 2s ¹ 2p ³ (¹ P) 3p ¹ ² S
142	2s ¹ 2p ³ (³ D) 3d ¹	⁴ D	0.5	8447449.	75% + 12% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ D
143	2s ¹ 2p ³ (³ D) 3d ¹	⁴ G	5.5	8452492.	100%
144	2s ¹ 2p ³ (³ D) 3d ¹	⁴ D	1.5	8452551.	62%
145	2s ¹ 2p ³ (¹ P) 3s ¹	² P	1.5	8456329.	74% + 12% 2s ¹ 2p ³ (³ S) 3s ¹ ⁴ S
146	2s ¹ 2p ³ (¹ P) 3s ¹	² P	0.5	8459323.	71% + 18% 2s ¹ 2p ³ (³ S) 3s ¹ ² S
147	2s ¹ 2p ³ (³ D) 3d ¹	⁴ D	2.5	8464145.	57% + 17% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ P + 15% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ P
148	2s ¹ 2p ³ (³ D) 3d ¹	² S	0.5	8465650.	56% + 15% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ P + 12% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ P
149	2s ¹ 2p ³ (³ D) 3d ¹	⁴ D	3.5	8472462.	50% + 35% 2s ¹ 2p ³ (³ D) 3d ¹ ² G
150	2s ¹ 2p ³ (³ D) 3d ¹	² G	3.5	8483011.	52% + 36% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ D
151	2s ¹ 2p ³ (³ D) 3d ¹	² G	4.5	8486955.	86%
152	2s ¹ 2p ³ (³ S) 3p ¹	⁴ P	1.5	8490594.	46% + 17% 2s ¹ 2p ³ (³ S) 3p ¹ ² P + 10% 2s ¹ 2p ³ (¹ D) 3p ¹ ² P
153	2s ¹ 2p ³ (³ S) 3p ¹	⁴ P	0.5	8493073.	36% + 23% 2s ¹ 2p ³ (³ S) 3p ¹ ² P + 15% 2s ¹ 2p ³ (¹ P) 3p ¹ ² P
154	2s ¹ 2p ³ (³ D) 3d ¹	⁴ P	2.5	8493591.	58% + 29% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ D
155	2s ¹ 2p ³ (³ D) 3d ¹	⁴ P	1.5	8499405.	48% + 17% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ S + 16% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ P
156	2s ¹ 2p ³ (³ D) 3d ¹	⁴ P	0.5	8500312.	65% + 25% 2s ¹ 2p ³ (³ D) 3d ¹ ² S
157	2s ¹ 2p ³ (³ D) 3d ¹	² P	1.5	8504331.	35% + 34% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ P + 16% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ D
158	2s ¹ 2p ³ (³ D) 3d ¹	² D	2.5	8505415.	36% + 31% 2s ¹ 2p ³ (³ P) 3d ¹ ² D + 18% 2s ¹ 2p ³ (³ D) 3d ¹ ² F
159	2s ¹ 2p ³ (³ S) 3p ¹	⁴ P	2.5	8513802.	77% + 12% 2s ¹ 2p ³ (¹ P) 3p ¹ ² D
160	2s ¹ 2p ³ (³ D) 3d ¹	⁴ S	1.5	8522664.	51% + 23% 2s ¹ 2p ³ (³ D) 3d ¹ ² P
161	2s ¹ 2p ³ (³ D) 3d ¹	² P	0.5	8524941.	83%

Table 1. continued.

Index	Configuration	LS	J	E (cm ⁻¹)	Composition
162	2s ¹ 2p ³ (¹ D) 3p ¹	² P	1.5	8530459.	37% + 32% 2s ¹ 2p ³ (³ S) 3p ¹ ⁴ P + 19% 2s ¹ 2p ³ (³ S) 3p ¹ ² P
163	2s ¹ 2p ³ (³ S) 3p ¹	⁴ P	0.5	8531112.	38% + 27% 2s ¹ 2p ³ (³ S) 3p ¹ ² P + 15% 2s ¹ 2p ³ (³ P) 3p ¹ ² S
164	2s ¹ 2p ³ (¹ D) 3p ¹	² F	2.5	8537267.	84% + 11% 2s ¹ 2p ³ (³ P) 3p ¹ ² D
165	2s ¹ 2p ³ (¹ D) 3p ¹	² F	3.5	8553704.	93%
166	2s ¹ 2p ³ (³ D) 3d ¹	² D	1.5	8555751.	73%
167	2s ¹ 2p ³ (³ D) 3d ¹	² F	3.5	8561610.	74%
168	2s ¹ 2p ³ (³ D) 3d ¹	² F	2.5	8566321.	54% + 27% 2s ¹ 2p ³ (³ D) 3d ¹ ² D
169	2s ¹ 2p ³ (³ P) 3d ¹	⁴ F	1.5	8576738.	74% + 12% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ F
170	2s ¹ 2p ³ (³ P) 3d ¹	⁴ F	2.5	8576893.	67% + 14% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ D
171	2s ¹ 2p ³ (³ P) 3d ¹	⁴ F	3.5	8578774.	62% + 16% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ D
172	2s ¹ 2p ³ (¹ D) 3p ¹	² D	1.5	8583365.	81%
173	2s ¹ 2p ³ (¹ D) 3p ¹	² D	2.5	8589182.	82%
174	2s ¹ 2p ³ (³ P) 3d ¹	⁴ F	4.5	8589924.	71% + 12% 2s ¹ 2p ³ (³ D) 3d ¹ ² G + 11% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ G
175	2s ¹ 2p ³ (³ P) 3d ¹	⁴ P	2.5	8598500.	58% + 12% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ D
176	2s ¹ 2p ³ (³ P) 3d ¹	⁴ P	0.5	8602160.	57% + 14% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ P + 14% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ D
177	2s ¹ 2p ³ (³ P) 3d ¹	⁴ P	1.5	8603763.	42% + 23% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ D + 15% 2s ¹ 2p ³ (³ D) 3d ¹ ⁴ S
178	2s ¹ 2p ³ (³ P) 3d ¹	⁴ D	0.5	8616026.	57% + 13% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ P
179	2s ¹ 2p ³ (³ P) 3d ¹	² D	1.5	8616973.	47% + 16% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ D + 16% 2s ¹ 2p ³ (³ P) 3d ¹ ⁴ P
180	2s ¹ 2p ³ (¹ P) 3p ¹	² D	1.5	8622572.	41% + 33% 2s ¹ 2p ³ (¹ D) 3p ¹ ² P + 16% 2s ¹ 2p ³ (³ S) 3p ¹ ² P
181	2s ¹ 2p ³ (³ P) 3d ¹	⁴ D	3.5	8622902.	60% + 11% 2s ¹ 2p ³ (³ D) 3d ¹ ² F
182	2s ¹ 2p ³ (³ P) 3d ¹	⁴ D	2.5	8625379.	52%
183	2s ¹ 2p ³ (³ P) 3d ¹	⁴ D	1.5	8629349.	34% + 23% 2s ¹ 2p ³ (³ P) 3d ¹ ² D
184	2s ¹ 2p ³ (¹ D) 3p ¹	² P	0.5	8631964.	59% + 18% 2s ¹ 2p ³ (¹ P) 3p ¹ ² P + 10% 2s ¹ 2p ³ (³ S) 3p ¹ ² P
185	2s ¹ 2p ³ (³ P) 3d ¹	² F	2.5	8648168.	78%
186	2s ¹ 2p ³ (³ P) 3d ¹	² F	3.5	8667774.	65% + 13% 2s ¹ 2p ³ (¹ D) 3d ¹ ² G
187	2s ¹ 2p ³ (³ P) 3d ¹	² D	2.5	8683490.	51% + 23% 2s ¹ 2p ³ (³ D) 3d ¹ ² D + 12% 2s ¹ 2p ³ (³ D) 3d ¹ ² F
188	2s ¹ 2p ³ (¹ P) 3p ¹	² D	2.5	8692983.	83% + 11% 2s ¹ 2p ³ (³ S) 3p ¹ ⁴ P
189	2s ¹ 2p ³ (³ P) 3d ¹	² P	0.5	8697378.	66% + 11% 2s ¹ 2p ³ (¹ D) 3d ¹ ² P
190	2s ¹ 2p ³ (¹ P) 3p ¹	² P	1.5	8701479.	83%
191	2s ¹ 2p ³ (¹ P) 3p ¹	² S	0.5	8706548.	43% + 33% 2s ¹ 2p ³ (¹ P) 3p ¹ ² P
192	2s ¹ 2p ³ (¹ P) 3p ¹	² D	1.5	8706613.	45% + 38% 2s ¹ 2p ³ (³ S) 3p ¹ ² P
193	2s ¹ 2p ³ (³ P) 3d ¹	² P	1.5	8729610.	67%
194	2s ¹ 2p ³ (³ S) 3d ¹	⁴ D	2.5	8757015.	69%
195	2s ¹ 2p ³ (³ S) 3d ¹	⁴ D	1.5	8759672.	45% + 15% 2s ¹ 2p ³ (¹ P) 3d ¹ ² D + 15% 2s ¹ 2p ³ (³ S) 3d ¹ ² D
196	2s ¹ 2p ³ (³ S) 3d ¹	⁴ D	3.5	8762783.	77% + 13% 2s ¹ 2p ³ (¹ P) 3d ¹ ² F
197	2s ¹ 2p ³ (³ S) 3p ¹	² P	0.5	8766585.	29% + 28% 2s ¹ 2p ³ (¹ P) 3p ¹ ² S + 26% 2s ¹ 2p ³ (¹ P) 3p ¹ ² P
198	2s ¹ 2p ³ (³ S) 3d ¹	⁴ D	0.5	8769067.	75%
199	2s ¹ 2p ³ (³ S) 3d ¹	² D	1.5	8786010.	35% + 28% 2s ¹ 2p ³ (³ S) 3d ¹ ⁴ D + 12% 2s ¹ 2p ³ (¹ D) 3d ¹ ² D
200	2s ¹ 2p ³ (¹ D) 3d ¹	² D	2.5	8796532.	43% + 28% 2s ¹ 2p ³ (³ S) 3d ¹ ² D + 13% 2s ¹ 2p ³ (³ S) 3d ¹ ⁴ D
201	2s ¹ 2p ³ (¹ D) 3d ¹	² G	4.5	8799526.	94%
202	2s ¹ 2p ³ (¹ D) 3d ¹	² G	3.5	8802647.	75% + 10% 2s ¹ 2p ³ (³ P) 3d ¹ ² F
203	2s ¹ 2p ³ (¹ D) 3d ¹	² F	3.5	8822215.	74%
204	2s ¹ 2p ³ (¹ D) 3d ¹	² F	2.5	8825252.	74%
205	2s ¹ 2p ³ (¹ D) 3d ¹	² P	1.5	8845989.	75% + 10% 2s ¹ 2p ³ (¹ D) 3d ¹ ² D
206	2s ¹ 2p ³ (¹ D) 3d ¹	² P	0.5	8854370.	55% + 34% 2s ¹ 2p ³ (¹ D) 3d ¹ ² S
207	2p ⁴ (³ P) 3s ¹	⁴ P	2.5	8867169.	87%
208	2s ¹ 2p ³ (¹ D) 3d ¹	² D	1.5	8868115.	50% + 16% 2s ¹ 2p ³ (¹ D) 3d ¹ ² P + 10% 2s ¹ 2p ³ (¹ P) 3d ¹ ² D
209	2s ¹ 2p ³ (¹ D) 3d ¹	² D	2.5	8871774.	33% + 28% 2s ¹ 2p ³ (¹ P) 3d ¹ ² F + 26% 2s ¹ 2p ³ (³ S) 3d ¹ ² D
210	2s ¹ 2p ³ (¹ D) 3d ¹	² S	0.5	8882194.	55% + 24% 2s ¹ 2p ³ (¹ D) 3d ¹ ² P + 12% 2s ¹ 2p ³ (³ P) 3d ¹ ² P
211	2p ⁴ (³ P) 3s ¹	⁴ P	1.5	8903799.	42% + 42% 2p ⁴ (³ P) 3s ¹ ² P + 11% 2p ⁴ (¹ D) 3s ¹ ² D
212	2s ¹ 2p ³ (¹ P) 3d ¹	² F	3.5	8942683.	82% + 12% 2s ¹ 2p ³ (³ S) 3d ¹ ⁴ D
213	2s ¹ 2p ³ (¹ P) 3d ¹	² D	2.5	8945446.	52% + 23% 2s ¹ 2p ³ (¹ P) 3d ¹ ² F + 13% 2s ¹ 2p ³ (³ S) 3d ¹ ² D
214	2p ⁴ (³ P) 3s ¹	⁴ P	0.5	8954636.	89%
215	2s ¹ 2p ³ (¹ P) 3d ¹	² P	1.5	8963481.	62% + 20% 2s ¹ 2p ³ (¹ P) 3d ¹ ² D

Table 1. continued.

