

ATOMIC SYMBOL = LI ATOMIC NUMBER = 3

0.10 TO 0.19 F'	-0.0010	-0.0010	-0.0010	-0.0010	-0.0010	-0.0010	-0.0010	-0.0010	-0.0010	-0.0010	-
0.0010	F''	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.20 TO 0.29 F'	-0.0010	-0.0010	-0.0010	-0.0010	-0.0010	-0.0010	-0.0010	-0.0010	-0.0009	-0.0009	-
0.0009	F''	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.30 TO 0.39 F'	-0.0009	-0.0009	-0.0009	-0.0009	-0.0009	-0.0009	-0.0009	-0.0009	-0.0009	-0.0009	-
0.0009	F''	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.40 TO 0.49 F'	-0.0009	-0.0009	-0.0009	-0.0009	-0.0009	-0.0009	-0.0009	-0.0009	-0.0008	-0.0008	-
0.0008	F''	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.50 TO 0.59 F'	-0.0008	-0.0008	-0.0008	-0.0008	-0.0008	-0.0008	-0.0008	-0.0008	-0.0008	-0.0008	-
0.0008	F''	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.60 TO 0.69 F'	-0.0008	-0.0007	-0.0007	-0.0007	-0.0007	-0.0007	-0.0007	-0.0007	-0.0007	-0.0007	-
0.0007	F''	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
0.70 TO 0.79 F'	-0.0007	-0.0007	-0.0007	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-
0.0006	F''	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
0.80 TO 0.89 F'	-0.0006	-0.0006	-0.0006	-0.0006	-0.0005	-0.0005	-0.0005	-0.0005	-0.0005	-0.0005	-
0.0005	F''	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
0.90 TO 0.99 F'	-0.0005	-0.0005	-0.0005	-0.0004	-0.0004	-0.0004	-0.0004	-0.0004	-0.0004	-0.0004	-
0.0004	F''	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
1.00 TO 1.09 F'	-0.0004	-0.0004	-0.0003	-0.0003	-0.0003	-0.0003	-0.0003	-0.0003	-0.0003	-0.0003	-
0.0003	F''	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
1.10 TO 1.19 F'	-0.0002	-0.0002	-0.0002	-0.0002	-0.0002	-0.0002	-0.0002	-0.0002	-0.0002	-0.0001	-
0.0001	F''	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
1.20 TO 1.29 F'	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
F''	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
1.30 TO 1.39 F'	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002
F''	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003
1.40 TO 1.49 F'	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003
F''	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003
1.50 TO 1.59 F'	0.0003	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0005	0.0005	0.0005
F''	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0004	0.0004	0.0004
1.60 TO 1.69 F'	0.0005	0.0005	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0007
F''	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004
1.70 TO 1.79 F'	0.0007	0.0007	0.0007	0.0007	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0009
F''	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0005	0.0005	0.0005	0.0005	0.0005
1.80 TO 1.89 F'	0.0009	0.0009	0.0009	0.0009	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0011
F''	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
1.90 TO 1.99 F'	0.0011	0.0011	0.0011	0.0011	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0013
F''	0.0005	0.0005	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
2.00 TO 2.09 F'	0.0013	0.0013	0.0013	0.0013	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0015
F''	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0007	0.0007	0.0007	0.0007
2.10 TO 2.19 F'	0.0015	0.0015	0.0015	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0017	0.0017

	F''	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0008
2.20 TO 2.29	F'	0.0017	0.0017	0.0018	0.0018	0.0018	0.0018	0.0018	0.0018	0.0019	0.0019
	F''	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
2.30 TO 2.39	F'	0.0019	0.0020	0.0020	0.0020	0.0020	0.0021	0.0021	0.0021	0.0021	0.0021
	F''	0.0008	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009
2.40 TO 2.49	F'	0.0022	0.0022	0.0022	0.0022	0.0023	0.0023	0.0023	0.0023	0.0024	0.0024
	F''	0.0009	0.0009	0.0009	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010
2.50 TO 2.59	F'	0.0024	0.0024	0.0025	0.0025	0.0025	0.0025	0.0026	0.0026	0.0026	0.0026
	F''	0.0010	0.0010	0.0010	0.0010	0.0011	0.0011	0.0011	0.0011	0.0011	0.0011
2.60 TO 2.69	F'	0.0027	0.0027	0.0027	0.0027	0.0028	0.0028	0.0028	0.0028	0.0029	0.0029
	F''	0.0011	0.0011	0.0011	0.0011	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012
2.70 TO 2.79	F'	0.0029	0.0029	0.0030	0.0030	0.0030	0.0031	0.0031	0.0031	0.0031	0.0032
	F''	0.0012	0.0012	0.0012	0.0012	0.0013	0.0013	0.0013	0.0013	0.0013	0.0013
2.80 TO 2.89	F'	0.0032	0.0032	0.0032	0.0033	0.0033	0.0033	0.0034	0.0034	0.0034	0.0034
	F''	0.0013	0.0013	0.0013	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014	0.0014
ATOMIC SYMBOL = BE ATOMIC NUMBER = 4											
0.10 TO 0.19	F'	-0.0010	-0.0010	-0.0010	-0.0010	-0.0010	-0.0009	-0.0009	-0.0009	-0.0009	-
	F''	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.20 TO 0.29	F'	-0.0009	-0.0009	-0.0009	-0.0009	-0.0009	-0.0008	-0.0008	-0.0008	-0.0008	-
	F''	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.30 TO 0.39	F'	-0.0008	-0.0008	-0.0008	-0.0007	-0.0007	-0.0007	-0.0007	-0.0007	-0.0007	-
	F''	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001
0.40 TO 0.49	F'	-0.0006	-0.0006	-0.0006	-0.0006	-0.0006	-0.0005	-0.0005	-0.0005	-0.0005	-
	F''	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
0.50 TO 0.59	F'	-0.0004	-0.0004	-0.0004	-0.0004	-0.0004	-0.0003	-0.0003	-0.0003	-0.0003	-
	F''	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
0.60 TO 0.69	F'	-0.0002	-0.0002	-0.0002	-0.0001	-0.0001	-0.0001	-0.0001	0.0000	0.0000	0.0000
	F''	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
0.70 TO 0.79	F'	0.0000	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003
	F''	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003
0.80 TO 0.89	F'	0.0003	0.0004	0.0004	0.0004	0.0005	0.0005	0.0005	0.0006	0.0006	0.0006
	F''	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0004	0.0004	0.0004	0.0004
0.90 TO 0.99	F'	0.0007	0.0007	0.0007	0.0008	0.0008	0.0008	0.0009	0.0009	0.0009	0.0010
	F''	0.0004	0.0004	0.0004	0.0004	0.0004	0.0005	0.0005	0.0005	0.0005	0.0005
1.00 TO 1.09	F'	0.0010	0.0010	0.0011	0.0011	0.0012	0.0012	0.0012	0.0013	0.0013	0.0014
	F''	0.0005	0.0005	0.0005	0.0005	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
1.10 TO 1.19	F'	0.0014	0.0014	0.0015	0.0015	0.0016	0.0016	0.0016	0.0017	0.0017	0.0018
	F''	0.0006	0.0006	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0008
1.20 TO 1.29	F'	0.0018	0.0018	0.0019	0.0019	0.0020	0.0020	0.0021	0.0021	0.0022	0.0022
	F''	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0009	0.0009	0.0009	0.0009
1.30 TO 1.39	F'	0.0022	0.0023	0.0023	0.0024	0.0024	0.0025	0.0025	0.0026	0.0026	0.0027
	F''	0.0009	0.0009	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0011	0.0011
1.40 TO 1.49	F'	0.0027	0.0028	0.0028	0.0029	0.0029	0.0030	0.0030	0.0030	0.0031	0.0031
	F''	0.0011	0.0011	0.0011	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0013
1.50 TO 1.59	F'	0.0032	0.0033	0.0033	0.0034	0.0034	0.0035	0.0035	0.0036	0.0036	0.0037
	F''	0.0013	0.0013	0.0013	0.0013	0.0014	0.0014	0.0014	0.0014	0.0014	0.0015
1.60 TO 1.69	F'	0.0037	0.0038	0.0038	0.0039	0.0039	0.0040	0.0040	0.0041	0.0041	0.0042
	F''	0.0015	0.0015	0.0015	0.0016	0.0016	0.0016	0.0016	0.0016	0.0017	0.0017
1.70 TO 1.79	F'	0.0043	0.0043	0.0044	0.0044	0.0045	0.0045	0.0046	0.0047	0.0047	0.0048

1.80 TO 1.89	F''	0.0017	0.0017	0.0018	0.0018	0.0018	0.0018	0.0018	0.0019	0.0019	0.0019
	F'	0.0048	0.0049	0.0049	0.0050	0.0051	0.0051	0.0052	0.0052	0.0053	0.0054
1.90 TO 1.99	F''	0.0019	0.0020	0.0020	0.0020	0.0020	0.0021	0.0021	0.0021	0.0021	0.0022
	F'	0.0054	0.0055	0.0055	0.0056	0.0057	0.0057	0.0058	0.0058	0.0059	0.0060
2.00 TO 2.09	F''	0.0022	0.0022	0.0022	0.0023	0.0023	0.0023	0.0024	0.0024	0.0024	0.0024
	F'	0.0060	0.0061	0.0062	0.0062	0.0063	0.0063	0.0064	0.0065	0.0065	0.0066
2.10 TO 2.19	F''	0.0025	0.0025	0.0025	0.0025	0.0026	0.0026	0.0026	0.0027	0.0027	0.0027
	F'	0.0067	0.0067	0.0068	0.0069	0.0069	0.0070	0.0071	0.0071	0.0072	0.0072
2.20 TO 2.29	F''	0.0027	0.0028	0.0028	0.0028	0.0029	0.0029	0.0029	0.0030	0.0030	0.0030
	F'	0.0073	0.0074	0.0074	0.0075	0.0076	0.0077	0.0077	0.0078	0.0079	0.0079
2.30 TO 2.39	F''	0.0031	0.0031	0.0031	0.0031	0.0032	0.0032	0.0032	0.0033	0.0033	0.0033
	F'	0.0080	0.0081	0.0081	0.0082	0.0083	0.0083	0.0084	0.0085	0.0085	0.0086
2.40 TO 2.49	F''	0.0034	0.0034	0.0034	0.0035	0.0035	0.0035	0.0036	0.0036	0.0036	0.0037
	F'	0.0087	0.0088	0.0088	0.0089	0.0090	0.0090	0.0091	0.0092	0.0093	0.0093
2.50 TO 2.59	F''	0.0037	0.0037	0.0038	0.0038	0.0038	0.0039	0.0039	0.0040	0.0040	0.0040
	F'	0.0094	0.0095	0.0096	0.0096	0.0097	0.0098	0.0098	0.0099	0.0100	0.0101
2.60 TO 2.69	F''	0.0041	0.0041	0.0041	0.0042	0.0042	0.0042	0.0043	0.0043	0.0044	0.0044
	F'	0.0101	0.0102	0.0103	0.0104	0.0104	0.0105	0.0106	0.0107	0.0107	0.0108
2.70 TO 2.79	F''	0.0044	0.0045	0.0045	0.0045	0.0046	0.0046	0.0047	0.0047	0.0047	0.0048
	F'	0.0109	0.0110	0.0110	0.0111	0.0112	0.0113	0.0114	0.0114	0.0115	0.0116
2.80 TO 2.89	F''	0.0048	0.0049	0.0049	0.0049	0.0050	0.0050	0.0051	0.0051	0.0051	0.0052
	F'	0.0117	0.0117	0.0118	0.0119	0.0120	0.0121	0.0121	0.0122	0.0123	0.0124
	F''	0.0052	0.0053	0.0053	0.0053	0.0054	0.0054	0.0055	0.0055	0.0056	0.0056
ATOMIC SYMBOL = B    ATOMIC NUMBER = 5											
0.10 TO 0.19	F'	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019	-0.0019	-0.0018	-0.0018	-0.0018	-0.0018
	F''	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.20 TO 0.29	F'	-0.0018	-0.0017	-0.0017	-0.0017	-0.0017	-0.0016	-0.0016	-0.0016	-0.0015	-0.0015
	F''	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
0.30 TO 0.39	F'	-0.0015	-0.0015	-0.0014	-0.0014	-0.0014	-0.0013	-0.0013	-0.0012	-0.0012	-0.0012
	F''	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002
0.40 TO 0.49	F'	-0.0011	-0.0011	-0.0010	-0.0010	-0.0009	-0.0009	-0.0009	-0.0008	-0.0008	-0.0007
	F''	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003
0.50 TO 0.59	F'	-0.0007	-0.0006	-0.0006	-0.0005	-0.0005	-0.0004	-0.0003	-0.0003	-0.0002	-0.0002
	F''	0.0003	0.0003	0.0003	0.0003	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004
0.60 TO 0.69	F'	-0.0001	-0.0001	0.0000	0.0001	0.0001	0.0002	0.0002	0.0003	0.0004	0.0004
	F''	0.0005	0.0005	0.0005	0.0005	0.0005	0.0006	0.0006	0.0006	0.0006	0.0006
0.70 TO 0.79	F'	0.0005	0.0006	0.0006	0.0007	0.0008	0.0008	0.0009	0.0010	0.0010	0.0011
	F''	0.0007	0.0007	0.0007	0.0007	0.0007	0.0008	0.0008	0.0008	0.0008	0.0009
0.80 TO 0.89	F'	0.0012	0.0012	0.0013	0.0014	0.0015	0.0015	0.0016	0.0017	0.0018	0.0019
	F''	0.0009	0.0009	0.0009	0.0010	0.0010	0.0010	0.0011	0.0011	0.0011	0.0011
0.90 TO 0.99	F'	0.0019	0.0020	0.0021	0.0022	0.0023	0.0023	0.0024	0.0025	0.0026	0.0027
	F''	0.0012	0.0012	0.0012	0.0013	0.0013	0.0013	0.0013	0.0014	0.0014	0.0014
1.00 TO 1.09	F'	0.0028	0.0028	0.0029	0.0030	0.0031	0.0032	0.0033	0.0034	0.0035	0.0036
	F''	0.0015	0.0015	0.0015	0.0016	0.0016	0.0017	0.0017	0.0017	0.0018	0.0018
1.10 TO 1.19	F'	0.0036	0.0037	0.0038	0.0039	0.0040	0.0041	0.0042	0.0043	0.0044	0.0045
	F''	0.0018	0.0019	0.0019	0.0020	0.0020	0.0020	0.0021	0.0021	0.0022	0.0022
1.20 TO 1.29	F'	0.0046	0.0047	0.0048	0.0049	0.0050	0.0051	0.0052	0.0053	0.0054	0.0055
	F''	0.0022	0.0023	0.0023	0.0024	0.0024	0.0025	0.0025	0.0025	0.0026	0.0026
1.30 TO 1.39	F'	0.0056	0.0057	0.0058	0.0059	0.0060	0.0061	0.0062	0.0063	0.0064	0.0066

	F''	0.0027	0.0027	0.0028	0.0028	0.0029	0.0029	0.0030	0.0030	0.0031	0.0031
1.40 TO 1.49	F'	0.0067	0.0068	0.0069	0.0070	0.0071	0.0072	0.0073	0.0074	0.0075	0.0077
	F''	0.0032	0.0032	0.0033	0.0033	0.0034	0.0034	0.0035	0.0035	0.0036	0.0036
1.50 TO 1.59	F'	0.0078	0.0079	0.0080	0.0081	0.0082	0.0084	0.0085	0.0086	0.0087	0.0088
	F''	0.0037	0.0038	0.0038	0.0039	0.0039	0.0040	0.0040	0.0041	0.0042	0.0042
1.60 TO 1.69	F'	0.0089	0.0091	0.0092	0.0093	0.0094	0.0095	0.0097	0.0098	0.0099	0.0100
	F''	0.0043	0.0043	0.0044	0.0044	0.0045	0.0046	0.0046	0.0047	0.0048	0.0048
1.70 TO 1.79	F'	0.0102	0.0103	0.0104	0.0105	0.0107	0.0108	0.0109	0.0110	0.0112	0.0113
	F''	0.0049	0.0049	0.0050	0.0051	0.0051	0.0052	0.0053	0.0053	0.0054	0.0055
1.80 TO 1.89	F'	0.0114	0.0116	0.0117	0.0118	0.0119	0.0121	0.0122	0.0123	0.0125	0.0126
	F''	0.0055	0.0056	0.0057	0.0057	0.0058	0.0059	0.0060	0.0060	0.0061	0.0062
1.90 TO 1.99	F'	0.0127	0.0129	0.0130	0.0131	0.0133	0.0134	0.0136	0.0137	0.0138	0.0140
	F''	0.0062	0.0063	0.0064	0.0065	0.0065	0.0066	0.0067	0.0068	0.0068	0.0069
2.00 TO 2.09	F'	0.0141	0.0142	0.0144	0.0145	0.0146	0.0148	0.0149	0.0151	0.0152	0.0153
	F''	0.0070	0.0071	0.0071	0.0072	0.0073	0.0074	0.0075	0.0075	0.0076	0.0077
2.10 TO 2.19	F'	0.0155	0.0156	0.0158	0.0159	0.0161	0.0162	0.0163	0.0165	0.0166	0.0168
	F''	0.0078	0.0079	0.0079	0.0080	0.0081	0.0082	0.0083	0.0083	0.0084	0.0085
2.20 TO 2.29	F'	0.0169	0.0171	0.0172	0.0174	0.0175	0.0177	0.0178	0.0180	0.0181	0.0183
	F''	0.0086	0.0087	0.0088	0.0089	0.0089	0.0090	0.0091	0.0092	0.0093	0.0094
2.30 TO 2.39	F'	0.0184	0.0186	0.0187	0.0189	0.0190	0.0192	0.0193	0.0195	0.0196	0.0198
	F''	0.0095	0.0096	0.0097	0.0097	0.0098	0.0099	0.0100	0.0101	0.0102	0.0103
2.40 TO 2.49	F'	0.0199	0.0201	0.0202	0.0204	0.0205	0.0207	0.0208	0.0210	0.0212	0.0213
	F''	0.0104	0.0105	0.0106	0.0107	0.0108	0.0109	0.0110	0.0111	0.0112	0.0113
2.50 TO 2.59	F'	0.0215	0.0216	0.0218	0.0219	0.0221	0.0223	0.0224	0.0226	0.0227	0.0229
	F''	0.0114	0.0115	0.0116	0.0117	0.0118	0.0119	0.0120	0.0121	0.0122	0.0123
2.60 TO 2.69	F'	0.0231	0.0232	0.0234	0.0235	0.0237	0.0239	0.0240	0.0242	0.0244	0.0245
	F''	0.0124	0.0125	0.0126	0.0127	0.0128	0.0129	0.0130	0.0131	0.0132	0.0133
2.70 TO 2.79	F'	0.0247	0.0248	0.0250	0.0252	0.0253	0.0255	0.0257	0.0258	0.0260	0.0262
	F''	0.0134	0.0135	0.0136	0.0137	0.0139	0.0140	0.0141	0.0142	0.0143	0.0144
2.80 TO 2.89	F'	0.0263	0.0265	0.0267	0.0268	0.0270	0.0272	0.0273	0.0275	0.0277	0.0278
	F''	0.0145	0.0146	0.0147	0.0149	0.0150	0.0151	0.0152	0.0153	0.0154	0.0155
ATOMIC SYMBOL = C    ATOMIC NUMBER = 6											
0.10 TO 0.19	F'	-0.0029	-0.0028	-0.0028	-0.0028	-0.0027	-0.0027	-0.0027	-0.0026	-0.0026	-0.0026
	F''	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001
0.20 TO 0.29	F'	-0.0025	-0.0025	-0.0024	-0.0024	-0.0023	-0.0022	-0.0022	-0.0021	-0.0021	-0.0020
	F''	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002
0.30 TO 0.39	F'	-0.0019	-0.0019	-0.0018	-0.0017	-0.0017	-0.0016	-0.0015	-0.0014	-0.0014	-0.0013
	F''	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0003	0.0004	0.0004	0.0004
0.40 TO 0.49	F'	-0.0012	-0.0011	-0.0010	-0.0009	-0.0009	-0.0008	-0.0007	-0.0006	-0.0005	-0.0004
	F''	0.0004	0.0005	0.0005	0.0005	0.0005	0.0006	0.0006	0.0006	0.0007	0.0007
0.50 TO 0.59	F'	-0.0003	-0.0002	-0.0001	0.0000	0.0001	0.0002	0.0003	0.0004	0.0006	0.0007
	F''	0.0007	0.0008	0.0008	0.0008	0.0009	0.0009	0.0009	0.0010	0.0010	0.0011
0.60 TO 0.69	F'	0.0008	0.0009	0.0010	0.0011	0.0012	0.0014	0.0015	0.0016	0.0017	0.0019
	F''	0.0011	0.0011	0.0012	0.0012	0.0013	0.0013	0.0014	0.0014	0.0015	0.0015
0.70 TO 0.79	F'	0.0020	0.0021	0.0023	0.0024	0.0025	0.0027	0.0028	0.0029	0.0031	0.0032
	F''	0.0016	0.0016	0.0017	0.0017	0.0018	0.0018	0.0019	0.0019	0.0020	0.0020
0.80 TO 0.89	F'	0.0033	0.0035	0.0036	0.0038	0.0039	0.0041	0.0042	0.0044	0.0045	0.0047
	F''	0.0021	0.0022	0.0022	0.0023	0.0023	0.0024	0.0025	0.0025	0.0026	0.0027
0.90 TO 0.99	F'	0.0048	0.0050	0.0051	0.0053	0.0055	0.0056	0.0058	0.0059	0.0061	0.0063
	F''	0.0027	0.0028	0.0029	0.0030	0.0030	0.0031	0.0032	0.0032	0.0033	0.0034

1.00 TO 1.09 F'	0.0064	0.0066	0.0068	0.0069	0.0071	0.0073	0.0074	0.0076	0.0078	0.0080
F''	0.0035	0.0036	0.0036	0.0037	0.0038	0.0039	0.0040	0.0040	0.0041	0.0042
1.10 TO 1.19 F'	0.0081	0.0083	0.0085	0.0087	0.0089	0.0090	0.0092	0.0094	0.0096	0.0098
F''	0.0043	0.0044	0.0045	0.0046	0.0047	0.0047	0.0048	0.0049	0.0050	0.0051
1.20 TO 1.29 F'	0.0100	0.0101	0.0103	0.0105	0.0107	0.0109	0.0111	0.0113	0.0115	0.0117
F''	0.0052	0.0053	0.0054	0.0055	0.0056	0.0057	0.0058	0.0059	0.0060	0.0061
1.30 TO 1.39 F'	0.0119	0.0121	0.0123	0.0125	0.0127	0.0129	0.0131	0.0133	0.0135	0.0137
F''	0.0062	0.0063	0.0064	0.0066	0.0067	0.0068	0.0069	0.0070	0.0071	0.0072
1.40 TO 1.49 F'	0.0139	0.0141	0.0143	0.0145	0.0147	0.0149	0.0151	0.0153	0.0155	0.0158
F''	0.0073	0.0075	0.0076	0.0077	0.0078	0.0079	0.0081	0.0082	0.0083	0.0084
1.50 TO 1.59 F'	0.0160	0.0162	0.0164	0.0166	0.0168	0.0171	0.0173	0.0175	0.0177	0.0179
F''	0.0085	0.0087	0.0088	0.0089	0.0090	0.0092	0.0093	0.0094	0.0096	0.0097
1.60 TO 1.69 F'	0.0182	0.0184	0.0186	0.0188	0.0191	0.0193	0.0195	0.0197	0.0200	0.0202
F''	0.0098	0.0100	0.0101	0.0102	0.0104	0.0105	0.0106	0.0108	0.0109	0.0111
1.70 TO 1.79 F'	0.0204	0.0207	0.0209	0.0211	0.0214	0.0216	0.0218	0.0221	0.0223	0.0225
F''	0.0112	0.0114	0.0115	0.0116	0.0118	0.0119	0.0121	0.0122	0.0124	0.0125
1.80 TO 1.89 F'	0.0228	0.0230	0.0232	0.0235	0.0237	0.0240	0.0242	0.0245	0.0247	0.0249
F''	0.0127	0.0128	0.0130	0.0132	0.0133	0.0135	0.0136	0.0138	0.0139	0.0141
1.90 TO 1.99 F'	0.0252	0.0254	0.0257	0.0259	0.0262	0.0264	0.0267	0.0269	0.0272	0.0274
F''	0.0143	0.0144	0.0146	0.0147	0.0149	0.0151	0.0152	0.0154	0.0156	0.0158
2.00 TO 2.09 F'	0.0277	0.0279	0.0282	0.0284	0.0287	0.0289	0.0292	0.0294	0.0297	0.0300
F''	0.0159	0.0161	0.0163	0.0164	0.0166	0.0168	0.0170	0.0171	0.0173	0.0175
2.10 TO 2.19 F'	0.0302	0.0305	0.0307	0.0310	0.0313	0.0315	0.0318	0.0320	0.0323	0.0326
F''	0.0177	0.0179	0.0180	0.0182	0.0184	0.0186	0.0188	0.0190	0.0192	0.0193
2.20 TO 2.29 F'	0.0328	0.0331	0.0334	0.0336	0.0339	0.0342	0.0344	0.0347	0.0350	0.0352
F''	0.0195	0.0197	0.0199	0.0201	0.0203	0.0205	0.0207	0.0209	0.0211	0.0213
2.30 TO 2.39 F'	0.0355	0.0358	0.0360	0.0361	0.0364	0.0367	0.0370	0.0372	0.0375	0.0378
F''	0.0215	0.0217	0.0219	0.0221	0.0223	0.0225	0.0227	0.0229	0.0231	0.0233
2.40 TO 2.49 F'	0.0380	0.0383	0.0386	0.0389	0.0391	0.0394	0.0397	0.0400	0.0402	0.0405
F''	0.0235	0.0237	0.0239	0.0241	0.0243	0.0245	0.0248	0.0250	0.0252	0.0254
2.50 TO 2.59 F'	0.0408	0.0411	0.0413	0.0416	0.0419	0.0422	0.0424	0.0427	0.0430	0.0433
F''	0.0256	0.0258	0.0260	0.0263	0.0265	0.0267	0.0269	0.0271	0.0274	0.0276
2.60 TO 2.69 F'	0.0436	0.0439	0.0441	0.0444	0.0447	0.0450	0.0453	0.0456	0.0458	0.0461
F''	0.0278	0.0280	0.0283	0.0285	0.0287	0.0290	0.0292	0.0294	0.0296	0.0299
2.70 TO 2.79 F'	0.0464	0.0467	0.0470	0.0473	0.0476	0.0478	0.0481	0.0484	0.0487	0.0490
F''	0.0301	0.0303	0.0306	0.0308	0.0311	0.0313	0.0315	0.0318	0.0320	0.0323
2.80 TO 2.89 F'	0.0493	0.0496	0.0499	0.0502	0.0505	0.0507	0.0510	0.0513	0.0516	0.0519
F''	0.0325	0.0327	0.0330	0.0332	0.0335	0.0337	0.0340	0.0342	0.0345	0.0347
ATOMIC SYMBOL = N ATOMIC NUMBER = 7										
0.10 TO 0.19 F'	-0.0048	-0.0047	-0.0047	-0.0046	-0.0045	-0.0045	-0.0044	-0.0043	-0.0043	-0.0042
F''	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002
0.20 TO 0.29 F'	-0.0041	-0.0040	-0.0039	-0.0038	-0.0037	-0.0036	-0.0035	-0.0034	-0.0033	-0.0032
F''	0.0002	0.0002	0.0002	0.0003	0.0003	0.0003	0.0003	0.0004	0.0004	0.0004
0.30 TO 0.39 F'	-0.0031	-0.0030	-0.0028	-0.0027	-0.0026	-0.0025	-0.0023	-0.0022	-0.0020	-0.0019
F''	0.0005	0.0005	0.0005	0.0006	0.0006	0.0007	0.0007	0.0008	0.0008	0.0009
0.40 TO 0.49 F'	-0.0017	-0.0016	-0.0014	-0.0013	-0.0011	-0.0010	-0.0008	-0.0006	-0.0005	-0.0003
F''	0.0009	0.0010	0.0010	0.0011	0.0011	0.0012	0.0012	0.0013	0.0014	0.0014
0.50 TO 0.59 F'	-0.0001	0.0001	0.0002	0.0004	0.0006	0.0008	0.0010	0.0012	0.0014	0.0016
F''	0.0015	0.0016	0.0016	0.0017	0.0018	0.0019	0.0019	0.0020	0.0021	0.0022
0.60 TO 0.69 F'	0.0018	0.0020	0.0022	0.0024	0.0026	0.0028	0.0030	0.0032	0.0035	0.0037

	F''	0.0023	0.0023	0.0024	0.0025	0.0026	0.0027	0.0028	0.0029	0.0030	0.0031
0.70 TO 0.79	F'	0.0039	0.0041	0.0043	0.0046	0.0048	0.0050	0.0053	0.0055	0.0058	0.0060
	F''	0.0032	0.0033	0.0034	0.0035	0.0036	0.0037	0.0038	0.0039	0.0041	0.0042
0.80 TO 0.89	F'	0.0063	0.0065	0.0068	0.0070	0.0073	0.0075	0.0078	0.0080	0.0083	0.0086
	F''	0.0043	0.0044	0.0045	0.0047	0.0048	0.0049	0.0050	0.0052	0.0053	0.0054
0.90 TO 0.99	F'	0.0088	0.0091	0.0094	0.0096	0.0099	0.0102	0.0105	0.0107	0.0110	0.0113
	F''	0.0056	0.0057	0.0058	0.0060	0.0061	0.0063	0.0064	0.0066	0.0067	0.0069
1.00 TO 1.09	F'	0.0116	0.0119	0.0122	0.0124	0.0127	0.0130	0.0133	0.0136	0.0139	0.0142
	F''	0.0070	0.0072	0.0073	0.0075	0.0077	0.0078	0.0080	0.0082	0.0083	0.0085
1.10 TO 1.19	F'	0.0145	0.0148	0.0151	0.0154	0.0157	0.0160	0.0163	0.0167	0.0170	0.0173
	F''	0.0087	0.0088	0.0090	0.0092	0.0094	0.0096	0.0097	0.0099	0.0101	0.0103
1.20 TO 1.29	F'	0.0176	0.0179	0.0182	0.0185	0.0189	0.0192	0.0195	0.0198	0.0202	0.0205
	F''	0.0105	0.0107	0.0109	0.0111	0.0113	0.0115	0.0117	0.0119	0.0121	0.0123
1.30 TO 1.39	F'	0.0208	0.0211	0.0215	0.0218	0.0221	0.0225	0.0228	0.0231	0.0235	0.0238
	F''	0.0125	0.0127	0.0129	0.0131	0.0133	0.0136	0.0138	0.0140	0.0142	0.0145
1.40 TO 1.49	F'	0.0241	0.0245	0.0248	0.0252	0.0255	0.0259	0.0262	0.0266	0.0269	0.0273
	F''	0.0147	0.0149	0.0151	0.0154	0.0156	0.0158	0.0161	0.0163	0.0165	0.0168
1.50 TO 1.59	F'	0.0276	0.0280	0.0283	0.0287	0.0291	0.0294	0.0298	0.0301	0.0305	0.0309
	F''	0.0170	0.0173	0.0175	0.0178	0.0180	0.0183	0.0185	0.0188	0.0190	0.0193
1.60 TO 1.69	F'	0.0312	0.0316	0.0320	0.0323	0.0327	0.0330	0.0334	0.0338	0.0342	0.0345
	F''	0.0195	0.0198	0.0201	0.0203	0.0206	0.0209	0.0211	0.0214	0.0217	0.0220
1.70 TO 1.79	F'	0.0349	0.0353	0.0357	0.0361	0.0364	0.0368	0.0372	0.0376	0.0380	0.0383
	F''	0.0222	0.0225	0.0228	0.0231	0.0234	0.0237	0.0239	0.0242	0.0245	0.0248
1.80 TO 1.89	F'	0.0387	0.0391	0.0395	0.0399	0.0403	0.0407	0.0411	0.0415	0.0418	0.0422
	F''	0.0251	0.0254	0.0257	0.0260	0.0263	0.0266	0.0269	0.0272	0.0275	0.0278
1.90 TO 1.99	F'	0.0426	0.0430	0.0434	0.0438	0.0442	0.0446	0.0450	0.0454	0.0458	0.0462
	F''	0.0281	0.0285	0.0288	0.0291	0.0294	0.0297	0.0300	0.0304	0.0307	0.0310
2.00 TO 2.09	F'	0.0466	0.0470	0.0474	0.0478	0.0482	0.0487	0.0491	0.0495	0.0499	0.0503
	F''	0.0313	0.0317	0.0320	0.0323	0.0327	0.0330	0.0333	0.0337	0.0340	0.0344
2.10 TO 2.19	F'	0.0507	0.0511	0.0515	0.0519	0.0524	0.0528	0.0532	0.0536	0.0540	0.0544
	F''	0.0347	0.0351	0.0354	0.0358	0.0361	0.0365	0.0368	0.0372	0.0375	0.0379
2.20 TO 2.29	F'	0.0549	0.0553	0.0557	0.0561	0.0565	0.0570	0.0574	0.0578	0.0582	0.0586
	F''	0.0382	0.0386	0.0390	0.0393	0.0397	0.0401	0.0405	0.0408	0.0412	0.0416
2.30 TO 2.39	F'	0.0591	0.0595	0.0599	0.0603	0.0608	0.0612	0.0616	0.0621	0.0625	0.0629
	F''	0.0420	0.0423	0.0427	0.0431	0.0435	0.0439	0.0443	0.0446	0.0450	0.0454
2.40 TO 2.49	F'	0.0634	0.0638	0.0642	0.0646	0.0651	0.0655	0.0660	0.0664	0.0668	0.0673
	F''	0.0458	0.0462	0.0466	0.0470	0.0474	0.0478	0.0482	0.0486	0.0490	0.0494
2.50 TO 2.59	F'	0.0677	0.0681	0.0686	0.0690	0.0694	0.0699	0.0703	0.0708	0.0712	0.0716
	F''	0.0498	0.0503	0.0507	0.0511	0.0515	0.0519	0.0523	0.0528	0.0532	0.0536
2.60 TO 2.69	F'	0.0721	0.0725	0.0730	0.0734	0.0739	0.0743	0.0747	0.0752	0.0756	0.0761
	F''	0.0540	0.0545	0.0549	0.0553	0.0558	0.0562	0.0566	0.0571	0.0575	0.0580
2.70 TO 2.79	F'	0.0765	0.0770	0.0774	0.0779	0.0783	0.0788	0.0792	0.0797	0.0801	0.0806
	F''	0.0584	0.0588	0.0593	0.0597	0.0602	0.0606	0.0611	0.0615	0.0620	0.0624
2.80 TO 2.89	F'	0.0810	0.0815	0.0819	0.0824	0.0828	0.0833	0.0837	0.0842	0.0846	0.0851
	F''	0.0629	0.0634	0.0638	0.0643	0.0648	0.0652	0.0657	0.0662	0.0666	0.0671
ATOMIC SYMBOL = O    ATOMIC NUMBER = 8											
0.10 TO 0.19	F'	-0.0066	-0.0065	-0.0064	-0.0063	-0.0062	-0.0061	-0.0060	-0.0059	-0.0058	-
	F''	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0003	0.0003
0.20 TO 0.29	F'	-0.0055	-0.0053	-0.0052	-0.0050	-0.0049	-0.0047	-0.0045	-0.0044	-0.0042	-
	F''	0.0003	0.0004	0.0004	0.0005	0.0005	0.0006	0.0006	0.0007	0.0007	0.0008
0.30 TO 0.39	F'	-0.0038	-0.0036	-0.0034	-0.0032	-0.0030	-0.0028	-0.0026	-0.0023	-0.0021	-
	F''	0.0019									

	F''	0.0009	0.0009	0.0010	0.0011	0.0012	0.0012	0.0013	0.0014	0.0015	0.0016
0.40 TO 0.49	F'	-0.0016	-0.0014	-0.0011	-0.0009	-0.0006	-0.0004	-0.0001	0.0002	0.0005	0.0007
	F''	0.0017	0.0018	0.0019	0.0020	0.0021	0.0022	0.0023	0.0024	0.0025	0.0027
0.50 TO 0.59	F'	0.0010	0.0013	0.0016	0.0019	0.0022	0.0025	0.0028	0.0031	0.0034	0.0038
	F''	0.0028	0.0029	0.0030	0.0032	0.0033	0.0034	0.0036	0.0037	0.0039	0.0040
0.60 TO 0.69	F'	0.0041	0.0044	0.0047	0.0051	0.0054	0.0057	0.0061	0.0064	0.0068	0.0071
	F''	0.0042	0.0043	0.0045	0.0047	0.0048	0.0050	0.0052	0.0053	0.0055	0.0057
0.70 TO 0.79	F'	0.0075	0.0079	0.0082	0.0086	0.0090	0.0093	0.0097	0.0101	0.0105	0.0109
	F''	0.0059	0.0061	0.0062	0.0064	0.0066	0.0068	0.0070	0.0072	0.0074	0.0077
0.80 TO 0.89	F'	0.0113	0.0116	0.0120	0.0124	0.0128	0.0133	0.0137	0.0141	0.0145	0.0149
	F''	0.0079	0.0081	0.0083	0.0085	0.0087	0.0090	0.0092	0.0094	0.0097	0.0099
0.90 TO 0.99	F'	0.0153	0.0157	0.0162	0.0166	0.0170	0.0175	0.0179	0.0183	0.0188	0.0192
	F''	0.0102	0.0104	0.0107	0.0109	0.0112	0.0114	0.0117	0.0120	0.0122	0.0125
1.00 TO 1.09	F'	0.0197	0.0201	0.0206	0.0210	0.0215	0.0219	0.0224	0.0229	0.0233	0.0238
	F''	0.0128	0.0131	0.0134	0.0136	0.0139	0.0142	0.0145	0.0148	0.0151	0.0154
1.10 TO 1.19	F'	0.0243	0.0247	0.0252	0.0257	0.0262	0.0266	0.0271	0.0276	0.0281	0.0286
	F''	0.0157	0.0160	0.0163	0.0167	0.0170	0.0173	0.0176	0.0180	0.0183	0.0186
1.20 TO 1.29	F'	0.0291	0.0296	0.0301	0.0306	0.0311	0.0313	0.0318	0.0323	0.0328	0.0333
	F''	0.0190	0.0193	0.0197	0.0200	0.0204	0.0207	0.0211	0.0214	0.0218	0.0222
1.30 TO 1.39	F'	0.0338	0.0343	0.0348	0.0353	0.0358	0.0363	0.0368	0.0374	0.0379	0.0384
	F''	0.0225	0.0229	0.0233	0.0236	0.0240	0.0244	0.0248	0.0252	0.0256	0.0260
1.40 TO 1.49	F'	0.0389	0.0394	0.0400	0.0405	0.0410	0.0415	0.0421	0.0426	0.0431	0.0437
	F''	0.0264	0.0268	0.0272	0.0276	0.0280	0.0284	0.0288	0.0292	0.0296	0.0301
1.50 TO 1.59	F'	0.0442	0.0447	0.0453	0.0458	0.0464	0.0469	0.0474	0.0480	0.0485	0.0491
	F''	0.0305	0.0309	0.0313	0.0318	0.0322	0.0327	0.0331	0.0335	0.0340	0.0344
1.60 TO 1.69	F'	0.0496	0.0502	0.0507	0.0513	0.0518	0.0524	0.0530	0.0535	0.0541	0.0546
	F''	0.0349	0.0354	0.0358	0.0363	0.0367	0.0372	0.0377	0.0382	0.0386	0.0391
1.70 TO 1.79	F'	0.0552	0.0558	0.0563	0.0569	0.0574	0.0580	0.0586	0.0592	0.0597	0.0603
	F''	0.0396	0.0401	0.0406	0.0411	0.0416	0.0421	0.0426	0.0431	0.0436	0.0441
1.80 TO 1.89	F'	0.0609	0.0614	0.0620	0.0626	0.0632	0.0637	0.0643	0.0649	0.0655	0.0661
	F''	0.0446	0.0451	0.0456	0.0462	0.0467	0.0472	0.0477	0.0483	0.0488	0.0493
1.90 TO 1.99	F'	0.0666	0.0672	0.0678	0.0684	0.0690	0.0696	0.0702	0.0708	0.0713	0.0719
	F''	0.0499	0.0504	0.0510	0.0515	0.0521	0.0526	0.0532	0.0537	0.0543	0.0549
2.00 TO 2.09	F'	0.0725	0.0731	0.0737	0.0743	0.0749	0.0755	0.0761	0.0767	0.0773	0.0779
	F''	0.0554	0.0560	0.0566	0.0572	0.0577	0.0583	0.0589	0.0595	0.0601	0.0607
2.10 TO 2.19	F'	0.0785	0.0791	0.0797	0.0803	0.0809	0.0815	0.0821	0.0827	0.0833	0.0839
	F''	0.0613	0.0619	0.0625	0.0631	0.0637	0.0643	0.0649	0.0655	0.0661	0.0668
2.20 TO 2.29	F'	0.0845	0.0851	0.0857	0.0863	0.0870	0.0876	0.0882	0.0888	0.0894	0.0900
	F''	0.0674	0.0680	0.0686	0.0693	0.0699	0.0705	0.0712	0.0718	0.0725	0.0731
2.30 TO 2.39	F'	0.0906	0.0912	0.0919	0.0925	0.0931	0.0937	0.0943	0.0949	0.0955	0.0962
	F''	0.0738	0.0744	0.0751	0.0757	0.0764	0.0771	0.0777	0.0784	0.0791	0.0797
2.40 TO 2.49	F'	0.0968	0.0974	0.0980	0.0986	0.0993	0.0999	0.1005	0.1011	0.1017	0.1024
	F''	0.0804	0.0811	0.0818	0.0825	0.0832	0.0838	0.0845	0.0852	0.0859	0.0866
2.50 TO 2.59	F'	0.1030	0.1036	0.1042	0.1049	0.1055	0.1061	0.1067	0.1073	0.1080	0.1086
	F''	0.0873	0.0880	0.0887	0.0895	0.0902	0.0909	0.0916	0.0923	0.0931	0.0938
2.60 TO 2.69	F'	0.1092	0.1099	0.1105	0.1111	0.1117	0.1124	0.1130	0.1136	0.1142	0.1149
	F''	0.0945	0.0952	0.0960	0.0967	0.0975	0.0982	0.0989	0.0997	0.1004	0.1012
2.70 TO 2.79	F'	0.1155	0.1161	0.1168	0.1174	0.1180	0.1186	0.1193	0.1199	0.1205	0.1212
	F''	0.1020	0.1027	0.1035	0.1042	0.1050	0.1058	0.1065	0.1073	0.1081	0.1089
2.80 TO 2.89	F'	0.1218	0.1224	0.1231	0.1237	0.1243	0.1249	0.1256	0.1262	0.1268	0.1275
	F''	0.1097	0.1104	0.1112	0.1120	0.1128	0.1136	0.1144	0.1152	0.1160	0.1168
ATOMIC SYMBOL = F    ATOMIC NUMBER = 9											
0.10 TO 0.19	F'	-0.0083	-0.0082	-0.0081	-0.0079	-0.0078	-0.0076	-0.0074	-0.0072	-0.0070	-
		0.0068									

F''	0.0001	0.0002	0.0002	0.0002	0.0003	0.0003	0.0004	0.0004	0.0005	0.0005	
0.20 TO 0.29 F'	-0.0066	-0.0064	-0.0062	-0.0059	-0.0057	-0.0054	-0.0052	-0.0049	-0.0046	-	0.0043
F''	0.0006	0.0007	0.0008	0.0008	0.0009	0.0010	0.0011	0.0012	0.0013	0.0014	
0.30 TO 0.39 F'	-0.0040	-0.0037	-0.0034	-0.0031	-0.0028	-0.0024	-0.0021	-0.0017	-0.0014	-	0.0010
F''	0.0015	0.0016	0.0018	0.0019	0.0020	0.0021	0.0023	0.0024	0.0026	0.0027	
0.40 TO 0.49 F'	-0.0007	-0.0003	0.0001	0.0005	0.0009	0.0013	0.0017	0.0021	0.0025	0.0029	0.0029
F''	0.0029	0.0031	0.0032	0.0034	0.0036	0.0038	0.0040	0.0042	0.0044	0.0046	
0.50 TO 0.59 F'	0.0033	0.0038	0.0042	0.0047	0.0051	0.0056	0.0060	0.0065	0.0070	0.0074	0.0074
F''	0.0048	0.0050	0.0052	0.0054	0.0057	0.0059	0.0061	0.0064	0.0066	0.0069	
0.60 TO 0.69 F'	0.0079	0.0084	0.0089	0.0094	0.0099	0.0104	0.0109	0.0115	0.0120	0.0125	0.0125
F''	0.0071	0.0074	0.0077	0.0079	0.0082	0.0085	0.0088	0.0091	0.0094	0.0097	
0.70 TO 0.79 F'	0.0130	0.0136	0.0141	0.0147	0.0152	0.0158	0.0163	0.0169	0.0175	0.0180	0.0180
F''	0.0100	0.0103	0.0106	0.0109	0.0113	0.0116	0.0119	0.0123	0.0126	0.0130	
0.80 TO 0.89 F'	0.0186	0.0192	0.0198	0.0204	0.0209	0.0215	0.0221	0.0227	0.0233	0.0240	0.0240
F''	0.0133	0.0137	0.0141	0.0144	0.0148	0.0152	0.0156	0.0160	0.0164	0.0168	
0.90 TO 0.99 F'	0.0246	0.0252	0.0258	0.0264	0.0271	0.0277	0.0283	0.0288	0.0294	0.0301	0.0301
F''	0.0172	0.0176	0.0180	0.0184	0.0189	0.0193	0.0197	0.0202	0.0206	0.0211	
1.00 TO 1.09 F'	0.0307	0.0314	0.0320	0.0327	0.0333	0.0340	0.0346	0.0353	0.0360	0.0366	0.0366
F''	0.0215	0.0220	0.0225	0.0229	0.0234	0.0239	0.0244	0.0249	0.0254	0.0259	
1.10 TO 1.19 F'	0.0373	0.0380	0.0386	0.0393	0.0400	0.0407	0.0414	0.0421	0.0428	0.0435	0.0435
F''	0.0264	0.0269	0.0274	0.0279	0.0284	0.0290	0.0295	0.0300	0.0306	0.0311	
1.20 TO 1.29 F'	0.0442	0.0449	0.0456	0.0463	0.0470	0.0477	0.0484	0.0491	0.0498	0.0505	0.0505
F''	0.0317	0.0322	0.0328	0.0334	0.0339	0.0345	0.0351	0.0357	0.0363	0.0369	
1.30 TO 1.39 F'	0.0513	0.0520	0.0527	0.0534	0.0542	0.0549	0.0556	0.0564	0.0571	0.0578	0.0578
F''	0.0375	0.0381	0.0387	0.0393	0.0399	0.0406	0.0412	0.0418	0.0425	0.0431	
1.40 TO 1.49 F'	0.0586	0.0593	0.0601	0.0608	0.0615	0.0623	0.0630	0.0638	0.0645	0.0653	0.0653
F''	0.0438	0.0444	0.0451	0.0457	0.0464	0.0471	0.0478	0.0484	0.0491	0.0498	
1.50 TO 1.59 F'	0.0660	0.0668	0.0675	0.0683	0.0691	0.0698	0.0706	0.0713	0.0721	0.0729	0.0729
F''	0.0505	0.0512	0.0519	0.0526	0.0533	0.0540	0.0548	0.0555	0.0562	0.0569	
1.60 TO 1.69 F'	0.0736	0.0744	0.0752	0.0759	0.0767	0.0775	0.0783	0.0790	0.0798	0.0806	0.0806
F''	0.0577	0.0584	0.0592	0.0599	0.0607	0.0614	0.0622	0.0630	0.0638	0.0645	
1.70 TO 1.79 F'	0.0814	0.0822	0.0829	0.0837	0.0845	0.0853	0.0861	0.0869	0.0877	0.0885	0.0885
F''	0.0653	0.0661	0.0669	0.0677	0.0685	0.0693	0.0701	0.0709	0.0717	0.0726	
1.80 TO 1.89 F'	0.0892	0.0900	0.0908	0.0916	0.0924	0.0932	0.0940	0.0948	0.0956	0.0964	0.0964
F''	0.0734	0.0742	0.0751	0.0759	0.0767	0.0776	0.0785	0.0793	0.0802	0.0810	
1.90 TO 1.99 F'	0.0972	0.0980	0.0988	0.0996	0.1004	0.1012	0.1020	0.1028	0.1036	0.1044	0.1044
F''	0.0819	0.0828	0.0837	0.0845	0.0854	0.0863	0.0872	0.0881	0.0890	0.0899	
2.00 TO 2.09 F'	0.1052	0.1060	0.1069	0.1077	0.1085	0.1093	0.1101	0.1109	0.1117	0.1125	0.1125
F''	0.0909	0.0918	0.0927	0.0936	0.0946	0.0955	0.0964	0.0974	0.0983	0.0993	
2.10 TO 2.19 F'	0.1133	0.1142	0.1150	0.1158	0.1166	0.1174	0.1182	0.1190	0.1199	0.1207	0.1207
F''	0.1002	0.1012	0.1022	0.1031	0.1041	0.1051	0.1061	0.1070	0.1080	0.1090	
2.20 TO 2.29 F'	0.1215	0.1223	0.1231	0.1239	0.1248	0.1256	0.1264	0.1272	0.1280	0.1289	0.1289
F''	0.1100	0.1110	0.1120	0.1131	0.1141	0.1151	0.1161	0.1171	0.1182	0.1192	
2.30 TO 2.39 F'	0.1297	0.1305	0.1313	0.1321	0.1330	0.1338	0.1346	0.1354	0.1362	0.1371	0.1371
F''	0.1202	0.1213	0.1223	0.1234	0.1244	0.1255	0.1266	0.1276	0.1287	0.1298	
2.40 TO 2.49 F'	0.1379	0.1387	0.1395	0.1403	0.1412	0.1420	0.1428	0.1436	0.1444	0.1453	0.1453
F''	0.1309	0.1320	0.1330	0.1341	0.1352	0.1363	0.1374	0.1385	0.1397	0.1408	
2.50 TO 2.59 F'	0.1461	0.1469	0.1477	0.1485	0.1494	0.1502	0.1510	0.1518	0.1526	0.1535	0.1535
F''	0.1419	0.1430	0.1442	0.1453	0.1464	0.1476	0.1487	0.1499	0.1510	0.1522	
2.60 TO 2.69 F'	0.1543	0.1551	0.1559	0.1567	0.1576	0.1584	0.1592	0.1600	0.1608	0.1617	0.1617
F''	0.1533	0.1545	0.1557	0.1568	0.1580	0.1592	0.1604	0.1616	0.1628	0.1640	
2.70 TO 2.79 F'	0.1625	0.1633	0.1641	0.1649	0.1657	0.1666	0.1674	0.1682	0.1690	0.1698	0.1698



F''	0.1652	0.1664	0.1676	0.1688	0.1700	0.1712	0.1724	0.1737	0.1749	0.1761
2.80 TO 2.89 F'	0.1706	0.1714	0.1722	0.1731	0.1739	0.1747	0.1755	0.1763	0.1771	0.1779
F''	0.1774	0.1786	0.1799	0.1811	0.1824	0.1836	0.1849	0.1862	0.1874	0.1887
ATOMIC SYMBOL = NE ATOMIC NUMBER = 10										
0.10 TO 0.19 F'	-0.0100	-0.0098	-0.0096	-0.0094	-0.0092	-0.0089	-0.0086	-0.0084	-0.0081	-
0.0078										
F''	0.0002	0.0003	0.0003	0.0004	0.0004	0.0005	0.0006	0.0007	0.0008	0.0009
0.20 TO 0.29 F'	-0.0075	-0.0071	-0.0068	-0.0064	-0.0061	-0.0057	-0.0053	-0.0049	-0.0045	-
0.0041										
F''	0.0010	0.0011	0.0012	0.0014	0.0015	0.0016	0.0018	0.0019	0.0021	0.0023
0.30 TO 0.39 F'	-0.0036	-0.0032	-0.0027	-0.0023	-0.0018	-0.0013	-0.0008	-0.0003	0.0002	0.0007
F''	0.0025	0.0026	0.0028	0.0030	0.0032	0.0035	0.0037	0.0039	0.0042	0.0044
0.40 TO 0.49 F'	0.0013	0.0018	0.0024	0.0029	0.0035	0.0040	0.0046	0.0052	0.0058	0.0064
F''	0.0047	0.0049	0.0052	0.0055	0.0058	0.0061	0.0064	0.0067	0.0070	0.0074
0.50 TO 0.59 F'	0.0070	0.0077	0.0083	0.0089	0.0096	0.0102	0.0109	0.0115	0.0122	0.0129
F''	0.0077	0.0080	0.0084	0.0087	0.0091	0.0095	0.0098	0.0102	0.0106	0.0110
0.60 TO 0.69 F'	0.0136	0.0143	0.0150	0.0157	0.0164	0.0171	0.0179	0.0186	0.0193	0.0201
F''	0.0114	0.0118	0.0123	0.0127	0.0131	0.0136	0.0140	0.0145	0.0150	0.0154
0.70 TO 0.79 F'	0.0208	0.0216	0.0223	0.0231	0.0239	0.0247	0.0255	0.0261	0.0269	0.0277
F''	0.0159	0.0164	0.0169	0.0174	0.0180	0.0185	0.0190	0.0196	0.0201	0.0207
0.80 TO 0.89 F'	0.0285	0.0293	0.0301	0.0310	0.0318	0.0326	0.0334	0.0343	0.0351	0.0359
F''	0.0212	0.0218	0.0224	0.0229	0.0235	0.0241	0.0247	0.0254	0.0260	0.0266
0.90 TO 0.99 F'	0.0368	0.0376	0.0385	0.0394	0.0402	0.0411	0.0420	0.0428	0.0437	0.0446
F''	0.0272	0.0279	0.0285	0.0292	0.0299	0.0305	0.0312	0.0319	0.0326	0.0333
1.00 TO 1.09 F'	0.0455	0.0464	0.0473	0.0482	0.0491	0.0500	0.0509	0.0518	0.0527	0.0536
F''	0.0340	0.0347	0.0355	0.0362	0.0369	0.0377	0.0384	0.0392	0.0400	0.0408
1.10 TO 1.19 F'	0.0546	0.0555	0.0564	0.0573	0.0583	0.0592	0.0601	0.0611	0.0620	0.0630
F''	0.0415	0.0423	0.0431	0.0439	0.0448	0.0456	0.0464	0.0473	0.0481	0.0490
1.20 TO 1.29 F'	0.0639	0.0649	0.0658	0.0668	0.0678	0.0687	0.0697	0.0707	0.0716	0.0726
F''	0.0498	0.0507	0.0516	0.0524	0.0533	0.0542	0.0551	0.0560	0.0570	0.0579
1.30 TO 1.39 F'	0.0736	0.0746	0.0755	0.0765	0.0775	0.0785	0.0795	0.0805	0.0814	0.0824
F''	0.0588	0.0598	0.0607	0.0617	0.0626	0.0636	0.0646	0.0656	0.0665	0.0675
1.40 TO 1.49 F'	0.0834	0.0844	0.0854	0.0864	0.0874	0.0884	0.0894	0.0904	0.0914	0.0924
F''	0.0685	0.0695	0.0706	0.0716	0.0726	0.0736	0.0747	0.0757	0.0768	0.0778
1.50 TO 1.59 F'	0.0934	0.0944	0.0954	0.0964	0.0974	0.0985	0.0995	0.1005	0.1015	0.1025
F''	0.0789	0.0800	0.0811	0.0821	0.0832	0.0843	0.0854	0.0866	0.0877	0.0888
1.60 TO 1.69 F'	0.1035	0.1046	0.1056	0.1066	0.1076	0.1086	0.1097	0.1107	0.1117	0.1127
F''	0.0899	0.0911	0.0922	0.0934	0.0945	0.0957	0.0969	0.0981	0.0992	0.1004
1.70 TO 1.79 F'	0.1138	0.1148	0.1158	0.1169	0.1179	0.1189	0.1200	0.1210	0.1220	0.1231
F''	0.1016	0.1028	0.1041	0.1053	0.1065	0.1077	0.1090	0.1102	0.1115	0.1127
1.80 TO 1.89 F'	0.1241	0.1251	0.1262	0.1272	0.1282	0.1293	0.1303	0.1313	0.1324	0.1334
F''	0.1140	0.1153	0.1165	0.1178	0.1191	0.1204	0.1217	0.1230	0.1244	0.1257
1.90 TO 1.99 F'	0.1345	0.1355	0.1365	0.1376	0.1386	0.1397	0.1407	0.1417	0.1428	0.1438
F''	0.1270	0.1283	0.1297	0.1310	0.1324	0.1337	0.1351	0.1365	0.1379	0.1393
2.00 TO 2.09 F'	0.1449	0.1459	0.1469	0.1480	0.1490	0.1501	0.1511	0.1521	0.1532	0.1542
F''	0.1407	0.1420	0.1435	0.1449	0.1463	0.1477	0.1491	0.1506	0.1520	0.1535
2.10 TO 2.19 F'	0.1553	0.1563	0.1573	0.1584	0.1594	0.1605	0.1615	0.1625	0.1636	0.1646
F''	0.1549	0.1564	0.1579	0.1593	0.1608	0.1623	0.1638	0.1653	0.1668	0.1683
2.20 TO 2.29 F'	0.1656	0.1667	0.1677	0.1687	0.1698	0.1708	0.1719	0.1729	0.1739	0.1750
F''	0.1698	0.1713	0.1729	0.1744	0.1759	0.1775	0.1790	0.1806	0.1822	0.1837
2.30 TO 2.39 F'	0.1760	0.1770	0.1780	0.1791	0.1801	0.1811	0.1822	0.1832	0.1842	0.1852
F''	0.1853	0.1869	0.1885	0.1901	0.1917	0.1933	0.1949	0.1965	0.1981	0.1998
2.40 TO 2.49 F'	0.1863	0.1873	0.1883	0.1893	0.1903	0.1914	0.1924	0.1934	0.1944	0.1954
F''	0.2014	0.2031	0.2047	0.2064	0.2080	0.2097	0.2114	0.2130	0.2147	0.2164

2.50 TO 2.59 F'	0.1965	0.1975	0.1985	0.1995	0.2005	0.2015	0.2025	0.2035	0.2045	0.2055	
F''	0.2181	0.2198	0.2215	0.2232	0.2249	0.2267	0.2284	0.2301	0.2319	0.2336	
2.60 TO 2.69 F'	0.2066	0.2076	0.2086	0.2096	0.2106	0.2116	0.2126	0.2135	0.2145	0.2155	
F''	0.2354	0.2371	0.2389	0.2407	0.2425	0.2442	0.2460	0.2478	0.2496	0.2514	
2.70 TO 2.79 F'	0.2165	0.2175	0.2185	0.2195	0.2205	0.2215	0.2224	0.2234	0.2244	0.2254	
F''	0.2532	0.2550	0.2569	0.2587	0.2605	0.2624	0.2642	0.2661	0.2679	0.2698	
2.80 TO 2.89 F'	0.2264	0.2273	0.2283	0.2293	0.2303	0.2312	0.2322	0.2332	0.2341	0.2351	
F''	0.2717	0.2735	0.2754	0.2773	0.2792	0.2811	0.2830	0.2849	0.2868	0.2887	
ATOMIC SYMBOL = NA ATOMIC NUMBER = 11											
0.10 TO 0.19 F'	-0.0127	-0.0124	-0.0121	-0.0118	-0.0115	-0.0111	-0.0108	-0.0104	-0.0100	-	
0.0096	F''	0.0003	0.0004	0.0005	0.0006	0.0007	0.0008	0.0009	0.0011	0.0012	0.0014
0.20 TO 0.29 F'	-0.0091	-0.0086	-0.0082	-0.0077	-0.0072	-0.0066	-0.0061	-0.0055	-0.0050	-	
0.0044	F''	0.0016	0.0017	0.0019	0.0021	0.0024	0.0026	0.0028	0.0031	0.0033	0.0036
0.30 TO 0.39 F'	-0.0038	-0.0031	-0.0025	-0.0019	-0.0012	-0.0005	0.0001	0.0008	0.0016	0.0023	
F''	0.0039	0.0041	0.0044	0.0048	0.0051	0.0054	0.0058	0.0061	0.0065	0.0069	
0.40 TO 0.49 F'	0.0030	0.0038	0.0045	0.0053	0.0061	0.0069	0.0077	0.0085	0.0093	0.0101	
F''	0.0073	0.0077	0.0081	0.0085	0.0089	0.0094	0.0098	0.0103	0.0108	0.0113	
0.50 TO 0.59 F'	0.0110	0.0118	0.0127	0.0136	0.0145	0.0153	0.0162	0.0171	0.0180	0.0190	
F''	0.0118	0.0123	0.0128	0.0134	0.0139	0.0145	0.0150	0.0156	0.0162	0.0168	
0.60 TO 0.69 F'	0.0199	0.0208	0.0218	0.0227	0.0237	0.0247	0.0257	0.0267	0.0276	0.0286	
F''	0.0174	0.0181	0.0187	0.0194	0.0200	0.0207	0.0214	0.0221	0.0228	0.0235	
0.70 TO 0.79 F'	0.0297	0.0307	0.0317	0.0327	0.0338	0.0348	0.0358	0.0369	0.0380	0.0390	
F''	0.0242	0.0250	0.0257	0.0265	0.0272	0.0280	0.0288	0.0296	0.0304	0.0313	
0.80 TO 0.89 F'	0.0401	0.0412	0.0423	0.0434	0.0444	0.0456	0.0467	0.0478	0.0489	0.0500	
F''	0.0321	0.0330	0.0338	0.0347	0.0356	0.0365	0.0374	0.0383	0.0392	0.0402	
0.90 TO 0.99 F'	0.0511	0.0523	0.0534	0.0545	0.0557	0.0568	0.0580	0.0591	0.0603	0.0615	
F''	0.0411	0.0421	0.0430	0.0440	0.0450	0.0460	0.0470	0.0481	0.0491	0.0501	
1.00 TO 1.09 F'	0.0626	0.0638	0.0650	0.0662	0.0674	0.0685	0.0697	0.0709	0.0721	0.0733	
F''	0.0512	0.0523	0.0533	0.0544	0.0555	0.0566	0.0578	0.0589	0.0600	0.0612	
1.10 TO 1.19 F'	0.0745	0.0757	0.0770	0.0782	0.0794	0.0806	0.0818	0.0831	0.0843	0.0855	
F''	0.0624	0.0635	0.0647	0.0659	0.0671	0.0684	0.0696	0.0708	0.0721	0.0733	
1.20 TO 1.29 F'	0.0868	0.0880	0.0892	0.0905	0.0917	0.0930	0.0942	0.0954	0.0967	0.0979	
F''	0.0746	0.0759	0.0772	0.0785	0.0798	0.0811	0.0825	0.0838	0.0852	0.0865	
1.30 TO 1.39 F'	0.0992	0.1005	0.1017	0.1030	0.1042	0.1055	0.1068	0.1080	0.1093	0.1105	
F''	0.0879	0.0893	0.0907	0.0921	0.0935	0.0950	0.0964	0.0979	0.0993	0.1008	
1.40 TO 1.49 F'	0.1118	0.1131	0.1143	0.1156	0.1169	0.1181	0.1194	0.1207	0.1220	0.1232	
F''	0.1023	0.1037	0.1052	0.1067	0.1082	0.1097	0.1113	0.1128	0.1143	0.1159	
1.50 TO 1.59 F'	0.1245	0.1258	0.1270	0.1283	0.1296	0.1309	0.1321	0.1334	0.1347	0.1360	
F''	0.1175	0.1190	0.1206	0.1222	0.1238	0.1254	0.1270	0.1287	0.1303	0.1319	
1.60 TO 1.69 F'	0.1373	0.1385	0.1398	0.1411	0.1424	0.1437	0.1449	0.1462	0.1475	0.1488	
F''	0.1336	0.1353	0.1370	0.1386	0.1403	0.1420	0.1438	0.1455	0.1472	0.1490	
1.70 TO 1.79 F'	0.1501	0.1513	0.1526	0.1539	0.1552	0.1564	0.1577	0.1590	0.1603	0.1616	
F''	0.1507	0.1525	0.1542	0.1560	0.1578	0.1596	0.1614	0.1632	0.1651	0.1669	
1.80 TO 1.89 F'	0.1628	0.1641	0.1654	0.1667	0.1679	0.1692	0.1705	0.1717	0.1730	0.1743	
F''	0.1687	0.1706	0.1725	0.1743	0.1762	0.1781	0.1800	0.1819	0.1838	0.1857	
1.90 TO 1.99 F'	0.1756	0.1768	0.1781	0.1794	0.1806	0.1819	0.1831	0.1844	0.1857	0.1869	
F''	0.1877	0.1896	0.1916	0.1935	0.1955	0.1975	0.1995	0.2015	0.2035	0.2055	
2.00 TO 2.09 F'	0.1882	0.1894	0.1907	0.1920	0.1932	0.1945	0.1957	0.1970	0.1982	0.1994	
F''	0.2075	0.2095	0.2116	0.2136	0.2157	0.2178	0.2198	0.2219	0.2240	0.2261	
2.10 TO 2.19 F'	0.2007	0.2019	0.2032	0.2044	0.2056	0.2069	0.2081	0.2093	0.2106	0.2118	
F''	0.2282	0.2304	0.2325	0.2346	0.2368	0.2389	0.2411	0.2433	0.2454	0.2476	
2.20 TO 2.29 F'	0.2130	0.2142	0.2155	0.2167	0.2179	0.2191	0.2203	0.2215	0.2228	0.2240	

F''	0.2498	0.2520	0.2542	0.2565	0.2587	0.2609	0.2632	0.2654	0.2677	0.2700
2.30 TO 2.39 F'	0.2252	0.2264	0.2276	0.2288	0.2300	0.2311	0.2323	0.2335	0.2347	0.2359
F''	0.2723	0.2746	0.2769	0.2792	0.2815	0.2838	0.2861	0.2885	0.2908	0.2932
2.40 TO 2.49 F'	0.2371	0.2383	0.2394	0.2406	0.2418	0.2429	0.2441	0.2453	0.2464	0.2476
F''	0.2956	0.2979	0.3003	0.3027	0.3051	0.3075	0.3099	0.3124	0.3148	0.3172
2.50 TO 2.59 F'	0.2487	0.2499	0.2510	0.2522	0.2533	0.2544	0.2556	0.2567	0.2578	0.2590
F''	0.3197	0.3221	0.3246	0.3271	0.3295	0.3320	0.3345	0.3370	0.3396	0.3421
2.60 TO 2.69 F'	0.2601	0.2612	0.2623	0.2634	0.2645	0.2656	0.2667	0.2662	0.2672	0.2683
F''	0.3446	0.3471	0.3497	0.3522	0.3548	0.3574	0.3599	0.3625	0.3651	0.3677
2.70 TO 2.79 F'	0.2694	0.2704	0.2715	0.2726	0.2736	0.2747	0.2757	0.2768	0.2778	0.2788
F''	0.3703	0.3729	0.3755	0.3781	0.3807	0.3833	0.3860	0.3886	0.3913	0.3939
2.80 TO 2.89 F'	0.2799	0.2809	0.2819	0.2830	0.2840	0.2850	0.2860	0.2870	0.2880	0.2890
F''	0.3966	0.3992	0.4019	0.4046	0.4073	0.4100	0.4127	0.4154	0.4182	0.4209
ATOMIC SYMBOL = MG ATOMIC NUMBER = 12										
0.10 TO 0.19 F'	-0.0161	-0.0158	-0.0154	-0.0149	-0.0145	-0.0140	-0.0135	-0.0129	-0.0124	-
0.0118										
F''	0.0005	0.0006	0.0007	0.0009	0.0010	0.0012	0.0014	0.0016	0.0018	0.0021
0.20 TO 0.29 F'	-0.0112	-0.0106	-0.0099	-0.0092	-0.0085	-0.0078	-0.0071	-0.0063	-0.0055	-
0.0047										
F''	0.0023	0.0026	0.0029	0.0032	0.0035	0.0038	0.0042	0.0045	0.0049	0.0053
0.30 TO 0.39 F'	-0.0039	-0.0031	-0.0022	-0.0014	-0.0005	0.0004	0.0014	0.0023	0.0032	0.0042
F''	0.0057	0.0062	0.0066	0.0071	0.0075	0.0080	0.0085	0.0091	0.0096	0.0102
0.40 TO 0.49 F'	0.0052	0.0062	0.0072	0.0082	0.0093	0.0103	0.0114	0.0125	0.0136	0.0147
F''	0.0107	0.0113	0.0119	0.0125	0.0132	0.0138	0.0145	0.0152	0.0159	0.0166
0.50 TO 0.59 F'	0.0158	0.0169	0.0180	0.0192	0.0203	0.0215	0.0227	0.0239	0.0251	0.0263
F''	0.0173	0.0181	0.0189	0.0196	0.0204	0.0212	0.0221	0.0229	0.0238	0.0247
0.60 TO 0.69 F'	0.0275	0.0287	0.0300	0.0312	0.0325	0.0337	0.0350	0.0363	0.0376	0.0389
F''	0.0255	0.0265	0.0274	0.0283	0.0293	0.0302	0.0312	0.0322	0.0333	0.0343
0.70 TO 0.79 F'	0.0402	0.0415	0.0428	0.0442	0.0455	0.0469	0.0482	0.0496	0.0509	0.0523
F''	0.0353	0.0364	0.0375	0.0386	0.0397	0.0408	0.0420	0.0431	0.0443	0.0455
0.80 TO 0.89 F'	0.0537	0.0551	0.0565	0.0579	0.0593	0.0607	0.0621	0.0635	0.0649	0.0664
F''	0.0467	0.0479	0.0492	0.0504	0.0517	0.0530	0.0543	0.0556	0.0569	0.0582
0.90 TO 0.99 F'	0.0678	0.0692	0.0707	0.0721	0.0736	0.0750	0.0765	0.0780	0.0794	0.0809
F''	0.0596	0.0610	0.0624	0.0638	0.0652	0.0666	0.0681	0.0695	0.0710	0.0725
1.00 TO 1.09 F'	0.0824	0.0839	0.0854	0.0868	0.0883	0.0898	0.0913	0.0928	0.0943	0.0958
F''	0.0740	0.0756	0.0771	0.0787	0.0802	0.0818	0.0834	0.0850	0.0867	0.0883
1.10 TO 1.19 F'	0.0973	0.0988	0.1004	0.1019	0.1034	0.1049	0.1064	0.1079	0.1095	0.1110
F''	0.0900	0.0916	0.0933	0.0950	0.0968	0.0985	0.1002	0.1020	0.1038	0.1056
1.20 TO 1.29 F'	0.1125	0.1141	0.1156	0.1171	0.1186	0.1202	0.1217	0.1232	0.1248	0.1263
F''	0.1074	0.1092	0.1111	0.1129	0.1148	0.1167	0.1185	0.1205	0.1224	0.1243
1.30 TO 1.39 F'	0.1278	0.1294	0.1309	0.1324	0.1340	0.1355	0.1370	0.1386	0.1401	0.1416
F''	0.1263	0.1282	0.1302	0.1322	0.1342	0.1363	0.1383	0.1404	0.1424	0.1445
1.40 TO 1.49 F'	0.1432	0.1447	0.1462	0.1478	0.1493	0.1508	0.1524	0.1539	0.1554	0.1570
F''	0.1466	0.1487	0.1508	0.1529	0.1550	0.1571	0.1593	0.1615	0.1636	0.1658
1.50 TO 1.59 F'	0.1585	0.1600	0.1616	0.1631	0.1646	0.1661	0.1677	0.1692	0.1707	0.1722
F''	0.1680	0.1703	0.1725	0.1747	0.1770	0.1793	0.1815	0.1838	0.1861	0.1885
1.60 TO 1.69 F'	0.1738	0.1753	0.1768	0.1783	0.1798	0.1813	0.1828	0.1844	0.1859	0.1874
F''	0.1908	0.1931	0.1955	0.1979	0.2003	0.2027	0.2051	0.2075	0.2099	0.2124
1.70 TO 1.79 F'	0.1889	0.1904	0.1919	0.1934	0.1949	0.1964	0.1979	0.1994	0.2008	0.2023
F''	0.2148	0.2173	0.2198	0.2223	0.2248	0.2273	0.2299	0.2324	0.2350	0.2376
1.80 TO 1.89 F'	0.2038	0.2053	0.2068	0.2082	0.2097	0.2112	0.2126	0.2141	0.2156	0.2170
F''	0.2401	0.2427	0.2454	0.2480	0.2506	0.2533	0.2559	0.2586	0.2613	0.2640
1.90 TO 1.99 F'	0.2185	0.2199	0.2214	0.2228	0.2242	0.2257	0.2271	0.2285	0.2300	0.2314
F''	0.2667	0.2694	0.2721	0.2749	0.2776	0.2804	0.2832	0.2860	0.2888	0.2916