Index	Configuration	<i>LS</i>	<i>J</i>	<i>E</i> (cm ⁻¹)	Composition
216	2s ¹ 2p ³ (¹ P) 3d ¹	² P	0.5	8965728.	80%
217	2s ¹ 2p ³ (¹ P) 3d ¹	² F	2.5	8970107.	34% + 34% 2s ¹ 2p ³ (¹ P) 3d ¹ ² D + 17% 2s ¹ 2p ³ (³ S) 3d ¹ ² D
218	2p ⁴ (³ P) 3s ¹	⁴ P	1.5	8973008.	54% + 36% 2p ⁴ (³ P) 3s ¹ ² P
219	2s ¹ 2p ³ (¹ P) 3d ¹	² D	1.5	9010001.	45% + 31% 2s ¹ 2p ³ (³ S) 3d ¹ ² D + 14% 2s ¹ 2p ³ (¹ P) 3d ¹ ² P
220	2p ⁴ (³ P) 3s ¹	² P	0.5	9014309.	87%
221	2p ⁴ (¹ D) 3s ¹	² D	2.5	9053851.	87%
222	2p ⁴ (³ P) 3p ¹	⁴ P	1.5	9056767.	60% + 11% 2p ⁴ (³ P) 3p ¹ ⁴ S
223	2p ⁴ (¹ D) 3s ¹	² D	1.5	9059219.	81% + 14% 2p ⁴ (³ P) 3s ¹ ² P
224	2p ⁴ (³ P) 3p ¹	⁴ P	2.5	9060667.	65% + 23% 2p ⁴ (³ P) 3p ¹ ⁴ D
225	2p ⁴ (³ P) 3p ¹	⁴ P	0.5	9091685.	42% + 20% 2p ⁴ (³ P) 3p ¹ ² P + 20% 2p ⁴ (¹ D) 3p ¹ ² P
226	2p ⁴ (³ P) 3p ¹	⁴ D	3.5	9095350.	86%
227	2p ⁴ (³ P) 3p ¹	² D	2.5	9097318.	56% + 15% 2p ⁴ (³ P) 3p ¹ ⁴ P + 13% 2p ⁴ (³ P) 3p ¹ ⁴ D
228	2p ⁴ (³ P) 3p ¹	⁴ P	0.5	9149940.	43% + 15% 2p ⁴ (³ P) 3p ¹ ⁴ D + 14% 2p ⁴ (³ P) 3p ¹ ² P
229	2p ⁴ (³ P) 3p ¹	⁴ D	1.5	9152602.	50% + 18% 2p ⁴ (³ P) 3p ¹ ² D + 12% 2p ⁴ (³ P) 3p ¹ ⁴ S
230	2p ⁴ (³ P) 3p ¹	⁴ D	0.5	9159360.	66% + 12% 2p ⁴ (³ P) 3p ¹ ² S
231	2p ⁴ (³ P) 3p ¹	² P	1.5	9172087.	35% + 28% 2p ⁴ (³ P) 3p ¹ ⁴ D + 15% 2p ⁴ (¹ D) 3p ¹ ² P
232	2p ⁴ (³ P) 3p ¹	⁴ D	2.5	9186205.	55% + 25% 2p ⁴ (³ P) 3p ¹ ² D + 15% 2p ⁴ (³ P) 3p ¹ ⁴ P
233	2p ⁴ (³ P) 3p ¹	⁴ S	1.5	9195185.	39% + 25% 2p ⁴ (³ P) 3p ¹ ⁴ P + 12% 2p ⁴ (¹ D) 3p ¹ ² P
234	2p ⁴ (³ P) 3p ¹	² S	0.5	9210584.	56% + 17% 2p ⁴ (³ P) 3p ¹ ² P + 11% 2p ⁴ (¹ D) 3p ¹ ² P
235	2p ⁴ (³ P) 3p ¹	² D	1.5	9215095.	61% + 22% 2p ⁴ (³ P) 3p ¹ ⁴ S
236	2p ⁴ (¹ D) 3p ¹	² F	2.5	9241982.	77%
237	2p ⁴ (¹ D) 3p ¹	² F	3.5	9265703.	86%
238	2p ⁴ (¹ S) 3s ¹	² S	0.5	9284859.	79%
239	2p ⁴ (¹ D) 3p ¹	² D	1.5	9286502.	80% + 11% 2p ⁴ (¹ D) 3p ¹ ² P
240	2p ⁴ (¹ D) 3p ¹	² D	2.5	9299763.	81%
241	2p ⁴ (³ P) 3d ¹	⁴ D	3.5	9304629.	75% + 16% 2p ⁴ (³ P) 3d ¹ ⁴ F
242	2p ⁴ (³ P) 3d ¹	⁴ D	2.5	9304925.	74%
243	2p ⁴ (³ P) 3d ¹	⁴ D	1.5	9311808.	65% + 15% 2p ⁴ (³ P) 3d ¹ ⁴ P
244	2p ⁴ (³ P) 3d ¹	⁴ D	0.5	9322315.	52% + 16% 2p ⁴ (³ P) 3d ¹ ² P + 16% 2p ⁴ (³ P) 3d ¹ ⁴ P
245	2p ⁴ (³ P) 3d ¹	⁴ F	4.5	9329589.	87% + 11% 2p ⁴ (¹ D) 3d ¹ ² G
246	2p ⁴ (³ P) 3d ¹	² F	3.5	9342724.	55% + 28% 2p ⁴ (³ P) 3d ¹ ⁴ F + 14% 2p ⁴ (¹ D) 3d ¹ ² G
247	2p ⁴ (¹ D) 3p ¹	² P	1.5	9356849.	48% + 41% 2p ⁴ (³ P) 3p ¹ ² P
248	2p ⁴ (³ P) 3d ¹	⁴ P	0.5	9367939.	67% + 17% 2p ⁴ (³ P) 3d ¹ ² P
249	2p ⁴ (³ P) 3d ¹	⁴ P	1.5	9386677.	53% + 23% 2p ⁴ (³ P) 3d ¹ ² D + 11% 2p ⁴ (¹ D) 3d ¹ ² D
250	2p ⁴ (³ P) 3d ¹	⁴ F	2.5	9391122.	37% + 24% 2p ⁴ (³ P) 3d ¹ ² F + 15% 2p ⁴ (³ P) 3d ¹ ⁴ P
251	2p ⁴ (¹ D) 3p ¹	² P	0.5	9392437.	52% + 29% 2p ⁴ (³ P) 3p ¹ ² P + 12% 2p ⁴ (¹ S) 3p ¹ ² P
252	2p ⁴ (³ P) 3d ¹	⁴ D	0.5	9404882.	44% + 29% 2p ⁴ (³ P) 3d ¹ ² P + 18% 2p ⁴ (¹ D) 3d ¹ ² P
253	2p ⁴ (³ P) 3d ¹	⁴ F	1.5	9414304.	82%
254	2p ⁴ (³ P) 3d ¹	⁴ F	2.5	9419137.	40% + 26% 2p ⁴ (³ P) 3d ¹ ⁴ P
255	2p ⁴ (³ P) 3d ¹	⁴ F	3.5	9420080.	50% + 27% 2p ⁴ (³ P) 3d ¹ ² F + 18% 2p ⁴ (³ P) 3d ¹ ⁴ D
256	2p ⁴ (³ P) 3d ¹	⁴ D	1.5	9427958.	25% + 19% 2p ⁴ (³ P) 3d ¹ ² D + 17% 2p ⁴ (³ P) 3d ¹ ⁴ P
257	2p ⁴ (³ P) 3d ¹	⁴ P	2.5	9446510.	42% + 37% 2p ⁴ (³ P) 3d ¹ ² F
258	2p ⁴ (³ P) 3d ¹	² P	1.5	9461162.	46% + 26% 2p ⁴ (¹ D) 3d ¹ ² P
259	2p ⁴ (³ P) 3d ¹	² D	2.5	9473025.	38% + 25% 2p ⁴ (³ P) 3d ¹ ² F + 18% 2p ⁴ (¹ D) 3d ¹ ² D
260	2p ⁴ (¹ D) 3d ¹	² G	3.5	9489956.	83% + 11% 2p ⁴ (³ P) 3d ¹ ² F
261	2p ⁴ (¹ D) 3d ¹	² G	4.5	9493374.	88% + 11% 2p ⁴ (³ P) 3d ¹ ⁴ F
262	2p ⁴ (¹ S) 3p ¹	² P	1.5	9515048.	83%
263	2p ⁴ (¹ S) 3p ¹	² P	0.5	9517054.	69% + 17% 2p ⁴ (³ P) 3p ¹ ² P
264	2p ⁴ (¹ D) 3d ¹	² F	2.5	9527645.	68% + 25% 2p ⁴ (¹ D) 3d ¹ ² D
265	2p ⁴ (¹ D) 3d ¹	² S	0.5	9538103.	84%
266	2p ⁴ (¹ D) 3d ¹	² F	3.5	9539118.	88%
267	2p ⁴ (¹ D) 3d ¹	² D	2.5	9574187.	46% + 32% 2p ⁴ (³ P) 3d ¹ ² D + 13% 2p ⁴ (¹ D) 3d ¹ ² F
268	2p ⁴ (¹ D) 3d ¹	² P	1.5	9576251.	59% + 28% 2p ⁴ (³ P) 3d ¹ ² P
269	2p ⁴ (¹ D) 3d ¹	² D	1.5	9602493.	59% + 32% 2p ⁴ (³ P) 3d ¹ ² D

Table 1. continued.