2.00 TO 2.09 F'	0.2328	0.2342	0.2356	0.2370	0.2385	0.2399	0.2412	0.2426	0.2440	0.2454	
F''	0.2944	0.2973	0.3001	0.3030	0.3059	0.3088	0.3117	0.3146	0.3175	0.3204	
2.10 TO 2.19 F'	0.2468	0.2482	0.2495	0.2509	0.2523	0.2536	0.2550	0.2563	0.2577	0.2590	
F''	0.3234	0.3263	0.3293	0.3323	0.3353	0.3383	0.3413	0.3443	0.3474	0.3504	
2.20 TO 2.29 F'	0.2590	0.2603	0.2616	0.2629	0.2642	0.2655	0.2668	0.2681	0.2693	0.2706	
F''	0.3535	0.3565	0.3596	0.3627	0.3658	0.3689	0.3720	0.3751	0.3782	0.3814	
2.30 TO 2.39 F'	0.2719	0.2731	0.2744	0.2756	0.2769	0.2781	0.2793	0.2806	0.2818	0.2830	
F''	0.3845	0.3877	0.3909	0.3940	0.3972	0.4004	0.4037	0.4069	0.4101	0.4134	
2.40 TO 2.49 F'	0.2842	0.2854	0.2866	0.2878	0.2890	0.2902	0.2914	0.2925	0.2937	0.2949	
F''	0.4166	0.4199	0.4232	0.4265	0.4298	0.4331	0.4364	0.4397	0.4431	0.4464	
2.50 TO 2.59 F'	0.2960	0.2972	0.2983	0.2994	0.3006	0.3017	0.3028	0.3039	0.3050	0.3061	
F''	0.4498	0.4531	0.4565	0.4599	0.4633	0.4667	0.4701	0.4736	0.4770	0.4805	
2.60 TO 2.69 F'	0.3072	0.3083	0.3094	0.3105	0.3115	0.3126	0.3137	0.3147	0.3157	0.3168	
F''	0.4839	0.4874	0.4909	0.4944	0.4979	0.5014	0.5049	0.5084	0.5120	0.5155	
2.70 TO 2.79 F'	0.3178	0.3188	0.3199	0.3209	0.3219	0.3229	0.3238	0.3248	0.3258	0.3268	
F''	0.5191	0.5227	0.5262	0.5298	0.5334	0.5370	0.5407	0.5443	0.5479	0.5516	
2.80 TO 2.89 F'	0.3277	0.3287	0.3296	0.3306	0.3315	0.3324	0.3334	0.3343	0.3352	0.3361	
F''	0.5552	0.5589	0.5626	0.5663	0.5699	0.5737	0.5774	0.5811	0.5848	0.5886	
ATOMIC SYMBOL = AL ATOMIC NUMBER = 13											
0.10 TO 0.19 F'	-0.0184	-0.0179	-0.0174	-0.0168	-0.0162	-0.0155	-0.0148	-0.0141	-0.0134	-	
0.0126	F''	0.0007	0.0009	0.0011	0.0013	0.0015	0.0018	0.0021	0.0024	0.0027	0.0030
0.20 TO 0.29 F'	-0.0118	-0.0109	-0.0101	-0.0092	-0.0082	-0.0073	-0.0063	-0.0053	-0.0043	-	
0.0032	F''	0.0034	0.0038	0.0042	0.0046	0.0051	0.0055	0.0060	0.0066	0.0071	0.0077
0.30 TO 0.39 F'	-0.0021	-0.0010	0.0001	0.0012	0.0024	0.0036	0.0048	0.0060	0.0072	0.0085	
F''	0.0083	0.0089	0.0095	0.0102	0.0108	0.0115	0.0123	0.0130	0.0138	0.0146	
0.40 TO 0.49 F'	0.0098	0.0110	0.0124	0.0137	0.0150	0.0164	0.0178	0.0192	0.0206	0.0220	
F''	0.0154	0.0162	0.0171	0.0179	0.0188	0.0198	0.0207	0.0217	0.0227	0.0237	
0.50 TO 0.59 F'	0.0234	0.0249	0.0263	0.0278	0.0293	0.0308	0.0323	0.0338	0.0353	0.0369	
F''	0.0247	0.0258	0.0269	0.0280	0.0291	0.0302	0.0314	0.0326	0.0338	0.0350	
0.60 TO 0.69 F'	0.0384	0.0400	0.0416	0.0432	0.0448	0.0464	0.0480	0.0496	0.0512	0.0529	
F''	0.0363	0.0375	0.0388	0.0402	0.0415	0.0429	0.0442	0.0456	0.0471	0.0485	
0.70 TO 0.79 F'	0.0545	0.0562	0.0579	0.0595	0.0612	0.0629	0.0646	0.0663	0.0680	0.0698	
F''	0.0500	0.0515	0.0530	0.0545	0.0561	0.0576	0.0592	0.0609	0.0625	0.0642	
0.80 TO 0.89 F'	0.0715	0.0732	0.0750	0.0767	0.0784	0.0802	0.0820	0.0837	0.0855	0.0873	
F''	0.0658	0.0675	0.0693	0.0710	0.0728	0.0745	0.0764	0.0782	0.0800	0.0819	
0.90 TO 0.99 F'	0.0890	0.0908	0.0926	0.0944	0.0962	0.0980	0.0998	0.1016	0.1034	0.1052	
F''	0.0838	0.0857	0.0876	0.0896	0.0915	0.0935	0.0955	0.0976	0.0996	0.1017	
1.00 TO 1.09 F'	0.1070	0.1089	0.1107	0.1125	0.1143	0.1161	0.1180	0.1198	0.1216	0.1234	
F''	0.1038	0.1059	0.1080	0.1102	0.1124	0.1146	0.1168	0.1190	0.1213	0.1235	
1.10 TO 1.19 F'	0.1253	0.1271	0.1289	0.1308	0.1326	0.1344	0.1363	0.1381	0.1399	0.1417	
F''	0.1258	0.1281	0.1305	0.1328	0.1352	0.1376	0.1400	0.1424	0.1449	0.1474	
1.20 TO 1.29 F'	0.1436	0.1454	0.1472	0.1491	0.1509	0.1527	0.1545	0.1563	0.1581	0.1600	
F''	0.1499	0.1524	0.1549	0.1575	0.1600	0.1626	0.1652	0.1679	0.1705	0.1732	
1.30 TO 1.39 F'	0.1618	0.1636	0.1654	0.1672	0.1690	0.1707	0.1725	0.1743	0.1761	0.1779	
F''	0.1759	0.1786	0.1813	0.1840	0.1868	0.1896	0.1924	0.1952	0.1981	0.2009	
1.40 TO 1.49 F'	0.1796	0.1814	0.1832	0.1850	0.1868	0.1886	0.1904	0.1921	0.1939	0.1957	
F''	0.2038	0.2066	0.2095	0.2124	0.2153	0.2182	0.2212	0.2241	0.2271	0.2301	
1.50 TO 1.59 F'	0.1975	0.1992	0.2010	0.2027	0.2045	0.2063	0.2080	0.2097	0.2115	0.2132	
F''	0.2331	0.2362	0.2392	0.2423	0.2454	0.2485	0.2516	0.2547	0.2579	0.2610	
1.60 TO 1.69 F'	0.2149	0.2167	0.2184	0.2201	0.2218	0.2235	0.2252	0.2269	0.2286	0.2303	
F''	0.2642	0.2674	0.2707	0.2739	0.2771	0.2804	0.2837	0.2870	0.2903	0.2937	
1.70 TO 1.79 F'	0.2320	0.2337	0.2354	0.2370	0.2387	0.2403	0.2420	0.2436	0.2453	0.2469	

F''	0.2970	0.3004	0.3038	0.3072	0.3106	0.3140	0.3175	0.3209	0.3244	0.3279	
1.80 TO 1.89 F'	0.2485	0.2502	0.2518	0.2534	0.2541	0.2557	0.2573	0.2589	0.2604	0.2620	
F''	0.3315	0.3350	0.3385	0.3421	0.3457	0.3493	0.3529	0.3565	0.3601	0.3637	
1.90 TO 1.99 F'	0.2635	0.2650	0.2666	0.2681	0.2696	0.2711	0.2726	0.2741	0.2756	0.2770	
F''	0.3674	0.3711	0.3748	0.3785	0.3822	0.3859	0.3897	0.3934	0.3972	0.4010	
2.00 TO 2.09 F'	0.2785	0.2800	0.2814	0.2829	0.2843	0.2858	0.2872	0.2886	0.2900	0.2914	
F''	0.4048	0.4086	0.4125	0.4163	0.4202	0.4241	0.4279	0.4319	0.4358	0.4397	
2.10 TO 2.19 F'	0.2928	0.2942	0.2956	0.2969	0.2983	0.2996	0.3010	0.3023	0.3036	0.3050	
F''	0.4437	0.4476	0.4516	0.4556	0.4596	0.4636	0.4677	0.4717	0.4758	0.4799	
2.20 TO 2.29 F'	0.3063	0.3076	0.3089	0.3101	0.3114	0.3127	0.3139	0.3152	0.3164	0.3176	
F''	0.4840	0.4881	0.4922	0.4963	0.5005	0.5046	0.5088	0.5130	0.5172	0.5214	
2.30 TO 2.39 F'	0.3189	0.3201	0.3213	0.3225	0.3237	0.3248	0.3260	0.3271	0.3283	0.3294	
F''	0.5256	0.5299	0.5341	0.5384	0.5427	0.5470	0.5513	0.5556	0.5599	0.5643	
2.40 TO 2.49 F'	0.3305	0.3317	0.3328	0.3339	0.3349	0.3360	0.3371	0.3381	0.3392	0.3402	
F''	0.5686	0.5730	0.5774	0.5818	0.5862	0.5907	0.5951	0.5995	0.6040	0.6085	
2.50 TO 2.59 F'	0.3412	0.3423	0.3433	0.3443	0.3452	0.3462	0.3472	0.3481	0.3491	0.3500	
F''	0.6130	0.6175	0.6220	0.6265	0.6311	0.6356	0.6402	0.6448	0.6494	0.6540	
2.60 TO 2.69 F'	0.3509	0.3518	0.3527	0.3536	0.3545	0.3553	0.3562	0.3570	0.3579	0.3587	
F''	0.6586	0.6632	0.6679	0.6725	0.6772	0.6819	0.6866	0.6913	0.6960	0.7007	
2.70 TO 2.79 F'	0.3595	0.3603	0.3611	0.3618	0.3626	0.3633	0.3641	0.3648	0.3655	0.3662	
F''	0.7055	0.7102	0.7150	0.7198	0.7246	0.7294	0.7342	0.7390	0.7439	0.7487	
2.80 TO 2.89 F'	0.3669	0.3676	0.3682	0.3689	0.3695	0.3702	0.3708	0.3714	0.3720	0.3726	
F''	0.7536	0.7585	0.7633	0.7682	0.7732	0.7781	0.7830	0.7880	0.7929	0.7979	
ATOMIC SYMBOL = SI ATOMIC NUMBER = 14											
0.10 TO 0.19 F'	-0.0226	-0.0219	-0.0212	-0.0204	-0.0196	-0.0188	-0.0179	-0.0169	-0.0159	-	
0.0149	F''	0.0010	0.0012	0.0015	0.0018	0.0022	0.0025	0.0029	0.0033	0.0038	0.0043
0.20 TO 0.29 F'	-0.0139	-0.0128	-0.0116	-0.0105	-0.0093	-0.0081	-0.0068	-0.0055	-0.0042	-	
0.0028	F''	0.0048	0.0053	0.0059	0.0065	0.0071	0.0078	0.0085	0.0092	0.0099	0.0107
0.30 TO 0.39 F'	-0.0015	-0.0001	0.0014	0.0028	0.0043	0.0058	0.0073	0.0089	0.0104	0.0120	
F''	0.0115	0.0124	0.0132	0.0141	0.0151	0.0160	0.0170	0.0181	0.0191	0.0202	
0.40 TO 0.49 F'	0.0137	0.0153	0.0169	0.0186	0.0203	0.0220	0.0238	0.0255	0.0273	0.0290	
F''	0.0213	0.0225	0.0237	0.0249	0.0261	0.0274	0.0287	0.0300	0.0314	0.0327	
0.50 TO 0.59 F'	0.0308	0.0326	0.0345	0.0363	0.0382	0.0400	0.0419	0.0438	0.0457	0.0476	
F''	0.0342	0.0356	0.0371	0.0386	0.0401	0.0417	0.0432	0.0449	0.0465	0.0482	
0.60 TO 0.69 F'	0.0495	0.0515	0.0534	0.0554	0.0574	0.0593	0.0613	0.0633	0.0653	0.0674	
F''	0.0499	0.0516	0.0534	0.0552	0.0570	0.0588	0.0607	0.0626	0.0646	0.0665	
0.70 TO 0.79 F'	0.0694	0.0714	0.0735	0.0755	0.0776	0.0797	0.0817	0.0838	0.0859	0.0880	
F''	0.0685	0.0705	0.0726	0.0746	0.0767	0.0789	0.0810	0.0832	0.0854	0.0877	
0.80 TO 0.89 F'	0.0901	0.0922	0.0943	0.0964	0.0985	0.1007	0.1028	0.1049	0.1070	0.1092	
F''	0.0899	0.0922	0.0946	0.0969	0.0993	0.1017	0.1041	0.1066	0.1091	0.1116	
0.90 TO 0.99 F'	0.1113	0.1135	0.1156	0.1178	0.1199	0.1221	0.1242	0.1264	0.1285	0.1307	
F''	0.1142	0.1167	0.1193	0.1219	0.1246	0.1273	0.1300	0.1327	0.1355	0.1382	
1.00 TO 1.09 F'	0.1328	0.1350	0.1372	0.1393	0.1415	0.1436	0.1458	0.1479	0.1501	0.1523	
F''	0.1411	0.1439	0.1468	0.1497	0.1526	0.1555	0.1585	0.1615	0.1645	0.1675	
1.10 TO 1.19 F'	0.1544	0.1566	0.1587	0.1608	0.1630	0.1651	0.1673	0.1694	0.1715	0.1736	
F''	0.1706	0.1737	0.1769	0.1800	0.1832	0.1864	0.1896	0.1929	0.1962	0.1995	
1.20 TO 1.29 F'	0.1757	0.1779	0.1800	0.1821	0.1841	0.1862	0.1883	0.1904	0.1924	0.1945	
F''	0.2028	0.2062	0.2095	0.2129	0.2164	0.2198	0.2233	0.2268	0.2304	0.2339	
1.30 TO 1.39 F'	0.1965	0.1986	0.2006	0.2026	0.2046	0.2065	0.2085	0.2104	0.2123	0.2142	
F''	0.2375	0.2411	0.2448	0.2484	0.2521	0.2558	0.2596	0.2633	0.2671	0.2709	
1.40 TO 1.49 F'	0.2162	0.2182	0.2202	0.2222	0.2242	0.2261	0.2281	0.2301	0.2320	0.2340	
F''	0.2747	0.2785	0.2823	0.2862	0.2901	0.2939	0.2979	0.3018	0.3058	0.3097	

1.50 TO 1.59 F'	0.2359	0.2379	0.2398	0.2417	0.2436	0.2455	0.2471	0.2490	0.2508	0.2527
F''	0.3137	0.3178	0.3218	0.3259	0.3300	0.3341	0.3382	0.3424	0.3465	0.3507
1.60 TO 1.69 F'	0.2545	0.2563	0.2582	0.2600	0.2618	0.2636	0.2654	0.2671	0.2689	0.2707
F''	0.3549	0.3592	0.3634	0.3677	0.3720	0.3763	0.3807	0.3850	0.3894	0.3938
1.70 TO 1.79 F'	0.2724	0.2741	0.2759	0.2776	0.2793	0.2810	0.2827	0.2843	0.2860	0.2876
F''	0.3982	0.4026	0.4071	0.4116	0.4161	0.4206	0.4251	0.4297	0.4342	0.4388
1.80 TO 1.89 F'	0.2893	0.2909	0.2925	0.2941	0.2957	0.2973	0.2989	0.3005	0.3020	0.3035
F''	0.4435	0.4481	0.4527	0.4574	0.4621	0.4668	0.4716	0.4763	0.4811	0.4859
1.90 TO 1.99 F'	0.3051	0.3066	0.3081	0.3096	0.3111	0.3125	0.3140	0.3154	0.3168	0.3183
F''	0.4907	0.4955	0.5003	0.5052	0.5101	0.5150	0.5199	0.5248	0.5298	0.5348
2.00 TO 2.09 F'	0.3197	0.3210	0.3224	0.3238	0.3251	0.3265	0.3278	0.3291	0.3304	0.3317
F''	0.5398	0.5448	0.5498	0.5548	0.5599	0.5650	0.5701	0.5752	0.5804	0.5855
2.10 TO 2.19 F'	0.3330	0.3342	0.3355	0.3367	0.3379	0.3391	0.3403	0.3415	0.3426	0.3438
F''	0.5907	0.5959	0.6011	0.6063	0.6116	0.6168	0.6221	0.6274	0.6327	0.6380
2.20 TO 2.29 F'	0.3449	0.3460	0.3471	0.3482	0.3493	0.3503	0.3513	0.3524	0.3534	0.3544
F''	0.6434	0.6487	0.6541	0.6595	0.6649	0.6704	0.6758	0.6813	0.6868	0.6923
2.30 TO 2.39 F'	0.3553	0.3563	0.3573	0.3582	0.3591	0.3600	0.3609	0.3618	0.3626	0.3634
F''	0.6978	0.7033	0.7089	0.7145	0.7201	0.7257	0.7313	0.7369	0.7426	0.7482
2.40 TO 2.49 F'	0.3643	0.3649	0.3657	0.3665	0.3672	0.3680	0.3687	0.3694	0.3701	0.3707
F''	0.7539	0.7596	0.7653	0.7711	0.7768	0.7826	0.7884	0.7942	0.8000	0.8058
2.50 TO 2.59 F'	0.3714	0.3720	0.3726	0.3732	0.3738	0.3744	0.3749	0.3754	0.3759	0.3764
F''	0.8117	0.8175	0.8234	0.8293	0.8352	0.8411	0.8471	0.8530	0.8590	0.8650
2.60 TO 2.69 F'	0.3769	0.3774	0.3778	0.3782	0.3786	0.3790	0.3794	0.3797	0.3800	0.3803
F''	0.8710	0.8770	0.8830	0.8891	0.8952	0.9012	0.9073	0.9134	0.9196	0.9257
2.70 TO 2.79 F'	0.3806	0.3809	0.3811	0.3814	0.3816	0.3818	0.3819	0.3821	0.3822	0.3823
F''	0.9319	0.9380	0.9442	0.9504	0.9566	0.9629	0.9691	0.9754	0.9817	0.9879
2.80 TO 2.89 F'	0.3824	0.3825	0.3826	0.3826	0.3826	0.3826	0.3826	0.3825	0.3825	0.3824
F''	0.9943	1.0006	1.0069	1.0133	1.0196	1.0260	1.0324	1.0388	1.0452	1.0517
ATOMIC SYMBOL = P ATOMIC NUMBER = 15										
0.10 TO 0.19 F'	-0.0255	-0.0247	-0.0238	-0.0228	-0.0217	-0.0206	-0.0195	-0.0183	-0.0171	-
0.0158										
F''	0.0014	0.0017	0.0021	0.0025	0.0030	0.0035	0.0040	0.0045	0.0052	0.0058
0.20 TO 0.29 F'	-0.0144	-0.0130	-0.0116	-0.0101	-0.0086	-0.0071	-0.0055	-0.0039	-0.0022	-
0.0005										
F''	0.0065	0.0072	0.0080	0.0088	0.0097	0.0105	0.0115	0.0124	0.0135	0.0145
0.30 TO 0.39 F'	0.0012	0.0030	0.0048	0.0066	0.0085	0.0103	0.0122	0.0142	0.0161	0.0181
F''	0.0156	0.0167	0.0179	0.0191	0.0204	0.0217	0.0230	0.0244	0.0258	0.0273
0.40 TO 0.49 F'	0.0201	0.0222	0.0242	0.0263	0.0284	0.0305	0.0326	0.0348	0.0369	0.0391
F''	0.0288	0.0304	0.0319	0.0336	0.0352	0.0369	0.0387	0.0405	0.0423	0.0441
0.50 TO 0.59 F'	0.0413	0.0435	0.0458	0.0480	0.0503	0.0525	0.0548	0.0571	0.0594	0.0618
F''	0.0460	0.0480	0.0499	0.0519	0.0540	0.0561	0.0582	0.0603	0.0625	0.0648
0.60 TO 0.69 F'	0.0641	0.0665	0.0688	0.0712	0.0736	0.0760	0.0783	0.0808	0.0832	0.0856
F''	0.0670	0.0693	0.0717	0.0741	0.0765	0.0789	0.0814	0.0840	0.0865	0.0891
0.70 TO 0.79 F'	0.0880	0.0905	0.0929	0.0954	0.0978	0.1003	0.1028	0.1052	0.1077	0.1102
F''	0.0918	0.0944	0.0972	0.0999	0.1027	0.1055	0.1084	0.1113	0.1142	0.1172
0.80 TO 0.89 F'	0.1127	0.1152	0.1177	0.1201	0.1226	0.1251	0.1276	0.1301	0.1327	0.1352
F''	0.1202	0.1232	0.1263	0.1294	0.1325	0.1357	0.1389	0.1421	0.1454	0.1487
0.90 TO 0.99 F'	0.1377	0.1402	0.1427	0.1452	0.1477	0.1502	0.1527	0.1552	0.1577	0.1602
F''	0.1521	0.1555	0.1589	0.1624	0.1658	0.1694	0.1729	0.1765	0.1801	0.1838
1.00 TO 1.09 F'	0.1627	0.1652	0.1677	0.1702	0.1726	0.1751	0.1776	0.1801	0.1825	0.1850
F''	0.1875	0.1912	0.1950	0.1988	0.2026	0.2065	0.2103	0.2143	0.2182	0.2222
1.10 TO 1.19 F'	0.1874	0.1899	0.1923	0.1948	0.1972	0.1996	0.2020	0.2045	0.2069	0.2093
F''	0.2262	0.2303	0.2344	0.2385	0.2427	0.2469	0.2511	0.2553	0.2596	0.2640
1.20 TO 1.29 F'	0.2117	0.2140	0.2164	0.2188	0.2211	0.2235	0.2258	0.2281	0.2305	0.2328

F''	0.2683	0.2727	0.2771	0.2816	0.2860	0.2905	0.2951	0.2997	0.3043	0.3089
1.30 TO 1.39 F'	0.2351	0.2374	0.2396	0.2419	0.2420	0.2442	0.2463	0.2485	0.2507	0.2528
F''	0.3136	0.3183	0.3230	0.3278	0.3325	0.3373	0.3421	0.3470	0.3518	0.3567
1.40 TO 1.49 F'	0.2550	0.2571	0.2592	0.2613	0.2634	0.2654	0.2675	0.2695	0.2715	0.2736
F''	0.3616	0.3666	0.3715	0.3765	0.3815	0.3866	0.3917	0.3968	0.4019	0.4070
1.50 TO 1.59 F'	0.2756	0.2775	0.2795	0.2815	0.2834	0.2853	0.2873	0.2892	0.2910	0.2929
F''	0.4122	0.4174	0.4227	0.4279	0.4332	0.4385	0.4439	0.4492	0.4546	0.4600
1.60 TO 1.69 F'	0.2948	0.2966	0.2984	0.3002	0.3020	0.3038	0.3056	0.3073	0.3090	0.3107
F''	0.4655	0.4710	0.4765	0.4820	0.4875	0.4931	0.4987	0.5043	0.5100	0.5156
1.70 TO 1.79 F'	0.3124	0.3141	0.3158	0.3174	0.3190	0.3207	0.3222	0.3238	0.3254	0.3269
F''	0.5213	0.5271	0.5328	0.5386	0.5444	0.5502	0.5560	0.5619	0.5678	0.5737
1.80 TO 1.89 F'	0.3284	0.3299	0.3314	0.3329	0.3343	0.3358	0.3372	0.3386	0.3399	0.3412
F''	0.5796	0.5856	0.5916	0.5976	0.6037	0.6097	0.6158	0.6219	0.6280	0.6342
1.90 TO 1.99 F'	0.3425	0.3438	0.3451	0.3464	0.3477	0.3489	0.3501	0.3513	0.3525	0.3536
F''	0.6404	0.6466	0.6528	0.6590	0.6653	0.6716	0.6779	0.6843	0.6906	0.6970
2.00 TO 2.09 F'	0.3547	0.3558	0.3569	0.3580	0.3590	0.3601	0.3611	0.3620	0.3630	0.3639
F''	0.7034	0.7098	0.7163	0.7228	0.7293	0.7358	0.7423	0.7489	0.7555	0.7621
2.10 TO 2.19 F'	0.3648	0.3657	0.3666	0.3674	0.3683	0.3691	0.3698	0.3706	0.3713	0.3720
F''	0.7687	0.7754	0.7820	0.7887	0.7954	0.8022	0.8089	0.8157	0.8225	0.8293
2.20 TO 2.29 F'	0.3727	0.3734	0.3740	0.3746	0.3752	0.3758	0.3763	0.3768	0.3773	0.3778
F''	0.8362	0.8430	0.8499	0.8568	0.8638	0.8707	0.8777	0.8847	0.8917	0.8987
2.30 TO 2.39 F'	0.3782	0.3787	0.3790	0.3794	0.3797	0.3801	0.3804	0.3806	0.3809	0.3811
F''	0.9058	0.9128	0.9199	0.9270	0.9342	0.9413	0.9485	0.9557	0.9629	0.9701
2.40 TO 2.49 F'	0.3813	0.3814	0.3815	0.3816	0.3817	0.3818	0.3818	0.3818	0.3818	0.3817
F''	0.9774	0.9847	0.9920	0.9993	1.0066	1.0140	1.0213	1.0287	1.0361	1.0436
2.50 TO 2.59 F'	0.3816	0.3815	0.3814	0.3812	0.3810	0.3808	0.3805	0.3802	0.3799	0.3796
F''	1.0510	1.0585	1.0660	1.0735	1.0810	1.0886	1.0961	1.1037	1.1113	1.1189
2.60 TO 2.69 F'	0.3792	0.3788	0.3784	0.3779	0.3774	0.3769	0.3764	0.3758	0.3752	0.3745
F''	1.1266	1.1342	1.1419	1.1496	1.1573	1.1651	1.1728	1.1806	1.1884	1.1962
2.70 TO 2.79 F'	0.3739	0.3732	0.3724	0.3717	0.3709	0.3700	0.3692	0.3683	0.3673	0.3664
F''	1.2040	1.2119	1.2197	1.2276	1.2355	1.2434	1.2514	1.2593	1.2673	1.2753
2.80 TO 2.89 F'	0.3654	0.3644	0.3633	0.3622	0.3611	0.3599	0.3588	0.3575	0.3563	0.3498
F''	1.2833	1.2913	1.2994	1.3074	1.3155	1.3236	1.3317	1.3398	1.3480	1.3562

ATOMIC SYMBOL = S    ATOMIC NUMBER = 16

0.10 TO 0.19 F'	-0.0293	-0.0282	-0.0270	-0.0258	-0.0245	-0.0231	-0.0216	-0.0201	-0.0186	-
0.0170										

F''	0.0019	0.0023	0.0028	0.0034	0.0040	0.0046	0.0053	0.0061	0.0069	0.0078
0.20 TO 0.29 F'	-0.0153	-0.0136	-0.0118	-0.0100	-0.0081	-0.0062	-0.0042	-0.0022	-0.0002	0.0019
F''	0.0087	0.0097	0.0107	0.0117	0.0129	0.0141	0.0153	0.0166	0.0179	0.0193
0.30 TO 0.39 F'	0.0041	0.0062	0.0084	0.0106	0.0129	0.0152	0.0175	0.0199	0.0223	0.0247
F''	0.0207	0.0222	0.0238	0.0254	0.0271	0.0288	0.0305	0.0323	0.0342	0.0361
0.40 TO 0.49 F'	0.0271	0.0296	0.0321	0.0346	0.0371	0.0396	0.0422	0.0448	0.0474	0.0500
F''	0.0381	0.0401	0.0422	0.0443	0.0465	0.0488	0.0511	0.0534	0.0558	0.0582
0.50 TO 0.59 F'	0.0527	0.0553	0.0580	0.0607	0.0634	0.0661	0.0688	0.0715	0.0743	0.0770
F''	0.0607	0.0632	0.0657	0.0684	0.0710	0.0737	0.0765	0.0793	0.0822	0.0851
0.60 TO 0.69 F'	0.0798	0.0826	0.0854	0.0882	0.0910	0.0938	0.0966	0.0994	0.1023	0.1051
F''	0.0880	0.0911	0.0941	0.0972	0.1003	0.1035	0.1068	0.1101	0.1134	0.1168
0.70 TO 0.79 F'	0.1079	0.1108	0.1137	0.1165	0.1194	0.1222	0.1251	0.1280	0.1308	0.1337
F''	0.1202	0.1237	0.1272	0.1308	0.1344	0.1380	0.1417	0.1455	0.1493	0.1531
0.80 TO 0.89 F'	0.1366	0.1394	0.1423	0.1452	0.1480	0.1509	0.1537	0.1566	0.1595	0.1623
F''	0.1570	0.1609	0.1649	0.1689	0.1730	0.1771	0.1812	0.1854	0.1896	0.1939
0.90 TO 0.99 F'	0.1652	0.1680	0.1708	0.1737	0.1765	0.1793	0.1821	0.1849	0.1877	0.1905
F''	0.1982	0.2026	0.2070	0.2115	0.2160	0.2205	0.2251	0.2297	0.2344	0.2391
1.00 TO 1.09 F'	0.1933	0.1961	0.1988	0.2016	0.2044	0.2071	0.2098	0.2125	0.2152	0.2179

F''	0.2439	0.2486	0.2535	0.2584	0.2633	0.2682	0.2733	0.2783	0.2834	0.2885
1.10 TO 1.19 F'	0.2206	0.2233	0.2259	0.2286	0.2312	0.2338	0.2346	0.2372	0.2397	0.2423
F''	0.2937	0.2989	0.3041	0.3094	0.3148	0.3202	0.3256	0.3310	0.3364	0.3419
1.20 TO 1.29 F'	0.2448	0.2473	0.2497	0.2522	0.2546	0.2571	0.2595	0.2619	0.2642	0.2666
F''	0.3474	0.3530	0.3586	0.3642	0.3699	0.3756	0.3813	0.3871	0.3929	0.3988
1.30 TO 1.39 F'	0.2689	0.2713	0.2736	0.2759	0.2781	0.2804	0.2826	0.2848	0.2870	0.2892
F''	0.4047	0.4106	0.4166	0.4226	0.4286	0.4347	0.4408	0.4470	0.4532	0.4594
1.40 TO 1.49 F'	0.2913	0.2934	0.2955	0.2976	0.2996	0.3017	0.3037	0.3057	0.3076	0.3096
F''	0.4656	0.4719	0.4782	0.4845	0.4909	0.4973	0.5037	0.5102	0.5167	0.5232
1.50 TO 1.59 F'	0.3115	0.3134	0.3153	0.3172	0.3190	0.3208	0.3226	0.3243	0.3261	0.3278
F''	0.5298	0.5364	0.5430	0.5497	0.5563	0.5631	0.5698	0.5766	0.5834	0.5903
1.60 TO 1.69 F'	0.3295	0.3311	0.3328	0.3344	0.3360	0.3375	0.3391	0.3406	0.3421	0.3435
F''	0.5972	0.6041	0.6110	0.6180	0.6250	0.6320	0.6391	0.6462	0.6533	0.6605
1.70 TO 1.79 F'	0.3450	0.3464	0.3478	0.3491	0.3505	0.3518	0.3530	0.3543	0.3555	0.3567
F''	0.6677	0.6749	0.6821	0.6894	0.6967	0.7040	0.7114	0.7188	0.7262	0.7337
1.80 TO 1.89 F'	0.3579	0.3590	0.3601	0.3612	0.3622	0.3632	0.3642	0.3652	0.3661	0.3670
F''	0.7412	0.7487	0.7562	0.7638	0.7714	0.7790	0.7867	0.7943	0.8020	0.8098
1.90 TO 1.99 F'	0.3679	0.3687	0.3695	0.3703	0.3711	0.3718	0.3725	0.3731	0.3737	0.3743
F''	0.8176	0.8254	0.8332	0.8410	0.8489	0.8568	0.8647	0.8727	0.8807	0.8887
2.00 TO 2.09 F'	0.3749	0.3754	0.3759	0.3763	0.3768	0.3771	0.3775	0.3778	0.3781	0.3784
F''	0.8967	0.9048	0.9129	0.9210	0.9292	0.9374	0.9456	0.9538	0.9620	0.9703
2.10 TO 2.19 F'	0.3786	0.3788	0.3789	0.3790	0.3791	0.3791	0.3792	0.3791	0.3791	0.3790
F''	0.9786	0.9870	0.9953	1.0037	1.0121	1.0206	1.0290	1.0375	1.0460	1.0546
2.20 TO 2.29 F'	0.3788	0.3786	0.3784	0.3782	0.3779	0.3776	0.3772	0.3768	0.3764	0.3759
F''	1.0631	1.0717	1.0803	1.0890	1.0976	1.1063	1.1150	1.1238	1.1325	1.1413
2.30 TO 2.39 F'	0.3754	0.3748	0.3742	0.3736	0.3729	0.3722	0.3714	0.3706	0.3698	0.3689
F''	1.1501	1.1590	1.1678	1.1767	1.1856	1.1946	1.2035	1.2125	1.2215	1.2305
2.40 TO 2.49 F'	0.3680	0.3670	0.3660	0.3650	0.3639	0.3627	0.3615	0.3603	0.3591	0.3578
F''	1.2396	1.2487	1.2578	1.2669	1.2760	1.2852	1.2944	1.3036	1.3129	1.3221
2.50 TO 2.59 F'	0.3564	0.3507	0.3492	0.3477	0.3461	0.3445	0.3428	0.3411	0.3393	0.3375
F''	1.3314	1.3407	1.3499	1.3592	1.3685	1.3778	1.3871	1.3964	1.4058	1.4152
2.60 TO 2.69 F'	0.3357	0.3338	0.3318	0.3299	0.3278	0.3257	0.3236	0.3214	0.3192	0.3170
F''	1.4246	1.4340	1.4434	1.4529	1.4624	1.4719	1.4814	1.4909	1.5005	1.5100
2.70 TO 2.79 F'	0.3146	0.3123	0.3098	0.3074	0.3049	0.3023	0.2997	0.2970	0.2943	0.2915
F''	1.5196	1.5293	1.5389	1.5485	1.5582	1.5679	1.5776	1.5873	1.5971	1.6068
2.80 TO 2.89 F'	0.2887	0.2859	0.2829	0.2800	0.2769	0.2739	0.2707	0.2676	0.2643	0.2595
F''	1.6166	1.6264	1.6363	1.6461	1.6559	1.6658	1.6757	1.6856	1.6956	1.7055
ATOMIC SYMBOL = CL ATOMIC NUMBER = 17										
0.10 TO 0.19 F'	-0.0338	-0.0324	-0.0310	-0.0294	-0.0278	-0.0261	-0.0244	-0.0225	-0.0206	-
0.0186										
F''	0.0025	0.0031	0.0037	0.0045	0.0052	0.0061	0.0070	0.0080	0.0091	0.0102
0.20 TO 0.29 F'	-0.0166	-0.0145	-0.0123	-0.0101	-0.0078	-0.0055	-0.0031	-0.0007	0.0018	0.0043
F''	0.0114	0.0127	0.0140	0.0154	0.0168	0.0184	0.0200	0.0217	0.0234	0.0252
0.30 TO 0.39 F'	0.0069	0.0095	0.0121	0.0148	0.0175	0.0203	0.0231	0.0259	0.0287	0.0316
F''	0.0271	0.0290	0.0310	0.0331	0.0352	0.0374	0.0397	0.0420	0.0444	0.0469
0.40 TO 0.49 F'	0.0345	0.0374	0.0404	0.0434	0.0464	0.0494	0.0524	0.0555	0.0585	0.0616
F''	0.0495	0.0521	0.0547	0.0575	0.0603	0.0632	0.0661	0.0691	0.0721	0.0752
0.50 TO 0.59 F'	0.0647	0.0678	0.0710	0.0741	0.0773	0.0805	0.0836	0.0868	0.0900	0.0933
F''	0.0784	0.0816	0.0849	0.0883	0.0917	0.0951	0.0987	0.1023	0.1059	0.1096
0.60 TO 0.69 F'	0.0965	0.0997	0.1029	0.1062	0.1094	0.1127	0.1159	0.1192	0.1225	0.1257
F''	0.1134	0.1172	0.1211	0.1251	0.1291	0.1332	0.1373	0.1415	0.1457	0.1500
0.70 TO 0.79 F'	0.1290	0.1322	0.1355	0.1388	0.1420	0.1453	0.1485	0.1518	0.1550	0.1583
F''	0.1544	0.1588	0.1633	0.1678	0.1724	0.1770	0.1817	0.1865	0.1913	0.1962
0.80 TO 0.89 F'	0.1615	0.1648	0.1680	0.1712	0.1744	0.1776	0.1808	0.1840	0.1872	0.1903



F''	0.2011	0.2061	0.2111	0.2162	0.2214	0.2266	0.2319	0.2372	0.2425	0.2480
0.90 TO 0.99 F'	0.1935	0.1966	0.1998	0.2029	0.2060	0.2091	0.2122	0.2152	0.2183	0.2213
F''	0.2534	0.2590	0.2646	0.2702	0.2759	0.2816	0.2874	0.2933	0.2992	0.3051
1.00 TO 1.09 F'	0.2243	0.2273	0.2285	0.2314	0.2343	0.2372	0.2401	0.2429	0.2457	0.2485
F''	0.3112	0.3172	0.3233	0.3294	0.3356	0.3418	0.3480	0.3544	0.3607	0.3671
1.10 TO 1.19 F'	0.2513	0.2541	0.2568	0.2595	0.2622	0.2649	0.2675	0.2702	0.2728	0.2753
F''	0.3736	0.3801	0.3866	0.3932	0.3998	0.4065	0.4133	0.4200	0.4269	0.4337
1.20 TO 1.29 F'	0.2779	0.2804	0.2829	0.2854	0.2879	0.2903	0.2927	0.2951	0.2974	0.2997
F''	0.4407	0.4476	0.4546	0.4617	0.4688	0.4760	0.4832	0.4904	0.4977	0.5050
1.30 TO 1.39 F'	0.3020	0.3043	0.3065	0.3087	0.3108	0.3130	0.3151	0.3171	0.3192	0.3212
F''	0.5124	0.5198	0.5273	0.5348	0.5423	0.5499	0.5576	0.5652	0.5730	0.5807
1.40 TO 1.49 F'	0.3232	0.3251	0.3270	0.3289	0.3308	0.3326	0.3344	0.3361	0.3378	0.3395
F''	0.5885	0.5963	0.6042	0.6120	0.6200	0.6279	0.6359	0.6440	0.6521	0.6602
1.50 TO 1.59 F'	0.3412	0.3428	0.3444	0.3459	0.3474	0.3489	0.3503	0.3517	0.3531	0.3544
F''	0.6683	0.6765	0.6848	0.6931	0.7014	0.7097	0.7181	0.7265	0.7350	0.7435
1.60 TO 1.69 F'	0.3557	0.3569	0.3582	0.3593	0.3605	0.3616	0.3627	0.3637	0.3647	0.3656
F''	0.7521	0.7606	0.7693	0.7779	0.7866	0.7953	0.8041	0.8129	0.8217	0.8306
1.70 TO 1.79 F'	0.3665	0.3674	0.3682	0.3690	0.3697	0.3705	0.3711	0.3717	0.3723	0.3728
F''	0.8395	0.8484	0.8574	0.8664	0.8755	0.8845	0.8936	0.9028	0.9120	0.9212
1.80 TO 1.89 F'	0.3733	0.3738	0.3742	0.3746	0.3749	0.3752	0.3754	0.3756	0.3757	0.3758
F''	0.9305	0.9397	0.9491	0.9584	0.9678	0.9772	0.9867	0.9962	1.0057	1.0153
1.90 TO 1.99 F'	0.3758	0.3758	0.3758	0.3757	0.3756	0.3754	0.3751	0.3748	0.3745	0.3741
F''	1.0249	1.0345	1.0441	1.0538	1.0636	1.0733	1.0831	1.0929	1.1028	1.1127
2.00 TO 2.09 F'	0.3737	0.3732	0.3727	0.3721	0.3715	0.3708	0.3700	0.3693	0.3684	0.3675
F''	1.1226	1.1325	1.1425	1.1525	1.1625	1.1726	1.1827	1.1929	1.2030	1.2132
2.10 TO 2.19 F'	0.3666	0.3656	0.3645	0.3634	0.3622	0.3610	0.3598	0.3584	0.3570	0.3556
F''	1.2235	1.2337	1.2440	1.2543	1.2647	1.2750	1.2855	1.2959	1.3064	1.3169
2.20 TO 2.29 F'	0.3508	0.3492	0.3476	0.3458	0.3441	0.3422	0.3403	0.3384	0.3364	0.3343
F''	1.3274	1.3378	1.3483	1.3589	1.3694	1.3800	1.3906	1.4012	1.4119	1.4226
2.30 TO 2.39 F'	0.3322	0.3300	0.3277	0.3254	0.3231	0.3206	0.3181	0.3156	0.3130	0.3103
F''	1.4333	1.4440	1.4548	1.4656	1.4764	1.4872	1.4981	1.5090	1.5199	1.5309
2.40 TO 2.49 F'	0.3075	0.3047	0.3019	0.2989	0.2959	0.2916	0.2885	0.2853	0.2820	0.2786
F''	1.5418	1.5528	1.5638	1.5749	1.5859	1.5970	1.6081	1.6193	1.6304	1.6416
2.50 TO 2.59 F'	0.2752	0.2717	0.2682	0.2645	0.2608	0.2571	0.2532	0.2493	0.2453	0.2413
F''	1.6528	1.6640	1.6753	1.6865	1.6978	1.7091	1.7205	1.7318	1.7432	1.7546
2.60 TO 2.69 F'	0.2371	0.2329	0.2287	0.2243	0.2199	0.2154	0.2108	0.2061	0.2014	0.1966
F''	1.7661	1.7775	1.7890	1.8005	1.8120	1.8236	1.8351	1.8467	1.8583	1.8700
2.70 TO 2.79 F'	0.1917	0.1867	0.1816	0.1765	0.1713	0.1660	0.1606	0.1551	0.1495	0.1439
F''	1.8816	1.8933	1.9050	1.9167	1.9284	1.9402	1.9520	1.9638	1.9756	1.9874
2.80 TO 2.89 F'	0.1382	0.1324	0.1265	0.1205	0.1144	0.1082	0.1020	0.0956	0.0892	0.0826
F''	1.9993	2.0112	2.0231	2.0350	2.0470	2.0590	2.0709	2.0830	2.0950	2.1070
ATOMIC SYMBOL = AR ATOMIC NUMBER = 18										
0.10 TO 0.19 F'	-0.0380	-0.0363	-0.0345	-0.0326	-0.0306	-0.0286	-0.0264	-0.0242	-0.0218	-
0.0194										
F''	0.0032	0.0040	0.0048	0.0058	0.0068	0.0079	0.0091	0.0104	0.0117	0.0132
0.20 TO 0.29 F'	-0.0170	-0.0144	-0.0118	-0.0091	-0.0064	-0.0036	-0.0008	0.0021	0.0051	0.0081
F''	0.0147	0.0164	0.0181	0.0199	0.0218	0.0237	0.0258	0.0279	0.0302	0.0325
0.30 TO 0.39 F'	0.0111	0.0142	0.0173	0.0205	0.0237	0.0269	0.0302	0.0335	0.0368	0.0402
F''	0.0349	0.0373	0.0399	0.0425	0.0452	0.0481	0.0509	0.0539	0.0569	0.0601
0.40 TO 0.49 F'	0.0436	0.0470	0.0505	0.0539	0.0574	0.0609	0.0645	0.0680	0.0716	0.0752
F''	0.0633	0.0666	0.0699	0.0734	0.0769	0.0805	0.0842	0.0879	0.0918	0.0957
0.50 TO 0.59 F'	0.0787	0.0824	0.0860	0.0896	0.0933	0.0969	0.1006	0.1042	0.1079	0.1116
F''	0.0997	0.1037	0.1079	0.1121	0.1164	0.1208	0.1252	0.1297	0.1343	0.1390
0.60 TO 0.69 F'	0.1153	0.1189	0.1226	0.1263	0.1300	0.1337	0.1374	0.1411	0.1447	0.1484

	F''	0.1437	0.1486	0.1534	0.1584	0.1634	0.1686	0.1737	0.1790	0.1843	0.1897
0.70 TO 0.79	F'	0.1521	0.1557	0.1594	0.1630	0.1667	0.1703	0.1739	0.1775	0.1811	0.1847
	F''	0.1952	0.2007	0.2063	0.2120	0.2177	0.2236	0.2295	0.2354	0.2414	0.2475
0.80 TO 0.89	F'	0.1883	0.1918	0.1954	0.1989	0.2024	0.2059	0.2094	0.2128	0.2162	0.2197
	F''	0.2537	0.2599	0.2662	0.2726	0.2791	0.2856	0.2921	0.2988	0.3055	0.3123
0.90 TO 0.99	F'	0.2213	0.2246	0.2279	0.2312	0.2344	0.2377	0.2409	0.2440	0.2472	0.2503
	F''	0.3191	0.3259	0.3328	0.3398	0.3468	0.3539	0.3611	0.3683	0.3756	0.3829
1.00 TO 1.09	F'	0.2534	0.2565	0.2595	0.2625	0.2655	0.2684	0.2714	0.2742	0.2771	0.2799
	F''	0.3903	0.3978	0.4053	0.4128	0.4205	0.4282	0.4359	0.4437	0.4516	0.4595
1.10 TO 1.19	F'	0.2827	0.2854	0.2882	0.2909	0.2935	0.2961	0.2987	0.3013	0.3038	0.3063
	F''	0.4675	0.4756	0.4837	0.4918	0.5000	0.5083	0.5166	0.5250	0.5334	0.5419
1.20 TO 1.29	F'	0.3087	0.3111	0.3135	0.3158	0.3181	0.3203	0.3225	0.3246	0.3268	0.3288
	F''	0.5505	0.5591	0.5677	0.5764	0.5852	0.5940	0.6029	0.6118	0.6208	0.6299
1.30 TO 1.39	F'	0.3309	0.3328	0.3348	0.3367	0.3385	0.3403	0.3420	0.3437	0.3454	0.3470
	F''	0.6389	0.6481	0.6573	0.6665	0.6758	0.6852	0.6946	0.7040	0.7136	0.7231
1.40 TO 1.49	F'	0.3485	0.3501	0.3515	0.3530	0.3543	0.3557	0.3570	0.3582	0.3594	0.3605
	F''	0.7327	0.7423	0.7519	0.7616	0.7713	0.7811	0.7909	0.8008	0.8107	0.8207
1.50 TO 1.59	F'	0.3616	0.3626	0.3636	0.3645	0.3654	0.3662	0.3670	0.3677	0.3684	0.3690
	F''	0.8307	0.8407	0.8508	0.8610	0.8711	0.8814	0.8917	0.9020	0.9124	0.9228
1.60 TO 1.69	F'	0.3696	0.3701	0.3705	0.3709	0.3712	0.3715	0.3717	0.3719	0.3720	0.3720
	F''	0.9332	0.9437	0.9543	0.9648	0.9755	0.9861	0.9969	1.0076	1.0184	1.0293
1.70 TO 1.79	F'	0.3720	0.3719	0.3718	0.3716	0.3713	0.3710	0.3706	0.3702	0.3697	0.3691
	F''	1.0401	1.0511	1.0620	1.0730	1.0841	1.0952	1.1063	1.1175	1.1287	1.1399
1.80 TO 1.89	F'	0.3685	0.3678	0.3670	0.3662	0.3653	0.3643	0.3632	0.3621	0.3610	0.3597
	F''	1.1512	1.1626	1.1739	1.1854	1.1968	1.2083	1.2198	1.2314	1.2430	1.2547
1.90 TO 1.99	F'	0.3584	0.3570	0.3556	0.3541	0.3501	0.3484	0.3466	0.3448	0.3428	0.3408
	F''	1.2664	1.2781	1.2898	1.3016	1.3135	1.3253	1.3371	1.3490	1.3609	1.3729
2.00 TO 2.09	F'	0.3387	0.3366	0.3343	0.3320	0.3296	0.3272	0.3246	0.3212	0.3185	0.3157
	F''	1.3848	1.3969	1.4089	1.4210	1.4331	1.4453	1.4574	1.4697	1.4819	1.4942
2.10 TO 2.19	F'	0.3128	0.3098	0.3068	0.3037	0.3005	0.2972	0.2938	0.2904	0.2868	0.2832
	F''	1.5065	1.5188	1.5312	1.5436	1.5560	1.5685	1.5810	1.5935	1.6061	1.6187
2.20 TO 2.29	F'	0.2795	0.2755	0.2716	0.2677	0.2636	0.2594	0.2552	0.2508	0.2464	0.2419
	F''	1.6313	1.6440	1.6567	1.6694	1.6821	1.6949	1.7077	1.7205	1.7334	1.7463
2.30 TO 2.39	F'	0.2373	0.2325	0.2277	0.2228	0.2178	0.2127	0.2075	0.2022	0.1968	0.1913
	F''	1.7592	1.7722	1.7851	1.7982	1.8112	1.8243	1.8374	1.8505	1.8636	1.8768
2.40 TO 2.49	F'	0.1857	0.1799	0.1741	0.1682	0.1622	0.1560	0.1498	0.1434	0.1369	0.1303
	F''	1.8900	1.9033	1.9165	1.9298	1.9432	1.9565	1.9699	1.9833	1.9967	2.0102
2.50 TO 2.59	F'	0.1236	0.1168	0.1099	0.1029	0.0957	0.0884	0.0810	0.0735	0.0658	0.0580
	F''	2.0236	2.0372	2.0507	2.0643	2.0778	2.0915	2.1051	2.1188	2.1325	2.1462
2.60 TO 2.69	F'	0.0501	0.0421	0.0339	0.0257	0.0172	0.0087	0.0000	-0.0093	-0.0182	-0.0274
	F''	2.1599	2.1737	2.1875	2.2013	2.2152	2.2290	2.2429	2.2569	2.2708	2.2848
2.70 TO 2.79	F'	-0.0374	-0.0468	-0.0563	-0.0660	-0.0759	-0.0859	-0.0961	-0.1064	-0.1169	-
	F''	2.2988	2.3128	2.3268	2.3409	2.3550	2.3691	2.3832	2.3974	2.4115	2.4257
2.80 TO 2.89	F'	-0.1383	-0.1493	-0.1604	-0.1717	-0.1832	-0.1948	-0.2066	-0.2186	-0.2308	-
	F''	2.4400	2.4542	2.4685	2.4828	2.4971	2.5115	2.5258	2.5402	2.5546	2.5690
ATOMIC SYMBOL = K    ATOMIC NUMBER = 19											
0.10 TO 0.19	F'	-0.0421	-0.0402	-0.0380	-0.0358	-0.0334	-0.0310	-0.0284	-0.0257	-0.0230	-
	F''	0.0042	0.0052	0.0062	0.0074	0.0087	0.0101	0.0116	0.0132	0.0149	0.0167
0.20 TO 0.29	F'	-0.0172	-0.0142	-0.0111	-0.0079	-0.0047	-0.0014	0.0020	0.0054	0.0089	0.0124
	F''	0.0186	0.0206	0.0227	0.0250	0.0273	0.0298	0.0323	0.0350	0.0377	0.0406
0.30 TO 0.39	F'	0.0160	0.0196	0.0233	0.0270	0.0307	0.0345	0.0384	0.0422	0.0461	0.0500

	F''	0.0436	0.0467	0.0499	0.0532	0.0566	0.0601	0.0637	0.0674	0.0712	0.0751
0.40 TO 0.49	F'	0.0540	0.0579	0.0619	0.0659	0.0699	0.0740	0.0780	0.0820	0.0861	0.0902
	F''	0.0792	0.0833	0.0875	0.0919	0.0963	0.1009	0.1055	0.1102	0.1150	0.1199
0.50 TO 0.59	F'	0.0943	0.0984	0.1025	0.1066	0.1107	0.1148	0.1189	0.1230	0.1272	0.1313
	F''	0.1248	0.1299	0.1350	0.1403	0.1456	0.1510	0.1565	0.1621	0.1678	0.1736
0.60 TO 0.69	F'	0.1354	0.1395	0.1436	0.1477	0.1518	0.1558	0.1599	0.1639	0.1680	0.1720
	F''	0.1795	0.1855	0.1915	0.1976	0.2039	0.2102	0.2166	0.2231	0.2297	0.2363
0.70 TO 0.79	F'	0.1760	0.1800	0.1840	0.1880	0.1919	0.1958	0.1997	0.2036	0.2074	0.2113
	F''	0.2431	0.2499	0.2568	0.2638	0.2709	0.2781	0.2854	0.2927	0.3001	0.3076
0.80 TO 0.89	F'	0.2137	0.2174	0.2211	0.2247	0.2284	0.2320	0.2356	0.2391	0.2426	0.2461
	F''	0.3152	0.3228	0.3305	0.3383	0.3461	0.3541	0.3621	0.3701	0.3783	0.3865
0.90 TO 0.99	F'	0.2495	0.2529	0.2563	0.2596	0.2629	0.2662	0.2694	0.2726	0.2758	0.2789
	F''	0.3948	0.4032	0.4117	0.4202	0.4288	0.4375	0.4462	0.4550	0.4639	0.4729
1.00 TO 1.09	F'	0.2819	0.2850	0.2879	0.2909	0.2938	0.2966	0.2994	0.3022	0.3049	0.3076
	F''	0.4819	0.4910	0.5002	0.5094	0.5187	0.5281	0.5376	0.5471	0.5567	0.5663
1.10 TO 1.19	F'	0.3102	0.3127	0.3152	0.3177	0.3201	0.3225	0.3248	0.3270	0.3292	0.3313
	F''	0.5760	0.5858	0.5957	0.6056	0.6156	0.6257	0.6358	0.6460	0.6562	0.6666
1.20 TO 1.29	F'	0.3334	0.3354	0.3374	0.3393	0.3411	0.3429	0.3446	0.3463	0.3479	0.3494
	F''	0.6770	0.6874	0.6979	0.7085	0.7192	0.7299	0.7406	0.7515	0.7624	0.7733
1.30 TO 1.39	F'	0.3509	0.3523	0.3536	0.3548	0.3560	0.3571	0.3582	0.3591	0.3600	0.3608
	F''	0.7844	0.7954	0.8066	0.8178	0.8291	0.8404	0.8518	0.8632	0.8748	0.8863
1.40 TO 1.49	F'	0.3616	0.3623	0.3630	0.3636	0.3642	0.3647	0.3651	0.3654	0.3656	0.3658
	F''	0.8979	0.9095	0.9211	0.9328	0.9446	0.9564	0.9682	0.9802	0.9921	1.0041
1.50 TO 1.59	F'	0.3660	0.3660	0.3660	0.3658	0.3656	0.3654	0.3650	0.3646	0.3641	0.3635
	F''	1.0162	1.0283	1.0405	1.0528	1.0650	1.0774	1.0898	1.1022	1.1147	1.1272
1.60 TO 1.69	F'	0.3629	0.3621	0.3613	0.3604	0.3594	0.3583	0.3572	0.3559	0.3546	0.3532
	F''	1.1398	1.1525	1.1652	1.1779	1.1907	1.2035	1.2164	1.2294	1.2423	1.2554
1.70 TO 1.79	F'	0.3517	0.3501	0.3470	0.3451	0.3432	0.3412	0.3387	0.3365	0.3342	0.3318
	F''	1.2685	1.2816	1.2948	1.3079	1.3212	1.3344	1.3477	1.3611	1.3745	1.3879
1.80 TO 1.89	F'	0.3293	0.3267	0.3240	0.3212	0.3184	0.3154	0.3123	0.3091	0.3058	0.3025
	F''	1.4014	1.4149	1.4285	1.4421	1.4557	1.4694	1.4832	1.4969	1.5107	1.5246
1.90 TO 1.99	F'	0.2990	0.2954	0.2917	0.2879	0.2840	0.2800	0.2758	0.2716	0.2673	0.2628
	F''	1.5385	1.5524	1.5664	1.5804	1.5944	1.6085	1.6227	1.6368	1.6510	1.6653
2.00 TO 2.09	F'	0.2582	0.2535	0.2487	0.2438	0.2388	0.2336	0.2283	0.2229	0.2174	0.2118
	F''	1.6796	1.6939	1.7082	1.7226	1.7371	1.7515	1.7661	1.7806	1.7952	1.8098
2.10 TO 2.19	F'	0.2060	0.2001	0.1941	0.1879	0.1816	0.1752	0.1687	0.1620	0.1552	0.1482
	F''	1.8244	1.8391	1.8539	1.8686	1.8834	1.8983	1.9131	1.9280	1.9430	1.9579
2.20 TO 2.29	F'	0.1411	0.1339	0.1265	0.1187	0.1110	0.1027	0.0947	0.0866	0.0783	0.0699
	F''	1.9729	1.9880	2.0031	2.0182	2.0333	2.0485	2.0637	2.0789	2.0942	2.1095
2.30 TO 2.39	F'	0.0613	0.0525	0.0436	0.0345	0.0253	0.0158	0.0063	-0.0035	-0.0134	-0.0235
	F''	2.1248	2.1402	2.1556	2.1710	2.1865	2.2020	2.2175	2.2331	2.2486	2.2643
2.40 TO 2.49	F'	-0.0338	-0.0443	-0.0549	-0.0658	-0.0768	-0.0880	-0.0995	-0.1111	-0.1229	-0.1349
	F''	2.2799	2.2956	2.3113	2.3271	2.3428	2.3586	2.3745	2.3903	2.4062	2.4222
2.50 TO 2.59	F'	-0.1471	-0.1596	-0.1722	-0.1851	-0.1982	-0.2115	-0.2251	-0.2389	-0.2529	-0.2672
	F''	2.4381	2.4541	2.4701	2.4861	2.5022	2.5183	2.5344	2.5506	2.5668	2.5830
2.60 TO 2.69	F'	-0.2817	-0.2964	-0.3115	-0.3267	-0.3423	-0.3579	-0.3740	-0.3903	-0.4070	-0.4240
	F''	2.5992	2.6155	2.6318	2.6481	2.6645	2.6808	2.6973	2.7137	2.7302	2.7467
2.70 TO 2.79	F'	-0.4412	-0.4588	-0.4767	-0.4949	-0.5135	-0.5323	-0.5516	-0.5711	-0.5911	-0.6114
	F''	2.7632	2.7797	2.7963	2.8129	2.8295	2.8462	2.8629	2.8796	2.8963	2.9131
2.80 TO 2.89	F'	-0.6321	-0.6532	-0.6747	-0.6966	-0.7189	-0.7417	-0.7649	-0.7886	-0.8127	-0.8371

0.8374

F''	2.9299	2.9467	2.9635	2.9804	2.9973	3.0142	3.0311	3.0481	3.0651	3.0821
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ATOMIC SYMBOL = CA ATOMIC NUMBER = 20

0.10 TO 0.19 F'	-0.0469	-0.0445	-0.0420	-0.0394	-0.0366	-0.0336	-0.0306	-0.0275	-0.0242	-
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0.0209

F''	0.0053	0.0065	0.0079	0.0093	0.0109	0.0127	0.0145	0.0165	0.0186	0.0209
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0.20 TO 0.29 F'	-0.0174	-0.0139	-0.0103	-0.0066	-0.0028	0.0010	0.0049	0.0089	0.0129	0.0170
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F''	0.0233	0.0258	0.0284	0.0312	0.0341	0.0371	0.0403	0.0436	0.0470	0.0506
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0.30 TO 0.39 F'	0.0212	0.0254	0.0296	0.0339	0.0382	0.0425	0.0469	0.0513	0.0558	0.0602
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F''	0.0542	0.0581	0.0620	0.0661	0.0703	0.0746	0.0790	0.0836	0.0883	0.0932
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0.40 TO 0.49 F'	0.0647	0.0692	0.0737	0.0782	0.0827	0.0873	0.0918	0.0963	0.1009	0.1054
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F''	0.0981	0.1032	0.1084	0.1138	0.1193	0.1249	0.1306	0.1364	0.1422	0.1482
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0.50 TO 0.59 F'	0.1100	0.1146	0.1191	0.1237	0.1283	0.1328	0.1374	0.1419	0.1464	0.1509
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F''	0.1543	0.1605	0.1668	0.1732	0.1797	0.1863	0.1931	0.1999	0.2069	0.2139
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0.60 TO 0.69 F'	0.1554	0.1599	0.1644	0.1689	0.1733	0.1777	0.1821	0.1864	0.1908	0.1951
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F''	0.2211	0.2284	0.2358	0.2433	0.2509	0.2586	0.2664	0.2743	0.2823	0.2905
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0.70 TO 0.79 F'	0.1994	0.2025	0.2066	0.2108	0.2149	0.2189	0.2229	0.2269	0.2309	0.2348
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F''	0.2987	0.3070	0.3154	0.3239	0.3324	0.3411	0.3499	0.3587	0.3677	0.3767
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0.80 TO 0.89 F'	0.2386	0.2425	0.2462	0.2500	0.2537	0.2573	0.2609	0.2645	0.2680	0.2715
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F''	0.3858	0.3950	0.4044	0.4138	0.4233	0.4328	0.4425	0.4523	0.4621	0.4721
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0.90 TO 0.99 F'	0.2749	0.2782	0.2815	0.2848	0.2880	0.2911	0.2942	0.2972	0.3002	0.3031
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F''	0.4821	0.4922	0.5024	0.5127	0.5231	0.5335	0.5441	0.5547	0.5654	0.5762
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1.00 TO 1.09 F'	0.3060	0.3087	0.3115	0.3141	0.3167	0.3193	0.3217	0.3241	0.3264	0.3287
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F''	0.5871	0.5980	0.6091	0.6202	0.6314	0.6427	0.6541	0.6655	0.6770	0.6886
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1.10 TO 1.19 F'	0.3309	0.3330	0.3350	0.3370	0.3389	0.3407	0.3425	0.3441	0.3457	0.3472
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F''	0.7003	0.7121	0.7239	0.7359	0.7478	0.7599	0.7721	0.7843	0.7966	0.8090
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1.20 TO 1.29 F'	0.3486	0.3500	0.3512	0.3524	0.3535	0.3545	0.3554	0.3562	0.3569	0.3575
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F''	0.8214	0.8340	0.8466	0.8592	0.8720	0.8848	0.8977	0.9107	0.9237	0.9369
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1.30 TO 1.39 F'	0.3580	0.3584	0.3587	0.3589	0.3590	0.3590	0.3588	0.3585	0.3581	0.3575
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F''	0.9500	0.9633	0.9766	0.9900	1.0035	1.0171	1.0307	1.0444	1.0581	1.0719
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1.40 TO 1.49 F'	0.3571	0.3566	0.3560	0.3553	0.3546	0.3537	0.3527	0.3516	0.3504	0.3491
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F''	1.0857	1.0995	1.1134	1.1274	1.1414	1.1554	1.1696	1.1838	1.1980	1.2123
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1.50 TO 1.59 F'	0.3477	0.3461	0.3445	0.3427	0.3402	0.3382	0.3361	0.3339	0.3315	0.3290
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F''	1.2267	1.2411	1.2556	1.2701	1.2847	1.2994	1.3141	1.3288	1.3436	1.3585
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1.60 TO 1.69 F'	0.3265	0.3238	0.3210	0.3180	0.3150	0.3118	0.3085	0.3050	0.3015	0.2978
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F''	1.3734	1.3884	1.4034	1.4184	1.4336	1.4487	1.4640	1.4792	1.4946	1.5099
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1.70 TO 1.79 F'	0.2940	0.2901	0.2860	0.2818	0.2774	0.2730	0.2684	0.2636	0.2587	0.2537
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F''	1.5254	1.5408	1.5564	1.5719	1.5876	1.6032	1.6190	1.6347	1.6505	1.6664
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1.80 TO 1.89 F'	0.2485	0.2432	0.2377	0.2321	0.2264	0.2205	0.2144	0.2082	0.2018	0.1952
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F''	1.6823	1.6983	1.7143	1.7303	1.7464	1.7626	1.7788	1.7950	1.8113	1.8276
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1.90 TO 1.99 F'	0.1885	0.1813	0.1743	0.1671	0.1598	0.1522	0.1445	0.1367	0.1286	0.1204
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F''	1.8440	1.8604	1.8769	1.8934	1.9099	1.9265	1.9431	1.9598	1.9765	1.9933
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2.00 TO 2.09 F'	0.1120	0.1034	0.0947	0.0857	0.0765	0.0672	0.0577	0.0479	0.0380	0.0279
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F''	2.0101	2.0269	2.0438	2.0607	2.0777	2.0947	2.1117	2.1288	2.1460	2.1631
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2.10 TO 2.19 F'	0.0175	0.0069	-0.0038	-0.0148	-0.0260	-0.0375	-0.0491	-0.0610	-0.0731	-0.0855
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F''	2.1803	2.1976	2.2149	2.2322	2.2496	2.2670	2.2844	2.3019	2.3194	2.3369
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2.20 TO 2.29 F'	-0.0981	-0.1110	-0.1241	-0.1374	-0.1511	-0.1649	-0.1791	-0.1935	-0.2083	-
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0.2233

F''	2.3545	2.3722	2.3898	2.4075	2.4253	2.4431	2.4609	2.4787	2.4966	2.5145
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2.30 TO 2.39 F'	-0.2385	-0.2541	-0.2700	-0.2862	-0.3028	-0.3196	-0.3368	-0.3551	-0.3730	-
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0.3912

F''	2.5325	2.5505	2.5685	2.5866	2.6047	2.6228	2.6410	2.6591	2.6773	2.6956
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2.40 TO 2.49 F'	-0.4098	-0.4287	-0.4481	-0.4678	-0.4879	-0.5084	-0.5294	-0.5507	-0.5726	-
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0.5948

F''	2.7138	2.7321	2.7504	2.7688	2.7872	2.8056	2.8241	2.8426	2.8611	2.8796	
2.50 TO 2.59 F'	-0.6176	-0.6408	-0.6645	-0.6888	-0.7135	-0.7388	-0.7647	-0.7911	-0.8182	-	
0.8458											
F''	2.8982	2.9168	2.9355	2.9541	2.9728	2.9916	3.0103	3.0291	3.0480	3.0668	
2.60 TO 2.69 F'	-0.8742	-0.9031	-0.9328	-0.9632	-0.9944	-1.0263	-1.0590	-1.0926	-1.1271	-	
1.1625											
F''	3.0857	3.1046	3.1235	3.1425	3.1615	3.1805	3.1996	3.2187	3.2378	3.2569	
2.70 TO 2.79 F'	-1.1988	-1.2362	-1.2746	-1.3142	-1.3550	-1.3970	-1.4403	-1.4850	-1.5312	-	
1.5790											
F''	3.2761	3.2953	3.3145	3.3337	3.3530	3.3723	3.3916	3.4110	3.4304	3.4498	
2.80 TO 2.89 F'	-1.6285	-1.6798	-1.7330	-1.7883	-1.8459	-1.9058	-1.9684	-2.0339	-2.1026	-	
2.1747											
F''	3.4692	3.4887	3.5082	3.5277	3.5472	3.5668	3.5864	3.6060	3.6256	3.6453	
ATOMIC SYMBOL = SC											
ATOMIC NUMBER = 21											
0.10 TO 0.19 F'	-0.0524	-0.0496	-0.0466	-0.0435	-0.0402	-0.0368	-0.0333	-0.0296	-0.0258	-	
0.0219											
F''	0.0066	0.0081	0.0098	0.0116	0.0136	0.0157	0.0180	0.0205	0.0231	0.0258	
0.20 TO 0.29 F'	-0.0179	-0.0138	-0.0096	-0.0054	-0.0010	0.0034	0.0079	0.0125	0.0171	0.0218	
F''	0.0288	0.0319	0.0351	0.0385	0.0421	0.0458	0.0496	0.0537	0.0579	0.0622	
0.30 TO 0.39 F'	0.0265	0.0313	0.0362	0.0410	0.0459	0.0509	0.0558	0.0608	0.0658	0.0709	
F''	0.0667	0.0713	0.0762	0.0811	0.0862	0.0915	0.0969	0.1025	0.1083	0.1141	
0.40 TO 0.49 F'	0.0759	0.0809	0.0860	0.0910	0.0960	0.1010	0.1060	0.1110	0.1160	0.1210	
F''	0.1202	0.1264	0.1327	0.1392	0.1459	0.1527	0.1596	0.1667	0.1738	0.1810	
0.50 TO 0.59 F'	0.1261	0.1311	0.1361	0.1411	0.1461	0.1511	0.1560	0.1609	0.1658	0.1707	
F''	0.1884	0.1959	0.2035	0.2112	0.2191	0.2272	0.2353	0.2436	0.2520	0.2606	
0.60 TO 0.69 F'	0.1755	0.1803	0.1851	0.1899	0.1937	0.1983	0.2029	0.2074	0.2119	0.2163	
F''	0.2692	0.2780	0.2869	0.2960	0.3051	0.3144	0.3238	0.3332	0.3428	0.3526	
0.70 TO 0.79 F'	0.2207	0.2250	0.2293	0.2336	0.2378	0.2419	0.2460	0.2501	0.2540	0.2580	
F''	0.3624	0.3723	0.3824	0.3926	0.4028	0.4132	0.4237	0.4343	0.4451	0.4559	
0.80 TO 0.89 F'	0.2618	0.2656	0.2694	0.2730	0.2767	0.2802	0.2837	0.2871	0.2904	0.2937	
F''	0.4668	0.4779	0.4890	0.5003	0.5116	0.5231	0.5347	0.5463	0.5581	0.5700	
0.90 TO 0.99 F'	0.2969	0.3000	0.3031	0.3060	0.3089	0.3118	0.3145	0.3172	0.3197	0.3222	
F''	0.5819	0.5940	0.6062	0.6185	0.6308	0.6433	0.6559	0.6686	0.6813	0.6942	
1.00 TO 1.09 F'	0.3246	0.3270	0.3292	0.3314	0.3334	0.3354	0.3373	0.3390	0.3407	0.3423	
F''	0.7071	0.7202	0.7333	0.7466	0.7599	0.7733	0.7869	0.8005	0.8142	0.8280	
1.10 TO 1.19 F'	0.3438	0.3452	0.3465	0.3477	0.3488	0.3498	0.3507	0.3515	0.3522	0.3527	
F''	0.8419	0.8558	0.8699	0.8841	0.8983	0.9127	0.9271	0.9416	0.9562	0.9709	
1.20 TO 1.29 F'	0.3532	0.3535	0.3538	0.3539	0.3539	0.3538	0.3535	0.3532	0.3527	0.3521	
F''	0.9856	1.0005	1.0154	1.0305	1.0456	1.0608	1.0761	1.0914	1.1069	1.1224	
1.30 TO 1.39 F'	0.3513	0.3505	0.3480	0.3468	0.3456	0.3441	0.3426	0.3409	0.3355	0.3334	
F''	1.1380	1.1537	1.1695	1.1853	1.2013	1.2173	1.2333	1.2495	1.2657	1.2819	
1.40 TO 1.49 F'	0.3312	0.3289	0.3264	0.3238	0.3210	0.3181	0.3150	0.3118	0.3084	0.3049	
F''	1.2981	1.3144	1.3308	1.3472	1.3637	1.3803	1.3969	1.4136	1.4303	1.4471	
1.50 TO 1.59 F'	0.3012	0.2974	0.2934	0.2893	0.2850	0.2805	0.2759	0.2711	0.2661	0.2610	
F''	1.4640	1.4810	1.4980	1.5150	1.5322	1.5493	1.5666	1.5839	1.6013	1.6187	
1.60 TO 1.69 F'	0.2557	0.2502	0.2446	0.2387	0.2327	0.2264	0.2200	0.2134	0.2067	0.1997	
F''	1.6362	1.6538	1.6714	1.6890	1.7068	1.7245	1.7424	1.7603	1.7782	1.7962	
1.70 TO 1.79 F'	0.1926	0.1853	0.1777	0.1700	0.1621	0.1539	0.1456	0.1370	0.1282	0.1192	
F''	1.8143	1.8324	1.8506	1.8688	1.8871	1.9054	1.9238	1.9422	1.9607	1.9793	
1.80 TO 1.89 F'	0.1100	0.1005	0.0909	0.0810	0.0708	0.0604	0.0498	0.0390	0.0278	0.0165	
F''	1.9979	2.0165	2.0352	2.0540	2.0728	2.0916	2.1105	2.1295	2.1485	2.1675	
1.90 TO 1.99 F'	0.0048	-0.0071	-0.0192	-0.0317	-0.0444	-0.0574	-0.0707	-0.0843	-0.0982	-0.1123	
F''	2.1866	2.2058	2.2250	2.2442	2.2635	2.2828	2.3022	2.3217	2.3411	2.3607	
2.00 TO 2.09 F'	-0.1268	-0.1417	-0.1568	-0.1723	-0.1881	-0.2042	-0.2207	-0.2376	-0.2548	-	

0.2724  
 F'' 2.3802 2.3998 2.4195 2.4392 2.4590 2.4788 2.4986 2.5185 2.5384 2.5584  
 2.10 TO 2.19 F' -0.2904 -0.3088 -0.3276 -0.3479 -0.3676 -0.3876 -0.4081 -0.4291 -0.4506 -  
 0.4725  
 F'' 2.5784 2.5985 2.6186 2.6387 2.6588 2.6790 2.6992 2.7194 2.7397 2.7600  
 2.20 TO 2.29 F' -0.4949 -0.5178 -0.5413 -0.5653 -0.5899 -0.6150 -0.6407 -0.6671 -0.6941 -  
 0.7217  
 F'' 2.7804 2.8008 2.8212 2.8417 2.8622 2.8828 2.9034 2.9240 2.9447 2.9654  
 2.30 TO 2.39 F' -0.7501 -0.7791 -0.8089 -0.8394 -0.8708 -0.9029 -0.9360 -0.9699 -1.0048 -  
 1.0406  
 F'' 2.9861 3.0069 3.0277 3.0486 3.0694 3.0904 3.1113 3.1323 3.1533 3.1744  
 2.40 TO 2.49 F' -1.0775 -1.1155 -1.1546 -1.1950 -1.2366 -1.2795 -1.3239 -1.3697 -1.4172 -  
 1.4664  
 F'' 3.1955 3.2166 3.2378 3.2590 3.2802 3.3015 3.3228 3.3441 3.3654 3.3868  
 2.50 TO 2.59 F' -1.5173 -1.5703 -1.6253 -1.6827 -1.7424 -1.8049 -1.8702 -1.9388 -2.0108 -  
 2.0868  
 F'' 3.4083 3.4297 3.4512 3.4727 3.4943 3.5159 3.5375 3.5591 3.5808 3.6025  
 2.60 TO 2.69 F' -2.1670 -2.2522 -2.3429 -2.4100 -2.5087 -2.6218 -2.7452 -2.8812 -3.0326 -  
 3.2034  
 F'' 3.6242 3.6460 3.6678 3.6896 3.7150 3.7405 3.7662 3.7921 3.8181 3.8444  
 2.70 TO 2.79 F' -3.3994 -3.6297 -3.9096 -4.2677 -4.7691 -5.6265 -8.9013 -5.5742 -4.8430 -  
 4.4171  
 F'' 3.8708 3.8974 3.9242 3.9512 3.9784 4.0058 0.4357 0.4386 0.4414 0.4443  
 2.80 TO 2.89 F' -4.1184 -3.8898 -3.7053 -3.5513 -3.4195 -3.3045 -3.2028 -3.1118 -3.0295 -  
 2.9546  
 F'' 0.4471 0.4500 0.4529 0.4557 0.4586 0.4615 0.4644 0.4673 0.4702 0.4732  
 ATOMIC SYMBOL = TI ATOMIC NUMBER = 22  
 0.10 TO 0.19 F' -0.0564 -0.0531 -0.0496 -0.0460 -0.0421 -0.0382 -0.0341 -0.0298 -0.0254 -  
 0.0209  
 F'' 0.0081 0.0100 0.0120 0.0142 0.0167 0.0193 0.0221 0.0251 0.0283 0.0317  
 0.20 TO 0.29 F' -0.0163 -0.0116 -0.0068 -0.0020 0.0030 0.0081 0.0132 0.0183 0.0236 0.0289  
 F'' 0.0353 0.0391 0.0430 0.0472 0.0515 0.0561 0.0608 0.0657 0.0708 0.0760  
 0.30 TO 0.39 F' 0.0342 0.0396 0.0450 0.0505 0.0560 0.0615 0.0670 0.0726 0.0781 0.0837  
 F'' 0.0815 0.0871 0.0929 0.0989 0.1051 0.1114 0.1180 0.1247 0.1316 0.1386  
 0.40 TO 0.49 F' 0.0893 0.0948 0.1004 0.1059 0.1114 0.1169 0.1223 0.1278 0.1333 0.1388  
 F'' 0.1459 0.1533 0.1609 0.1687 0.1766 0.1847 0.1930 0.2014 0.2099 0.2186  
 0.50 TO 0.59 F' 0.1442 0.1496 0.1551 0.1604 0.1658 0.1711 0.1764 0.1816 0.1862 0.1913  
 F'' 0.2274 0.2364 0.2455 0.2548 0.2642 0.2738 0.2836 0.2935 0.3035 0.3137  
 0.60 TO 0.69 F' 0.1963 0.2013 0.2062 0.2111 0.2159 0.2207 0.2254 0.2300 0.2346 0.2391  
 F'' 0.3240 0.3345 0.3451 0.3558 0.3667 0.3777 0.3888 0.4001 0.4115 0.4231  
 0.70 TO 0.79 F' 0.2436 0.2479 0.2522 0.2565 0.2606 0.2647 0.2687 0.2727 0.2765 0.2803  
 F'' 0.4347 0.4465 0.4585 0.4706 0.4828 0.4951 0.5076 0.5201 0.5328 0.5457  
 0.80 TO 0.89 F' 0.2840 0.2876 0.2911 0.2945 0.2978 0.3010 0.3042 0.3072 0.3102 0.3130  
 F'' 0.5586 0.5717 0.5849 0.5983 0.6117 0.6253 0.6390 0.6528 0.6667 0.6807  
 0.90 TO 0.99 F' 0.3158 0.3184 0.3210 0.3234 0.3257 0.3280 0.3301 0.3321 0.3339 0.3357  
 F'' 0.6949 0.7092 0.7236 0.7381 0.7527 0.7674 0.7823 0.7972 0.8123 0.8275  
 1.00 TO 1.09 F' 0.3374 0.3389 0.3403 0.3416 0.3428 0.3438 0.3447 0.3455 0.3461 0.3466  
 F'' 0.8427 0.8581 0.8737 0.8893 0.9050 0.9208 0.9368 0.9528 0.9689 0.9852  
 1.10 TO 1.19 F' 0.3470 0.3473 0.3474 0.3473 0.3472 0.3468 0.3464 0.3457 0.3436 0.3427  
 F'' 1.0015 1.0180 1.0346 1.0512 1.0680 1.0849 1.1018 1.1189 1.1361 1.1533  
 1.20 TO 1.29 F' 0.3416 0.3403 0.3389 0.3373 0.3356 0.3297 0.3276 0.3252 0.3227 0.3201  
 F'' 1.1707 1.1881 1.2056 1.2233 1.2410 1.2588 1.2766 1.2944 1.3123 1.3303  
 1.30 TO 1.39 F' 0.3172 0.3142 0.3110 0.3076 0.3040 0.3002 0.2962 0.2920 0.2876 0.2829  
 F'' 1.3484 1.3666 1.3849 1.4032 1.4217 1.4402 1.4588 1.4775 1.4962 1.5151