Index	Configuration	LS	J	E (cm ⁻¹)	Composition
270	2p ⁴ (¹ D) 3d ¹	² P	0.5	9614864.	58% + 35% 2p ⁴ (³ P) 3d ¹ ² P
271	2s ² 2p ² (³ P) 4s ¹	⁴ P	0.5	9700316.	66% + 23% 2s ² 2p ² (³ P) 4s ¹ ² P
272	2p ⁴ (¹ S) 3d ¹	² D	2.5	9753548.	84%
273	2p ⁴ (¹ S) 3d ¹	² D	1.5	9772076.	75% + 10% 2p ⁴ (³ P) 3d ¹ ² D
274	2s ² 2p ² (³ P) 4s ¹	⁴ P	1.5	9772436.	88% + 11% 2s ² 2p ² (³ P) 4s ¹ ² P
275	2s ² 2p ² (³ P) 4p ¹	⁴ D	0.5	9775269.	53% + 13% 2s ² 2p ² (³ P) 4p ¹ ² P + 12% 2s ² 2p ² (³ P) 4p ¹ ² S
276	2s ² 2p ² (³ P) 4s ¹	² P	0.5	9780715.	73% + 26% 2s ² 2p ² (³ P) 4s ¹ ⁴ P
277	2s ² 2p ² (³ P) 4p ¹	⁴ D	1.5	9795820.	37% + 28% 2s ² 2p ² (³ P) 4p ¹ ⁴ P + 16% 2s ² 2p ² (³ P) 4p ¹ ² D
278	2s ² 2p ² (³ P) 4s ¹	⁴ P	2.5	9815055.	76% + 22% 2s ² 2p ² (¹ D) 4s ¹ ² D
279	2s ² 2p ² (³ P) 4s ¹	² P	1.5	9824894.	66% + 26% 2s ² 2p ² (¹ D) 4s ¹ ² D
280	2s ² 2p ² (³ P) 4p ¹	² S	0.5	9845073.	35% + 32% 2s ² 2p ² (³ P) 4p ¹ ⁴ D + 31% 2s ² 2p ² (³ P) 4p ¹ ⁴ P
281	2s ² 2p ² (³ P) 4p ¹	⁴ D	1.5	9857186.	53% + 12% 2s ² 2p ² (³ P) 4p ¹ ² D + 12% 2s ² 2p ² (³ P) 4p ¹ ² P
282	2s ² 2p ² (³ P) 4p ¹	⁴ D	2.5	9861589.	66% + 25% 2s ² 2p ² (³ P) 4p ¹ ⁴ P
283	2s ² 2p ² (³ P) 4p ¹	⁴ P	0.5	9870105.	50% + 23% 2s ² 2p ² (³ P) 4p ¹ ² P + 20% 2s ² 2p ² (³ P) 4p ¹ ² S
284	2s ² 2p ² (³ P) 4d ¹	⁴ F	1.5	9874082.	51% + 15% 2s ² 2p ² (³ P) 4d ¹ ⁴ D + 12% 2s ² 2p ² (³ P) 4d ¹ ² P
285	2s ² 2p ² (³ P) 4p ¹	² D	1.5	9876625.	59% + 23% 2s ² 2p ² (³ P) 4p ¹ ⁴ P + 14% 2s ² 2p ² (³ P) 4p ¹ ⁴ S
286	2s ² 2p ² (³ P) 4d ¹	⁴ F	2.5	9885726.	29% + 28% 2s ² 2p ² (³ P) 4d ¹ ⁴ D + 15% 2s ² 2p ² (³ P) 4d ¹ ² F
287	2s ² 2p ² (³ P) 4p ¹	⁴ P	2.5	9893049.	32% + 23% 2s ² 2p ² (³ P) 4p ¹ ⁴ D + 18% 2s ² 2p ² (³ P) 4p ¹ ² D
288	2s ² 2p ² (³ P) 4p ¹	⁴ D	3.5	9902966.	78% + 21% 2s ² 2p ² (¹ D) 4p ¹ ² F
289	2s ² 2p ² (³ P) 4p ¹	⁴ S	1.5	9911632.	52% + 25% 2s ² 2p ² (³ P) 4p ¹ ⁴ P + 16% 2s ² 2p ² (¹ D) 4p ¹ ² P
290	2s ² 2p ² (³ P) 4p ¹	² P	1.5	9918196.	61% + 22% 2s ² 2p ² (¹ D) 4p ¹ ² D
291	2s ² 2p ² (³ P) 4p ¹	² D	2.5	9926739.	49% + 26% 2s ² 2p ² (³ P) 4p ¹ ⁴ P + 17% 2s ² 2p ² (¹ D) 4p ¹ ² F
292	2s ² 2p ² (³ P) 4p ¹	² P	0.5	9930018.	56% + 22% 2s ² 2p ² (³ P) 4p ¹ ² S + 10% 2s ² 2p ² (¹ D) 4p ¹ ² P
293	2s ² 2p ² (³ P) 4f ¹	⁴ G	2.5	9943424.	41% + 17% 2s ² 2p ² (³ P) 4f ¹ ² D + 15% 2s ² 2p ² (³ P) 4f ¹ ⁴ F
294	2s ² 2p ² (¹ D) 4s ¹	² D	2.5	9944210.	75% + 22% 2s ² 2p ² (³ P) 4s ¹ ⁴ P
295	2s ² 2p ² (³ P) 4f ¹	² G	3.5	9945010.	23% + 22% 2s ² 2p ² (³ P) 4f ¹ ⁴ D + 21% 2s ² 2p ² (³ P) 4f ¹ ⁴ F
296	2s ² 2p ² (¹ D) 4s ¹	² D	1.5	9946178.	26% + 25% 2s ² 2p ² (³ P) 4d ¹ ⁴ F + 25% 2s ² 2p ² (³ P) 4d ¹ ² P
297	2s ² 2p ² (¹ D) 4s ¹	² D	1.5	9948208.	45% + 14% 2s ² 2p ² (³ P) 4s ¹ ² P + 13% 2s ² 2p ² (³ P) 4d ¹ ⁴ F
298	2s ² 2p ² (³ P) 4d ¹	⁴ F	3.5	9948701.	58% + 33% 2s ² 2p ² (³ P) 4d ¹ ⁴ D
299	2s ² 2p ² (³ P) 4d ¹	⁴ D	0.5	9949293.	79% + 14% 2s ² 2p ² (³ P) 4d ¹ ² P
300	2s ² 2p ² (³ P) 4d ¹	⁴ F	2.5	9953010.	58% + 24% 2s ² 2p ² (³ P) 4d ¹ ⁴ P
301	2s ² 2p ² (³ P) 4d ¹	⁴ D	1.5	9965152.	37% + 27% 2s ² 2p ² (³ P) 4d ¹ ² P + 17% 2s ² 2p ² (³ P) 4d ¹ ² D
302	2s ² 2p ² (³ P) 4d ¹	² F	2.5	9966900.	66% + 18% 2s ² 2p ² (³ P) 4d ¹ ⁴ P
303	2s ² 2p ² (³ P) 4d ¹	⁴ D	3.5	9987555.	33% + 31% 2s ² 2p ² (³ P) 4d ¹ ⁴ F + 16% 2s ² 2p ² (¹ D) 4d ¹ ² F
304	2s ² 2p ² (³ P) 4d ¹	⁴ F	4.5	9989108.	79% + 20% 2s ² 2p ² (¹ D) 4d ¹ ² G
305	2s ² 2p ² (³ P) 4d ¹	⁴ D	2.5	9998297.	46% + 24% 2s ² 2p ² (³ P) 4d ¹ ⁴ P + 14% 2s ² 2p ² (¹ D) 4d ¹ ² D
306	2s ² 2p ² (³ P) 4d ¹	⁴ P	1.5	10003563.	59% + 20% 2s ² 2p ² (³ P) 4d ¹ ⁴ D + 13% 2s ² 2p ² (¹ D) 4d ¹ ² P
307	2s ² 2p ² (³ P) 4d ¹	⁴ P	0.5	10006223.	71% + 16% 2s ² 2p ² (¹ D) 4d ¹ ² S
308	2s ² 2p ² (³ P) 4d ¹	² P	0.5	10010790.	66% + 14% 2s ² 2p ² (³ P) 4d ¹ ⁴ D + 11% 2s ² 2p ² (¹ D) 4d ¹ ² P
309	2s ² 2p ² (³ P) 4f ¹	⁴ G	2.5	10015339.	45% + 35% 2s ² 2p ² (³ P) 4f ¹ ² D + 14% 2s ² 2p ² (³ P) 4f ¹ ⁴ D
310	2s ² 2p ² (³ P) 4f ¹	⁴ D	3.5	10016569.	45% + 38% 2s ² 2p ² (³ P) 4f ¹ ⁴ G
311	2s ² 2p ² (³ P) 4d ¹	² D	2.5	10016661.	62% + 20% 2s ² 2p ² (¹ D) 4d ¹ ² F
312	2s ² 2p ² (³ P) 4d ¹	² D	1.5	10016978.	58% + 14% 2s ² 2p ² (¹ D) 4d ¹ ² D + 12% 2s ² 2p ² (³ P) 4d ¹ ² P
313	2s ² 2p ² (³ P) 4d ¹	² F	3.5	10018677.	58% + 19% 2s ² 2p ² (¹ D) 4d ¹ ² G + 17% 2s ² 2p ² (³ P) 4d ¹ ⁴ D
314	2s ² 2p ² (³ P) 4f ¹	⁴ G	4.5	10019025.	51% + 31% 2s ² 2p ² (³ P) 4f ¹ ⁴ F + 17% 2s ² 2p ² (³ P) 4f ¹ ² G
315	2s ² 2p ² (³ P) 4f ¹	² G	3.5	10019043.	47% + 21% 2s ² 2p ² (³ P) 4f ¹ ⁴ G + 17% 2s ² 2p ² (³ P) 4f ¹ ² F
316	2s ² 2p ² (³ P) 4f ¹	⁴ F	1.5	10020503.	59% + 20% 2s ² 2p ² (³ P) 4f ¹ ⁴ D + 19% 2s ² 2p ² (³ P) 4f ¹ ² D
317	2s ² 2p ² (³ P) 4f ¹	² F	2.5	10022637.	32% + 29% 2s ² 2p ² (³ P) 4f ¹ ⁴ D + 24% 2s ² 2p ² (³ P) 4f ¹ ⁴ F
318	2s ² 2p ² (¹ D) 4p ¹	² F	2.5	10030316.	55% + 20% 2s ² 2p ² (¹ D) 4p ¹ ² D + 17% 2s ² 2p ² (³ P) 4p ¹ ² D
319	2s ² 2p ² (¹ D) 4p ¹	² D	1.5	10033855.	45% + 31% 2s ² 2p ² (¹ D) 4p ¹ ² P
320	2s ² 2p ² (¹ D) 4p ¹	² F	3.5	10035410.	78% + 21% 2s ² 2p ² (³ P) 4p ¹ ⁴ D
321	2s ² 2p ² (¹ D) 4p ¹	² D	2.5	10036881.	59% + 16% 2s ² 2p ² (¹ D) 4p ¹ ² F
322	2s ² 2p ² (¹ D) 4p ¹	² P	0.5	10041748.	85%
323	2s ² 2p ² (³ P) 4f ¹	² G	4.5	10060629.	39% + 30% 2s ² 2p ² (³ P) 4f ¹ ⁴ G + 19% 2s ² 2p ² (¹ D) 4f ¹ ² H

Table 1. continued.