1.40 TO 1.49 F'	0.2781	0.2732	0.2680	0.2627	0.2571	0.2513	0.2453	0.2391	0.2327	0.2260	
F''	1.5340	1.5529	1.5720	1.5911	1.6102	1.6295	1.6488	1.6682	1.6876	1.7072	
1.50 TO 1.59 F'	0.2192	0.2121	0.2048	0.1973	0.1895	0.1815	0.1732	0.1647	0.1560	0.1470	
F''	1.7268	1.7464	1.7662	1.7860	1.8058	1.8258	1.8458	1.8659	1.8860	1.9062	
1.60 TO 1.69 F'	0.1377	0.1282	0.1184	0.1083	0.0980	0.0874	0.0765	0.0653	0.0539	0.0421	
F''	1.9265	1.9468	1.9672	1.9877	2.0082	2.0288	2.0495	2.0702	2.0910	2.1118	
1.70 TO 1.79 F'	0.0300	0.0176	0.0049	-0.0081	-0.0214	-0.0351	-0.0491	-0.0635	-0.0782	-0.0933	
F''	2.1327	2.1537	2.1747	2.1958	2.2169	2.2381	2.2594	2.2807	2.3021	2.3235	
1.80 TO 1.89 F'	-0.1087	-0.1245	-0.1407	-0.1573	-0.1744	-0.1918	-0.2096	-0.2279	-0.2466	-	
0.2658	F''	2.3450	2.3665	2.3881	2.4098	2.4315	2.4533	2.4751	2.4970	2.5189	2.5409
1.90 TO 1.99 F'	-0.2854	-0.3055	-0.3262	-0.3489	-0.3706	-0.3928	-0.4155	-0.4388	-0.4627	-	
0.4872	F''	2.5629	2.5850	2.6072	2.6293	2.6514	2.6736	2.6959	2.7182	2.7405	2.7629
2.00 TO 2.09 F'	-0.5123	-0.5381	-0.5645	-0.5916	-0.6194	-0.6479	-0.6772	-0.7073	-0.7382	-	
0.7699	F''	2.7854	2.8078	2.8304	2.8529	2.8756	2.8982	2.9209	2.9437	2.9665	2.9893
2.10 TO 2.19 F'	-0.8026	-0.8362	-0.8707	-0.9063	-0.9430	-0.9807	-1.0197	-1.0598	-1.1013	-	
1.1442	F''	3.0122	3.0351	3.0581	3.0811	3.1042	3.1273	3.1504	3.1736	3.1968	3.2200
2.20 TO 2.29 F'	-1.1885	-1.2344	-1.2819	-1.3312	-1.3824	-1.4356	-1.4909	-1.5486	-1.6089	-	
1.6718	F''	3.2433	3.2667	3.2900	3.3134	3.3369	3.3604	3.3839	3.4075	3.4311	3.4547
2.30 TO 2.39 F'	-1.7378	-1.8071	-1.8800	-1.9570	-2.0384	-2.1249	-2.2172	-2.3160	-2.3859	-	
2.5013	F''	3.4784	3.5021	3.5259	3.5496	3.5735	3.5973	3.6212	3.6452	3.6694	3.6974
2.40 TO 2.49 F'	-2.6278	-2.7676	-2.9239	-3.1011	-3.3058	-3.5487	-3.8479	-4.2393	-4.8116	-	
5.9256	F''	3.7257	3.7541	3.7828	3.8117	3.8408	3.8702	3.8998	3.9297	3.9598	3.9901
2.50 TO 2.59 F'	-6.5719	-5.1252	-4.5354	-4.1646	-3.8961	-3.6867	-3.5159	-3.3721	-3.2484	-	
3.1400	F''	0.4443	0.4475	0.4507	0.4539	0.4571	0.4604	0.4636	0.4669	0.4701	0.4734
2.60 TO 2.69 F'	-3.0438	-2.9575	-2.8793	-2.8080	-2.7424	-2.6819	-2.6257	-2.5734	-2.5243	-	
2.4783	F''	0.4767	0.4799	0.4832	0.4865	0.4899	0.4932	0.4965	0.4999	0.5032	0.5066
2.70 TO 2.79 F'	-2.4350	-2.3940	-2.3553	-2.3185	-2.2835	-2.2501	-2.2183	-2.1879	-2.1587	-	
2.1307	F''	0.5099	0.5133	0.5167	0.5201	0.5235	0.5269	0.5303	0.5338	0.5372	0.5407
2.80 TO 2.89 F'	-2.1039	-2.0780	-2.0532	-2.0292	-2.0060	-1.9837	-1.9621	-1.9411	-1.9209	-	
1.9012	F''	0.5441	0.5476	0.5511	0.5545	0.5580	0.5615	0.5651	0.5686	0.5721	0.5756
ATOMIC SYMBOL = V    ATOMIC NUMBER = 23											
0.10 TO 0.19 F'	-0.0623	-0.0585	-0.0544	-0.0502	-0.0458	-0.0413	-0.0365	-0.0317	-0.0267	-	
0.0215	F''	0.0099	0.0122	0.0146	0.0173	0.0203	0.0235	0.0268	0.0305	0.0343	0.0384
0.20 TO 0.29 F'	-0.0163	-0.0110	-0.0055	0.0000	0.0057	0.0114	0.0171	0.0230	0.0289	0.0348	
F''	0.0427	0.0472	0.0520	0.0570	0.0622	0.0676	0.0732	0.0791	0.0852	0.0915	
0.30 TO 0.39 F'	0.0408	0.0469	0.0529	0.0590	0.0651	0.0713	0.0774	0.0835	0.0897	0.0958	
F''	0.0980	0.1047	0.1117	0.1188	0.1262	0.1338	0.1416	0.1496	0.1578	0.1662	
0.40 TO 0.49 F'	0.1019	0.1080	0.1140	0.1200	0.1260	0.1318	0.1376	0.1434	0.1493	0.1551	
F''	0.1749	0.1837	0.1928	0.2020	0.2115	0.2211	0.2310	0.2410	0.2511	0.2614	
0.50 TO 0.59 F'	0.1610	0.1668	0.1725	0.1778	0.1834	0.1889	0.1944	0.1998	0.2051	0.2103	
F''	0.2718	0.2825	0.2933	0.3043	0.3155	0.3268	0.3383	0.3500	0.3618	0.3739	
0.60 TO 0.69 F'	0.2155	0.2206	0.2257	0.2306	0.2355	0.2403	0.2450	0.2496	0.2542	0.2586	

	F''	0.3860	0.3984	0.4109	0.4235	0.4363	0.4493	0.4624	0.4757	0.4892	0.5028
0.70 TO 0.79	F'	0.2630	0.2672	0.2714	0.2754	0.2793	0.2832	0.2869	0.2905	0.2940	0.2974
	F''	0.5165	0.5304	0.5445	0.5587	0.5730	0.5875	0.6022	0.6170	0.6319	0.6470
0.80 TO 0.89	F'	0.3007	0.3039	0.3069	0.3098	0.3126	0.3153	0.3178	0.3202	0.3225	0.3246
	F''	0.6622	0.6775	0.6930	0.7087	0.7244	0.7404	0.7564	0.7726	0.7889	0.8054
0.90 TO 0.99	F'	0.3266	0.3285	0.3302	0.3318	0.3332	0.3345	0.3356	0.3365	0.3373	0.3380
	F''	0.8220	0.8387	0.8555	0.8725	0.8896	0.9069	0.9243	0.9417	0.9594	0.9771
1.00 TO 1.09	F'	0.3385	0.3388	0.3390	0.3390	0.3388	0.3384	0.3367	0.3360	0.3350	0.3339
	F''	0.9950	1.0130	1.0311	1.0494	1.0677	1.0862	1.1048	1.1236	1.1424	1.1613
1.10 TO 1.19	F'	0.3326	0.3312	0.3295	0.3276	0.3215	0.3192	0.3166	0.3139	0.3109	0.3077
	F''	1.1804	1.1996	1.2189	1.2383	1.2577	1.2772	1.2967	1.3164	1.3362	1.3560
1.20 TO 1.29	F'	0.3044	0.3008	0.2969	0.2929	0.2887	0.2842	0.2795	0.2741	0.2689	0.2628
	F''	1.3760	1.3961	1.4162	1.4365	1.4569	1.4773	1.4979	1.5185	1.5393	1.5601
1.30 TO 1.39	F'	0.2571	0.2511	0.2450	0.2385	0.2318	0.2248	0.2176	0.2101	0.2023	0.1943
	F''	1.5811	1.6021	1.6232	1.6444	1.6657	1.6872	1.7086	1.7302	1.7519	1.7737
1.40 TO 1.49	F'	0.1859	0.1772	0.1682	0.1589	0.1493	0.1394	0.1292	0.1187	0.1079	0.0967
	F''	1.7955	1.8173	1.8392	1.8612	1.8833	1.9055	1.9277	1.9501	1.9725	1.9950
1.50 TO 1.59	F'	0.0852	0.0734	0.0612	0.0487	0.0358	0.0225	0.0088	-0.0052	-0.0196	-0.0344
	F''	2.0175	2.0401	2.0629	2.0856	2.1085	2.1314	2.1544	2.1775	2.2006	2.2239
1.60 TO 1.69	F'	-0.0496	-0.0653	-0.0814	-0.0979	-0.1148	-0.1322	-0.1501	-0.1685	-0.1873	-0.2067
	F''	2.2472	2.2705	2.2939	2.3174	2.3410	2.3646	2.3883	2.4121	2.4359	2.4599
1.70 TO 1.79	F'	-0.2266	-0.2470	-0.2680	-0.2895	-0.3116	-0.3360	-0.3594	-0.3834	-0.4080	-0.4334
	F''	2.4838	2.5079	2.5320	2.5561	2.5803	2.6046	2.6288	2.6531	2.6775	2.7019
1.80 TO 1.89	F'	-0.4594	-0.4862	-0.5137	-0.5419	-0.5710	-0.6009	-0.6317	-0.6634	-0.6960	-0.7296
	F''	2.7264	2.7509	2.7755	2.8002	2.8248	2.8496	2.8744	2.8992	2.9241	2.9491
1.90 TO 1.99	F'	-0.7643	-0.8000	-0.8368	-0.8749	-0.9141	-0.9547	-0.9967	-1.0401	-1.0851	-1.1317
	F''	2.9741	2.9991	3.0242	3.0494	3.0746	3.0998	3.1251	3.1505	3.1758	3.2013
2.00 TO 2.09	F'	-1.1801	-1.2303	-1.2826	-1.3370	-1.3937	-1.4529	-1.5148	-1.5797	-1.6479	-1.7196
	F''	3.2268	3.2523	3.2779	3.3035	3.3291	3.3549	3.3806	3.4064	3.4322	3.4581
2.10 TO 2.19	F'	-1.7953	-1.8753	-1.9604	-2.0510	-2.1479	-2.2523	-2.3652	-2.4453	-2.5812	-2.7329
	F''	3.4840	3.5100	3.5360	3.5621	3.5882	3.6143	3.6405	3.6707	3.7024	3.7343
2.20 TO 2.29	F'	-2.9045	-3.1020	-3.3349	-3.6190	-3.9848	-4.5027	-5.4160	-7.4254	-5.1670	-4.4965
	F''	3.7666	3.7992	3.8321	3.8653	3.8989	3.9328	3.9670	0.4505	0.4541	0.4577
2.30 TO 2.39	F'	-4.0971	-3.8147	-3.5977	-3.4223	-3.2757	-3.1502	-3.0407	-2.9438	-2.8571	-2.7788
	F''	0.4613	0.4649	0.4685	0.4721	0.4758	0.4794	0.4831	0.4868	0.4904	0.4941
2.40 TO 2.49	F'	-2.7075	-2.6421	-2.5817	-2.5258	-2.4738	-2.4251	-2.3795	-2.3365	-2.2960	-2.2576
	F''	0.4978	0.5016	0.5053	0.5090	0.5128	0.5166	0.5203	0.5241	0.5279	0.5317
2.50 TO 2.59	F'	-2.2212	-2.1866	-2.1537	-2.1222	-2.0922	-2.0634	-2.0358	-2.0093	-1.9838	-1.9593
	F''	0.5355	0.5394	0.5432	0.5471	0.5509	0.5548	0.5587	0.5626	0.5665	0.5704
2.60 TO 2.69	F'	-1.9357	-1.9129	-1.8909	-1.8696	-1.8490	-1.8290	-1.8097	-1.7909	-1.7727	-1.7550
	F''	0.5744	0.5783	0.5823	0.5862	0.5902	0.5942	0.5982	0.6022	0.6062	0.6102
2.70 TO 2.79	F'	-1.7378	-1.7210	-1.7047	-1.6889	-1.6734	-1.6583	-1.6436	-1.6292	-1.6152	-1.6014



F''	0.6143	0.6183	0.6224	0.6265	0.6306	0.6347	0.6388	0.6429	0.6470	0.6511	
2.80 TO 2.89 F'	-1.5880	-1.5749	-1.5620	-1.5495	-1.5372	-1.5251	-1.5133	-1.5017	-1.4903	-	
1.4792											
F''	0.6553	0.6594	0.6636	0.6678	0.6720	0.6762	0.6804	0.6846	0.6889	0.6931	
ATOMIC SYMBOL = CR											
ATOMIC NUMBER = 24											
0.10 TO 0.19 F'	-0.0678	-0.0634	-0.0588	-0.0540	-0.0490	-0.0437	-0.0384	-0.0328	-0.0272	-	
0.0214											
F''	0.0120	0.0147	0.0177	0.0209	0.0244	0.0282	0.0323	0.0366	0.0412	0.0461	
0.20 TO 0.29 F'	-0.0154	-0.0094	-0.0033	0.0030	0.0093	0.0157	0.0222	0.0287	0.0353	0.0419	
F''	0.0512	0.0566	0.0623	0.0682	0.0744	0.0808	0.0875	0.0945	0.1017	0.1091	
0.30 TO 0.39 F'	0.0486	0.0553	0.0620	0.0688	0.0755	0.0823	0.0891	0.0958	0.1026	0.1093	
F''	0.1169	0.1248	0.1331	0.1415	0.1503	0.1592	0.1685	0.1779	0.1877	0.1976	
0.40 TO 0.49 F'	0.1159	0.1226	0.1292	0.1357	0.1421	0.1482	0.1540	0.1596	0.1658	0.1719	
F''	0.2078	0.2183	0.2289	0.2399	0.2510	0.2624	0.2741	0.2858	0.2977	0.3098	
0.50 TO 0.59 F'	0.1780	0.1840	0.1899	0.1957	0.2015	0.2072	0.2128	0.2183	0.2237	0.2290	
F''	0.3221	0.3346	0.3473	0.3602	0.3733	0.3866	0.4001	0.4138	0.4277	0.4417	
0.60 TO 0.69 F'	0.2342	0.2393	0.2443	0.2492	0.2540	0.2586	0.2632	0.2676	0.2719	0.2761	
F''	0.4560	0.4704	0.4850	0.4998	0.5148	0.5300	0.5454	0.5609	0.5766	0.5925	
0.70 TO 0.79 F'	0.2801	0.2840	0.2878	0.2914	0.2949	0.2983	0.3015	0.3046	0.3075	0.3102	
F''	0.6085	0.6248	0.6412	0.6577	0.6745	0.6914	0.7085	0.7257	0.7431	0.7607	
0.80 TO 0.89 F'	0.3128	0.3152	0.3175	0.3196	0.3216	0.3233	0.3249	0.3263	0.3275	0.3286	
F''	0.7784	0.7963	0.8143	0.8325	0.8509	0.8694	0.8881	0.9069	0.9259	0.9451	
0.90 TO 0.99 F'	0.3294	0.3301	0.3306	0.3308	0.3309	0.3308	0.3294	0.3288	0.3280	0.3270	
F''	0.9643	0.9838	1.0034	1.0231	1.0430	1.0630	1.0832	1.1035	1.1239	1.1445	
1.00 TO 1.09 F'	0.3258	0.3243	0.3227	0.3207	0.3145	0.3120	0.3093	0.3063	0.3031	0.2997	
F''	1.1652	1.1861	1.2071	1.2282	1.2494	1.2706	1.2919	1.3134	1.3349	1.3566	
1.10 TO 1.19 F'	0.2960	0.2920	0.2878	0.2833	0.2782	0.2726	0.2672	0.2616	0.2557	0.2495	
F''	1.3784	1.4003	1.4224	1.4446	1.4668	1.4892	1.5117	1.5344	1.5571	1.5799	
1.20 TO 1.29 F'	0.2431	0.2363	0.2292	0.2218	0.2141	0.2061	0.1977	0.1891	0.1800	0.1707	
F''	1.6029	1.6260	1.6492	1.6724	1.6958	1.7194	1.7430	1.7667	1.7905	1.8145	
1.30 TO 1.39 F'	0.1609	0.1509	0.1404	0.1296	0.1184	0.1068	0.0948	0.0824	0.0696	0.0563	
F''	1.8385	1.8626	1.8869	1.9112	1.9357	1.9602	1.9849	2.0096	2.0345	2.0594	
1.40 TO 1.49 F'	0.0426	0.0285	0.0139	-0.0011	-0.0166	-0.0325	-0.0490	-0.0659	-0.0834	-0.1014	
F''	2.0844	2.1094	2.1345	2.1597	2.1850	2.2104	2.2358	2.2614	2.2870	2.3127	
1.50 TO 1.59 F'	-0.1199	-0.1389	-0.1586	-0.1788	-0.1996	-0.2211	-0.2431	-0.2659	-0.2893	-	
0.3134											
F''	2.3385	2.3644	2.3903	2.4164	2.4425	2.4687	2.4950	2.5213	2.5478	2.5743	
1.60 TO 1.69 F'	-0.3399	-0.3656	-0.3920	-0.4192	-0.4472	-0.4761	-0.5059	-0.5366	-0.5683	-	
0.6009											
F''	2.6008	2.6274	2.6540	2.6807	2.7074	2.7342	2.7611	2.7881	2.8150	2.8421	
1.70 TO 1.79 F'	-0.6347	-0.6695	-0.7054	-0.7426	-0.7810	-0.8207	-0.8618	-0.9044	-0.9486	-	
0.9944											
F''	2.8692	2.8964	2.9236	2.9509	2.9783	3.0057	3.0332	3.0607	3.0883	3.1159	
1.80 TO 1.89 F'	-1.0420	-1.0915	-1.1429	-1.1966	-1.2525	-1.3110	-1.3721	-1.4362	-1.5035	-	
1.5744											
F''	3.1436	3.1713	3.1991	3.2270	3.2549	3.2828	3.3108	3.3389	3.3670	3.3951	
1.90 TO 1.99 F'	-1.6492	-1.7283	-1.8123	-1.9019	-1.9976	-2.1006	-2.2120	-2.3334	-2.4268	-	
2.5752											
F''	3.4233	3.4516	3.4799	3.5082	3.5366	3.5650	3.5935	3.6220	3.6543	3.6884	
2.00 TO 2.09 F'	-2.7428	-2.9351	-3.1610	-3.4349	-3.7840	-4.2689	-5.0818	-15.1314	-5.1770	-	
4.4400											
F''	3.7228	3.7576	3.7928	3.8283	3.8642	3.9004	3.9370	0.4563	0.4602	0.4642	
2.10 TO 2.19 F'	-4.0200	-3.7286	-3.5069	-3.3290	-3.1810	-3.0547	-2.9450	-2.8481	-2.7615	-	
2.6834											

F''	0.4682	0.4722	0.4763	0.4803	0.4844	0.4884	0.4925	0.4966	0.5008	0.5049
2.20 TO 2.29 F'	-2.6124	-2.5474	-2.4875	-2.4320	-2.3804	-2.3322	-2.2870	-2.2445	-2.2045	-
2.1665										
F''	0.5090	0.5132	0.5174	0.5215	0.5257	0.5299	0.5342	0.5384	0.5427	0.5469
2.30 TO 2.39 F'	-2.1306	-2.0964	-2.0639	-2.0329	-2.0032	-1.9748	-1.9476	-1.9215	-1.8964	-
1.8722										
F''	0.5512	0.5555	0.5598	0.5641	0.5685	0.5728	0.5772	0.5816	0.5859	0.5904
2.40 TO 2.49 F'	-1.8489	-1.8264	-1.8047	-1.7837	-1.7634	-1.7437	-1.7246	-1.7061	-1.6882	-
1.6707										
F''	0.5948	0.5992	0.6036	0.6081	0.6126	0.6170	0.6215	0.6261	0.6306	0.6351
2.50 TO 2.59 F'	-1.6537	-1.6372	-1.6211	-1.6054	-1.5902	-1.5752	-1.5607	-1.5465	-1.5326	-
1.5191										
F''	0.6397	0.6442	0.6488	0.6534	0.6580	0.6626	0.6672	0.6719	0.6765	0.6812
2.60 TO 2.69 F'	-1.5058	-1.4928	-1.4801	-1.4677	-1.4555	-1.4435	-1.4318	-1.4203	-1.4090	-
1.3980										
F''	0.6859	0.6906	0.6953	0.7000	0.7047	0.7095	0.7142	0.7190	0.7238	0.7286
2.70 TO 2.79 F'	-1.3871	-1.3765	-1.3660	-1.3557	-1.3455	-1.3356	-1.3258	-1.3161	-1.3067	-
1.2973										
F''	0.7334	0.7382	0.7430	0.7479	0.7527	0.7576	0.7625	0.7674	0.7723	0.7772
2.80 TO 2.89 F'	-1.2881	-1.2791	-1.2701	-1.2613	-1.2527	-1.2441	-1.2357	-1.2274	-1.2192	-
1.2111										
F''	0.7822	0.7871	0.7921	0.7970	0.8020	0.8070	0.8120	0.8171	0.8221	0.8271
ATOMIC SYMBOL = MN										
ATOMIC NUMBER = 25										
0.10 TO 0.19 F'	-0.0730	-0.0680	-0.0628	-0.0573	-0.0516	-0.0457	-0.0397	-0.0335	-0.0271	-
0.0206										
F''	0.0145	0.0177	0.0212	0.0250	0.0292	0.0337	0.0385	0.0436	0.0491	0.0548
0.20 TO 0.29 F'	-0.0139	-0.0071	-0.0003	0.0067	0.0137	0.0208	0.0280	0.0353	0.0425	0.0499
F''	0.0609	0.0673	0.0739	0.0809	0.0882	0.0958	0.1037	0.1119	0.1204	0.1292
0.30 TO 0.39 F'	0.0572	0.0646	0.0720	0.0794	0.0868	0.0941	0.1015	0.1088	0.1161	0.1234
F''	0.1383	0.1477	0.1573	0.1673	0.1776	0.1881	0.1990	0.2101	0.2215	0.2332
0.40 TO 0.49 F'	0.1306	0.1378	0.1449	0.1519	0.1560	0.1627	0.1693	0.1759	0.1823	0.1886
F''	0.2452	0.2574	0.2700	0.2828	0.2959	0.3090	0.3225	0.3361	0.3500	0.3641
0.50 TO 0.59 F'	0.1948	0.2010	0.2070	0.2129	0.2187	0.2244	0.2300	0.2354	0.2407	0.2459
F''	0.3784	0.3929	0.4077	0.4227	0.4380	0.4535	0.4691	0.4850	0.5012	0.5175
0.60 TO 0.69 F'	0.2509	0.2558	0.2606	0.2652	0.2696	0.2739	0.2781	0.2820	0.2858	0.2895
F''	0.5341	0.5508	0.5678	0.5850	0.6024	0.6200	0.6378	0.6558	0.6739	0.6923
0.70 TO 0.79 F'	0.2929	0.2962	0.2993	0.3022	0.3050	0.3075	0.3098	0.3120	0.3139	0.3156
F''	0.7109	0.7297	0.7487	0.7679	0.7872	0.8068	0.8265	0.8465	0.8666	0.8869
0.80 TO 0.89 F'	0.3172	0.3185	0.3195	0.3204	0.3210	0.3214	0.3207	0.3206	0.3203	0.3197
F''	0.9073	0.9280	0.9488	0.9699	0.9910	1.0124	1.0340	1.0557	1.0775	1.0996
0.90 TO 0.99 F'	0.3188	0.3177	0.3163	0.3147	0.3128	0.3066	0.3040	0.3011	0.2980	0.2946
F''	1.1218	1.1442	1.1667	1.1894	1.2123	1.2353	1.2582	1.2813	1.3046	1.3280
1.00 TO 1.09 F'	0.2908	0.2868	0.2822	0.2775	0.2721	0.2668	0.2612	0.2552	0.2490	0.2423
F''	1.3515	1.3752	1.3990	1.4230	1.4471	1.4713	1.4957	1.5202	1.5448	1.5696
1.10 TO 1.19 F'	0.2354	0.2281	0.2204	0.2124	0.2040	0.1952	0.1860	0.1764	0.1665	0.1561
F''	1.5945	1.6195	1.6447	1.6700	1.6954	1.7209	1.7466	1.7724	1.7983	1.8244
1.20 TO 1.29 F'	0.1453	0.1340	0.1224	0.1102	0.0977	0.0846	0.0711	0.0571	0.0426	0.0276
F''	1.8505	1.8768	1.9032	1.9297	1.9564	1.9832	2.0100	2.0370	2.0641	2.0914
1.30 TO 1.39 F'	0.0120	-0.0041	-0.0207	-0.0380	-0.0558	-0.0742	-0.0932	-0.1129	-0.1332	-0.1543
F''	2.1187	2.1461	2.1737	2.2014	2.2292	2.2571	2.2851	2.3132	2.3414	2.3697
1.40 TO 1.49 F'	-0.1760	-0.1983	-0.2215	-0.2453	-0.2700	-0.2955	-0.3229	-0.3502	-0.3785	-
0.4077										
F''	2.3981	2.4265	2.4550	2.4837	2.5124	2.5413	2.5702	2.5991	2.6281	2.6572
1.50 TO 1.59 F'	-0.4378	-0.4690	-0.5012	-0.5345	-0.5689	-0.6045	-0.6414	-0.6796	-0.7192	-

0.7602  
F'' 2.6864 2.7156 2.7449 2.7742 2.8036 2.8331 2.8626 2.8923 2.9219 2.9517  
1.60 TO 1.69 F' -0.8028 -0.8470 -0.8929 -0.9407 -0.9904 -1.0422 -1.0962 -1.1527 -1.2117 -  
1.2736  
F'' 2.9814 3.0113 3.0412 3.0712 3.1012 3.1313 3.1614 3.1916 3.2218 3.2521  
1.70 TO 1.79 F' -1.3386 -1.4069 -1.4789 -1.5551 -1.6358 -1.7216 -1.8133 -1.9116 -2.0175 -  
2.1324  
F'' 3.2825 3.3129 3.3433 3.3738 3.4044 3.4350 3.4656 3.4963 3.5270 3.5578  
1.80 TO 1.89 F' -2.2580 -2.3489 -2.5037 -2.6798 -2.8839 -3.1265 -3.4261 -3.8192 -4.3965 -  
5.5387  
F'' 3.5886 3.6215 3.6594 3.6978 3.7367 3.7760 3.8159 3.8562 3.8971 3.9385  
1.90 TO 1.99 F' -6.0236 -4.6853 -4.1258 -3.7732 -3.5178 -3.3190 -3.1570 -3.0208 -2.9038 -  
2.8014  
F'' 0.4639 0.4683 0.4727 0.4771 0.4816 0.4861 0.4906 0.4951 0.4996 0.5041  
2.00 TO 2.09 F' -2.7106 -2.6292 -2.5556 -2.4884 -2.4268 -2.3699 -2.3172 -2.2680 -2.2221 -  
2.1789  
F'' 0.5087 0.5133 0.5179 0.5225 0.5271 0.5317 0.5364 0.5411 0.5458 0.5505  
2.10 TO 2.19 F' -2.1383 -2.0999 -2.0636 -2.0292 -1.9964 -1.9652 -1.9354 -1.9069 -1.8796 -  
1.8534  
F'' 0.5552 0.5600 0.5647 0.5695 0.5743 0.5791 0.5839 0.5888 0.5936 0.5985  
2.20 TO 2.29 F' -1.8282 -1.8040 -1.7807 -1.7582 -1.7365 -1.7155 -1.6953 -1.6756 -1.6566 -  
1.6381  
F'' 0.6034 0.6083 0.6132 0.6181 0.6231 0.6281 0.6331 0.6381 0.6431 0.6481  
2.30 TO 2.39 F' -1.6202 -1.6028 -1.5858 -1.5694 -1.5533 -1.5377 -1.5225 -1.5077 -1.4932 -  
1.4790  
F'' 0.6532 0.6582 0.6633 0.6684 0.6735 0.6786 0.6838 0.6890 0.6941 0.6993  
2.40 TO 2.49 F' -1.4652 -1.4517 -1.4384 -1.4255 -1.4129 -1.4005 -1.3883 -1.3764 -1.3647 -  
1.3533  
F'' 0.7045 0.7098 0.7150 0.7203 0.7255 0.7308 0.7361 0.7414 0.7468 0.7521  
2.50 TO 2.59 F' -1.3420 -1.3310 -1.3202 -1.3095 -1.2991 -1.2888 -1.2787 -1.2688 -1.2590 -  
1.2493  
F'' 0.7575 0.7629 0.7682 0.7737 0.7791 0.7845 0.7900 0.7954 0.8009 0.8064  
2.60 TO 2.69 F' -1.2399 -1.2305 -1.2214 -1.2123 -1.2034 -1.1946 -1.1859 -1.1774 -1.1689 -  
1.1606  
F'' 0.8119 0.8175 0.8230 0.8286 0.8342 0.8398 0.8454 0.8510 0.8566 0.8623  
2.70 TO 2.79 F' -1.1524 -1.1443 -1.1363 -1.1284 -1.1206 -1.1129 -1.1053 -1.0978 -1.0903 -  
1.0830  
F'' 0.8679 0.8736 0.8793 0.8850 0.8907 0.8965 0.9022 0.9080 0.9138 0.9196  
2.80 TO 2.89 F' -1.0757 -1.0685 -1.0614 -1.0544 -1.0475 -1.0406 -1.0338 -1.0270 -1.0204 -  
1.0138  
F'' 0.9254 0.9312 0.9371 0.9429 0.9488 0.9547 0.9606 0.9665 0.9724 0.9784  
ATOMIC SYMBOL = FE ATOMIC NUMBER = 26  
0.10 TO 0.19 F' -0.0798 -0.0741 -0.0682 -0.0620 -0.0556 -0.0490 -0.0422 -0.0352 -0.0281 -  
0.0208  
F'' 0.0172 0.0210 0.0251 0.0297 0.0346 0.0399 0.0456 0.0516 0.0580 0.0648  
0.20 TO 0.29 F' -0.0134 -0.0059 0.0017 0.0094 0.0172 0.0250 0.0329 0.0408 0.0488 0.0568  
F'' 0.0719 0.0794 0.0873 0.0955 0.1040 0.1129 0.1222 0.1318 0.1417 0.1520  
0.30 TO 0.39 F' 0.0648 0.0728 0.0808 0.0887 0.0967 0.1046 0.1124 0.1202 0.1280 0.1357  
F'' 0.1627 0.1736 0.1850 0.1966 0.2086 0.2209 0.2336 0.2465 0.2598 0.2735  
0.40 TO 0.49 F' 0.1432 0.1481 0.1554 0.1625 0.1696 0.1765 0.1833 0.1899 0.1965 0.2029  
F'' 0.2874 0.3016 0.3160 0.3306 0.3456 0.3609 0.3765 0.3923 0.4083 0.4246  
0.50 TO 0.59 F' 0.2092 0.2153 0.2213 0.2271 0.2328 0.2384 0.2437 0.2489 0.2539 0.2588  
F'' 0.4412 0.4580 0.4751 0.4924 0.5100 0.5279 0.5460 0.5643 0.5829 0.6018  
0.60 TO 0.69 F' 0.2635 0.2679 0.2722 0.2763 0.2802 0.2838 0.2873 0.2906 0.2936 0.2964

F''	0.6208	0.6402	0.6597	0.6795	0.6995	0.7198	0.7402	0.7609	0.7819	0.8030
0.70 TO 0.79 F'	0.2990	0.3013	0.3034	0.3052	0.3068	0.3082	0.3093	0.3101	0.3107	0.3102
F''	0.8244	0.8460	0.8678	0.8898	0.9121	0.9345	0.9572	0.9800	1.0031	1.0264
0.80 TO 0.89 F'	0.3102	0.3099	0.3093	0.3083	0.3071	0.3056	0.3038	0.3016	0.2954	0.2925
F''	1.0498	1.0735	1.0974	1.1215	1.1457	1.1702	1.1948	1.2197	1.2445	1.2695
0.90 TO 0.99 F'	0.2892	0.2856	0.2814	0.2771	0.2720	0.2670	0.2616	0.2558	0.2496	0.2431
F''	1.2947	1.3200	1.3455	1.3711	1.3970	1.4229	1.4491	1.4754	1.5019	1.5285
1.00 TO 1.09 F'	0.2361	0.2288	0.2210	0.2128	0.2042	0.1951	0.1856	0.1756	0.1652	0.1543
F''	1.5553	1.5822	1.6093	1.6365	1.6639	1.6915	1.7192	1.7470	1.7750	1.8032
1.10 TO 1.19 F'	0.1429	0.1310	0.1186	0.1057	0.0922	0.0782	0.0636	0.0485	0.0328	0.0164
F''	1.8314	1.8599	1.8884	1.9172	1.9460	1.9750	2.0041	2.0334	2.0628	2.0923
1.20 TO 1.29 F'	-0.0006	-0.0182	-0.0364	-0.0554	-0.0750	-0.0954	-0.1165	-0.1383	-0.1610	-0.1844
F''	2.1220	2.1518	2.1817	2.2118	2.2419	2.2723	2.3027	2.3333	2.3640	2.3948
1.30 TO 1.39 F'	-0.2087	-0.2339	-0.2600	-0.2870	-0.3151	-0.3428	-0.3728	-0.4040	-0.4364	-0.4699
F''	2.4257	2.4568	2.4880	2.5193	2.5507	2.5823	2.6141	2.6460	2.6780	2.7101
1.40 TO 1.49 F'	-0.5050	-0.5416	-0.5795	-0.6188	-0.6597	-0.7022	-0.7464	-0.7923	-0.8402	-0.8901
F''	2.7422	2.7743	2.8064	2.8386	2.8709	2.9031	2.9355	2.9679	3.0003	3.0328
1.50 TO 1.59 F'	-0.9422	-0.9966	-1.0534	-1.1130	-1.1755	-1.2412	-1.3103	-1.3833	-1.4605	-1.5424
F''	3.0653	3.0978	3.1304	3.1630	3.1957	3.2284	3.2611	3.2939	3.3267	3.3595
1.60 TO 1.69 F'	-1.6297	-1.7230	-1.8232	-1.9313	-2.0489	-2.1776	-2.3199	-2.4275	-2.6095	-2.8219
F''	3.3924	3.4253	3.4582	3.4911	3.5241	3.5570	3.5900	3.6300	3.6718	3.7142
1.70 TO 1.79 F'	-3.0770	-3.3967	-3.8263	-4.4903	-6.1125	-5.3363	-4.3815	-3.9040	-3.5883	-3.3544
F''	3.7573	3.8012	3.8457	3.8909	3.9369	0.4710	0.4759	0.4808	0.4857	0.4906
1.80 TO 1.89 F'	-3.1697	-3.0179	-2.8895	-2.7786	-2.6813	-2.5947	-2.5170	-2.4465	-2.3821	-2.3229
F''	0.4956	0.5005	0.5055	0.5105	0.5156	0.5206	0.5257	0.5308	0.5359	0.5410
1.90 TO 1.99 F'	-2.2682	-2.2174	-2.1701	-2.1258	-2.0841	-2.0449	-2.0078	-1.9727	-1.9393	-1.9076
F''	0.5462	0.5513	0.5565	0.5617	0.5670	0.5722	0.5775	0.5828	0.5881	0.5934
2.00 TO 2.09 F'	-1.8773	-1.8484	-1.8208	-1.7943	-1.7688	-1.7444	-1.7208	-1.6981	-1.6763	-1.6551
F''	0.5988	0.6041	0.6095	0.6149	0.6204	0.6258	0.6313	0.6368	0.6423	0.6478
2.10 TO 2.19 F'	-1.6347	-1.6149	-1.5957	-1.5771	-1.5591	-1.5416	-1.5246	-1.5080	-1.4919	-1.4762
F''	0.6533	0.6589	0.6645	0.6701	0.6757	0.6813	0.6870	0.6927	0.6984	0.7041
2.20 TO 2.29 F'	-1.4609	-1.4460	-1.4314	-1.4172	-1.4033	-1.3897	-1.3764	-1.3634	-1.3507	-1.3382
F''	0.7098	0.7155	0.7213	0.7271	0.7329	0.7387	0.7446	0.7504	0.7563	0.7622
2.30 TO 2.39 F'	-1.3260	-1.3140	-1.3023	-1.2907	-1.2794	-1.2683	-1.2574	-1.2467	-1.2362	-1.2258
F''	0.7681	0.7741	0.7800	0.7860	0.7920	0.7980	0.8040	0.8101	0.8162	0.8222
2.40 TO 2.49 F'	-1.2157	-1.2056	-1.1958	-1.1861	-1.1765	-1.1671	-1.1578	-1.1487	-1.1397	-1.1308
F''	0.8283	0.8345	0.8406	0.8468	0.8529	0.8591	0.8653	0.8716	0.8778	0.8841
2.50 TO 2.59 F'	-1.1220	-1.1134	-1.1049	-1.0965	-1.0882	-1.0800	-1.0719	-1.0639	-1.0560	-1.0482
F''	0.8904	0.8967	0.9030	0.9093	0.9157	0.9220	0.9284	0.9348	0.9413	0.9477
2.60 TO 2.69 F'	-1.0404	-1.0328	-1.0253	-1.0178	-1.0105	-1.0032	-0.9960	-0.9888	-0.9818	-0.9747

0.9748  
F'' 0.9542 0.9606 0.9671 0.9736 0.9802 0.9867 0.9933 0.9999 1.0065 1.0131  
2.70 TO 2.79 F' -0.9679 -0.9610 -0.9542 -0.9475 -0.9409 -0.9343 -0.9278 -0.9213 -0.9149 -  
0.9086  
F'' 1.0197 1.0264 1.0330 1.0397 1.0464 1.0531 1.0599 1.0666 1.0734 1.0802  
2.80 TO 2.89 F' -0.9023 -0.8961 -0.8899 -0.8838 -0.8777 -0.8717 -0.8657 -0.8598 -0.8540 -  
0.8481  
F'' 1.0870 1.0938 1.1006 1.1075 1.1144 1.1213 1.1282 1.1351 1.1420 1.1490  
ATOMIC SYMBOL = CO ATOMIC NUMBER = 27  
0.10 TO 0.19 F' -0.0852 -0.0789 -0.0722 -0.0653 -0.0581 -0.0507 -0.0432 -0.0354 -0.0275 -  
0.0194  
F'' 0.0203 0.0247 0.0296 0.0350 0.0407 0.0469 0.0536 0.0606 0.0681 0.0760  
0.20 TO 0.29 F' -0.0113 -0.0030 0.0054 0.0139 0.0224 0.0310 0.0396 0.0482 0.0569 0.0655  
F'' 0.0843 0.0930 0.1022 0.1117 0.1217 0.1320 0.1428 0.1540 0.1655 0.1775  
0.30 TO 0.39 F' 0.0742 0.0828 0.0913 0.0999 0.1084 0.1168 0.1251 0.1333 0.1387 0.1466  
F'' 0.1898 0.2026 0.2157 0.2292 0.2432 0.2574 0.2721 0.2872 0.3024 0.3180  
0.40 TO 0.49 F' 0.1543 0.1619 0.1693 0.1766 0.1838 0.1908 0.1976 0.2043 0.2108 0.2171  
F'' 0.3339 0.3501 0.3667 0.3837 0.4009 0.4185 0.4364 0.4546 0.4730 0.4917  
0.50 TO 0.59 F' 0.2233 0.2292 0.2350 0.2406 0.2460 0.2511 0.2561 0.2608 0.2653 0.2695  
F'' 0.5108 0.5301 0.5497 0.5696 0.5898 0.6102 0.6310 0.6520 0.6733 0.6949  
0.60 TO 0.69 F' 0.2736 0.2773 0.2809 0.2841 0.2871 0.2899 0.2923 0.2945 0.2964 0.2980  
F'' 0.7167 0.7388 0.7612 0.7838 0.8067 0.8298 0.8532 0.8769 0.9008 0.9249  
0.70 TO 0.79 F' 0.2992 0.3002 0.3003 0.3007 0.3006 0.3003 0.2996 0.2986 0.2972 0.2954  
F'' 0.9493 0.9740 0.9989 1.0240 1.0493 1.0749 1.1007 1.1268 1.1530 1.1795  
0.80 TO 0.89 F' 0.2933 0.2875 0.2845 0.2811 0.2771 0.2725 0.2679 0.2628 0.2574 0.2515  
F'' 1.2063 1.2331 1.2600 1.2872 1.3145 1.3420 1.3698 1.3977 1.4258 1.4541  
0.90 TO 0.99 F' 0.2451 0.2383 0.2311 0.2233 0.2151 0.2064 0.1972 0.1875 0.1772 0.1665  
F'' 1.4826 1.5113 1.5401 1.5692 1.5984 1.6278 1.6574 1.6872 1.7171 1.7472  
1.00 TO 1.09 F' 0.1551 0.1433 0.1308 0.1177 0.1041 0.0898 0.0749 0.0593 0.0431 0.0261  
F'' 1.7775 1.8080 1.8386 1.8694 1.9003 1.9314 1.9627 1.9942 2.0258 2.0575  
1.10 TO 1.19 F' 0.0085 -0.0099 -0.0290 -0.0489 -0.0696 -0.0911 -0.1135 -0.1368 -0.1610 -0.1861  
F'' 2.0894 2.1215 2.1537 2.1861 2.2186 2.2513 2.2842 2.3171 2.3503 2.3835  
1.20 TO 1.29 F' -0.2122 -0.2394 -0.2676 -0.2969 -0.3286 -0.3603 -0.3932 -0.4275 -0.4632 -  
0.5003  
F'' 2.4169 2.4505 2.4842 2.5180 2.5520 2.5860 2.6202 2.6545 2.6889 2.7234  
1.30 TO 1.39 F' -0.5389 -0.5792 -0.6211 -0.6649 -0.7106 -0.7583 -0.8082 -0.8604 -0.9152 -  
0.9726  
F'' 2.7581 2.7929 2.8278 2.8629 2.8980 2.9333 2.9687 3.0043 3.0399 3.0757  
1.40 TO 1.49 F' -1.0331 -1.0968 -1.1638 -1.2344 -1.3092 -1.3884 -1.4727 -1.5626 -1.6591 -  
1.7629  
F'' 3.1111 3.1463 3.1816 3.2169 3.2522 3.2875 3.3229 3.3582 3.3936 3.4290  
1.50 TO 1.59 F' -1.8754 -1.9981 -2.1331 -2.2832 -2.4051 -2.5988 -2.8283 -3.1097 -3.4738 -  
3.9918  
F'' 3.4644 3.4999 3.5353 3.5708 3.6120 3.6565 3.7022 3.7491 3.7973 3.8466  
1.60 TO 1.69 F' -4.9147 -6.6663 -4.6394 -4.0074 -3.6305 -3.3644 -3.1604 -2.9959 -2.8586 -  
2.7413  
F'' 3.8972 0.4740 0.4794 0.4847 0.4901 0.4955 0.5009 0.5064 0.5119 0.5174  
1.70 TO 1.79 F' -2.6392 -2.5489 -2.4683 -2.3955 -2.3293 -2.2686 -2.2127 -2.1609 -2.1127 -  
2.0677  
F'' 0.5229 0.5285 0.5340 0.5396 0.5453 0.5509 0.5566 0.5623 0.5680 0.5737  
1.80 TO 1.89 F' -2.0255 -1.9858 -1.9483 -1.9128 -1.8792 -1.8472 -1.8167 -1.7876 -1.7598 -  
1.7332  
F'' 0.5795 0.5853 0.5911 0.5969 0.6028 0.6087 0.6146 0.6205 0.6265 0.6325  
1.90 TO 1.99 F' -1.7076 -1.6831 -1.6594 -1.6367 -1.6147 -1.5935 -1.5730 -1.5532 -1.5340 -

1.5154  
F'' 0.6385 0.6445 0.6505 0.6566 0.6627 0.6688 0.6749 0.6811 0.6873 0.6935  
2.00 TO 2.09 F' -1.4973 -1.4797 -1.4627 -1.4461 -1.4299 -1.4142 -1.3988 -1.3839 -1.3693 -  
1.3550  
F'' 0.6997 0.7060 0.7122 0.7185 0.7249 0.7312 0.7376 0.7439 0.7504 0.7568  
2.10 TO 2.19 F' -1.3411 -1.3274 -1.3141 -1.3010 -1.2883 -1.2757 -1.2635 -1.2514 -1.2396 -  
1.2280  
F'' 0.7632 0.7697 0.7762 0.7827 0.7893 0.7958 0.8024 0.8090 0.8157 0.8223  
2.20 TO 2.29 F' -1.2167 -1.2055 -1.1945 -1.1837 -1.1731 -1.1627 -1.1524 -1.1423 -1.1324 -  
1.1226  
F'' 0.8290 0.8357 0.8424 0.8491 0.8559 0.8627 0.8695 0.8763 0.8831 0.8900  
2.30 TO 2.39 F' -1.1130 -1.1035 -1.0941 -1.0849 -1.0757 -1.0668 -1.0579 -1.0492 -1.0405 -  
1.0320  
F'' 0.8969 0.9038 0.9107 0.9177 0.9247 0.9317 0.9387 0.9457 0.9528 0.9598  
2.40 TO 2.49 F' -1.0236 -1.0153 -1.0071 -0.9990 -0.9910 -0.9830 -0.9752 -0.9675 -0.9598 -  
0.9522  
F'' 0.9669 0.9741 0.9812 0.9884 0.9955 1.0028 1.0100 1.0172 1.0245 1.0318  
2.50 TO 2.59 F' -0.9447 -0.9373 -0.9300 -0.9227 -0.9155 -0.9084 -0.9014 -0.8944 -0.8875 -  
0.8807  
F'' 1.0391 1.0464 1.0538 1.0611 1.0685 1.0759 1.0834 1.0908 1.0983 1.1058  
2.60 TO 2.69 F' -0.8739 -0.8672 -0.8605 -0.8539 -0.8474 -0.8409 -0.8345 -0.8281 -0.8218 -  
0.8155  
F'' 1.1133 1.1208 1.1284 1.1359 1.1435 1.1511 1.1588 1.1664 1.1741 1.1818  
2.70 TO 2.79 F' -0.8093 -0.8032 -0.7971 -0.7910 -0.7850 -0.7790 -0.7731 -0.7672 -0.7614 -  
0.7556  
F'' 1.1895 1.1972 1.2050 1.2127 1.2205 1.2283 1.2362 1.2440 1.2519 1.2598  
2.80 TO 2.89 F' -0.7499 -0.7442 -0.7385 -0.7329 -0.7274 -0.7218 -0.7163 -0.7109 -0.7055 -  
0.7001  
F'' 1.2677 1.2756 1.2836 1.2915 1.2995 1.3075 1.3155 1.3236 1.3317 1.3397  
ATOMIC SYMBOL = NI ATOMIC NUMBER = 28  
0.10 TO 0.19 F' -0.0933 -0.0863 -0.0789 -0.0713 -0.0634 -0.0553 -0.0470 -0.0385 -0.0298 -  
0.0210  
F'' 0.0237 0.0289 0.0347 0.0409 0.0476 0.0548 0.0625 0.0707 0.0794 0.0886  
0.20 TO 0.29 F' -0.0121 -0.0031 0.0060 0.0152 0.0244 0.0337 0.0430 0.0522 0.0615 0.0707  
F'' 0.0982 0.1084 0.1190 0.1301 0.1416 0.1536 0.1661 0.1790 0.1924 0.2062  
0.30 TO 0.39 F' 0.0799 0.0891 0.0982 0.1072 0.1161 0.1221 0.1306 0.1389 0.1471 0.1552  
F'' 0.2205 0.2352 0.2504 0.2660 0.2821 0.2984 0.3150 0.3321 0.3495 0.3674  
0.40 TO 0.49 F' 0.1631 0.1708 0.1784 0.1858 0.1930 0.2000 0.2067 0.2132 0.2195 0.2256  
F'' 0.3856 0.4042 0.4231 0.4425 0.4622 0.4823 0.5027 0.5235 0.5445 0.5659  
0.50 TO 0.59 F' 0.2314 0.2370 0.2423 0.2474 0.2522 0.2567 0.2610 0.2649 0.2684 0.2717  
F'' 0.5876 0.6097 0.6320 0.6547 0.6777 0.7010 0.7247 0.7486 0.7729 0.7974  
0.60 TO 0.69 F' 0.2747 0.2774 0.2798 0.2819 0.2836 0.2849 0.2859 0.2865 0.2868 0.2866  
F'' 0.8222 0.8474 0.8728 0.8985 0.9245 0.9508 0.9774 1.0043 1.0314 1.0588  
0.70 TO 0.79 F' 0.2861 0.2852 0.2839 0.2821 0.2799 0.2744 0.2711 0.2674 0.2630 0.2584  
F'' 1.0865 1.1144 1.1426 1.1711 1.1999 1.2287 1.2578 1.2870 1.3165 1.3462  
0.80 TO 0.89 F' 0.2534 0.2478 0.2417 0.2352 0.2281 0.2204 0.2123 0.2035 0.1942 0.1843  
F'' 1.3762 1.4064 1.4368 1.4674 1.4982 1.5293 1.5606 1.5920 1.6237 1.6556  
0.90 TO 0.99 F' 0.1738 0.1627 0.1510 0.1386 0.1256 0.1119 0.0975 0.0824 0.0665 0.0499  
F'' 1.6877 1.7200 1.7525 1.7853 1.8182 1.8513 1.8846 1.9180 1.9517 1.9856  
1.00 TO 1.09 F' 0.0325 0.0143 -0.0048 -0.0247 -0.0454 -0.0671 -0.0898 -0.1134 -0.1380 -0.1637  
F'' 2.0196 2.0539 2.0883 2.1229 2.1577 2.1926 2.2278 2.2631 2.2986 2.3342  
1.10 TO 1.19 F' -0.1905 -0.2184 -0.2475 -0.2779 -0.3096 -0.3453 -0.3798 -0.4157 -0.4533 -  
0.4924  
F'' 2.3700 2.4060 2.4422 2.4785 2.5150 2.5515 2.5881 2.6248 2.6616 2.6986

1.20 TO 1.29 F' -0.5333 -0.5760 -0.6206 -0.6674 -0.7163 -0.7675 -0.8213 -0.8779 -0.9374 -  
1.0000  
F'' 2.7358 2.7730 2.8104 2.8480 2.8857 2.9235 2.9614 2.9995 3.0377 3.0761

1.30 TO 1.39 F' -1.0662 -1.1363 -1.2106 -1.2897 -1.3741 -1.4646 -1.5621 -1.6679 -1.7837 -  
1.9122  
F'' 3.1145 3.1531 3.1918 3.2307 3.2696 3.3087 3.3479 3.3872 3.4267 3.4662

1.40 TO 1.49 F' -2.0507 -2.2020 -2.3466 -2.5337 -2.7568 -3.0326 -3.3931 -3.9128 -4.8599 -  
6.3201  
F'' 3.5031 3.5386 3.5748 3.6164 3.6613 3.7095 3.7609 3.8158 3.8742 0.4793

1.50 TO 1.59 F' -4.4999 -3.8912 -3.5249 -3.2654 -3.0661 -2.9051 -2.7708 -2.6559 -2.5558 -  
2.4674  
F'' 0.4851 0.4910 0.4969 0.5028 0.5088 0.5148 0.5208 0.5268 0.5329 0.5390

1.60 TO 1.69 F' -2.3884 -2.3171 -2.2522 -2.1927 -2.1379 -2.0871 -2.0399 -1.9957 -1.9543 -  
1.9153  
F'' 0.5451 0.5513 0.5575 0.5637 0.5699 0.5762 0.5825 0.5888 0.5952 0.6015

1.70 TO 1.79 F' -1.8785 -1.8437 -1.8107 -1.7793 -1.7493 -1.7208 -1.6934 -1.6672 -1.6421 -  
1.6179  
F'' 0.6079 0.6144 0.6208 0.6273 0.6339 0.6404 0.6470 0.6536 0.6602 0.6669

1.80 TO 1.89 F' -1.5947 -1.5722 -1.5506 -1.5297 -1.5095 -1.4899 -1.4710 -1.4526 -1.4347 -  
1.4174  
F'' 0.6736 0.6803 0.6870 0.6938 0.7006 0.7074 0.7142 0.7211 0.7280 0.7349

1.90 TO 1.99 F' -1.4005 -1.3841 -1.3681 -1.3525 -1.3373 -1.3225 -1.3080 -1.2939 -1.2800 -  
1.2665  
F'' 0.7419 0.7489 0.7559 0.7629 0.7700 0.7771 0.7842 0.7913 0.7985 0.8057

2.00 TO 2.09 F' -1.2532 -1.2402 -1.2275 -1.2151 -1.2029 -1.1909 -1.1791 -1.1675 -1.1562 -  
1.1450  
F'' 0.8129 0.8202 0.8274 0.8347 0.8421 0.8494 0.8568 0.8642 0.8716 0.8791

2.10 TO 2.19 F' -1.1341 -1.1233 -1.1127 -1.1023 -1.0920 -1.0819 -1.0719 -1.0621 -1.0524 -  
1.0429  
F'' 0.8865 0.8940 0.9016 0.9091 0.9167 0.9243 0.9319 0.9396 0.9473 0.9550

2.20 TO 2.29 F' -1.0335 -1.0242 -1.0151 -1.0060 -0.9971 -0.9883 -0.9796 -0.9711 -0.9626 -  
0.9542  
F'' 0.9627 0.9705 0.9783 0.9861 0.9939 1.0018 1.0096 1.0175 1.0255 1.0334

2.30 TO 2.39 F' -0.9459 -0.9378 -0.9297 -0.9217 -0.9138 -0.9059 -0.8982 -0.8906 -0.8830 -  
0.8755  
F'' 1.0414 1.0494 1.0575 1.0655 1.0736 1.0817 1.0898 1.0980 1.1061 1.1143

2.40 TO 2.49 F' -0.8680 -0.8607 -0.8534 -0.8462 -0.8391 -0.8320 -0.8250 -0.8180 -0.8112 -  
0.8044  
F'' 1.1226 1.1308 1.1391 1.1474 1.1557 1.1641 1.1724 1.1808 1.1892 1.1977

2.50 TO 2.59 F' -0.7976 -0.7909 -0.7843 -0.7777 -0.7711 -0.7647 -0.7583 -0.7519 -0.7456 -  
0.7393  
F'' 1.2061 1.2146 1.2231 1.2317 1.2402 1.2488 1.2574 1.2661 1.2747 1.2834

2.60 TO 2.69 F' -0.7331 -0.7269 -0.7208 -0.7147 -0.7087 -0.7027 -0.6968 -0.6909 -0.6851 -  
0.6793  
F'' 1.2921 1.3008 1.3096 1.3183 1.3271 1.3359 1.3448 1.3536 1.3625 1.3714

2.70 TO 2.79 F' -0.6735 -0.6678 -0.6621 -0.6565 -0.6509 -0.6453 -0.6398 -0.6343 -0.6288 -  
0.6234  
F'' 1.3804 1.3893 1.3983 1.4073 1.4163 1.4254 1.4344 1.4435 1.4526 1.4618

2.80 TO 2.89 F' -0.6181 -0.6127 -0.6074 -0.6021 -0.6003 -0.5951 -0.5900 -0.5849 -0.5798 -  
0.5748  
F'' 1.4709 1.4801 1.4893 1.4985 1.5078 1.5170 1.5263 1.5355 1.5448 1.5542

ATOMIC SYMBOL = CU ATOMIC NUMBER = 29

0.10 TO 0.19 F' -0.0990 -0.0912 -0.0830 -0.0746 -0.0658 -0.0569 -0.0477 -0.0383 -0.0288 -  
0.0192

F''	0.0277	0.0337	0.0403	0.0475	0.0553	0.0636	0.0725	0.0820	0.0920	0.1026
0.20 TO 0.29 F'	-0.0094	0.0004	0.0103	0.0203	0.0303	0.0403	0.0503	0.0602	0.0701	0.0800
F''	0.1137	0.1254	0.1376	0.1503	0.1636	0.1774	0.1918	0.2066	0.2220	0.2379
0.30 TO 0.39 F'	0.0898	0.0994	0.1064	0.1156	0.1247	0.1336	0.1423	0.1509	0.1593	0.1675
F''	0.2543	0.2712	0.2886	0.3062	0.3244	0.3429	0.3619	0.3814	0.4013	0.4216
0.40 TO 0.49 F'	0.1755	0.1832	0.1908	0.1980	0.2050	0.2118	0.2183	0.2244	0.2303	0.2359
F''	0.4424	0.4636	0.4852	0.5072	0.5296	0.5524	0.5757	0.5993	0.6232	0.6474
0.50 TO 0.59 F'	0.2412	0.2462	0.2508	0.2552	0.2590	0.2626	0.2658	0.2687	0.2712	0.2733
F''	0.6721	0.6971	0.7224	0.7482	0.7742	0.8006	0.8274	0.8545	0.8819	0.9097
0.60 TO 0.69 F'	0.2750	0.2763	0.2772	0.2776	0.2776	0.2772	0.2763	0.2749	0.2730	0.2706
F''	0.9378	0.9663	0.9950	1.0241	1.0535	1.0832	1.1132	1.1435	1.1742	1.2051
0.70 TO 0.79 F'	0.2651	0.2614	0.2574	0.2528	0.2476	0.2419	0.2356	0.2287	0.2213	0.2132
F''	1.2361	1.2674	1.2990	1.3309	1.3630	1.3953	1.4280	1.4609	1.4940	1.5274
0.80 TO 0.89 F'	0.2045	0.1951	0.1851	0.1743	0.1629	0.1508	0.1379	0.1243	0.1099	0.0947
F''	1.5610	1.5949	1.6290	1.6634	1.6980	1.7329	1.7679	1.8032	1.8388	1.8745
0.90 TO 0.99 F'	0.0787	0.0618	0.0441	0.0254	0.0058	-0.0148	-0.0363	-0.0589	-0.0826	-0.1074
F''	1.9105	1.9467	1.9831	2.0197	2.0566	2.0936	2.1309	2.1684	2.2060	2.2439
1.00 TO 1.09 F'	-0.1333	-0.1605	-0.1889	-0.2187	-0.2498	-0.2823	-0.3164	-0.3571	-0.3945	-0.4336
F''	2.2820	2.3203	2.3588	2.3974	2.4363	2.4754	2.5146	2.5537	2.5928	2.6320
1.10 TO 1.19 F'	-0.4745	-0.5174	-0.5623	-0.6093	-0.6587	-0.7106	-0.7651	-0.8225	-0.8830	-0.9469
F''	2.6715	2.7110	2.7507	2.7906	2.8306	2.8707	2.9110	2.9514	2.9919	3.0326
1.20 TO 1.29 F'	-1.0145	-1.0862	-1.1623	-1.2435	-1.3304	-1.4236	-1.5241	-1.6330	-1.7519	-1.8827
F''	3.0735	3.1144	3.1555	3.1967	3.2380	3.2795	3.3210	3.3627	3.4046	3.4465
1.30 TO 1.39 F'	-2.0280	-2.1913	-2.3344	-2.5535	-2.8193	-3.1571	-3.6225	-4.3841	-7.3448	-4.6802
F''	3.4885	3.5307	3.5764	3.6279	3.6802	3.7334	3.7876	3.8426	3.8985	0.4890
1.40 TO 1.49 F'	-3.9344	-3.5232	-3.2423	-3.0307	-2.8621	-2.7226	-2.6041	-2.5014	-2.4110	-2.3305
F''	0.4954	0.5018	0.5083	0.5148	0.5213	0.5279	0.5345	0.5411	0.5478	0.5545
1.50 TO 1.59 F'	-2.2581	-2.1923	-2.1321	-2.0768	-2.0255	-1.9779	-1.9335	-1.8918	-1.8526	-1.8156
F''	0.5612	0.5680	0.5748	0.5816	0.5885	0.5954	0.6023	0.6093	0.6163	0.6233
1.60 TO 1.69 F'	-1.7807	-1.7475	-1.7160	-1.6859	-1.6573	-1.6298	-1.6035	-1.5783	-1.5541	-1.5307
F''	0.6304	0.6375	0.6446	0.6518	0.6590	0.6662	0.6735	0.6808	0.6881	0.6955
1.70 TO 1.79 F'	-1.5082	-1.4865	-1.4655	-1.4452	-1.4255	-1.4064	-1.3879	-1.3700	-1.3525	-1.3355
F''	0.7029	0.7103	0.7177	0.7252	0.7327	0.7403	0.7479	0.7555	0.7631	0.7708
1.80 TO 1.89 F'	-1.3190	-1.3028	-1.2871	-1.2718	-1.2568	-1.2421	-1.2278	-1.2138	-1.2001	-1.1867
F''	0.7785	0.7863	0.7940	0.8018	0.8097	0.8175	0.8254	0.8334	0.8413	0.8493
1.90 TO 1.99 F'	-1.1735	-1.1606	-1.1480	-1.1356	-1.1234	-1.1114	-1.0997	-1.0881	-1.0768	-1.0656
F''	0.8573	0.8654	0.8735	0.8816	0.8897	0.8979	0.9061	0.9143	0.9226	0.9309
2.00 TO 2.09 F'	-1.0546	-1.0438	-1.0331	-1.0226	-1.0123	-1.0021	-0.9920	-0.9821	-0.9724	-0.9627
F''	0.9392	0.9475	0.9559	0.9643	0.9728	0.9813	0.9898	0.9983	1.0069	1.0154
2.10 TO 2.19 F'	-0.9532	-0.9438	-0.9345	-0.9253	-0.9163	-0.9073	-0.8985	-0.8898	-0.8811	-0.8726
F''	1.0241	1.0327	1.0414	1.0501	1.0588	1.0676	1.0764	1.0852	1.0941	1.1030
2.20 TO 2.29 F'	-0.8641	-0.8558	-0.8475	-0.8393	-0.8312	-0.8232	-0.8153	-0.8074	-0.7996	-



0.7919  
F'' 1.1119 1.1208 1.1298 1.1388 1.1478 1.1569 1.1659 1.1750 1.1842 1.1934  
2.30 TO 2.39 F' -0.7843 -0.7767 -0.7692 -0.7618 -0.7544 -0.7472 -0.7399 -0.7328 -0.7256 -  
0.7186  
F'' 1.2026 1.2118 1.2210 1.2303 1.2396 1.2490 1.2583 1.2677 1.2771 1.2866  
2.40 TO 2.49 F' -0.7116 -0.7047 -0.6978 -0.6910 -0.6842 -0.6775 -0.6708 -0.6642 -0.6577 -  
0.6511  
F'' 1.2961 1.3056 1.3151 1.3247 1.3343 1.3439 1.3535 1.3632 1.3729 1.3826  
2.50 TO 2.59 F' -0.6447 -0.6383 -0.6319 -0.6256 -0.6193 -0.6131 -0.6069 -0.6007 -0.5946 -  
0.5886  
F'' 1.3924 1.4021 1.4119 1.4218 1.4316 1.4415 1.4514 1.4614 1.4713 1.4813  
2.60 TO 2.69 F' -0.5826 -0.5765 -0.5739 -0.5680 -0.5622 -0.5564 -0.5507 -0.5449 -0.5393 -  
0.5336  
F'' 1.4914 1.5014 1.5114 1.5215 1.5316 1.5417 1.5518 1.5620 1.5722 1.5824  
2.70 TO 2.79 F' -0.5280 -0.5225 -0.5169 -0.5114 -0.5060 -0.5006 -0.4952 -0.4898 -0.4845 -  
0.4792  
F'' 1.5927 1.6029 1.6132 1.6236 1.6339 1.6443 1.6547 1.6651 1.6755 1.6860  
2.80 TO 2.89 F' -0.4739 -0.4687 -0.4635 -0.4583 -0.4532 -0.4481 -0.4430 -0.4380 -0.4330 -  
0.4280  
F'' 1.6965 1.7070 1.7176 1.7281 1.7387 1.7494 1.7600 1.7707 1.7814 1.7921  
ATOMIC SYMBOL = ZN ATOMIC NUMBER = 30  
0.10 TO 0.19 F' -0.1064 -0.0978 -0.0888 -0.0795 -0.0699 -0.0600 -0.0500 -0.0398 -0.0294 -  
0.0189  
F'' 0.0321 0.0390 0.0466 0.0549 0.0639 0.0734 0.0837 0.0945 0.1060 0.1182  
0.20 TO 0.29 F' -0.0084 0.0023 0.0129 0.0236 0.0343 0.0450 0.0556 0.0661 0.0766 0.0869  
F'' 0.1309 0.1443 0.1583 0.1729 0.1881 0.2039 0.2203 0.2373 0.2549 0.2731  
0.30 TO 0.39 F' 0.0945 0.1043 0.1139 0.1234 0.1326 0.1417 0.1505 0.1591 0.1675 0.1756  
F'' 0.2918 0.3108 0.3304 0.3504 0.3710 0.3921 0.4137 0.4357 0.4583 0.4813  
0.40 TO 0.49 F' 0.1834 0.1909 0.1981 0.2051 0.2116 0.2179 0.2238 0.2293 0.2344 0.2391  
F'' 0.5048 0.5288 0.5532 0.5781 0.6035 0.6293 0.6556 0.6822 0.7092 0.7366  
0.50 TO 0.59 F' 0.2435 0.2474 0.2510 0.2541 0.2568 0.2590 0.2607 0.2620 0.2627 0.2630  
F'' 0.7644 0.7926 0.8212 0.8502 0.8795 0.9093 0.9395 0.9700 1.0009 1.0321  
0.60 TO 0.69 F' 0.2628 0.2620 0.2607 0.2589 0.2565 0.2515 0.2477 0.2434 0.2385 0.2329  
F'' 1.0637 1.0957 1.1280 1.1607 1.1938 1.2270 1.2605 1.2943 1.3285 1.3629  
0.70 TO 0.79 F' 0.2267 0.2198 0.2122 0.2040 0.1950 0.1852 0.1748 0.1635 0.1514 0.1386  
F'' 1.3977 1.4327 1.4681 1.5037 1.5396 1.5758 1.6123 1.6491 1.6861 1.7234  
0.80 TO 0.89 F' 0.1248 0.1102 0.0947 0.0783 0.0609 0.0425 0.0231 0.0026 -0.0189 -0.0416  
F'' 1.7610 1.7989 1.8370 1.8753 1.9139 1.9528 1.9919 2.0313 2.0709 2.1108  
0.90 TO 0.99 F' -0.0655 -0.0906 -0.1170 -0.1448 -0.1739 -0.2045 -0.2365 -0.2702 -0.3056 -  
0.3476  
F'' 2.1509 2.1912 2.2318 2.2726 2.3136 2.3549 2.3964 2.4381 2.4800 2.5220  
1.00 TO 1.09 F' -0.3868 -0.4278 -0.4709 -0.5162 -0.5638 -0.6139 -0.6667 -0.7223 -0.7810 -  
0.8430  
F'' 2.5639 2.6059 2.6481 2.6904 2.7330 2.7757 2.8186 2.8616 2.9048 2.9482  
1.10 TO 1.19 F' -0.9087 -0.9784 -1.0526 -1.1316 -1.2162 -1.3069 -1.4048 -1.5108 -1.6263 -  
1.7531  
F'' 2.9917 3.0354 3.0792 3.1232 3.1673 3.2116 3.2560 3.3005 3.3452 3.3901  
1.20 TO 1.29 F' -1.8937 -2.0512 -2.2303 -2.3882 -2.6383 -2.9517 -3.3719 -4.0159 -5.5230 -  
4.9698  
F'' 3.4351 3.4802 3.5254 3.5779 3.6349 3.6931 3.7525 3.8131 3.8748 0.4909  
1.30 TO 1.39 F' -4.0093 -3.5420 -3.2364 -3.0115 -2.8348 -2.6901 -2.5681 -2.4630 -2.3710 -  
2.2892  
F'' 0.4979 0.5050 0.5121 0.5193 0.5264 0.5337 0.5410 0.5483 0.5557 0.5631  
1.40 TO 1.49 F' -2.2159 -2.1495 -2.0889 -2.0333 -1.9819 -1.9341 -1.8896 -1.8480 -1.8089 -

1.7720  
F'' 0.5705 0.5779 0.5853 0.5927 0.6002 0.6078 0.6153 0.6230 0.6306 0.6383  
1.50 TO 1.59 F' -1.7371 -1.7040 -1.6726 -1.6427 -1.6142 -1.5869 -1.5608 -1.5357 -1.5116 -  
1.4884  
F'' 0.6460 0.6538 0.6616 0.6695 0.6774 0.6853 0.6932 0.7012 0.7093 0.7174  
1.60 TO 1.69 F' -1.4660 -1.4444 -1.4236 -1.4034 -1.3839 -1.3649 -1.3465 -1.3287 -1.3113 -  
1.2945  
F'' 0.7255 0.7336 0.7418 0.7500 0.7583 0.7666 0.7749 0.7833 0.7917 0.8002  
1.70 TO 1.79 F' -1.2780 -1.2620 -1.2464 -1.2311 -1.2162 -1.2017 -1.1874 -1.1735 -1.1599 -  
1.1465  
F'' 0.8086 0.8172 0.8257 0.8343 0.8429 0.8516 0.8603 0.8691 0.8778 0.8866  
1.80 TO 1.89 F' -1.1335 -1.1206 -1.1080 -1.0957 -1.0836 -1.0717 -1.0599 -1.0484 -1.0371 -  
1.0260  
F'' 0.8955 0.9044 0.9133 0.9222 0.9312 0.9403 0.9493 0.9584 0.9676 0.9767  
1.90 TO 1.99 F' -1.0150 -1.0043 -0.9936 -0.9832 -0.9729 -0.9627 -0.9527 -0.9428 -0.9330 -  
0.9234  
F'' 0.9859 0.9952 1.0044 1.0137 1.0231 1.0325 1.0419 1.0513 1.0608 1.0703  
2.00 TO 2.09 F' -0.9139 -0.9046 -0.8953 -0.8862 -0.8771 -0.8682 -0.8594 -0.8507 -0.8420 -  
0.8335  
F'' 1.0799 1.0895 1.0991 1.1087 1.1184 1.1281 1.1379 1.1477 1.1575 1.1674  
2.10 TO 2.19 F' -0.8251 -0.8167 -0.8085 -0.8003 -0.7923 -0.7843 -0.7763 -0.7685 -0.7607 -  
0.7530  
F'' 1.1773 1.1872 1.1972 1.2071 1.2172 1.2272 1.2373 1.2475 1.2576 1.2678  
2.20 TO 2.29 F' -0.7454 -0.7379 -0.7304 -0.7230 -0.7157 -0.7084 -0.7012 -0.6940 -0.6870 -  
0.6799  
F'' 1.2780 1.2883 1.2986 1.3089 1.3193 1.3297 1.3401 1.3505 1.3610 1.3716  
2.30 TO 2.39 F' -0.6730 -0.6661 -0.6592 -0.6524 -0.6457 -0.6390 -0.6324 -0.6258 -0.6193 -  
0.6128  
F'' 1.3821 1.3927 1.4033 1.4140 1.4246 1.4354 1.4461 1.4569 1.4677 1.4785  
2.40 TO 2.49 F' -0.6094 -0.6030 -0.5967 -0.5905 -0.5843 -0.5782 -0.5721 -0.5660 -0.5600 -  
0.5540  
F'' 1.4894 1.5003 1.5112 1.5221 1.5331 1.5441 1.5551 1.5661 1.5772 1.5883  
2.50 TO 2.59 F' -0.5481 -0.5422 -0.5364 -0.5306 -0.5248 -0.5191 -0.5135 -0.5078 -0.5022 -  
0.4967  
F'' 1.5995 1.6107 1.6219 1.6331 1.6444 1.6557 1.6670 1.6784 1.6898 1.7012  
2.60 TO 2.69 F' -0.4912 -0.4857 -0.4803 -0.4749 -0.4695 -0.4642 -0.4589 -0.4536 -0.4484 -  
0.4432  
F'' 1.7126 1.7241 1.7356 1.7472 1.7587 1.7703 1.7819 1.7936 1.8053 1.8170  
2.70 TO 2.79 F' -0.4381 -0.4330 -0.4279 -0.4229 -0.4179 -0.4153 -0.4104 -0.4055 -0.4007 -  
0.3959  
F'' 1.8288 1.8405 1.8523 1.8642 1.8760 1.8879 1.8998 1.9117 1.9237 1.9356  
2.80 TO 2.89 F' -0.3911 -0.3905 -0.3858 -0.3812 -0.3766 -0.3721 -0.3675 -0.3630 -0.3586 -  
0.3541  
F'' 1.9477 1.9597 1.9717 1.9837 1.9958 2.0079 2.0200 2.0322 2.0444 2.0566  
ATOMIC SYMBOL = GA ATOMIC NUMBER = 31  
0.10 TO 0.19 F' -0.1136 -0.1041 -0.0943 -0.0841 -0.0736 -0.0629 -0.0520 -0.0409 -0.0297 -  
0.0184  
F'' 0.0370 0.0450 0.0537 0.0632 0.0734 0.0843 0.0960 0.1084 0.1215 0.1353  
0.20 TO 0.29 F' -0.0070 0.0044 0.0158 0.0272 0.0386 0.0499 0.0611 0.0722 0.0805 0.0910  
F'' 0.1499 0.1651 0.1810 0.1977 0.2150 0.2330 0.2516 0.2710 0.2909 0.3112  
0.30 TO 0.39 F' 0.1013 0.1114 0.1212 0.1308 0.1402 0.1493 0.1581 0.1666 0.1748 0.1826  
F'' 0.3322 0.3537 0.3758 0.3985 0.4218 0.4456 0.4700 0.4949 0.5203 0.5463  
0.40 TO 0.49 F' 0.1901 0.1972 0.2040 0.2103 0.2162 0.2216 0.2266 0.2312 0.2352 0.2388  
F'' 0.5728 0.5998 0.6274 0.6554 0.6840 0.7130 0.7426 0.7725 0.8028 0.8336