Index	Configuration	<i>LS</i>	<i>J</i>	<i>E</i> (cm ⁻¹)	Composition
324	2s ² 2p ² (3P) 4f ¹	4G	5.5	10060896.	77% + 22% 2s ² 2p ² (1D) 4f ¹ 2H
325	2s ² 2p ² (3P) 4f ¹	4D	0.5	10062472.	79% + 19% 2s ² 2p ² (1D) 4f ¹ 2P
326	2s ² 2p ² (3P) 4f ¹	4F	3.5	10062959.	41% + 18% 2s ² 2p ² (1D) 4f ¹ 2G + 14% 2s ² 2p ² (3P) 4f ¹ 4G
327	2s ² 2p ² (3P) 4f ¹	4D	1.5	10062983.	61% + 14% 2s ² 2p ² (3P) 4f ¹ 4F + 11% 2s ² 2p ² (1D) 4f ¹ 2P
328	2s ² 2p ² (3P) 4f ¹	4F	2.5	10063442.	42% + 28% 2s ² 2p ² (3P) 4f ¹ 4D + 14% 2s ² 2p ² (1D) 4f ¹ 2F
329	2s ² 2p ² (3P) 4f ¹	4F	4.5	10064404.	45% + 24% 2s ² 2p ² (3P) 4f ¹ 2G + 22% 2s ² 2p ² (1D) 4f ¹ 2G
330	2s ² 2p ² (3P) 4f ¹	2D	1.5	10064764.	55% + 16% 2s ² 2p ² (3P) 4f ¹ 4F + 11% 2s ² 2p ² (1D) 4f ¹ 2D
331	2s ² 2p ² (3P) 4f ¹	2F	3.5	10065319.	41% + 18% 2s ² 2p ² (1D) 4f ¹ 2F + 12% 2s ² 2p ² (3P) 4f ¹ 4D
332	2s ² 2p ² (1S) 4s ¹	2S	0.5	10065547.	85%
333	2s ² 2p ² (3P) 4f ¹	2F	2.5	10065706.	42% + 21% 2s ² 2p ² (3P) 4f ¹ 2D + 13% 2s ² 2p ² (1D) 4f ¹ 2D
334	2s ² 2p ² (1D) 4p ¹	2P	1.5	10067992.	38% + 23% 2s ² 2p ² (1D) 4p ¹ 2D + 18% 2s ² 2p ² (3P) 4p ¹ 2P
335	2s ² 2p ² (1D) 4d ¹	2F	3.5	10117039.	54% + 24% 2s ² 2p ² (1D) 4d ¹ 2G + 12% 2s ² 2p ² (3P) 4d ¹ 4D
336	2s ² 2p ² (1D) 4d ¹	2G	4.5	10123780.	79% + 20% 2s ² 2p ² (3P) 4d ¹ 4F
337	2s ² 2p ² (1D) 4d ¹	2D	2.5	10128905.	47% + 29% 2s ² 2p ² (1D) 4d ¹ 2F + 10% 2s ² 2p ² (3P) 4d ¹ 4D
338	2s ² 2p ² (1D) 4d ¹	2D	1.5	10129336.	71%
339	2s ² 2p ² (1D) 4d ¹	2G	3.5	10132201.	47% + 24% 2s ² 2p ² (1D) 4d ¹ 2F + 16% 2s ² 2p ² (3P) 4d ¹ 2F
340	2s ² 2p ² (1D) 4d ¹	2P	0.5	10132444.	81%
341	2s ² 2p ² (1D) 4d ¹	2F	2.5	10146039.	37% + 28% 2s ² 2p ² (1D) 4d ¹ 2D + 21% 2s ² 2p ² (3P) 4d ¹ 2D
342	2s ² 2p ² (1D) 4d ¹	2S	0.5	10147331.	76% + 14% 2s ² 2p ² (3P) 4d ¹ 4P
343	2s ² 2p ² (1D) 4d ¹	2P	1.5	10149370.	69%
344	2s ² 2p ² (1S) 4p ¹	2P	0.5	10156263.	85%
345	2s ² 2p ² (1S) 4p ¹	2P	1.5	10163204.	86%
346	2s ¹ 2p ³ (5S) 4s ¹	6S	2.5	10176177.	97%
347	2s ² 2p ² (1D) 4f ¹	2G	3.5	10187009.	63%
348	2s ² 2p ² (1D) 4f ¹	2G	4.5	10187088.	73% + 16% 2s ² 2p ² (3P) 4f ¹ 4F
349	2s ² 2p ² (1D) 4f ¹	2F	2.5	10188324.	72%
350	2s ² 2p ² (1D) 4f ¹	2F	3.5	10189775.	64%
351	2s ² 2p ² (1D) 4f ¹	2H	4.5	10191538.	77% + 16% 2s ² 2p ² (3P) 4f ¹ 2G
352	2s ² 2p ² (1D) 4f ¹	2H	5.5	10192299.	77% + 21% 2s ² 2p ² (3P) 4f ¹ 4G
353	2s ² 2p ² (1D) 4f ¹	2D	1.5	10193834.	77%
354	2s ² 2p ² (1D) 4f ¹	2D	2.5	10195712.	76%
355	2s ² 2p ² (1D) 4f ¹	2P	0.5	10199792.	79% + 19% 2s ² 2p ² (3P) 4f ¹ 4D
356	2s ² 2p ² (1D) 4f ¹	2P	1.5	10200883.	79% + 10% 2s ² 2p ² (3P) 4f ¹ 2D
357	2s ¹ 2p ³ (5S) 4s ¹	4S	1.5	10209913.	95%
358	2s ¹ 2p ³ (5S) 4p ¹	6P	1.5	10253565.	94%
359	2s ² 2p ² (1S) 4d ¹	2D	2.5	10255906.	87%
360	2s ¹ 2p ³ (5S) 4p ¹	6P	2.5	10256281.	91%
361	2s ² 2p ² (1S) 4d ¹	2D	1.5	10258343.	85%
362	2s ¹ 2p ³ (5S) 4p ¹	6P	3.5	10263545.	97%
363	2s ¹ 2p ³ (5S) 4p ¹	4P	2.5	10291663.	90%
364	2s ¹ 2p ³ (5S) 4p ¹	4P	1.5	10291679.	93%
365	2s ¹ 2p ³ (5S) 4p ¹	4P	0.5	10294709.	96%
366	2s ² 2p ² (1S) 4f ¹	2F	2.5	10311855.	86%
367	2s ² 2p ² (1S) 4f ¹	2F	3.5	10312862.	86%
368	2s ¹ 2p ³ (5S) 4d ¹	6D	0.5	10349579.	97%
369	2s ¹ 2p ³ (5S) 4d ¹	6D	1.5	10349721.	96%
370	2s ¹ 2p ³ (5S) 4d ¹	6D	2.5	10349966.	96%
371	2s ¹ 2p ³ (5S) 4d ¹	6D	3.5	10350401.	96%
372	2s ¹ 2p ³ (5S) 4d ¹	6D	4.5	10351404.	97%
373	2s ¹ 2p ³ (5S) 4d ¹	4D	2.5	10394282.	94%
374	2s ¹ 2p ³ (5S) 4d ¹	4D	1.5	10395051.	95%
375	2s ¹ 2p ³ (5S) 4d ¹	4D	3.5	10396068.	95%
376	2s ¹ 2p ³ (5S) 4d ¹	4D	0.5	10396325.	95%
377	2s ¹ 2p ³ (5S) 4f ¹	6F	2.5	10417346.	95%

Table 1. continued.

Index	Configuration	LS	J	E (cm ⁻¹)	Composition
378	2s ¹ 2p ³ (⁵ S) 4f ¹	⁶ F	3.5	10417361.	94%
379	2s ¹ 2p ³ (⁵ S) 4f ¹	⁶ F	1.5	10417386.	96%
380	2s ¹ 2p ³ (⁵ S) 4f ¹	⁶ F	0.5	10417430.	97%
381	2s ¹ 2p ³ (⁵ S) 4f ¹	⁶ F	4.5	10417522.	94%
382	2s ¹ 2p ³ (⁵ S) 4f ¹	⁶ F	5.5	10417982.	96%
383	2s ¹ 2p ³ (⁵ S) 4f ¹	⁴ F	4.5	10422412.	94%
384	2s ¹ 2p ³ (⁵ S) 4f ¹	⁴ F	3.5	10422696.	94%
385	2s ¹ 2p ³ (⁵ S) 4f ¹	⁴ F	2.5	10423094.	95%
386	2s ¹ 2p ³ (⁵ S) 4f ¹	⁴ F	1.5	10423479.	96%
387	2s ¹ 2p ³ (³ D) 4s ¹	⁴ D	1.5	10481215.	83% + 13% 2s ¹ 2p ³ (³ P) 4s ¹ ⁴ P
388	2s ¹ 2p ³ (³ D) 4s ¹	⁴ D	0.5	10482158.	86%
389	2s ¹ 2p ³ (³ D) 4s ¹	⁴ D	2.5	10482963.	75% + 17% 2s ¹ 2p ³ (³ P) 4s ¹ ⁴ P
390	2s ¹ 2p ³ (³ D) 4s ¹	² D	1.5	10504608.	82% + 14% 2s ¹ 2p ³ (³ P) 4s ¹ ² P
391	2s ¹ 2p ³ (³ D) 4s ¹	⁴ D	3.5	10507560.	99%
392	2s ¹ 2p ³ (³ D) 4s ¹	² D	2.5	10527509.	87% + 10% 2s ¹ 2p ³ (³ D) 4s ¹ ⁴ D
393	2s ¹ 2p ³ (³ D) 4p ¹	⁴ D	0.5	10555626.	72% + 11% 2s ¹ 2p ³ (³ D) 4p ¹ ² P
394	2s ¹ 2p ³ (³ D) 4p ¹	⁴ D	1.5	10556298.	53% + 17% 2s ¹ 2p ³ (³ D) 4p ¹ ⁴ F
395	2s ¹ 2p ³ (³ D) 4p ¹	⁴ F	2.5	10562459.	67% + 11% 2s ¹ 2p ³ (³ P) 4p ¹ ⁴ D + 11% 2s ¹ 2p ³ (³ D) 4p ¹ ⁴ D
396	2s ¹ 2p ³ (³ D) 4p ¹	⁴ F	1.5	10562548.	61%
397	2s ¹ 2p ³ (³ D) 4p ¹	⁴ D	2.5	10572436.	71% + 10% 2s ¹ 2p ³ (³ D) 4p ¹ ⁴ F
398	2s ¹ 2p ³ (³ D) 4p ¹	⁴ F	3.5	10572824.	72% + 16% 2s ¹ 2p ³ (³ P) 4p ¹ ⁴ D
399	2s ¹ 2p ³ (³ D) 4p ¹	² F	2.5	10579291.	77%
400	2s ¹ 2p ³ (³ D) 4p ¹	⁴ P	1.5	10582055.	28% + 26% 2s ¹ 2p ³ (³ D) 4p ¹ ² P + 20% 2s ¹ 2p ³ (³ D) 4p ¹ ⁴ D
401	2s ¹ 2p ³ (³ D) 4p ¹	² P	0.5	10583649.	73% + 11% 2s ¹ 2p ³ (³ D) 4p ¹ ⁴ D
402	2s ¹ 2p ³ (³ D) 4p ¹	⁴ D	3.5	10587041.	68% + 19% 2s ¹ 2p ³ (³ D) 4p ¹ ² F + 12% 2s ¹ 2p ³ (³ D) 4p ¹ ⁴ F
403	2s ¹ 2p ³ (³ D) 4p ¹	⁴ P	0.5	10592870.	81%
404	2s ¹ 2p ³ (³ D) 4p ¹	⁴ F	4.5	10597134.	100%
405	2s ¹ 2p ³ (³ D) 4p ¹	⁴ P	1.5	10597732.	41% + 21% 2s ¹ 2p ³ (³ D) 4p ¹ ² D + 14% 2s ¹ 2p ³ (³ D) 4p ¹ ² P
406	2s ¹ 2p ³ (³ D) 4p ¹	² F	3.5	10600064.	67% + 28% 2s ¹ 2p ³ (³ D) 4p ¹ ⁴ D
407	2s ¹ 2p ³ (³ D) 4p ¹	⁴ P	2.5	10607449.	82%
408	2s ¹ 2p ³ (³ D) 4p ¹	² D	1.5	10616153.	48% + 33% 2s ¹ 2p ³ (³ D) 4p ¹ ² P
409	2s ¹ 2p ³ (³ P) 4s ¹	⁴ P	0.5	10618682.	91%
410	2s ¹ 2p ³ (³ P) 4s ¹	⁴ P	1.5	10628402.	78% + 10% 2s ¹ 2p ³ (³ D) 4s ¹ ⁴ D
411	2s ¹ 2p ³ (³ D) 4p ¹	² D	2.5	10631079.	78% + 11% 2s ¹ 2p ³ (³ D) 4p ¹ ⁴ P
412	2s ¹ 2p ³ (³ P) 4s ¹	² P	0.5	10644516.	83%
413	2s ¹ 2p ³ (³ P) 4s ¹	⁴ P	2.5	10644872.	68% + 13% 2s ¹ 2p ³ (³ D) 4s ¹ ⁴ D
414	2s ¹ 2p ³ (³ D) 4d ¹	⁴ F	1.5	10649828.	81%
415	2s ¹ 2p ³ (³ D) 4d ¹	⁴ F	2.5	10653430.	60% + 19% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ G
416	2s ¹ 2p ³ (³ D) 4d ¹	⁴ G	3.5	10658672.	61% + 14% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ F + 13% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ F
417	2s ¹ 2p ³ (³ D) 4d ¹	⁴ G	2.5	10660128.	66% + 19% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ F
418	2s ¹ 2p ³ (³ P) 4s ¹	² P	1.5	10661387.	61%
419	2s ¹ 2p ³ (³ D) 4d ¹	⁴ F	3.5	10661620.	54% + 21% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ G + 11% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ D
420	2s ¹ 2p ³ (³ D) 4d ¹	⁴ G	4.5	10663038.	67% + 16% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ F
421	2s ¹ 2p ³ (³ D) 4d ¹	⁴ D	0.5	10664362.	78% + 12% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ D
422	2s ¹ 2p ³ (³ D) 4d ¹	⁴ D	1.5	10667404.	62%
423	2s ¹ 2p ³ (³ D) 4d ¹	⁴ D	2.5	10672650.	55% + 22% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ P + 12% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ P
424	2s ¹ 2p ³ (³ D) 4d ¹	⁴ P	0.5	10674278.	43% + 36% 2s ¹ 2p ³ (³ D) 4d ¹ ² S + 14% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ P
425	2s ¹ 2p ³ (³ D) 4d ¹	² G	3.5	10677890.	79% + 11% 2s ¹ 2p ³ (³ P) 4d ¹ ² F
426	2s ¹ 2p ³ (³ D) 4d ¹	⁴ F	4.5	10681677.	89% + 11% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ G
427	2s ¹ 2p ³ (³ D) 4d ¹	⁴ P	1.5	10684779.	44% + 31% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ S + 11% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ P
428	2s ¹ 2p ³ (³ D) 4d ¹	⁴ G	5.5	10685596.	100%
429	2s ¹ 2p ³ (³ D) 4d ¹	⁴ D	3.5	10688890.	76% + 20% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ F
430	2s ¹ 2p ³ (³ D) 4d ¹	² S	0.5	10691231.	36% + 29% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ P + 22% 2s ¹ 2p ³ (³ D) 4d ¹ ² P
431	2s ¹ 2p ³ (³ D) 4d ¹	² F	2.5	10694178.	44% + 29% 2s ¹ 2p ³ (³ D) 4d ¹ ² D + 16% 2s ¹ 2p ³ (³ P) 4d ¹ ² D

Table 1. continued.