0.50 TO 0.59 F'	0.2419	0.2444	0.2465	0.2480	0.2489	0.2493	0.2491	0.2483	0.2468	0.2448
F''	0.8648	0.8964	0.9285	0.9610	0.9939	1.0273	1.0611	1.0953	1.1298	1.1648
0.60 TO 0.69 F'	0.2405	0.2370	0.2328	0.2279	0.2223	0.2159	0.2088	0.2009	0.1922	0.1827
F''	1.2002	1.2358	1.2718	1.3081	1.3448	1.3819	1.4192	1.4570	1.4950	1.5334
0.70 TO 0.79 F'	0.1723	0.1611	0.1489	0.1359	0.1219	0.1069	0.0909	0.0738	0.0557	0.0364
F''	1.5721	1.6112	1.6505	1.6902	1.7302	1.7704	1.8110	1.8519	1.8931	1.9346
0.80 TO 0.89 F'	0.0160	-0.0056	-0.0285	-0.0527	-0.0782	-0.1052	-0.1336	-0.1636	-0.1952	-0.2285
F''	1.9763	2.0184	2.0607	2.1033	2.1462	2.1893	2.2327	2.2764	2.3204	2.3646
0.90 TO 0.99 F'	-0.2636	-0.3006	-0.3440	-0.3852	-0.4286	-0.4743	-0.5226	-0.5734	-0.6272	-0.6840
F''	2.4090	2.4537	2.4987	2.5434	2.5883	2.6334	2.6787	2.7243	2.7700	2.8159
1.00 TO 1.09 F'	-0.7442	-0.8080	-0.8758	-0.9479	-1.0249	-1.1074	-1.1959	-1.2913	-1.3946	-1.5073
F''	2.8620	2.9083	2.9547	3.0014	3.0482	3.0952	3.1424	3.1898	3.2373	3.2850
1.10 TO 1.19 F'	-1.6308	-1.7675	-1.9203	-2.0936	-2.2362	-2.4741	-2.7697	-3.1594	-3.7334	-4.8707
F''	3.3328	3.3809	3.4290	3.4774	3.5262	3.5883	3.6519	3.7170	3.7837	3.8520
1.20 TO 1.29 F'	-5.3336	-4.0708	-3.5457	-3.2171	-2.9804	-2.7970	-2.6481	-2.5233	-2.4164	-2.3230
F''	0.4927	0.5002	0.5079	0.5155	0.5233	0.5311	0.5389	0.5468	0.5547	0.5627
1.30 TO 1.39 F'	-2.2404	-2.1665	-2.0997	-2.0388	-1.9830	-1.9315	-1.8838	-1.8393	-1.7977	-1.7587
F''	0.5707	0.5788	0.5869	0.5951	0.6033	0.6116	0.6199	0.6283	0.6368	0.6452
1.40 TO 1.49 F'	-1.7219	-1.6871	-1.6541	-1.6228	-1.5930	-1.5646	-1.5374	-1.5113	-1.4863	-1.4623
F''	0.6537	0.6621	0.6706	0.6791	0.6877	0.6963	0.7049	0.7136	0.7224	0.7312
1.50 TO 1.59 F'	-1.4391	-1.4169	-1.3953	-1.3745	-1.3544	-1.3349	-1.3160	-1.2977	-1.2799	-1.2625
F''	0.7400	0.7489	0.7578	0.7668	0.7758	0.7848	0.7939	0.8031	0.8122	0.8215
1.60 TO 1.69 F'	-1.2457	-1.2292	-1.2132	-1.1976	-1.1823	-1.1674	-1.1528	-1.1386	-1.1246	-1.1110
F''	0.8307	0.8400	0.8494	0.8588	0.8682	0.8777	0.8872	0.8968	0.9064	0.9160
1.70 TO 1.79 F'	-1.0976	-1.0844	-1.0716	-1.0589	-1.0465	-1.0343	-1.0223	-1.0106	-0.9990	-0.9876
F''	0.9257	0.9355	0.9452	0.9551	0.9649	0.9748	0.9847	0.9947	1.0047	1.0148
1.80 TO 1.89 F'	-0.9764	-0.9654	-0.9545	-0.9438	-0.9332	-0.9228	-0.9126	-0.9025	-0.8925	-0.8826
F''	1.0249	1.0350	1.0452	1.0555	1.0657	1.0760	1.0864	1.0967	1.1072	1.1176
1.90 TO 1.99 F'	-0.8729	-0.8633	-0.8538	-0.8445	-0.8352	-0.8261	-0.8171	-0.8081	-0.7993	-0.7906
F''	1.1281	1.1387	1.1493	1.1599	1.1706	1.1813	1.1920	1.2028	1.2136	1.2245
2.00 TO 2.09 F'	-0.7819	-0.7734	-0.7649	-0.7566	-0.7483	-0.7401	-0.7320	-0.7240	-0.7160	-0.7081
F''	1.2354	1.2463	1.2573	1.2683	1.2794	1.2905	1.3016	1.3128	1.3240	1.3352
2.10 TO 2.19 F'	-0.7003	-0.6926	-0.6850	-0.6774	-0.6699	-0.6624	-0.6550	-0.6477	-0.6405	-0.6333
F''	1.3465	1.3578	1.3692	1.3806	1.3921	1.4035	1.4150	1.4266	1.4382	1.4498
2.20 TO 2.29 F'	-0.6261	-0.6217	-0.6147	-0.6078	-0.6009	-0.5941	-0.5874	-0.5807	-0.5741	-0.5675
F''	1.4615	1.4732	1.4849	1.4966	1.5084	1.5202	1.5321	1.5439	1.5559	1.5678
2.30 TO 2.39 F'	-0.5610	-0.5545	-0.5481	-0.5417	-0.5354	-0.5291	-0.5229	-0.5167	-0.5105	-0.5045
F''	1.5798	1.5919	1.6039	1.6160	1.6282	1.6403	1.6525	1.6648	1.6771	1.6894
2.40 TO 2.49 F'	-0.4984	-0.4924	-0.4865	-0.4806	-0.4747	-0.4689	-0.4631	-0.4574	-0.4517	-

0.4461  
F'' 1.7017 1.7141 1.7265 1.7390 1.7515 1.7640 1.7766 1.7892 1.8018 1.8144  
2.50 TO 2.59 F' -0.4405 -0.4370 -0.4315 -0.4261 -0.4207 -0.4153 -0.4100 -0.4084 -0.4032 -  
0.3980  
F'' 1.8271 1.8399 1.8526 1.8654 1.8782 1.8910 1.9039 1.9168 1.9297 1.9426  
2.60 TO 2.69 F' -0.3929 -0.3878 -0.3827 -0.3777 -0.3728 -0.3678 -0.3629 -0.3581 -0.3533 -  
0.3485  
F'' 1.9556 1.9686 1.9816 1.9947 2.0077 2.0209 2.0340 2.0472 2.0604 2.0737  
2.70 TO 2.79 F' -0.3437 -0.3390 -0.3343 -0.3297 -0.3251 -0.3205 -0.3160 -0.3115 -0.3070 -  
0.3026  
F'' 2.0869 2.1003 2.1136 2.1270 2.1404 2.1538 2.1673 2.1808 2.1943 2.2078  
2.80 TO 2.89 F' -0.2982 -0.2939 -0.2895 -0.2852 -0.2810 -0.2768 -0.2726 -0.2684 -0.2643 -  
0.2602  
F'' 2.2214 2.2350 2.2487 2.2624 2.2761 2.2898 2.3036 2.3174 2.3312 2.3451  
ATOMIC SYMBOL = GE ATOMIC NUMBER = 32  
0.10 TO 0.19 F' -0.1214 -0.1109 -0.1001 -0.0890 -0.0776 -0.0660 -0.0542 -0.0422 -0.0301 -  
0.0180  
F'' 0.0425 0.0516 0.0615 0.0723 0.0839 0.0963 0.1096 0.1237 0.1386 0.1543  
0.20 TO 0.29 F' -0.0058 0.0064 0.0185 0.0306 0.0426 0.0544 0.0637 0.0749 0.0859 0.0967  
F'' 0.1708 0.1881 0.2061 0.2250 0.2446 0.2650 0.2861 0.3077 0.3300 0.3529  
0.30 TO 0.39 F' 0.1072 0.1174 0.1274 0.1370 0.1463 0.1553 0.1638 0.1720 0.1798 0.1872  
F'' 0.3765 0.4008 0.4257 0.4512 0.4773 0.5041 0.5315 0.5594 0.5880 0.6171  
0.40 TO 0.49 F' 0.1941 0.2005 0.2065 0.2119 0.2168 0.2211 0.2248 0.2280 0.2306 0.2326  
F'' 0.6469 0.6772 0.7080 0.7395 0.7714 0.8040 0.8370 0.8705 0.9044 0.9388  
0.50 TO 0.59 F' 0.2340 0.2347 0.2348 0.2342 0.2329 0.2309 0.2270 0.2233 0.2189 0.2137  
F'' 0.9736 1.0090 1.0448 1.0811 1.1179 1.1551 1.1927 1.2307 1.2691 1.3079  
0.60 TO 0.69 F' 0.2076 0.2007 0.1929 0.1842 0.1746 0.1641 0.1526 0.1400 0.1264 0.1118  
F'' 1.3471 1.3867 1.4267 1.4671 1.5078 1.5490 1.5905 1.6323 1.6746 1.7171  
0.70 TO 0.79 F' 0.0960 0.0790 0.0609 0.0415 0.0209 -0.0011 -0.0245 -0.0494 -0.0757 -0.1037  
F'' 1.7601 1.8034 1.8470 1.8909 1.9352 1.9798 2.0248 2.0700 2.1156 2.1615  
0.80 TO 0.89 F' -0.1333 -0.1646 -0.1977 -0.2328 -0.2699 -0.3092 -0.3549 -0.3989 -0.4455 -  
0.4948  
F'' 2.2077 2.2542 2.3010 2.3481 2.3955 2.4432 2.4911 2.5388 2.5868 2.6350  
0.90 TO 0.99 F' -0.5470 -0.6023 -0.6610 -0.7233 -0.7897 -0.8604 -0.9361 -1.0171 -1.1043 -  
1.1983  
F'' 2.6834 2.7321 2.7810 2.8301 2.8794 2.9290 2.9787 3.0287 3.0789 3.1292  
1.00 TO 1.09 F' -1.3003 -1.4115 -1.5335 -1.6685 -1.8195 -1.9906 -2.1880 -2.3611 -2.6504 -  
3.0302  
F'' 3.1798 3.2306 3.2815 3.3327 3.3840 3.4355 3.4872 3.5477 3.6158 3.6858  
1.10 TO 1.19 F' -3.5837 -4.6394 -5.4407 -4.0375 -3.4944 -3.1602 -2.9216 -2.7375 -2.5885 -  
2.4641  
F'' 3.7577 3.8314 0.4957 0.5039 0.5121 0.5204 0.5287 0.5371 0.5456 0.5541  
1.20 TO 1.29 F' -2.3576 -2.2647 -2.1827 -2.1093 -2.0430 -1.9827 -1.9274 -1.8764 -1.8291 -  
1.7850  
F'' 0.5626 0.5713 0.5800 0.5887 0.5975 0.6064 0.6153 0.6243 0.6333 0.6424  
1.30 TO 1.39 F' -1.7438 -1.7052 -1.6687 -1.6343 -1.6017 -1.5707 -1.5412 -1.5130 -1.4861 -  
1.4603  
F'' 0.6515 0.6607 0.6700 0.6793 0.6887 0.6981 0.7076 0.7171 0.7267 0.7364  
1.40 TO 1.49 F' -1.4355 -1.4117 -1.3887 -1.3666 -1.3452 -1.3245 -1.3045 -1.2851 -1.2663 -  
1.2480  
F'' 0.7460 0.7556 0.7653 0.7750 0.7847 0.7945 0.8044 0.8143 0.8242 0.8342  
1.50 TO 1.59 F' -1.2302 -1.2129 -1.1961 -1.1797 -1.1637 -1.1481 -1.1328 -1.1179 -1.1033 -  
1.0890  
F'' 0.8443 0.8544 0.8645 0.8747 0.8850 0.8953 0.9056 0.9160 0.9265 0.9370

1.60 TO 1.69 F' -1.0751 -1.0614 -1.0479 -1.0347 -1.0218 -1.0091 -0.9966 -0.9844 -0.9723 -  
0.9605  
F'' 0.9475 0.9581 0.9688 0.9795 0.9902 1.0010 1.0118 1.0227 1.0336 1.0446  
1.70 TO 1.79 F' -0.9488 -0.9374 -0.9261 -0.9149 -0.9040 -0.8932 -0.8825 -0.8720 -0.8617 -  
0.8514  
F'' 1.0556 1.0667 1.0778 1.0890 1.1002 1.1114 1.1227 1.1341 1.1455 1.1569  
1.80 TO 1.89 F' -0.8413 -0.8314 -0.8216 -0.8118 -0.8022 -0.7928 -0.7834 -0.7741 -0.7650 -  
0.7559  
F'' 1.1684 1.1799 1.1915 1.2031 1.2148 1.2265 1.2383 1.2501 1.2619 1.2738  
1.90 TO 1.99 F' -0.7470 -0.7381 -0.7294 -0.7207 -0.7121 -0.7036 -0.6952 -0.6869 -0.6787 -  
0.6705  
F'' 1.2858 1.2978 1.3098 1.3219 1.3340 1.3462 1.3584 1.3707 1.3830 1.3953  
2.00 TO 2.09 F' -0.6625 -0.6545 -0.6465 -0.6408 -0.6331 -0.6254 -0.6178 -0.6103 -0.6028 -  
0.5954  
F'' 1.4077 1.4201 1.4326 1.4451 1.4577 1.4702 1.4828 1.4955 1.5082 1.5210  
2.10 TO 2.19 F' -0.5881 -0.5808 -0.5736 -0.5665 -0.5594 -0.5524 -0.5454 -0.5385 -0.5317 -  
0.5249  
F'' 1.5337 1.5466 1.5595 1.5724 1.5853 1.5983 1.6114 1.6244 1.6376 1.6507  
2.20 TO 2.29 F' -0.5181 -0.5115 -0.5048 -0.4983 -0.4917 -0.4853 -0.4789 -0.4725 -0.4662 -  
0.4599  
F'' 1.6639 1.6772 1.6905 1.7038 1.7172 1.7306 1.7440 1.7575 1.7711 1.7846  
2.30 TO 2.39 F' -0.4556 -0.4495 -0.4434 -0.4374 -0.4314 -0.4255 -0.4228 -0.4170 -0.4113 -  
0.4056  
F'' 1.7982 1.8119 1.8255 1.8392 1.8530 1.8668 1.8806 1.8944 1.9083 1.9222  
2.40 TO 2.49 F' -0.3999 -0.3943 -0.3887 -0.3832 -0.3777 -0.3723 -0.3669 -0.3616 -0.3563 -  
0.3510  
F'' 1.9361 1.9501 1.9641 1.9781 1.9922 2.0063 2.0205 2.0347 2.0489 2.0632  
2.50 TO 2.59 F' -0.3458 -0.3406 -0.3355 -0.3304 -0.3253 -0.3203 -0.3154 -0.3105 -0.3056 -  
0.3007  
F'' 2.0775 2.0918 2.1062 2.1206 2.1351 2.1496 2.1641 2.1787 2.1933 2.2079  
2.60 TO 2.69 F' -0.2959 -0.2912 -0.2864 -0.2818 -0.2771 -0.2725 -0.2680 -0.2634 -0.2590 -  
0.2545  
F'' 2.2226 2.2373 2.2520 2.2668 2.2816 2.2964 2.3113 2.3262 2.3412 2.3562  
2.70 TO 2.79 F' -0.2501 -0.2458 -0.2414 -0.2371 -0.2329 -0.2287 -0.2245 -0.2204 -0.2163 -  
0.2122  
F'' 2.3712 2.3862 2.4013 2.4165 2.4316 2.4468 2.4620 2.4773 2.4926 2.5079  
2.80 TO 2.89 F' -0.2082 -0.2043 -0.2003 -0.1964 -0.1926 -0.1887 -0.1849 -0.1812 -0.1775 -  
0.1738  
F'' 2.5233 2.5387 2.5541 2.5696 2.5851 2.6006 2.6162 2.6318 2.6474 2.6631  
ATOMIC SYMBOL = AS ATOMIC NUMBER = 33  
0.10 TO 0.19 F' -0.1286 -0.1173 -0.1055 -0.0935 -0.0811 -0.0686 -0.0559 -0.0431 -0.0302 -  
0.0172  
F'' 0.0485 0.0588 0.0701 0.0823 0.0954 0.1095 0.1245 0.1405 0.1573 0.1750  
0.20 TO 0.29 F' -0.0043 0.0086 0.0213 0.0340 0.0465 0.0567 0.0684 0.0800 0.0912 0.1022  
F'' 0.1937 0.2132 0.2335 0.2548 0.2769 0.2996 0.3231 0.3473 0.3723 0.3980  
0.30 TO 0.39 F' 0.1128 0.1230 0.1329 0.1424 0.1515 0.1602 0.1683 0.1760 0.1831 0.1898  
F'' 0.4245 0.4517 0.4795 0.5081 0.5374 0.5673 0.5979 0.6292 0.6611 0.6937  
0.40 TO 0.49 F' 0.1958 0.2013 0.2061 0.2103 0.2137 0.2165 0.2184 0.2197 0.2203 0.2203  
F'' 0.7269 0.7608 0.7953 0.8303 0.8660 0.9023 0.9392 0.9765 1.0142 1.0525  
0.50 TO 0.59 F' 0.2194 0.2177 0.2152 0.2111 0.2068 0.2015 0.1954 0.1882 0.1801 0.1710  
F'' 1.0913 1.1305 1.1704 1.2106 1.2513 1.2925 1.3341 1.3762 1.4187 1.4617  
0.60 TO 0.69 F' 0.1608 0.1495 0.1371 0.1236 0.1088 0.0928 0.0755 0.0569 0.0369 0.0155  
F'' 1.5051 1.5489 1.5932 1.6379 1.6829 1.7284 1.7743 1.8205 1.8672 1.9142  
0.70 TO 0.79 F' -0.0075 -0.0320 -0.0581 -0.0860 -0.1156 -0.1472 -0.1807 -0.2164 -0.2542 -

0.2944  
F'' 1.9616 2.0094 2.0575 2.1060 2.1548 2.2040 2.2536 2.3035 2.3537 2.4042  
0.80 TO 0.89 F' -0.3371 -0.3863 -0.4346 -0.4859 -0.5403 -0.5983 -0.6601 -0.7260 -0.7965 -  
0.8720  
F'' 2.4551 2.5060 2.5570 2.6083 2.6598 2.7116 2.7637 2.8160 2.8686 2.9214  
0.90 TO 0.99 F' -0.9530 -1.0404 -1.1350 -1.2377 -1.3500 -1.4735 -1.6106 -1.7644 -1.9392 -  
2.1419  
F'' 2.9744 3.0277 3.0813 3.1350 3.1890 3.2432 3.2977 3.3523 3.4072 3.4623  
1.00 TO 1.09 F' -2.3237 -2.6248 -3.0263 -3.6296 -4.9124 -4.8978 -3.8283 -3.3460 -3.0382 -  
2.8147  
F'' 3.5242 3.5964 3.6707 3.7471 3.8257 0.5005 0.5093 0.5181 0.5270 0.5360  
1.10 TO 1.19 F' -2.6405 -2.4988 -2.3797 -2.2775 -2.1881 -2.1090 -2.0381 -1.9739 -1.9155 -  
1.8618  
F'' 0.5451 0.5542 0.5634 0.5726 0.5820 0.5914 0.6008 0.6103 0.6199 0.6296  
1.20 TO 1.29 F' -1.8122 -1.7662 -1.7233 -1.6831 -1.6454 -1.6098 -1.5761 -1.5442 -1.5138 -  
1.4849  
F'' 0.6393 0.6491 0.6589 0.6688 0.6788 0.6889 0.6990 0.7091 0.7194 0.7297  
1.30 TO 1.39 F' -1.4573 -1.4308 -1.4055 -1.3811 -1.3577 -1.3352 -1.3134 -1.2924 -1.2720 -  
1.2524  
F'' 0.7401 0.7505 0.7610 0.7716 0.7822 0.7929 0.8036 0.8144 0.8253 0.8363  
1.40 TO 1.49 F' -1.2332 -1.2146 -1.1965 -1.1789 -1.1617 -1.1450 -1.1287 -1.1128 -1.0972 -  
1.0820  
F'' 0.8471 0.8580 0.8690 0.8799 0.8910 0.9021 0.9133 0.9245 0.9357 0.9471  
1.50 TO 1.59 F' -1.0672 -1.0526 -1.0384 -1.0244 -1.0107 -0.9973 -0.9841 -0.9712 -0.9585 -  
0.9460  
F'' 0.9585 0.9699 0.9814 0.9929 1.0045 1.0162 1.0279 1.0397 1.0515 1.0634  
1.60 TO 1.69 F' -0.9337 -0.9216 -0.9097 -0.8980 -0.8865 -0.8751 -0.8639 -0.8529 -0.8420 -  
0.8313  
F'' 1.0753 1.0873 1.0994 1.1115 1.1236 1.1358 1.1481 1.1604 1.1728 1.1852  
1.70 TO 1.79 F' -0.8207 -0.8103 -0.8000 -0.7898 -0.7798 -0.7698 -0.7600 -0.7504 -0.7408 -  
0.7313  
F'' 1.1976 1.2102 1.2227 1.2354 1.2481 1.2608 1.2736 1.2864 1.2993 1.3123  
1.80 TO 1.89 F' -0.7220 -0.7127 -0.7036 -0.6945 -0.6855 -0.6767 -0.6679 -0.6592 -0.6524 -  
0.6439  
F'' 1.3253 1.3383 1.3514 1.3646 1.3778 1.3910 1.4043 1.4177 1.4311 1.4445  
1.90 TO 1.99 F' -0.6355 -0.6272 -0.6190 -0.6109 -0.6028 -0.5948 -0.5869 -0.5791 -0.5713 -  
0.5636  
F'' 1.4580 1.4715 1.4851 1.4987 1.5124 1.5261 1.5399 1.5537 1.5676 1.5815  
2.00 TO 2.09 F' -0.5560 -0.5484 -0.5410 -0.5335 -0.5262 -0.5189 -0.5117 -0.5045 -0.4974 -  
0.4904  
F'' 1.5955 1.6095 1.6236 1.6377 1.6518 1.6660 1.6803 1.6946 1.7089 1.7233  
2.10 TO 2.19 F' -0.4834 -0.4780 -0.4712 -0.4644 -0.4577 -0.4511 -0.4445 -0.4406 -0.4342 -  
0.4278  
F'' 1.7378 1.7523 1.7668 1.7814 1.7960 1.8106 1.8253 1.8400 1.8548 1.8696  
2.20 TO 2.29 F' -0.4215 -0.4152 -0.4090 -0.4028 -0.3967 -0.3907 -0.3846 -0.3787 -0.3728 -  
0.3669  
F'' 1.8844 1.8993 1.9143 1.9292 1.9443 1.9593 1.9744 1.9896 2.0048 2.0200  
2.30 TO 2.39 F' -0.3611 -0.3554 -0.3497 -0.3440 -0.3384 -0.3328 -0.3273 -0.3219 -0.3164 -  
0.3111  
F'' 2.0353 2.0506 2.0660 2.0814 2.0968 2.1123 2.1278 2.1434 2.1590 2.1747  
2.40 TO 2.49 F' -0.3057 -0.3005 -0.2952 -0.2901 -0.2849 -0.2798 -0.2748 -0.2698 -0.2649 -  
0.2600  
F'' 2.1904 2.2061 2.2219 2.2377 2.2536 2.2695 2.2854 2.3014 2.3174 2.3335  
2.50 TO 2.59 F' -0.2551 -0.2503 -0.2455 -0.2408 -0.2361 -0.2315 -0.2269 -0.2223 -0.2179 -

0.2134  
F'' 2.3496 2.3658 2.3820 2.3982 2.4145 2.4308 2.4471 2.4635 2.4800 2.4964  
2.60 TO 2.69 F' -0.2090 -0.2046 -0.2003 -0.1960 -0.1918 -0.1876 -0.1835 -0.1793 -0.1753 -  
0.1713  
F'' 2.5129 2.5295 2.5461 2.5627 2.5794 2.5961 2.6128 2.6296 2.6464 2.6633  
2.70 TO 2.79 F' -0.1673 -0.1634 -0.1595 -0.1557 -0.1519 -0.1481 -0.1444 -0.1407 -0.1371 -  
0.1335  
F'' 2.6802 2.6971 2.7141 2.7311 2.7482 2.7653 2.7824 2.7996 2.8168 2.8340  
2.80 TO 2.89 F' -0.1300 -0.1265 -0.1231 -0.1197 -0.1163 -0.1130 -0.1097 -0.1065 -0.1033 -  
0.1002  
F'' 2.8513 2.8686 2.8860 2.9034 2.9208 2.9383 2.9558 2.9733 2.9909 3.0085  
ATOMIC SYMBOL = SE ATOMIC NUMBER = 34  
0.10 TO 0.19 F' -0.1363 -0.1240 -0.1112 -0.0981 -0.0848 -0.0713 -0.0577 -0.0440 -0.0302 -  
0.0165  
F'' 0.0550 0.0667 0.0794 0.0932 0.1081 0.1240 0.1409 0.1589 0.1779 0.1978  
0.20 TO 0.29 F' -0.0028 0.0107 0.0241 0.0355 0.0481 0.0604 0.0725 0.0842 0.0956 0.1066  
F'' 0.2188 0.2408 0.2637 0.2875 0.3121 0.3375 0.3638 0.3909 0.4188 0.4476  
0.30 TO 0.39 F' 0.1171 0.1272 0.1368 0.1460 0.1546 0.1626 0.1701 0.1769 0.1831 0.1887  
F'' 0.4771 0.5074 0.5385 0.5704 0.6030 0.6363 0.6704 0.7052 0.7407 0.7770  
0.40 TO 0.49 F' 0.1935 0.1976 0.2009 0.2035 0.2051 0.2057 0.2053 0.2040 0.2022 0.1991  
F'' 0.8139 0.8515 0.8898 0.9287 0.9683 1.0086 1.0495 1.0908 1.1326 1.1750  
0.50 TO 0.59 F' 0.1953 0.1904 0.1845 0.1776 0.1695 0.1603 0.1500 0.1384 0.1256 0.1114  
F'' 1.2178 1.2613 1.3052 1.3497 1.3946 1.4401 1.4861 1.5325 1.5794 1.6268  
0.60 TO 0.69 F' 0.0960 0.0791 0.0607 0.0408 0.0194 -0.0037 -0.0285 -0.0551 -0.0837 -0.1141  
F'' 1.6747 1.7230 1.7718 1.8210 1.8706 1.9207 1.9712 2.0221 2.0734 2.1251  
0.70 TO 0.79 F' -0.1467 -0.1815 -0.2187 -0.2583 -0.3005 -0.3455 -0.3971 -0.4485 -0.5033 -  
0.5617  
F'' 2.1772 2.2298 2.2827 2.3359 2.3896 2.4436 2.4977 2.5520 2.6065 2.6614  
0.80 TO 0.89 F' -0.6242 -0.6912 -0.7630 -0.8402 -0.9234 -1.0134 -1.1111 -1.2178 -1.3350 -  
1.4646  
F'' 2.7166 2.7720 2.8278 2.8838 2.9402 2.9968 3.0536 3.1108 3.1682 3.2259  
0.90 TO 0.99 F' -1.6094 -1.7730 -1.9610 -2.1818 -2.3934 -2.7388 -3.2240 -4.0506 -7.1564 -  
4.1112  
F'' 3.2838 3.3420 3.4004 3.4591 3.5283 3.6050 3.6840 3.7652 0.4996 0.5090  
1.00 TO 1.09 F' -3.4669 -3.0995 -2.8457 -2.6536 -2.5002 -2.3731 -2.2651 -2.1714 -2.0889 -  
2.0154  
F'' 0.5185 0.5281 0.5377 0.5474 0.5572 0.5671 0.5770 0.5870 0.5971 0.6072  
1.10 TO 1.19 F' -1.9491 -1.8890 -1.8339 -1.7831 -1.7361 -1.6924 -1.6515 -1.6131 -1.5769 -  
1.5428  
F'' 0.6175 0.6278 0.6382 0.6486 0.6592 0.6698 0.6805 0.6912 0.7021 0.7130  
1.20 TO 1.29 F' -1.5104 -1.4796 -1.4503 -1.4223 -1.3956 -1.3699 -1.3453 -1.3216 -1.2987 -  
1.2767  
F'' 0.7240 0.7350 0.7462 0.7574 0.7687 0.7800 0.7914 0.8029 0.8145 0.8261  
1.30 TO 1.39 F' -1.2554 -1.2349 -1.2150 -1.1956 -1.1769 -1.1587 -1.1410 -1.1239 -1.1071 -  
1.0908  
F'' 0.8379 0.8496 0.8615 0.8734 0.8855 0.8975 0.9097 0.9219 0.9342 0.9466  
1.40 TO 1.49 F' -1.0748 -1.0590 -1.0436 -1.0286 -1.0139 -0.9994 -0.9853 -0.9714 -0.9578 -  
0.9444  
F'' 0.9588 0.9711 0.9835 0.9959 1.0084 1.0209 1.0335 1.0462 1.0589 1.0717  
1.50 TO 1.59 F' -0.9313 -0.9184 -0.9057 -0.8932 -0.8809 -0.8689 -0.8570 -0.8452 -0.8337 -  
0.8223  
F'' 1.0845 1.0974 1.1104 1.1234 1.1365 1.1497 1.1629 1.1762 1.1896 1.2030  
1.60 TO 1.69 F' -0.8111 -0.8000 -0.7891 -0.7784 -0.7677 -0.7572 -0.7469 -0.7367 -0.7266 -  
0.7166

F''	1.2164	1.2300	1.2436	1.2572	1.2709	1.2847	1.2985	1.3124	1.3264	1.3404
1.70 TO 1.79 F'	-0.7067	-0.6970	-0.6873	-0.6790	-0.6696	-0.6603	-0.6511	-0.6420	-0.6330	-0.6241
F''	1.3545	1.3686	1.3828	1.3970	1.4113	1.4257	1.4401	1.4545	1.4690	1.4836
1.80 TO 1.89 F'	-0.6153	-0.6066	-0.5980	-0.5894	-0.5810	-0.5726	-0.5643	-0.5561	-0.5480	-0.5400
F''	1.4982	1.5129	1.5277	1.5425	1.5573	1.5722	1.5872	1.6022	1.6173	1.6324
1.90 TO 1.99 F'	-0.5320	-0.5241	-0.5163	-0.5085	-0.5021	-0.4945	-0.4870	-0.4795	-0.4722	-0.4649
F''	1.6476	1.6629	1.6782	1.6935	1.7090	1.7244	1.7399	1.7555	1.7711	1.7867
2.00 TO 2.09 F'	-0.4598	-0.4527	-0.4456	-0.4386	-0.4317	-0.4248	-0.4180	-0.4113	-0.4046	-0.3980
F''	1.8024	1.8181	1.8339	1.8498	1.8657	1.8816	1.8976	1.9136	1.9297	1.9459
2.10 TO 2.19 F'	-0.3914	-0.3849	-0.3785	-0.3721	-0.3658	-0.3595	-0.3533	-0.3472	-0.3411	-0.3350
F''	1.9620	1.9783	1.9946	2.0109	2.0273	2.0438	2.0602	2.0768	2.0934	2.1100
2.20 TO 2.29 F'	-0.3291	-0.3231	-0.3173	-0.3114	-0.3057	-0.3000	-0.2943	-0.2887	-0.2832	-0.2777
F''	2.1267	2.1434	2.1602	2.1771	2.1939	2.2109	2.2278	2.2449	2.2619	2.2791
2.30 TO 2.39 F'	-0.2722	-0.2669	-0.2615	-0.2562	-0.2510	-0.2458	-0.2407	-0.2356	-0.2306	-0.2256
F''	2.2962	2.3134	2.3307	2.3480	2.3654	2.3828	2.4002	2.4177	2.4353	2.4529
2.40 TO 2.49 F'	-0.2207	-0.2159	-0.2110	-0.2063	-0.2016	-0.1969	-0.1923	-0.1877	-0.1832	-0.1787
F''	2.4705	2.4882	2.5059	2.5237	2.5415	2.5594	2.5773	2.5952	2.6132	2.6313
2.50 TO 2.59 F'	-0.1743	-0.1700	-0.1657	-0.1614	-0.1572	-0.1530	-0.1489	-0.1449	-0.1409	-0.1369
F''	2.6494	2.6675	2.6857	2.7039	2.7222	2.7405	2.7589	2.7773	2.7957	2.8142
2.60 TO 2.69 F'	-0.1330	-0.1291	-0.1253	-0.1216	-0.1179	-0.1142	-0.1106	-0.1070	-0.1035	-0.1001
F''	2.8327	2.8513	2.8699	2.8886	2.9073	2.9261	2.9449	2.9637	2.9826	3.0015
2.70 TO 2.79 F'	-0.0967	-0.0933	-0.0900	-0.0867	-0.0835	-0.0804	-0.0773	-0.0742	-0.0712	-0.0683
F''	3.0205	3.0395	3.0585	3.0776	3.0968	3.1159	3.1352	3.1544	3.1737	3.1931
2.80 TO 2.89 F'	-0.0654	-0.0625	-0.0597	-0.0569	-0.0542	-0.0516	-0.0489	-0.0464	-0.0439	-0.0414
F''	3.2125	3.2319	3.2514	3.2709	3.2904	3.3100	3.3297	3.3493	3.3691	3.3888
ATOMIC SYMBOL = BR ATOMIC NUMBER = 35										
0.10 TO 0.19 F'	-0.1449	-0.1315	-0.1178	-0.1037	-0.0895	-0.0750	-0.0605	-0.0459	-0.0314	-0.0169
F''	0.0623	0.0754	0.0897	0.1052	0.1219	0.1398	0.1588	0.1789	0.2002	0.2226
0.20 TO 0.29 F'	-0.0025	0.0116	0.0237	0.0370	0.0499	0.0625	0.0747	0.0865	0.0978	0.1087
F''	0.2461	0.2707	0.2962	0.3227	0.3501	0.3784	0.4077	0.4379	0.4690	0.5009
0.30 TO 0.39 F'	0.1189	0.1287	0.1378	0.1464	0.1542	0.1614	0.1679	0.1736	0.1786	0.1827
F''	0.5338	0.5675	0.6020	0.6374	0.6736	0.7106	0.7484	0.7869	0.8263	0.8664
0.40 TO 0.49 F'	0.1860	0.1884	0.1900	0.1905	0.1901	0.1886	0.1861	0.1793	0.1742	0.1679
F''	0.9073	0.9489	0.9912	1.0343	1.0781	1.1226	1.1678	1.2133	1.2594	1.3060
0.50 TO 0.59 F'	0.1604	0.1517	0.1417	0.1303	0.1175	0.1033	0.0876	0.0704	0.0515	0.0309
F''	1.3533	1.4011	1.4495	1.4984	1.5479	1.5979	1.6484	1.6995	1.7510	1.8031
0.60 TO 0.69 F'	0.0086	-0.0156	-0.0417	-0.0699	-0.1001	-0.1327	-0.1676	-0.2050	-0.2451	-0.2880
F''	1.8556	1.9086	1.9621	2.0161	2.0705	2.1254	2.1807	2.2365	2.2927	2.3493
0.70 TO 0.79 F'	-0.3340	-0.3863	-0.4392	-0.4958	-0.5565	-0.6217	-0.6917	-0.7672	-0.8488	-0.9371
F''	2.4064	2.4637	2.5212	2.5789	2.6370	2.6955	2.7543	2.8135	2.8729	2.9327



0.80 TO 0.89 F' -1.0333 -1.1383 -1.2538 -1.3816 -1.5245 -1.6860 -1.8715 -2.0891 -2.2995 -  
2.6363  
F'' 2.9928 3.0533 3.1140 3.1750 3.2363 3.2980 3.3599 3.4220 3.4892 3.5688

0.90 TO 0.99 F' -3.1060 -3.8895 -8.5402 -4.1023 -3.4305 -3.0559 -2.7996 -2.6067 -2.4532 -  
2.3263  
F'' 3.6508 3.7353 3.8222 0.5121 0.5222 0.5325 0.5428 0.5532 0.5637 0.5743

1.00 TO 1.09 F' -2.2186 -2.1253 -2.0433 -1.9702 -1.9044 -1.8446 -1.7900 -1.7396 -1.6929 -  
1.6495  
F'' 0.5849 0.5957 0.6065 0.6174 0.6284 0.6395 0.6507 0.6620 0.6733 0.6848

1.10 TO 1.19 F' -1.6089 -1.5708 -1.5348 -1.5009 -1.4687 -1.4381 -1.4089 -1.3810 -1.3544 -  
1.3288  
F'' 0.6963 0.7079 0.7196 0.7313 0.7432 0.7551 0.7672 0.7793 0.7914 0.8037

1.20 TO 1.29 F' -1.3042 -1.2806 -1.2578 -1.2358 -1.2145 -1.1939 -1.1740 -1.1547 -1.1359 -  
1.1177  
F'' 0.8161 0.8285 0.8410 0.8536 0.8663 0.8791 0.8919 0.9049 0.9179 0.9310

1.30 TO 1.39 F' -1.0999 -1.0827 -1.0658 -1.0495 -1.0335 -1.0179 -1.0027 -0.9878 -0.9733 -  
0.9591  
F'' 0.9441 0.9574 0.9707 0.9842 0.9977 1.0112 1.0249 1.0386 1.0525 1.0664

1.40 TO 1.49 F' -0.9450 -0.9310 -0.9173 -0.9038 -0.8906 -0.8776 -0.8648 -0.8522 -0.8398 -  
0.8276  
F'' 1.0802 1.0940 1.1078 1.1218 1.1358 1.1499 1.1640 1.1782 1.1925 1.2069

1.50 TO 1.59 F' -0.8156 -0.8038 -0.7921 -0.7806 -0.7693 -0.7581 -0.7471 -0.7362 -0.7255 -  
0.7149  
F'' 1.2213 1.2358 1.2504 1.2651 1.2798 1.2945 1.3094 1.3243 1.3393 1.3543

1.60 TO 1.69 F' -0.7044 -0.6948 -0.6846 -0.6745 -0.6646 -0.6547 -0.6450 -0.6354 -0.6259 -  
0.6165  
F'' 1.3695 1.3847 1.3999 1.4152 1.4306 1.4460 1.4615 1.4771 1.4927 1.5084