Index	Configuration	LS	J	E (cm ⁻¹)	Composition
432	2s ¹ 2p ³ (³ D) 4d ¹	² P	1.5	10694436.	46% + 21% 2s ¹ 2p ³ (³ D) 4d ¹ ² D + 11% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ D
433	2s ¹ 2p ³ (³ D) 4d ¹	² G	4.5	10696754.	86% + 10% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ G
434	2s ¹ 2p ³ (³ D) 4d ¹	⁴ P	2.5	10697445.	59% + 33% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ D
435	2s ¹ 2p ³ (³ P) 4p ¹	⁴ D	0.5	10698935.	72% + 23% 2s ¹ 2p ³ (³ P) 4p ¹ ² P
436	2s ¹ 2p ³ (³ D) 4d ¹	⁴ S	1.5	10705865.	45% + 37% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ P
437	2s ¹ 2p ³ (³ D) 4d ¹	² P	0.5	10708047.	63% + 17% 2s ¹ 2p ³ (³ D) 4d ¹ ² S + 11% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ P
438	2s ¹ 2p ³ (³ P) 4p ¹	⁴ D	1.5	10708325.	78%
439	2s ¹ 2p ³ (³ D) 4f ¹	⁴ G	2.5	10715225.	72%
440	2s ¹ 2p ³ (³ D) 4f ¹	⁴ G	3.5	10716228.	47% + 15% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ F + 14% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ H
441	2s ¹ 2p ³ (³ P) 4p ¹	⁴ S	1.5	10716514.	50% + 21% 2s ¹ 2p ³ (³ P) 4p ¹ ⁴ P
442	2s ¹ 2p ³ (³ D) 4f ¹	⁴ F	4.5	10717811.	28% + 26% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ G + 12% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ H
443	2s ¹ 2p ³ (³ P) 4p ¹	⁴ D	2.5	10718045.	72% + 12% 2s ¹ 2p ³ (³ D) 4p ¹ ⁴ F
444	2s ¹ 2p ³ (³ D) 4f ¹	⁴ D	3.5	10719440.	31% + 19% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ H + 14% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ F
445	2s ¹ 2p ³ (³ D) 4f ¹	² D	2.5	10720227.	29% + 27% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ F + 16% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ D
446	2s ¹ 2p ³ (³ D) 4f ¹	⁴ H	3.5	10720310.	40% + 19% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ D + 15% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ G
447	2s ¹ 2p ³ (³ D) 4d ¹	² D	1.5	10720523.	57% + 25% 2s ¹ 2p ³ (³ D) 4d ¹ ² P
448	2s ¹ 2p ³ (³ P) 4p ¹	⁴ P	0.5	10721016.	70%
449	2s ¹ 2p ³ (³ D) 4f ¹	⁴ H	4.5	10721491.	66% + 14% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ G
450	2s ¹ 2p ³ (³ D) 4f ¹	² G	3.5	10722037.	52% + 14% 2s ¹ 2p ³ (³ D) 4f ¹ ² F + 12% 2s ¹ 2p ³ (³ P) 4f ¹ ² F
451	2s ¹ 2p ³ (³ D) 4f ¹	⁴ H	5.5	10722816.	56% + 18% 2s ¹ 2p ³ (³ D) 4f ¹ ² H + 16% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ G
452	2s ¹ 2p ³ (³ D) 4f ¹	⁴ F	1.5	10723304.	67% + 10% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ F
453	2s ¹ 2p ³ (³ D) 4d ¹	² F	3.5	10723858.	86%
454	2s ¹ 2p ³ (³ D) 4f ¹	² H	4.5	10723935.	73% + 12% 2s ¹ 2p ³ (³ P) 4f ¹ ² G
455	2s ¹ 2p ³ (³ D) 4d ¹	² D	2.5	10725368.	53% + 36% 2s ¹ 2p ³ (³ D) 4d ¹ ² F
456	2s ¹ 2p ³ (³ P) 4p ¹	² P	0.5	10726597.	57% + 16% 2s ¹ 2p ³ (³ P) 4p ¹ ⁴ D + 12% 2s ¹ 2p ³ (³ D) 4p ¹ ⁴ D
457	2s ¹ 2p ³ (³ D) 4f ¹	² F	2.5	10726763.	38% + 19% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ P + 14% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ F
458	2s ¹ 2p ³ (³ P) 4p ¹	² D	1.5	10727872.	58% + 13% 2s ¹ 2p ³ (³ P) 4p ¹ ⁴ S
459	2s ¹ 2p ³ (³ D) 4f ¹	² P	1.5	10728393.	35% + 24% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ P + 21% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ D
460	2s ¹ 2p ³ (³ D) 4f ¹	⁴ P	2.5	10729081.	50% + 18% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ D
461	2s ¹ 2p ³ (³ D) 4f ¹	⁴ D	0.5	10729885.	49% + 21% 2s ¹ 2p ³ (³ D) 4f ¹ ² P + 14% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ D
462	2s ¹ 2p ³ (³ D) 4f ¹	² D	1.5	10732751.	26% + 25% 2s ¹ 2p ³ (³ D) 4f ¹ ² P + 14% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ P
463	2s ¹ 2p ³ (³ P) 4p ¹	⁴ D	3.5	10733476.	73% + 12% 2s ¹ 2p ³ (³ D) 4p ¹ ⁴ F
464	2s ¹ 2p ³ (³ P) 4p ¹	⁴ P	1.5	10735477.	54%
465	2s ¹ 2p ³ (³ P) 4p ¹	⁴ P	2.5	10737530.	51% + 16% 2s ¹ 2p ³ (³ P) 4p ¹ ² D
466	2s ¹ 2p ³ (³ D) 4f ¹	⁴ G	5.5	10746623.	47% + 30% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ H + 22% 2s ¹ 2p ³ (³ D) 4f ¹ ² H
467	2s ¹ 2p ³ (³ D) 4f ¹	⁴ H	6.5	10746802.	100%
468	2s ¹ 2p ³ (³ D) 4f ¹	⁴ G	4.5	10747285.	51% + 40% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ F
469	2s ¹ 2p ³ (³ D) 4f ¹	² H	5.5	10747961.	55% + 42% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ G
470	2s ¹ 2p ³ (³ D) 4f ¹	⁴ F	3.5	10748233.	55% + 20% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ G + 18% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ D
471	2s ¹ 2p ³ (³ P) 4p ¹	² P	1.5	10748584.	49% + 13% 2s ¹ 2p ³ (³ D) 4p ¹ ² D
472	2s ¹ 2p ³ (³ D) 4f ¹	⁴ D	2.5	10749378.	45% + 38% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ F
473	2s ¹ 2p ³ (³ P) 4p ¹	² D	2.5	10750591.	49% + 15% 2s ¹ 2p ³ (³ P) 4p ¹ ⁴ P
474	2s ¹ 2p ³ (³ D) 4f ¹	⁴ D	1.5	10750709.	47% + 29% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ P + 11% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ F
475	2s ¹ 2p ³ (³ D) 4f ¹	² G	4.5	10751108.	74% + 19% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ F
476	2s ¹ 2p ³ (³ D) 4f ¹	⁴ P	0.5	10751363.	71% + 26% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ D
477	2s ¹ 2p ³ (³ D) 4f ¹	² F	3.5	10752629.	57% + 20% 2s ¹ 2p ³ (³ D) 4f ¹ ² G + 15% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ D
478	2s ¹ 2p ³ (³ D) 4f ¹	² P	0.5	10753854.	71% + 14% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ P + 14% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ D
479	2s ¹ 2p ³ (³ D) 4f ¹	² D	2.5	10753910.	34% + 32% 2s ¹ 2p ³ (³ D) 4f ¹ ² F + 11% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ D
480	2s ¹ 2p ³ (³ D) 4f ¹	² D	1.5	10754020.	51% + 21% 2s ¹ 2p ³ (³ D) 4f ¹ ² P + 19% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ P
481	2s ¹ 2p ³ (³ P) 4p ¹	² S	0.5	10770912.	72%
482	2s ¹ 2p ³ (³ P) 4d ¹	⁴ F	1.5	10800304.	75%
483	2s ¹ 2p ³ (³ P) 4d ¹	⁴ F	2.5	10802782.	56% + 24% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ D + 12% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ P
484	2s ¹ 2p ³ (³ P) 4d ¹	⁴ F	3.5	10808767.	63% + 19% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ D + 10% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ G
485	2s ² 2p ² (³ P) 5s ¹	⁴ P	0.5	10809581.	61% + 26% 2s ² 2p ² (³ P) 5s ¹ ² P

Table 1. continued.

Index	Configuration	<i>LS</i>	<i>J</i>	<i>E</i> (cm ⁻¹)	Composition
486	2s ¹ 2p ³ (³ P) 4d ¹	⁴ P	2.5	10812807.	49% + 20% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ F
487	2s ¹ 2p ³ (³ S) 4s ¹	⁴ S	1.5	10812975.	49% + 15% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ P + 12% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ D
488	2s ¹ 2p ³ (³ S) 4s ¹	⁴ S	1.5	10815587.	29% + 23% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ D + 19% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ P
489	2s ¹ 2p ³ (³ P) 4d ¹	⁴ D	0.5	10815594.	56% + 15% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ P
490	2s ¹ 2p ³ (³ S) 4s ¹	² S	0.5	10820577.	66% + 15% 2s ¹ 2p ³ (¹ P) 4s ¹ ² P
491	2s ¹ 2p ³ (³ P) 4d ¹	⁴ F	4.5	10821900.	74% + 11% 2s ¹ 2p ³ (³ D) 4d ¹ ⁴ G
492	2s ¹ 2p ³ (³ P) 4d ¹	² D	1.5	10826349.	64%
493	2s ¹ 2p ³ (³ P) 4d ¹	² F	2.5	10828119.	62% + 15% 2s ¹ 2p ³ (³ P) 4d ¹ ² D
494	2s ¹ 2p ³ (³ P) 4d ¹	⁴ P	0.5	10829417.	58% + 11% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ D
495	2s ¹ 2p ³ (³ P) 4d ¹	⁴ D	1.5	10832027.	35% + 34% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ P
496	2s ¹ 2p ³ (³ P) 4d ¹	⁴ D	3.5	10832715.	56% + 15% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ F
497	2s ¹ 2p ³ (³ P) 4d ¹	⁴ D	2.5	10834714.	46% + 12% 2s ¹ 2p ³ (³ P) 4d ¹ ⁴ P
498	2s ¹ 2p ³ (¹ D) 4s ¹	² D	2.5	10847004.	76%
499	2s ¹ 2p ³ (¹ D) 4s ¹	² D	1.5	10849165.	84%
500	2s ¹ 2p ³ (³ P) 4d ¹	² F	3.5	10849735.	73%
501	2s ¹ 2p ³ (³ P) 4d ¹	² D	2.5	10851580.	45% + 16% 2s ¹ 2p ³ (¹ D) 4s ¹ ² D + 10% 2s ¹ 2p ³ (³ P) 4d ¹ ² F
502	2s ² 2p ² (³ P) 5p ¹	⁴ D	0.5	10853489.	49% + 14% 2s ² 2p ² (³ P) 5p ¹ ² P
503	2s ¹ 2p ³ (³ P) 4f ¹	⁴ G	2.5	10858183.	49% + 25% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ F + 13% 2s ¹ 2p ³ (³ P) 4f ¹ ² F
504	2s ¹ 2p ³ (³ P) 4d ¹	² P	0.5	10859018.	71%
505	2s ¹ 2p ³ (³ P) 4f ¹	⁴ F	3.5	10859563.	36% + 27% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ G + 15% 2s ¹ 2p ³ (³ P) 4f ¹ ² G
506	2s ² 2p ² (³ P) 5p ¹	⁴ D	1.5	10862601.	28% + 25% 2s ² 2p ² (³ P) 5p ¹ ⁴ P + 19% 2s ² 2p ² (³ P) 5p ¹ ² D
507	2s ¹ 2p ³ (³ P) 4f ¹	⁴ F	1.5	10865794.	60% + 14% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ D
508	2s ¹ 2p ³ (³ P) 4f ¹	² G	3.5	10866170.	27% + 26% 2s ¹ 2p ³ (³ P) 4f ¹ ² F + 26% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ G
509	2s ¹ 2p ³ (³ P) 4f ¹	⁴ G	4.5	10866307.	43% + 29% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ F
510	2s ¹ 2p ³ (³ P) 4d ¹	² P	1.5	10866834.	70%
511	2s ¹ 2p ³ (³ P) 4f ¹	² F	2.5	10867233.	30% + 25% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ F + 24% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ D
512	2s ¹ 2p ³ (³ P) 4f ¹	² D	2.5	10874227.	31% + 29% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ G + 13% 2s ¹ 2p ³ (³ P) 4f ¹ ² F
513	2s ¹ 2p ³ (³ P) 4f ¹	⁴ D	3.5	10874239.	38% + 24% 2s ¹ 2p ³ (³ P) 4f ¹ ² G + 12% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ G
514	2s ² 2p ² (³ P) 5s ¹	⁴ P	1.5	10879092.	72% + 13% 2s ¹ 2p ³ (³ S) 4p ¹ ⁴ P
515	2s ² 2p ² (³ P) 5s ¹	² P	0.5	10879899.	52% + 22% 2s ² 2p ² (³ P) 5s ¹ ⁴ P
516	2s ¹ 2p ³ (³ P) 4f ¹	⁴ D	0.5	10881387.	76%
517	2s ¹ 2p ³ (³ P) 4f ¹	⁴ G	5.5	10882481.	74% + 11% 2s ¹ 2p ³ (³ D) 4f ¹ ⁴ H
518	2s ¹ 2p ³ (³ P) 4f ¹	⁴ D	1.5	10883227.	58% + 12% 2s ¹ 2p ³ (³ P) 4f ¹ ² D
519	2s ¹ 2p ³ (³ P) 4f ¹	² G	4.5	10883609.	51% + 21% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ G
520	2s ¹ 2p ³ (³ P) 4f ¹	⁴ D	2.5	10886888.	44% + 22% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ F
521	2s ¹ 2p ³ (³ P) 4f ¹	² D	1.5	10888089.	54% + 15% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ F
522	2s ¹ 2p ³ (³ P) 4f ¹	⁴ F	3.5	10889627.	36% + 15% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ G + 14% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ D
523	2s ¹ 2p ³ (³ P) 4f ¹	⁴ F	4.5	10890447.	44% + 14% 2s ¹ 2p ³ (³ P) 4f ¹ ² G + 14% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ G
524	2s ¹ 2p ³ (³ S) 4p ¹	⁴ P	1.5	10891493.	39% + 20% 2s ¹ 2p ³ (³ S) 4p ¹ ² P + 11% 2s ² 2p ² (³ P) 5s ¹ ² P
525	2s ¹ 2p ³ (³ P) 4f ¹	² D	2.5	10891847.	37% + 22% 2s ¹ 2p ³ (³ P) 4f ¹ ² F
526	2s ¹ 2p ³ (³ P) 4f ¹	² F	3.5	10891879.	40% + 16% 2s ¹ 2p ³ (³ P) 4f ¹ ² G + 12% 2s ¹ 2p ³ (³ P) 4f ¹ ⁴ D
527	2s ¹ 2p ³ (³ S) 4p ¹	⁴ P	2.5	10896381.	66% + 13% 2s ¹ 2p ³ (¹ P) 4p ¹ ² D + 12% 2s ² 2p ² (³ P) 5s ¹ ⁴ P
528	2s ¹ 2p ³ (³ S) 4p ¹	⁴ P	0.5	10896451.	58% + 11% 2s ² 2p ² (³ P) 5s ¹ ² P
529	2s ¹ 2p ³ (³ S) 4p ¹	² P	0.5	10909985.	53% + 12% 2s ¹ 2p ³ (³ S) 4p ¹ ⁴ P + 11% 2s ¹ 2p ³ (¹ D) 4p ¹ ² P
530	2s ² 2p ² (³ P) 5d ¹	⁴ F	1.5	10913123.	45% + 15% 2s ² 2p ² (³ P) 5d ¹ ⁴ D + 13% 2s ² 2p ² (³ P) 5d ¹ ² P
531	2s ¹ 2p ³ (³ S) 4p ¹	² P	1.5	10914728.	28% + 26% 2s ¹ 2p ³ (³ S) 4p ¹ ⁴ P + 11% 2s ¹ 2p ³ (¹ D) 4p ¹ ² P
532	2s ² 2p ² (³ P) 5d ¹	⁴ D	2.5	10919342.	26% + 23% 2s ² 2p ² (³ P) 5d ¹ ⁴ F + 19% 2s ² 2p ² (³ P) 5d ¹ ² F
533	2s ² 2p ² (³ P) 5p ¹	⁴ P	0.5	10924532.	41% + 29% 2s ² 2p ² (³ P) 5p ¹ ⁴ D + 27% 2s ² 2p ² (³ P) 5p ¹ ² S
534	2s ² 2p ² (³ P) 5s ¹	⁴ P	2.5	10927446.	37% + 17% 2s ¹ 2p ³ (¹ D) 4p ¹ ² F + 15% 2s ² 2p ² (¹ D) 5s ¹ ² D
535	2s ¹ 2p ³ (¹ D) 4p ¹	² F	2.5	10928289.	72% + 14% 2s ² 2p ² (³ P) 5s ¹ ⁴ P
536	2s ² 2p ² (³ P) 5p ¹	⁴ D	1.5	10929513.	56% + 17% 2s ² 2p ² (³ P) 5p ¹ ² P + 10% 2s ² 2p ² (³ P) 5p ¹ ⁴ S
537	2s ² 2p ² (³ P) 5s ¹	² P	1.5	10929942.	39% + 18% 2s ¹ 2p ³ (¹ D) 4p ¹ ² P + 17% 2s ² 2p ² (¹ D) 5s ¹ ² D
538	2s ² 2p ² (³ P) 5p ¹	⁴ D	2.5	10931869.	62% + 24% 2s ² 2p ² (³ P) 5p ¹ ⁴ P + 11% 2s ² 2p ² (³ P) 5p ¹ ² D
539	2s ¹ 2p ³ (¹ D) 4p ¹	² F	3.5	10935161.	93%

Table 1. continued.

Index	Configuration	LS	J	E (cm ⁻¹)	Composition
540	2s ¹ 2p ³ (¹ D) 4p ¹	² D	1.5	10937511.	70% + 11% 2s ¹ 2p ³ (¹ D) 4p ¹ ² P
541	2s ² 2p ² (³ P) 5p ¹	² P	0.5	10938376.	37% + 37% 2s ² 2p ² (³ P) 5p ¹ ⁴ P + 16% 2s ² 2p ² (³ P) 5p ¹ ² S
542	2s ² 2p ² (³ P) 5p ¹	² D	1.5	10939248.	56% + 23% 2s ² 2p ² (³ P) 5p ¹ ⁴ P + 17% 2s ² 2p ² (³ P) 5p ¹ ⁴ S
543	2s ² 2p ² (³ P) 5f ¹	⁴ G	2.5	10942251.	39% + 17% 2s ² 2p ² (³ P) 5f ¹ ² D + 15% 2s ² 2p ² (³ P) 5f ¹ ⁴ F
544	2s ¹ 2p ³ (¹ D) 4p ¹	² D	2.5	10942640.	76% + 13% 2s ² 2p ² (³ P) 5s ¹ ⁴ P
545	2s ² 2p ² (³ P) 5f ¹	⁴ D	3.5	10943468.	22% + 22% 2s ² 2p ² (³ P) 5f ¹ ² G + 21% 2s ² 2p ² (³ P) 5f ¹ ⁴ F
546	2s ² 2p ² (³ P) 5g ¹	⁴ H	3.5	10947479.	36% + 18% 2s ² 2p ² (³ P) 5g ¹ ² F + 16% 2s ² 2p ² (³ P) 5g ¹ ⁴ G
547	2s ² 2p ² (³ P) 5g ¹	⁴ F	4.5	10947869.	24% + 22% 2s ² 2p ² (³ P) 5g ¹ ² H + 20% 2s ² 2p ² (³ P) 5g ¹ ⁴ G
548	2s ¹ 2p ³ (¹ D) 4p ¹	² P	1.5	10957689.	50% + 16% 2s ¹ 2p ³ (³ S) 4p ¹ ² P
549	2s ¹ 2p ³ (¹ D) 4p ¹	² P	0.5	10962297.	76%
550	2s ² 2p ² (³ P) 5p ¹	⁴ P	2.5	10967369.	26% + 22% 2s ² 2p ² (³ P) 5p ¹ ⁴ D + 19% 2s ² 2p ² (³ P) 5p ¹ ² D
551	2s ² 2p ² (³ P) 5p ¹	⁴ D	3.5	10970170.	65% + 19% 2s ² 2p ² (¹ D) 5p ¹ ² F + 11% 2s ¹ 2p ³ (³ S) 4d ¹ ⁴ D
552	2s ² 2p ² (³ P) 5p ¹	² P	1.5	10974814.	33% + 28% 2s ¹ 2p ³ (¹ P) 4s ¹ ² P + 14% 2s ² 2p ² (¹ D) 5p ¹ ² D
553	2s ¹ 2p ³ (¹ P) 4s ¹	² P	0.5	10976690.	54% + 12% 2s ² 2p ² (³ P) 5p ¹ ² P + 11% 2s ² 2p ² (³ P) 5p ¹ ² S
554	2s ² 2p ² (³ P) 5p ¹	⁴ S	1.5	10977211.	44% + 25% 2s ² 2p ² (³ P) 5p ¹ ⁴ P + 20% 2s ² 2p ² (¹ D) 5p ¹ ² P
555	2s ² 2p ² (³ P) 5p ¹	² D	2.5	10983807.	40% + 30% 2s ² 2p ² (³ P) 5p ¹ ⁴ P + 11% 2s ² 2p ² (¹ D) 5p ¹ ² F
556	2s ¹ 2p ³ (¹ P) 4s ¹	² P	1.5	10984651.	44% + 19% 2s ² 2p ² (³ P) 5p ¹ ² P
557	2s ² 2p ² (³ P) 5d ¹	⁴ F	1.5	10987448.	41% + 31% 2s ² 2p ² (³ P) 5d ¹ ² P + 15% 2s ² 2p ² (³ P) 5d ¹ ⁴ D
558	2s ² 2p ² (³ P) 5p ¹	² P	0.5	10987578.	23% + 23% 2s ¹ 2p ³ (¹ P) 4s ¹ ² P + 19% 2s ² 2p ² (³ P) 5p ¹ ² S
559	2s ² 2p ² (³ P) 5d ¹	⁴ D	0.5	10988609.	77% + 15% 2s ² 2p ² (³ P) 5d ¹ ² P
560	2s ² 2p ² (³ P) 5d ¹	⁴ F	3.5	10988721.	54% + 34% 2s ² 2p ² (³ P) 5d ¹ ⁴ D + 10% 2s ² 2p ² (³ P) 5d ¹ ² F
561	2s ² 2p ² (³ P) 5d ¹	⁴ F	2.5	10990820.	58% + 26% 2s ² 2p ² (³ P) 5d ¹ ⁴ P + 13% 2s ² 2p ² (³ P) 5d ¹ ² D
562	2s ¹ 2p ³ (³ S) 4d ¹	⁴ D	2.5	10991134.	66%
563	2s ¹ 2p ³ (³ S) 4d ¹	⁴ D	1.5	10991396.	58% + 11% 2s ¹ 2p ³ (¹ P) 4d ¹ ² D
564	2s ¹ 2p ³ (³ S) 4d ¹	⁴ D	0.5	10992911.	72% + 13% 2s ¹ 2p ³ (¹ P) 4d ¹ ² P
565	2s ¹ 2p ³ (³ S) 4d ¹	⁴ D	3.5	10994535.	64% + 12% 2s ¹ 2p ³ (¹ P) 4d ¹ ² F
566	2s ² 2p ² (³ P) 5d ¹	⁴ D	1.5	10997512.	33% + 29% 2s ² 2p ² (³ P) 5d ¹ ² D + 20% 2s ² 2p ² (³ P) 5d ¹ ² P
567	2s ² 2p ² (³ P) 5d ¹	² F	2.5	10997771.	64% + 18% 2s ² 2p ² (³ P) 5d ¹ ⁴ P + 10% 2s ² 2p ² (³ P) 5d ¹ ⁴ D
568	2s ¹ 2p ³ (³ S) 4d ¹	² D	1.5	11001640.	52% + 13% 2s ¹ 2p ³ (³ S) 4d ¹ ⁴ D + 11% 2s ¹ 2p ³ (¹ P) 4d ¹ ² P
569	2s ¹ 2p ³ (³ S) 4d ¹	² D	2.5	11008900.	29% + 23% 2s ² 2p ² (³ P) 5f ¹ ² D + 16% 2s ² 2p ² (³ P) 5f ¹ ⁴ G
570	2s ² 2p ² (³ P) 5f ¹	⁴ G	3.5	11017831.	44% + 23% 2s ² 2p ² (³ P) 5f ¹ ² F + 20% 2s ² 2p ² (³ P) 5f ¹ ² G
571	2s ² 2p ² (³ P) 5f ¹	⁴ D	3.5	11017955.	43% + 30% 2s ² 2p ² (³ P) 5f ¹ ² G + 13% 2s ² 2p ² (³ P) 5f ¹ ⁴ G
572	2s ² 2p ² (³ P) 5g ¹	⁴ H	3.5	11017997.	43% + 31% 2s ² 2p ² (³ P) 5g ¹ ² F + 14% 2s ² 2p ² (³ P) 5g ¹ ⁴ F
573	2s ² 2p ² (³ P) 5f ¹	⁴ G	4.5	11018323.	48% + 34% 2s ² 2p ² (³ P) 5f ¹ ⁴ F + 16% 2s ² 2p ² (³ P) 5f ¹ ² G
574	2s ² 2p ² (³ P) 5g ¹	⁴ F	4.5	11018334.	45% + 25% 2s ² 2p ² (³ P) 5g ¹ ² H + 18% 2s ² 2p ² (³ P) 5g ¹ ⁴ H
575	2s ² 2p ² (³ P) 5f ¹	⁴ D	2.5	11018653.	31% + 24% 2s ² 2p ² (³ P) 5f ¹ ⁴ G + 19% 2s ² 2p ² (³ P) 5f ¹ ⁴ F
576	2s ² 2p ² (³ P) 5g ¹	⁴ G	2.5	11019807.	42% + 25% 2s ² 2p ² (³ P) 5g ¹ ⁴ F + 20% 2s ² 2p ² (³ P) 5g ¹ ² F
577	2s ² 2p ² (³ P) 5f ¹	⁴ F	1.5	11019860.	62% + 17% 2s ² 2p ² (³ P) 5f ¹ ⁴ D + 15% 2s ² 2p ² (³ P) 5f ¹ ² D
578	2s ² 2p ² (³ P) 5g ¹	⁴ F	3.5	11020326.	31% + 25% 2s ² 2p ² (³ P) 5g ¹ ² G + 17% 2s ² 2p ² (³ P) 5g ¹ ⁴ G
579	2s ² 2p ² (³ P) 5f ¹	² F	2.5	11022222.	28% + 14% 2s ² 2p ² (³ P) 5f ¹ ² D + 14% 2s ¹ 2p ³ (¹ D) 4d ¹ ² D
580	2s ² 2p ² (³ P) 5g ¹	⁴ H	4.5	11022661.	36% + 27% 2s ² 2p ² (³ P) 5g ¹ ² G + 26% 2s ² 2p ² (³ P) 5g ¹ ² H
581	2s ² 2p ² (³ P) 5g ¹	⁴ H	5.5	11023010.	45% + 37% 2s ² 2p ² (³ P) 5g ¹ ⁴ G + 17% 2s ² 2p ² (³ P) 5g ¹ ² H
582	2s ¹ 2p ³ (¹ D) 4d ¹	² G	4.5	11024244.	92%
583	2s ¹ 2p ³ (¹ D) 4d ¹	² G	3.5	11025472.	80%
584	2s ² 2p ² (³ P) 5d ¹	⁴ F	3.5	11029403.	34% + 31% 2s ² 2p ² (³ P) 5d ¹ ⁴ D + 15% 2s ² 2p ² (¹ D) 5d ¹ ² F
585	2s ² 2p ² (³ P) 5d ¹	⁴ F	4.5	11030231.	76% + 22% 2s ² 2p ² (¹ D) 5d ¹ ² G
586	2s ¹ 2p ³ (¹ D) 4d ¹	² F	3.5	11030310.	86%
587	2s ¹ 2p ³ (¹ D) 4d ¹	² F	2.5	11030798.	80%
588	2s ² 2p ² (³ P) 5d ¹	⁴ D	2.5	11033880.	45% + 19% 2s ² 2p ² (³ P) 5d ¹ ⁴ P + 14% 2s ² 2p ² (¹ D) 5d ¹ ² D
589	2s ² 2p ² (³ P) 5d ¹	⁴ P	1.5	11036484.	52% + 23% 2s ² 2p ² (³ P) 5d ¹ ⁴ D + 15% 2s ² 2p ² (¹ D) 5d ¹ ² P
590	2s ¹ 2p ³ (³ S) 4f ¹	⁴ F	1.5	11037809.	49% + 29% 2s ² 2p ² (³ P) 5g ¹ ⁴ F
591	2s ² 2p ² (³ P) 5d ¹	⁴ P	0.5	11038395.	72% + 17% 2s ² 2p ² (¹ D) 5d ¹ ² S
592	2s ¹ 2p ³ (³ S) 4f ¹	⁴ F	2.5	11038706.	21% + 20% 2s ¹ 2p ³ (³ S) 4f ¹ ² F + 15% 2s ² 2p ² (³ P) 5g ¹ ² F
593	2s ¹ 2p ³ (¹ D) 4d ¹	² P	1.5	11038726.	60% + 25% 2s ¹ 2p ³ (¹ D) 4d ¹ ² D

Table 1. continued.

Index	Configuration	LS	J	E (cm ⁻¹)	Composition
594	2s ¹ 2p ³ (¹ D) 4d ¹	² P	0.5	11040537.	52% + 39% 2s ¹ 2p ³ (¹ D) 4d ¹ ² S
595	2s ² 2p ² (³ P) 5d ¹	² P	0.5	11041102.	65% + 15% 2s ² 2p ² (¹ D) 5d ¹ ² P + 14% 2s ² 2p ² (³ P) 5d ¹ ⁴ D
596	2s ² 2p ² (³ P) 5d ¹	² D	2.5	11041252.	44% + 14% 2s ² 2p ² (¹ D) 5d ¹ ² F
597	2s ² 2p ² (³ P) 5d ¹	² D	1.5	11042133.	45% + 21% 2s ² 2p ² (³ P) 5d ¹ ² P + 16% 2s ² 2p ² (¹ D) 5d ¹ ² D
598	2s ¹ 2p ³ (¹ D) 4d ¹	² D	2.5	11044216.	56% + 20% 2s ¹ 2p ³ (³ S) 4d ¹ ² D
599	2s ² 2p ² (³ P) 5d ¹	² F	3.5	11044289.	56% + 18% 2s ² 2p ² (³ P) 5d ¹ ⁴ D + 16% 2s ² 2p ² (¹ D) 5d ¹ ² G
600	2s ¹ 2p ³ (¹ D) 4d ¹	² D	1.5	11044482.	44% + 29% 2s ¹ 2p ³ (¹ D) 4d ¹ ² P
601	2s ² 2p ² (³ P) 5g ¹	⁴ G	2.5	11045335.	34% + 22% 2s ¹ 2p ³ (³ S) 4f ¹ ² F + 19% 2s ¹ 2p ³ (³ S) 4f ¹ ⁴ F
602	2s ¹ 2p ³ (³ S) 4f ¹	⁴ F	3.5	11046199.	36% + 18% 2s ² 2p ² (³ P) 5g ¹ ⁴ G + 16% 2s ² 2p ² (³ P) 5g ¹ ² G
603	2s ² 2p ² (¹ D) 5s ¹	² D	1.5	11049365.	52% + 22% 2s ¹ 2p ³ (¹ P) 4p ¹ ² D + 13% 2s ² 2p ² (³ P) 5s ¹ ² P
604	2s ¹ 2p ³ (³ S) 4f ¹	⁴ F	4.5	11050241.	42% + 17% 2s ² 2p ² (³ P) 5g ¹ ⁴ G
605	2s ¹ 2p ³ (³ S) 4f ¹	² F	3.5	11050286.	35% + 14% 2s ² 2p ² (³ P) 5g ¹ ² G
606	2s ² 2p ² (¹ D) 5s ¹	² D	2.5	11050373.	52% + 19% 2s ¹ 2p ³ (¹ P) 4p ¹ ² D + 15% 2s ² 2p ² (³ P) 5s ¹ ⁴ P
607	2s ¹ 2p ³ (¹ D) 4d ¹	² S	0.5	11050776.	52% + 32% 2s ¹ 2p ³ (¹ D) 4d ¹ ² P
608	2s ² 2p ² (³ P) 5f ¹	⁴ G	5.5	11060816.	76% + 23% 2s ² 2p ² (¹ D) 5f ¹ ² H
609	2s ² 2p ² (³ P) 5f ¹	⁴ G	4.5	11060995.	34% + 31% 2s ² 2p ² (³ P) 5f ¹ ² G + 19% 2s ² 2p ² (¹ D) 5f ¹ ² H
610	2s ² 2p ² (³ P) 5f ¹	⁴ F	3.5	11062369.	38% + 17% 2s ² 2p ² (¹ D) 5f ¹ ² G + 16% 2s ² 2p ² (³ P) 5f ¹ ⁴ G
611	2s ² 2p ² (³ P) 5f ¹	⁴ F	4.5	11063010.	39% + 32% 2s ² 2p ² (³ P) 5f ¹ ² G + 20% 2s ² 2p ² (¹ D) 5f ¹ ² G
612	2s ² 2p ² (³ P) 5f ¹	⁴ F	2.5	11063142.	36% + 34% 2s ² 2p ² (³ P) 5f ¹ ⁴ D + 11% 2s ² 2p ² (¹ D) 5f ¹ ² F
613	2s ² 2p ² (³ P) 5f ¹	⁴ D	1.5	11063426.	60% + 13% 2s ² 2p ² (³ P) 5f ¹ ⁴ F + 11% 2s ² 2p ² (¹ D) 5f ¹ ² D
614	2s ² 2p ² (³ P) 5f ¹	⁴ D	0.5	11063661.	73% + 20% 2s ² 2p ² (¹ D) 5f ¹ ² P
615	2s ² 2p ² (³ P) 5f ¹	² F	3.5	11063914.	39% + 17% 2s ² 2p ² (¹ D) 5f ¹ ² F + 14% 2s ² 2p ² (³ P) 5f ¹ ⁴ D
616	2s ² 2p ² (³ P) 5g ¹	² G	4.5	11064364.	30% + 26% 2s ² 2p ² (¹ D) 5g ¹ ² H + 13% 2s ² 2p ² (³ P) 5g ¹ ⁴ H
617	2s ² 2p ² (³ P) 5g ¹	⁴ G	5.5	11064762.	39% + 25% 2s ² 2p ² (³ P) 5g ¹ ⁴ H + 24% 2s ² 2p ² (¹ D) 5g ¹ ² H
618	2s ² 2p ² (³ P) 5f ¹	² F	2.5	11064979.	35% + 25% 2s ² 2p ² (³ P) 5f ¹ ² D + 12% 2s ² 2p ² (¹ D) 5f ¹ ² D
619	2s ¹ 2p ³ (¹ P) 4p ¹	² S	0.5	11065233.	52% + 27% 2s ¹ 2p ³ (¹ P) 4p ¹ ² P + 14% 2s ¹ 2p ³ (³ S) 4p ¹ ⁴ P
620	2s ² 2p ² (³ P) 5g ¹	² H	5.5	11065617.	60% + 22% 2s ² 2p ² (¹ D) 5g ¹ ² I + 12% 2s ² 2p ² (³ P) 5g ¹ ⁴ H
621	2s ² 2p ² (³ P) 5g ¹	⁴ H	6.5	11065927.	75% + 23% 2s ² 2p ² (¹ D) 5g ¹ ² I
622	2s ² 2p ² (³ P) 5f ¹	² D	1.5	11066627.	55% + 11% 2s ² 2p ² (³ P) 5f ¹ ⁴ F
623	2s ¹ 2p ³ (¹ P) 4p ¹	² P	1.5	11070097.	66% + 13% 2s ¹ 2p ³ (³ S) 4p ¹ ⁴ P
624	2s ¹ 2p ³ (³ S) 4f ¹	² F	3.5	11071838.	18% + 16% 2s ² 2p ² (¹ D) 5g ¹ ² G + 14% 2s ² 2p ² (³ P) 5g ¹ ⁴ G
625	2s ¹ 2p ³ (³ S) 4f ¹	⁴ F	4.5	11072192.	29% + 18% 2s ² 2p ² (³ P) 5g ¹ ⁴ F + 17% 2s ² 2p ² (¹ D) 5g ¹ ² G
626	2s ¹ 2p ³ (¹ D) 4f ¹	² F	2.5	11074208.	18% + 16% 2s ² 2p ² (³ P) 5g ¹ ⁴ F + 15% 2s ² 2p ² (¹ D) 5g ¹ ² F
627	2s ¹ 2p ³ (¹ P) 4p ¹	² D	1.5	11075203.	33% + 14% 2s ¹ 2p ³ (¹ P) 4p ¹ ² P + 14% 2s ² 2p ² (¹ D) 5s ¹ ² D
628	2s ² 2p ² (³ P) 5g ¹	⁴ F	3.5	11075650.	15% + 15% 2s ¹ 2p ³ (¹ D) 4f ¹ ² F + 15% 2s ² 2p ² (¹ D) 5g ¹ ² F
629	2s ¹ 2p ³ (¹ P) 4p ¹	² D	2.5	11075952.	44% + 13% 2s ² 2p ² (¹ D) 5s ¹ ² D + 11% 2s ¹ 2p ³ (¹ D) 4f ¹ ² D
630	2s ² 2p ² (³ P) 5g ¹	⁴ F	1.5	11077740.	27% + 18% 2s ¹ 2p ³ (³ S) 4f ¹ ⁴ F + 16% 2s ¹ 2p ³ (¹ D) 4f ¹ ² D
631	2s ¹ 2p ³ (¹ P) 4p ¹	² D	2.5	11078751.	17% + 14% 2s ¹ 2p ³ (¹ D) 4f ¹ ² D + 14% 2s ² 2p ² (³ P) 5g ¹ ² F
632	2s ¹ 2p ³ (¹ D) 4f ¹	² H	4.5	11082423.	81%
633	2s ¹ 2p ³ (¹ D) 4f ¹	² H	5.5	11083138.	83%
634	2s ¹ 2p ³ (¹ D) 4f ¹	² P	0.5	11084255.	60% + 15% 2s ¹ 2p ³ (¹ P) 4p ¹ ² P + 11% 2s ¹ 2p ³ (¹ P) 4p ¹ ² S
635	2s ¹ 2p ³ (¹ D) 4f ¹	² G	3.5	11084490.	81%
636	2s ¹ 2p ³ (¹ D) 4f ¹	² G	4.5	11085248.	81%
637	2s ¹ 2p ³ (¹ D) 4f ¹	² P	1.5	11087099.	82%
638	2s ¹ 2p ³ (¹ D) 4f ¹	² F	2.5	11087827.	63%
639	2s ¹ 2p ³ (¹ D) 4f ¹	² F	3.5	11088071.	74%
640	2s ¹ 2p ³ (¹ D) 4f ¹	² P	0.5	11088597.	33% + 33% 2s ¹ 2p ³ (¹ P) 4p ¹ ² P + 14% 2s ¹ 2p ³ (³ S) 4p ¹ ² P
641	2s ¹ 2p ³ (¹ D) 4f ¹	² D	1.5	11089307.	61% + 12% 2s ² 2p ² (³ P) 5g ¹ ⁴ F
642	2s ¹ 2p ³ (¹ D) 4f ¹	² D	2.5	11090214.	58% + 11% 2s ² 2p ² (³ P) 5g ¹ ² F
643	2s ² 2p ² (¹ D) 5p ¹	² F	2.5	11101608.	69% + 20% 2s ² 2p ² (³ P) 5p ¹ ² D
644	2s ² 2p ² (¹ D) 5p ¹	² F	3.5	11103648.	73% + 21% 2s ² 2p ² (³ P) 5p ¹ ⁴ D
645	2s ² 2p ² (¹ D) 5p ¹	² D	1.5	11104235.	43% + 31% 2s ² 2p ² (¹ D) 5p ¹ ² P
646	2s ² 2p ² (¹ D) 5p ¹	² D	2.5	11104918.	74% + 15% 2s ² 2p ² (³ P) 5p ¹ ⁴ P
647	2s ² 2p ² (¹ D) 5p ¹	² P	0.5	11108924.	77% + 11% 2s ² 2p ² (³ P) 5p ¹ ² S

Table 1. continued.

Index	Configuration	LS	J	E (cm ⁻¹)	Composition
648	2s ² 2p ² (1D) 5p ¹	² P	1.5	11119121.	43% + 27% 2s ² 2p ² (1D) 5p ¹ ² D + 15% 2s ² 2p ² (³ P) 5p ¹ ² P
649	2s ² 2p ² (1D) 5d ¹	² F	3.5	11157237.	56% + 20% 2s ² 2p ² (1D) 5d ¹ ² G + 12% 2s ² 2p ² (³ P) 5d ¹ ⁴ D
650	2s ¹ 2p ³ (¹ P) 4d ¹	² D	2.5	11159476.	55% + 18% 2s ¹ 2p ³ (¹ P) 4d ¹ ² F
651	2s ² 2p ² (1D) 5d ¹	² G	4.5	11160269.	77% + 22% 2s ² 2p ² (³ P) 5d ¹ ⁴ F
652	2s ¹ 2p ³ (¹ P) 4d ¹	² F	3.5	11161476.	76% + 14% 2s ¹ 2p ³ (³ S) 4d ¹ ⁴ D
653	2s ¹ 2p ³ (¹ P) 4d ¹	² P	0.5	11161755.	69% + 12% 2s ¹ 2p ³ (³ S) 4d ¹ ⁴ D + 11% 2s ² 2p ² (1D) 5f ¹ ² P
654	2s ¹ 2p ³ (¹ P) 4d ¹	² P	1.5	11162251.	53% + 17% 2s ¹ 2p ³ (¹ P) 4d ¹ ² D + 11% 2s ¹ 2p ³ (³ S) 4d ¹ ⁴ D
655	2s ² 2p ² (1D) 5d ¹	² D	2.5	11162688.	43% + 33% 2s ² 2p ² (1D) 5d ¹ ² F + 12% 2s ² 2p ² (³ P) 5d ¹ ⁴ D
656	2s ² 2p ² (1D) 5d ¹	² D	1.5	11163216.	69%
657	2s ² 2p ² (1D) 5d ¹	² G	3.5	11163625.	53% + 21% 2s ² 2p ² (1D) 5d ¹ ² F + 12% 2s ² 2p ² (³ P) 5d ¹ ² F
658	2s ² 2p ² (1D) 5d ¹	² P	0.5	11163952.	76% + 11% 2s ² 2p ² (³ P) 5d ¹ ² P
659	2s ¹ 2p ³ (¹ P) 4d ¹	² F	2.5	11165464.	49% + 19% 2s ¹ 2p ³ (¹ P) 4d ¹ ² D
660	2s ² 2p ² (1D) 5d ¹	² S	0.5	11170444.	68% + 16% 2s ² 2p ² (³ P) 5d ¹ ⁴ P
661	2s ² 2p ² (1D) 5d ¹	² F	2.5	11170610.	38% + 32% 2s ² 2p ² (1D) 5d ¹ ² D + 18% 2s ² 2p ² (³ P) 5d ¹ ² D
662	2s ² 2p ² (1D) 5d ¹	² P	1.5	11172397.	68%
663	2s ¹ 2p ³ (¹ P) 4d ¹	² D	1.5	11173750.	38% + 18% 2s ² 2p ² (1D) 5f ¹ ² D + 14% 2s ¹ 2p ³ (³ S) 4d ¹ ² D
664	2s ² 2p ² (¹ S) 5s ¹	² S	0.5	11181732.	78%
665	2s ² 2p ² (1D) 5g ¹	² D	1.5	11183000.	58% + 19% 2s ¹ 2p ³ (¹ P) 4f ¹ ² D + 18% 2s ² 2p ² (³ P) 5g ¹ ⁴ F
666	2s ² 2p ² (1D) 5g ¹	² D	2.5	11183533.	58% + 18% 2s ¹ 2p ³ (¹ P) 4f ¹ ² D
667	2s ² 2p ² (1D) 5g ¹	² F	2.5	11186227.	59% + 16% 2s ¹ 2p ³ (¹ P) 4f ¹ ² F
668	2s ² 2p ² (1D) 5g ¹	² F	3.5	11186534.	59% + 16% 2s ¹ 2p ³ (¹ P) 4f ¹ ² F
669	2s ² 2p ² (1D) 5f ¹	² G	4.5	11187419.	74% + 16% 2s ² 2p ² (³ P) 5f ¹ ⁴ F
670	2s ² 2p ² (1D) 5f ¹	² G	3.5	11187825.	71%
671	2s ² 2p ² (1D) 5f ¹	² H	4.5	11189376.	75% + 17% 2s ² 2p ² (³ P) 5f ¹ ² G
672	2s ² 2p ² (1D) 5f ¹	² H	5.5	11189620.	76% + 23% 2s ² 2p ² (³ P) 5f ¹ ⁴ G
673	2s ² 2p ² (1D) 5f ¹	² F	3.5	11190006.	69%
674	2s ² 2p ² (1D) 5f ¹	² F	2.5	11190380.	66%
675	2s ² 2p ² (1D) 5g ¹	² G	3.5	11191058.	64%
676	2s ² 2p ² (1D) 5g ¹	² G	4.5	11191531.	64%
677	2s ² 2p ² (1D) 5g ¹	² I	5.5	11193423.	75% + 16% 2s ² 2p ² (³ P) 5g ¹ ² H
678	2s ² 2p ² (1D) 5g ¹	² I	6.5	11193780.	76% + 23% 2s ² 2p ² (³ P) 5g ¹ ⁴ H
679	2s ² 2p ² (1D) 5g ¹	² H	4.5	11194213.	73% + 11% 2s ² 2p ² (³ P) 5g ¹ ² G
680	2s ² 2p ² (1D) 5f ¹	² D	2.5	11194402.	68%
681	2s ² 2p ² (1D) 5g ¹	² H	5.5	11194538.	73% + 14% 2s ² 2p ² (³ P) 5g ¹ ⁴ G
682	2s ² 2p ² (1D) 5f ¹	² D	1.5	11195205.	48% + 14% 2s ² 2p ² (1D) 5f ¹ ² P + 13% 2s ¹ 2p ³ (¹ P) 4d ¹ ² D
683	2s ² 2p ² (1D) 5f ¹	² P	0.5	11197527.	66% + 18% 2s ² 2p ² (³ P) 5f ¹ ⁴ D + 11% 2s ¹ 2p ³ (¹ P) 4d ¹ ² P
684	2s ² 2p ² (1D) 5f ¹	² P	1.5	11199728.	47% + 13% 2s ¹ 2p ³ (¹ P) 4d ¹ ² P + 12% 2s ² 2p ² (³ P) 5f ¹ ² D
685	2s ¹ 2p ³ (¹ P) 4f ¹	² G	3.5	11219101.	69% + 11% 2s ¹ 2p ³ (³ S) 4f ¹ ² F
686	2s ¹ 2p ³ (¹ P) 4f ¹	² G	4.5	11219848.	70% + 15% 2s ¹ 2p ³ (³ S) 4f ¹ ⁴ F
687	2s ² 2p ² (¹ S) 5p ¹	² P	0.5	11226682.	84%
688	2s ¹ 2p ³ (¹ P) 4f ¹	² F	2.5	11226746.	64% + 15% 2s ² 2p ² (1D) 5g ¹ ² F
689	2s ¹ 2p ³ (¹ P) 4f ¹	² F	3.5	11227196.	64% + 15% 2s ² 2p ² (1D) 5g ¹ ² F
690	2s ² 2p ² (¹ S) 5p ¹	² P	1.5	11230571.	84%
691	2s ¹ 2p ³ (¹ P) 4f ¹	² D	1.5	11232199.	62% + 18% 2s ² 2p ² (1D) 5g ¹ ² D + 12% 2s ¹ 2p ³ (³ S) 4f ¹ ⁴ F
692	2s ¹ 2p ³ (¹ P) 4f ¹	² D	2.5	11233192.	62% + 17% 2s ² 2p ² (1D) 5g ¹ ² D
693	2s ² 2p ² (¹ S) 5d ¹	² D	2.5	11281692.	87%
694	2s ² 2p ² (¹ S) 5d ¹	² D	1.5	11282508.	86%
695	2s ¹ 2p ³ (³ S) 5s ¹	⁶ S	2.5	11295480.	97%
696	2s ² 2p ² (¹ S) 5f ¹	² F	2.5	11307621.	86%
697	2s ² 2p ² (¹ S) 5f ¹	² F	3.5	11308064.	86%
698	2s ¹ 2p ³ (³ S) 5s ¹	⁴ S	1.5	11310454.	96%
699	2s ² 2p ² (¹ S) 5g ¹	² G	3.5	11313231.	84%
700	2s ² 2p ² (¹ S) 5g ¹	² G	4.5	11313609.	84%