1.70 TO 1.79 F' -0.6072 -0.5980 -0.5889 -0.5799 -0.5710 -0.5622 -0.5535 -0.5448 -0.5363 -  
0.5278  
F'' 1.5242 1.5400 1.5559 1.5719 1.5879 1.6040 1.6201 1.6364 1.6526 1.6690

1.80 TO 1.89 F' -0.5204 -0.5121 -0.5039 -0.4958 -0.4878 -0.4815 -0.4737 -0.4659 -0.4583 -  
0.4507  
F'' 1.6854 1.7018 1.7183 1.7349 1.7516 1.7682 1.7850 1.8018 1.8186 1.8355

1.90 TO 1.99 F' -0.4432 -0.4357 -0.4284 -0.4211 -0.4139 -0.4067 -0.3996 -0.3926 -0.3857 -  
0.3788  
F'' 1.8525 1.8695 1.8866 1.9038 1.9210 1.9382 1.9556 1.9729 1.9904 2.0079

2.00 TO 2.09 F' -0.3720 -0.3652 -0.3585 -0.3519 -0.3454 -0.3389 -0.3325 -0.3261 -0.3198 -  
0.3136  
F'' 2.0254 2.0430 2.0607 2.0784 2.0962 2.1140 2.1319 2.1499 2.1679 2.1859

2.10 TO 2.19 F' -0.3074 -0.3013 -0.2952 -0.2893 -0.2833 -0.2775 -0.2717 -0.2659 -0.2603 -  
0.2546  
F'' 2.2040 2.2222 2.2404 2.2587 2.2770 2.2954 2.3139 2.3324 2.3509 2.3695

2.20 TO 2.29 F' -0.2491 -0.2436 -0.2381 -0.2327 -0.2274 -0.2222 -0.2170 -0.2118 -0.2067 -  
0.2017  
F'' 2.3882 2.4069 2.4257 2.4445 2.4634 2.4823 2.5013 2.5203 2.5394 2.5585

2.30 TO 2.39 F' -0.1967 -0.1918 -0.1870 -0.1822 -0.1774 -0.1727 -0.1681 -0.1636 -0.1590 -  
0.1546  
F'' 2.5777 2.5970 2.6163 2.6356 2.6550 2.6745 2.6940 2.7135 2.7331 2.7528

2.40 TO 2.49 F' -0.1502 -0.1459 -0.1416 -0.1374 -0.1332 -0.1291 -0.1251 -0.1211 -0.1171 -  
0.1133  
F'' 2.7725 2.7923 2.8121 2.8319 2.8518 2.8718 2.8918 2.9119 2.9320 2.9521

2.50 TO 2.59 F' -0.1095 -0.1057 -0.1020 -0.0984 -0.0948 -0.0912 -0.0878 -0.0844 -0.0809 -  
0.0776  
F'' 2.9723 2.9926 3.0129 3.0333 3.0537 3.0741 3.0946 3.1152 3.1358 3.1564

2.60 TO 2.69 F' -0.0744 -0.0712 -0.0681 -0.0650 -0.0620 -0.0591 -0.0562 -0.0534 -0.0506 -  
0.0479  
F'' 3.1771 3.1979 3.2187 3.2395 3.2604 3.2813 3.3023 3.3233 3.3444 3.3655

2.70 TO 2.79 F' -0.0452 -0.0426 -0.0401 -0.0376 -0.0352 -0.0328 -0.0305 -0.0283 -0.0261 -  
0.0240  
F'' 3.3867 3.4079 3.4292 3.4505 3.4719 3.4933 3.5147 3.5362 3.5578 3.5794

2.80 TO 2.89 F' -0.0219 -0.0199 -0.0180 -0.0161 -0.0143 -0.0125 -0.0109 -0.0092 -0.0076 -  
0.0061  
F'' 3.6010 3.6227 3.6444 3.6662 3.6880 3.7098 3.7318 3.7537 3.7757 3.7977

ATOMIC SYMBOL = KR ATOMIC NUMBER = 36

0.10 TO 0.19 F' -0.1531 -0.1387 -0.1240 -0.1090 -0.0937 -0.0784 -0.0630 -0.0476 -0.0323 -  
0.0172  
F'' 0.0704 0.0851 0.1012 0.1185 0.1372 0.1572 0.1784 0.2009 0.2247 0.2497

0.20 TO 0.29 F' -0.0035 0.0109 0.0248 0.0385 0.0517 0.0644 0.0767 0.0884 0.0996 0.1101  
F'' 0.2759 0.3030 0.3313 0.3607 0.3911 0.4226 0.4551 0.4885 0.5230 0.5584

0.30 TO 0.39 F' 0.1200 0.1292 0.1376 0.1453 0.1522 0.1583 0.1635 0.1677 0.1710 0.1733  
F'' 0.5948 0.6322 0.6705 0.7096 0.7497 0.7907 0.8325 0.8752 0.9188 0.9632

0.40 TO 0.49 F' 0.1746 0.1747 0.1737 0.1716 0.1646 0.1598 0.1536 0.1460 0.1369 0.1263  
F'' 1.0084 1.0544 1.1012 1.1489 1.1970 1.2457 1.2951 1.3451 1.3958 1.4470

0.50 TO 0.59 F' 0.1143 0.1006 0.0853 0.0683 0.0496 0.0290 0.0064 -0.0182 -0.0449 -0.0739  
F'' 1.4989 1.5514 1.6046 1.6582 1.7125 1.7674 1.8228 1.8787 1.9352 1.9922

0.60 TO 0.69 F' -0.1052 -0.1390 -0.1755 -0.2148 -0.2571 -0.3026 -0.3516 -0.4069 -0.4637 -  
0.5248  
F'' 2.0497 2.1078 2.1664 2.2254 2.2849 2.3450 2.4055 2.4662 2.5272 2.5886

0.70 TO 0.79 F' -0.5906 -0.6617 -0.7386 -0.8219 -0.9126 -1.0116 -1.1203 -1.2404 -1.3741 -  
1.5244  
F'' 2.6504 2.7126 2.7751 2.8380 2.9013 2.9650 3.0290 3.0933 3.1580 3.2230

0.80 TO 0.89 F' -1.6957 -1.8944 -2.1307 -2.3736 -2.7603 -3.3353 -4.5032 -4.7867 -3.6524 -  
3.1675  
F'' 3.2884 3.3541 3.4201 3.4944 3.5783 3.6647 3.7537 0.5106 0.5214 0.5323

0.90 TO 0.99 F' -2.8629 -2.6435 -2.4735 -2.3355 -2.2199 -2.1209 -2.0344 -1.9579 -1.8893 -  
1.8273  
F'' 0.5433 0.5544 0.5656 0.5769 0.5883 0.5998 0.6114 0.6231 0.6348 0.6467

1.00 TO 1.09 F' -1.7708 -1.7188 -1.6709 -1.6263 -1.5847 -1.5457 -1.5090 -1.4743 -1.4415 -  
1.4103  
F'' 0.6587 0.6707 0.6829 0.6952 0.7075 0.7200 0.7325 0.7452 0.7579 0.7707

1.10 TO 1.19 F' -1.3806 -1.3522 -1.3251 -1.2990 -1.2740 -1.2500 -1.2268 -1.2044 -1.1828 -  
1.1618  
F'' 0.7836 0.7967 0.8098 0.8230 0.8363 0.8496 0.8631 0.8767 0.8904 0.9041

1.20 TO 1.29 F' -1.1415 -1.1218 -1.1027 -1.0841 -1.0660 -1.0483 -1.0312 -1.0144 -0.9981 -  
0.9821  
F'' 0.9180 0.9319 0.9460 0.9601 0.9743 0.9886 1.0030 1.0175 1.0321 1.0467

1.30 TO 1.39 F' -0.9665 -0.9513 -0.9364 -0.9218 -0.9075 -0.8936 -0.8800 -0.8666 -0.8536 -  
0.8409  
F'' 1.0615 1.0764 1.0913 1.1063 1.1215 1.1367 1.1520 1.1674 1.1828 1.1984

1.40 TO 1.49 F' -0.8281 -0.8153 -0.8026 -0.7902 -0.7780 -0.7659 -0.7540 -0.7423 -0.7307 -  
0.7197  
F'' 1.2139 1.2294 1.2449 1.2605 1.2763 1.2921 1.3079 1.3239 1.3399 1.3560

1.50 TO 1.59 F' -0.7084 -0.6974 -0.6865 -0.6757 -0.6650 -0.6545 -0.6441 -0.6338 -0.6237 -  
0.6136  
F'' 1.3722 1.3884 1.4048 1.4212 1.4376 1.4542 1.4708 1.4875 1.5043 1.5212

1.60 TO 1.69 F' -0.6037 -0.5939 -0.5842 -0.5747 -0.5652 -0.5558 -0.5471 -0.5380 -0.5290 -  
0.5200  
F'' 1.5381 1.5551 1.5722 1.5893 1.6066 1.6238 1.6412 1.6586 1.6762 1.6937

1.70 TO 1.79 F' -0.5112 -0.5035 -0.4949 -0.4863 -0.4779 -0.4695 -0.4613 -0.4531 -0.4450 -  
0.4370  
F'' 1.7114 1.7291 1.7469 1.7647 1.7826 1.8006 1.8186 1.8367 1.8549 1.8732

1.80 TO 1.89 F' -0.4291 -0.4212 -0.4135 -0.4058 -0.3982 -0.3906 -0.3832 -0.3758 -0.3685 -  
0.3613  
F'' 1.8915 1.9099 1.9283 1.9468 1.9654 1.9841 2.0028 2.0216 2.0404 2.0594

1.90 TO 1.99 F' -0.3542 -0.3471 -0.3401 -0.3332 -0.3263 -0.3196 -0.3129 -0.3062 -0.2997 -  
0.2932  
F'' 2.0783 2.0974 2.1165 2.1357 2.1549 2.1742 2.1936 2.2130 2.2325 2.2521

2.00 TO 2.09 F' -0.2868 -0.2804 -0.2741 -0.2679 -0.2618 -0.2557 -0.2497 -0.2438 -0.2379 -  
0.2321  
F'' 2.2717 2.2914 2.3112 2.3310 2.3509 2.3708 2.3908 2.4109 2.4310 2.4512

2.10 TO 2.19 F' -0.2264 -0.2207 -0.2151 -0.2096 -0.2041 -0.1987 -0.1934 -0.1882 -0.1830 -  
0.1778  
F'' 2.4715 2.4918 2.5122 2.5326 2.5531 2.5736 2.5943 2.6149 2.6357 2.6565

2.20 TO 2.29 F' -0.1728 -0.1678 -0.1629 -0.1580 -0.1532 -0.1485 -0.1438 -0.1392 -0.1347 -  
0.1302  
F'' 2.6773 2.6983 2.7192 2.7403 2.7614 2.7825 2.8037 2.8250 2.8463 2.8677

2.30 TO 2.39 F' -0.1258 -0.1215 -0.1172 -0.1130 -0.1089 -0.1048 -0.1008 -0.0969 -0.0930 -  
0.0892  
F'' 2.8892 2.9107 2.9322 2.9539 2.9756 2.9973 3.0191 3.0409 3.0628 3.0848

2.40 TO 2.49 F' -0.0855 -0.0818 -0.0782 -0.0747 -0.0712 -0.0678 -0.0645 -0.0612 -0.0581 -  
0.0549  
F'' 3.1068 3.1289 3.1510 3.1732 3.1955 3.2178 3.2401 3.2625 3.2850 3.3075

2.50 TO 2.59 F' -0.0519 -0.0489 -0.0459 -0.0431 -0.0403 -0.0376 -0.0349 -0.0323 -0.0298 -  
0.0274  
F'' 3.3301 3.3527 3.3754 3.3982 3.4209 3.4438 3.4667 3.4897 3.5127 3.5357

2.60 TO 2.69 F' -0.0250 -0.0227 -0.0205 -0.0183 -0.0162 -0.0142 -0.0122 -0.0103 -0.0085 -  
0.0067  
F'' 3.5588 3.5820 3.6052 3.6285 3.6518 3.6752 3.6987 3.7221 3.7457 3.7693

2.70 TO 2.79 F' -0.0050 -0.0034 -0.0019 -0.0004 0.0010 0.0023 0.0036 0.0047 0.0059 0.0069  
F'' 3.7929 3.8166 3.8404 3.8642 3.8880 3.9119 3.9359 3.9599 3.9839 4.0080

2.80 TO 2.89 F' 0.0079 0.0088 0.0096 0.0103 0.0110 0.0116 0.0122 0.0126 0.0130 0.0133  
F'' 4.0322 4.0564 4.0806 4.1049 4.1293 4.1537 4.1782 4.2027 4.2272 4.2518

ATOMIC SYMBOL = RB ATOMIC NUMBER = 37

0.10 TO 0.19 F' -0.1619 -0.1465 -0.1308 -0.1148 -0.0987 -0.0824 -0.0662 -0.0501 -0.0342 -  
0.0194  
F'' 0.0790 0.0955 0.1134 0.1328 0.1536 0.1758 0.1995 0.2245 0.2509 0.2786

0.20 TO 0.29 F' -0.0042 0.0105 0.0248 0.0386 0.0519 0.0647 0.0768 0.0883 0.0990 0.1090  
F'' 0.3075 0.3376 0.3689 0.4014 0.4350 0.4698 0.5057 0.5427 0.5808 0.6200

0.30 TO 0.39 F' 0.1182 0.1266 0.1341 0.1406 0.1461 0.1507 0.1541 0.1564 0.1575 0.1574  
F'' 0.6602 0.7014 0.7436 0.7869 0.8311 0.8763 0.9225 0.9696 1.0176 1.0666

0.40 TO 0.49 F' 0.1560 0.1488 0.1444 0.1385 0.1311 0.1222 0.1117 0.0994 0.0853 0.0694  
F'' 1.1164 1.1671 1.2181 1.2699 1.3224 1.3758 1.4299 1.4847 1.5401 1.5961

0.50 TO 0.59 F' 0.0515 0.0317 0.0098 -0.0143 -0.0407 -0.0695 -0.1009 -0.1350 -0.1720 -0.2120  
F'' 1.6528 1.7102 1.7682 1.8268 1.8861 1.9459 2.0064 2.0674 2.1290 2.1911

0.60 TO 0.69 F' -0.2553 -0.3021 -0.3527 -0.4097 -0.4689 -0.5330 -0.6023 -0.6775 -0.7592 -  
0.8484  
F'' 2.2539 2.3171 2.3809 2.4451 2.5095 2.5744 2.6397 2.7055 2.7716 2.8382

0.70 TO 0.79 F' -0.9459 -1.0532 -1.1718 -1.3042 -1.4531 -1.6230 -1.8202 -2.0547 -2.2974 -  
2.6792  
F'' 2.9052 2.9726 3.0404 3.1086 3.1772 3.2461 3.3154 3.3851 3.4591 3.5464

0.80 TO 0.89 F' -3.2450 -4.3781 -4.7618 -3.6016 -3.1156 -2.8120 -2.5938 -2.4251 -2.2884 -  
2.1739

F'' 3.6364 3.7291 0.5135 0.5250 0.5367 0.5484 0.5603 0.5722 0.5843 0.5965  
 0.90 TO 0.99 F' -2.0759 -1.9903 -1.9146 -1.8468 -1.7855 -1.7295 -1.6781 -1.6306 -1.5865 -  
 1.5452

F'' 0.6088 0.6212 0.6337 0.6463 0.6591 0.6719 0.6848 0.6979 0.7111 0.7243  
 1.00 TO 1.09 F' -1.5066 -1.4701 -1.4357 -1.4031 -1.3721 -1.3426 -1.3143 -1.2873 -1.2613 -  
 1.2364

F'' 0.7377 0.7512 0.7648 0.7785 0.7923 0.8062 0.8202 0.8343 0.8485 0.8629  
 1.10 TO 1.19 F' -1.2123 -1.1891 -1.1667 -1.1451 -1.1241 -1.1037 -1.0839 -1.0647 -1.0460 -  
 1.0277

F'' 0.8773 0.8918 0.9065 0.9212 0.9361 0.9510 0.9661 0.9812 0.9965 1.0119  
 1.20 TO 1.29 F' -1.0100 -0.9926 -0.9757 -0.9592 -0.9430 -0.9272 -0.9117 -0.8966 -0.8817 -  
 0.8672

F'' 1.0273 1.0429 1.0586 1.0743 1.0902 1.1062 1.1223 1.1384 1.1547 1.1711  
 1.30 TO 1.39 F' -0.8529 -0.8389 -0.8252 -0.8117 -0.7985 -0.7856 -0.7729 -0.7605 -0.7483 -  
 0.7403

F'' 1.1876 1.2042 1.2208 1.2376 1.2545 1.2715 1.2886 1.3057 1.3230 1.3403  
 1.40 TO 1.49 F' -0.7283 -0.7164 -0.7046 -0.6930 -0.6815 -0.6702 -0.6590 -0.6480 -0.6371 -  
 0.6264

F'' 1.3576 1.3748 1.3922 1.4096 1.4271 1.4447 1.4624 1.4802 1.4980 1.5160  
 1.50 TO 1.59 F' -0.6158 -0.6053 -0.5950 -0.5847 -0.5749 -0.5650 -0.5551 -0.5454 -0.5358 -  
 0.5269

F'' 1.5340 1.5521 1.5703 1.5886 1.6069 1.6254 1.6439 1.6625 1.6812 1.6999  
 1.60 TO 1.69 F' -0.5175 -0.5083 -0.4991 -0.4901 -0.4811 -0.4723 -0.4636 -0.4549 -0.4463 -  
 0.4379

F'' 1.7188 1.7377 1.7567 1.7757 1.7949 1.8141 1.8334 1.8528 1.8722 1.8918  
 1.70 TO 1.79 F' -0.4295 -0.4213 -0.4131 -0.4050 -0.3970 -0.3891 -0.3812 -0.3735 -0.3659 -  
 0.3583

F'' 1.9114 1.9311 1.9509 1.9707 1.9906 2.0106 2.0307 2.0508 2.0711 2.0914  
 1.80 TO 1.89 F' -0.3508 -0.3434 -0.3361 -0.3289 -0.3217 -0.3147 -0.3077 -0.3008 -0.2939 -  
 0.2872

F'' 2.1117 2.1322 2.1527 2.1733 2.1939 2.2147 2.2355 2.2564 2.2773 2.2984  
 1.90 TO 1.99 F' -0.2805 -0.2740 -0.2674 -0.2610 -0.2547 -0.2484 -0.2422 -0.2361 -0.2301 -  
 0.2241

F'' 2.3195 2.3406 2.3619 2.3832 2.4046 2.4261 2.4476 2.4692 2.4909 2.5126  
 2.00 TO 2.09 F' -0.2182 -0.2124 -0.2067 -0.2010 -0.1955 -0.1899 -0.1845 -0.1792 -0.1739 -  
 0.1687

F'' 2.5344 2.5563 2.5782 2.6003 2.6223 2.6445 2.6667 2.6890 2.7114 2.7338  
 2.10 TO 2.19 F' -0.1636 -0.1585 -0.1536 -0.1487 -0.1439 -0.1391 -0.1345 -0.1299 -0.1254 -  
 0.1209

F'' 2.7563 2.7789 2.8015 2.8242 2.8470 2.8698 2.8927 2.9157 2.9387 2.9618  
 2.20 TO 2.29 F' -0.1166 -0.1123 -0.1081 -0.1039 -0.0999 -0.0959 -0.0920 -0.0882 -0.0844 -  
 0.0808

F'' 2.9850 3.0082 3.0315 3.0548 3.0783 3.1017 3.1253 3.1489 3.1726 3.1963  
 2.30 TO 2.39 F' -0.0772 -0.0737 -0.0702 -0.0668 -0.0636 -0.0604 -0.0572 -0.0542 -0.0512 -  
 0.0483

F'' 3.2201 3.2440 3.2679 3.2919 3.3160 3.3401 3.3643 3.3886 3.4129 3.4373  
 2.40 TO 2.49 F' -0.0455 -0.0427 -0.0401 -0.0375 -0.0350 -0.0326 -0.0302 -0.0279 -0.0258 -  
 0.0237

F'' 3.4617 3.4862 3.5107 3.5354 3.5600 3.5848 3.6096 3.6344 3.6594 3.6844  
 2.50 TO 2.59 F' -0.0216 -0.0197 -0.0178 -0.0160 -0.0143 -0.0127 -0.0111 -0.0097 -0.0083 -  
 0.0070

F'' 3.7094 3.7345 3.7597 3.7849 3.8102 3.8355 3.8609 3.8864 3.9119 3.9375  
 2.60 TO 2.69 F' -0.0058 -0.0047 -0.0036 -0.0026 -0.0018 -0.0010 -0.0002 -0.0018 -0.0013 -  
 0.0009

F''	3.9631	3.9888	4.0145	4.0404	4.0662	4.0921	4.1181	4.1442	4.1702	4.1964	
2.70 TO 2.79 F'	-0.0005	-0.0003	-0.0001	0.0000	0.0000	0.0000	0.0000	-0.0002	-0.0046	-0.0050	-0.0055
F''	4.2226	4.2488	4.2751	4.3015	4.3279	4.3544	4.3809	4.4075	4.4341	4.4608	
2.80 TO 2.89 F'	-0.0060	-0.0067	-0.0074	-0.0082	-0.0091	-0.0101	-0.0112	-0.0124	-0.0137	-	
0.0150											
F''	4.4875	4.5143	4.5412	4.5681	4.5950	4.6220	4.6491	4.6762	4.7033	4.7305	
ATOMIC SYMBOL = SR    ATOMIC NUMBER = 38											
0.10 TO 0.19 F'	-0.1711	-0.1545	-0.1377	-0.1206	-0.1035	-0.0863	-0.0692	-0.0522	-0.0362	-	
0.0202											
F''	0.0887	0.1070	0.1270	0.1486	0.1718	0.1965	0.2228	0.2506	0.2799	0.3106	
0.20 TO 0.29 F'	-0.0046	0.0106	0.0252	0.0392	0.0525	0.0652	0.0771	0.0881	0.0984	0.1076	
F''	0.3426	0.3759	0.4106	0.4466	0.4838	0.5222	0.5619	0.6028	0.6449	0.6881	
0.30 TO 0.39 F'	0.1160	0.1233	0.1295	0.1345	0.1384	0.1410	0.1423	0.1422	0.1407	0.1331	
F''	0.7325	0.7779	0.8245	0.8722	0.9210	0.9708	1.0216	1.0735	1.1264	1.1800	
0.40 TO 0.49 F'	0.1282	0.1217	0.1135	0.1035	0.0917	0.0780	0.0622	0.0442	0.0240	0.0014	
F''	1.2342	1.2892	1.3452	1.4019	1.4596	1.5180	1.5773	1.6372	1.6978	1.7591	
0.50 TO 0.59 F'	-0.0235	-0.0511	-0.0813	-0.1144	-0.1506	-0.1900	-0.2329	-0.2795	-0.3301	-	
0.3851											
F''	1.8210	1.8837	1.9470	2.0110	2.0756	2.1409	2.2068	2.2733	2.3404	2.4081	
0.60 TO 0.69 F'	-0.4468	-0.5118	-0.5826	-0.6597	-0.7439	-0.8361	-0.9376	-1.0498	-1.1748	-	
1.3151											
F''	2.4761	2.5446	2.6135	2.6830	2.7529	2.8234	2.8942	2.9656	3.0373	3.1095	
0.70 TO 0.79 F'	-1.4744	-1.6581	-1.8744	-2.1368	-2.4275	-2.8958	-3.6846	-7.9123	-3.8494	-	
3.2141											
F''	3.1822	3.2552	3.3287	3.4025	3.4868	3.5793	3.6748	0.5211	0.5335	0.5461	
0.80 TO 0.89 F'	-2.8573	-2.6126	-2.4283	-2.2815	-2.1600	-2.0569	-1.9676	-1.8889	-1.8187	-	
1.7554											
F''	0.5588	0.5716	0.5846	0.5976	0.6108	0.6242	0.6376	0.6512	0.6649	0.6787	
0.90 TO 0.99 F'	-1.6979	-1.6451	-1.5964	-1.5512	-1.5091	-1.4696	-1.4324	-1.3973	-1.3640	-	
1.3324											
F''	0.6926	0.7067	0.7209	0.7352	0.7496	0.7642	0.7788	0.7936	0.8085	0.8236	
1.00 TO 1.09 F'	-1.3022	-1.2734	-1.2458	-1.2193	-1.1938	-1.1693	-1.1456	-1.1227	-1.1005	-	
1.0790											
F''	0.8387	0.8540	0.8694	0.8849	0.9005	0.9162	0.9321	0.9481	0.9641	0.9804	
1.10 TO 1.19 F'	-1.0581	-1.0379	-1.0181	-0.9989	-0.9802	-0.9620	-0.9441	-0.9267	-0.9097	-	
0.8930											
F''	0.9967	1.0131	1.0297	1.0464	1.0631	1.0801	1.0971	1.1142	1.1315	1.1488	
1.20 TO 1.29 F'	-0.8767	-0.8607	-0.8450	-0.8296	-0.8145	-0.7997	-0.7852	-0.7709	-0.7569	-	
0.7432											
F''	1.1663	1.1839	1.2016	1.2194	1.2373	1.2554	1.2735	1.2918	1.3102	1.3286	
1.30 TO 1.39 F'	-0.7337	-0.7205	-0.7075	-0.6947	-0.6822	-0.6699	-0.6580	-0.6463	-0.6358	-	
0.6250											
F''	1.3472	1.3658	1.3845	1.4033	1.4223	1.4413	1.4605	1.4797	1.4991	1.5186	
1.40 TO 1.49 F'	-0.6138	-0.6023	-0.5909	-0.5798	-0.5688	-0.5579	-0.5471	-0.5365	-0.5263	-	
0.5159											
F''	1.5380	1.5574	1.5770	1.5966	1.6164	1.6362	1.6561	1.6762	1.6963	1.7165	
1.50 TO 1.59 F'	-0.5057	-0.4956	-0.4857	-0.4758	-0.4661	-0.4565	-0.4470	-0.4376	-0.4283	-	
0.4191											
F''	1.7368	1.7572	1.7776	1.7982	1.8189	1.8396	1.8605	1.8814	1.9024	1.9235	
1.60 TO 1.69 F'	-0.4101	-0.4011	-0.3923	-0.3835	-0.3749	-0.3663	-0.3579	-0.3495	-0.3413	-	
0.3331											
F''	1.9447	1.9660	1.9874	2.0088	2.0304	2.0520	2.0737	2.0955	2.1174	2.1394	
1.70 TO 1.79 F'	-0.3251	-0.3171	-0.3092	-0.3015	-0.2938	-0.2862	-0.2787	-0.2713	-0.2640	-	
0.2568											

F'' 2.1614 2.1836 2.2058 2.2281 2.2505 2.2730 2.2956 2.3182 2.3410 2.3638  
 1.80 TO 1.89 F' -0.2497 -0.2427 -0.2357 -0.2289 -0.2221 -0.2154 -0.2089 -0.2024 -0.1960 -  
 0.1896  
 F'' 2.3867 2.4096 2.4327 2.4558 2.4791 2.5024 2.5258 2.5492 2.5728 2.5964  
 1.90 TO 1.99 F' -0.1834 -0.1773 -0.1712 -0.1653 -0.1594 -0.1536 -0.1479 -0.1423 -0.1367 -  
 0.1313  
 F'' 2.6201 2.6439 2.6677 2.6917 2.7157 2.7398 2.7640 2.7882 2.8126 2.8370  
 2.00 TO 2.09 F' -0.1260 -0.1207 -0.1155 -0.1104 -0.1054 -0.1005 -0.0957 -0.0909 -0.0863 -  
 0.0817  
 F'' 2.8615 2.8860 2.9107 2.9354 2.9602 2.9850 3.0100 3.0350 3.0601 3.0853  
 2.10 TO 2.19 F' -0.0772 -0.0728 -0.0685 -0.0643 -0.0602 -0.0562 -0.0522 -0.0484 -0.0446 -  
 0.0409  
 F'' 3.1105 3.1358 3.1612 3.1867 3.2122 3.2378 3.2635 3.2893 3.3151 3.3410  
 2.20 TO 2.29 F' -0.0373 -0.0338 -0.0304 -0.0271 -0.0238 -0.0207 -0.0176 -0.0147 -0.0118 -  
 0.0090  
 F'' 3.3670 3.3930 3.4191 3.4453 3.4716 3.4979 3.5243 3.5508 3.5773 3.6039  
 2.30 TO 2.39 F' -0.0063 -0.0037 -0.0012 0.0012 0.0036 0.0058 0.0062 0.0083 0.0102 0.0120  
 F'' 3.6306 3.6574 3.6842 3.7111 3.7381 3.7651 3.7922 3.8193 3.8466 3.8739  
 2.40 TO 2.49 F' 0.0138 0.0154 0.0170 0.0185 0.0198 0.0211 0.0190 0.0201 0.0210 0.0219  
 F'' 3.9012 3.9286 3.9561 3.9837 4.0113 4.0390 4.0668 4.0946 4.1225 4.1504  
 2.50 TO 2.59 F' 0.0226 0.0233 0.0238 0.0243 0.0246 0.0249 0.0251 0.0251 0.0251 0.0249  
 F'' 4.1784 4.2065 4.2346 4.2628 4.2911 4.3194 4.3478 4.3762 4.4047 4.4333  
 2.60 TO 2.69 F' 0.0247 0.0244 0.0239 0.0234 0.0228 0.0220 0.0212 0.0202 0.0192 0.0180  
 F'' 4.4620 4.4907 4.5194 4.5483 4.5772 4.6061 4.6351 4.6642 4.6933 4.7225  
 2.70 TO 2.79 F' 0.0168 0.0154 0.0139 0.0124 0.0107 0.0089 0.0070 0.0050 0.0029 0.0007  
 F'' 4.7518 4.7811 4.8105 4.8400 4.8695 4.8990 4.9287 4.9584 4.9881 5.0179  
 2.80 TO 2.89 F' -0.0062 -0.0086 -0.0112 -0.0139 -0.0166 -0.0195 -0.0225 -0.0256 -0.0288 -  
 0.0321  
 F'' 5.0477 5.0776 5.1075 5.1374 5.1674 5.1975 5.2276 5.2578 5.2880 5.3183  
 ATOMIC SYMBOL = Y ATOMIC NUMBER = 39  
 0.10 TO 0.19 F' -0.1802 -0.1625 -0.1446 -0.1266 -0.1085 -0.0904 -0.0725 -0.0554 -0.0384 -  
 0.0220  
 F'' 0.0989 0.1192 0.1414 0.1653 0.1910 0.2184 0.2475 0.2783 0.3106 0.3444  
 0.20 TO 0.29 F' -0.0061 0.0092 0.0239 0.0378 0.0509 0.0631 0.0744 0.0847 0.0940 0.1021  
 F'' 0.3797 0.4165 0.4547 0.4943 0.5353 0.5776 0.6212 0.6662 0.7124 0.7599  
 0.30 TO 0.39 F' 0.1090 0.1147 0.1191 0.1221 0.1237 0.1236 0.1220 0.1140 0.1087 0.1015  
 F'' 0.8086 0.8586 0.9097 0.9620 1.0155 1.0701 1.1259 1.1823 1.2395 1.2976  
 0.40 TO 0.49 F' 0.0925 0.0815 0.0684 0.0531 0.0355 0.0155 -0.0071 -0.0324 -0.0605 -0.0917  
 F'' 1.3567 1.4168 1.4778 1.5397 1.6025 1.6661 1.7307 1.7959 1.8617 1.9283  
 0.50 TO 0.59 F' -0.1259 -0.1636 -0.2049 -0.2500 -0.2993 -0.3531 -0.4135 -0.4778 -0.5481 -  
 0.6249  
 F'' 1.9956 2.0637 2.1325 2.2020 2.2721 2.3430 2.4145 2.4863 2.5587 2.6316  
 0.60 TO 0.69 F' -0.7091 -0.8017 -0.9039 -1.0174 -1.1442 -1.2872 -1.4503 -1.6393 -1.8633 -  
 2.1377  
 F'' 2.7051 2.7791 2.8536 2.9286 3.0042 3.0802 3.1566 3.2336 3.3110 3.3888  
 0.70 TO 0.79 F' -2.4517 -2.9626 -3.8916 -5.2054 -3.6035 -3.0655 -2.7445 -2.5188 -2.3463 -  
 2.2076  
 F'' 3.4773 3.5740 3.6737 0.5278 0.5411 0.5545 0.5681 0.5818 0.5957 0.6097  
 0.80 TO 0.89 F' -2.0922 -1.9937 -1.9080 -1.8322 -1.7645 -1.7033 -1.6475 -1.5962 -1.5488 -  
 1.5048  
 F'' 0.6238 0.6381 0.6525 0.6671 0.6818 0.6967 0.7116 0.7267 0.7420 0.7574  
 0.90 TO 0.99 F' -1.4636 -1.4249 -1.3884 -1.3540 -1.3213 -1.2901 -1.2604 -1.2319 -1.2046 -  
 1.1784  
 F'' 0.7729 0.7886 0.8044 0.8203 0.8364 0.8526 0.8689 0.8854 0.9020 0.9187

1.00 TO 1.09 F' -1.1532 -1.1288 -1.1053 -1.0825 -1.0604 -1.0390 -1.0182 -0.9983 -0.9786 -  
 0.9594  
 F'' 0.9356 0.9526 0.9697 0.9870 1.0044 1.0219 1.0396 1.0574 1.0753 1.0933  
 1.10 TO 1.19 F' -0.9406 -0.9223 -0.9044 -0.8869 -0.8698 -0.8531 -0.8366 -0.8205 -0.8047 -  
 0.7892  
 F'' 1.1115 1.1298 1.1482 1.1668 1.1855 1.2043 1.2232 1.2423 1.2615 1.2808  
 1.20 TO 1.29 F' -0.7740 -0.7630 -0.7484 -0.7340 -0.7198 -0.7059 -0.6921 -0.6786 -0.6653 -  
 0.6522  
 F'' 1.3003 1.3198 1.3394 1.3591 1.3790 1.3989 1.4190 1.4392 1.4596 1.4800  
 1.30 TO 1.39 F' -0.6393 -0.6266 -0.6141 -0.6051 -0.5930 -0.5811 -0.5693 -0.5577 -0.5505 -  
 0.5393  
 F'' 1.5006 1.5213 1.5421 1.5630 1.5839 1.6050 1.6262 1.6475 1.6689 1.6904  
 1.40 TO 1.49 F' -0.5282 -0.5173 -0.5065 -0.4959 -0.4854 -0.4751 -0.4648 -0.4547 -0.4447 -  
 0.4349  
 F'' 1.7119 1.7335 1.7551 1.7769 1.7988 1.8208 1.8429 1.8651 1.8874 1.9098  
 1.50 TO 1.59 F' -0.4252 -0.4155 -0.4061 -0.3967 -0.3874 -0.3783 -0.3693 -0.3604 -0.3516 -  
 0.3429  
 F'' 1.9323 1.9549 1.9775 2.0003 2.0232 2.0462 2.0693 2.0925 2.1158 2.1392  
 1.60 TO 1.69 F' -0.3343 -0.3258 -0.3175 -0.3092 -0.3011 -0.2930 -0.2851 -0.2773 -0.2695 -  
 0.2619  
 F'' 2.1626 2.1862 2.2099 2.2337 2.2575 2.2815 2.3055 2.3297 2.3539 2.3783  
 1.70 TO 1.79 F' -0.2544 -0.2470 -0.2397 -0.2324 -0.2253 -0.2183 -0.2114 -0.2046 -0.1979 -  
 0.1913  
 F'' 2.4027 2.4272 2.4518 2.4765 2.5013 2.5262 2.5512 2.5763 2.6014 2.6267  
 1.80 TO 1.89 F' -0.1848 -0.1784 -0.1721 -0.1659 -0.1597 -0.1537 -0.1478 -0.1420 -0.1363 -  
 0.1307  
 F'' 2.6520 2.6775 2.7030 2.7286 2.7543 2.7801 2.8060 2.8319 2.8580 2.8841  
 1.90 TO 1.99 F' -0.1252 -0.1198 -0.1145 -0.1092 -0.1041 -0.0991 -0.0942 -0.0894 -0.0847 -  
 0.0800  
 F'' 2.9103 2.9366 2.9630 2.9895 3.0161 3.0428 3.0695 3.0963 3.1232 3.1502  
 2.00 TO 2.09 F' -0.0755 -0.0711 -0.0668 -0.0626 -0.0585 -0.0545 -0.0505 -0.0467 -0.0430 -  
 0.0394  
 F'' 3.1773 3.2045 3.2317 3.2590 3.2865 3.3140 3.3415 3.3692 3.3969 3.4248  
 2.10 TO 2.19 F' -0.0359 -0.0325 -0.0305 -0.0273 -0.0243 -0.0213 -0.0184 -0.0157 -0.0130 -  
 0.0105  
 F'' 3.4527 3.4806 3.5087 3.5368 3.5651 3.5934 3.6217 3.6502 3.6787 3.7073  
 2.20 TO 2.29 F' -0.0105 -0.0082 -0.0060 -0.0039 -0.0019 0.0000 0.0017 0.0034 0.0050 0.0064  
 F'' 3.7360 3.7648 3.7936 3.8225 3.8515 3.8806 3.9097 3.9389 3.9682 3.9976  
 2.30 TO 2.39 F' 0.0077 0.0090 0.0101 0.0111 0.0120 0.0128 0.0135 0.0140 0.0145 0.0148  
 F'' 4.0270 4.0565 4.0861 4.1158 4.1455 4.1753 4.2052 4.2352 4.2652 4.2953  
 2.40 TO 2.49 F' 0.0151 0.0152 0.0152 0.0151 0.0149 0.0146 0.0141 0.0136 0.0129 0.0121  
 F'' 4.3255 4.3557 4.3861 4.4165 4.4469 4.4775 4.5081 4.5388 4.5695 4.6003  
 2.50 TO 2.59 F' 0.0112 0.0102 0.0090 0.0078 0.0064 0.0049 0.0033 0.0015 -0.0003 -0.0023  
 F'' 4.6312 4.6622 4.6932 4.7243 4.7555 4.7868 4.8181 4.8495 4.8809 4.9124  
 2.60 TO 2.69 F' -0.0044 -0.0066 -0.0131 -0.0156 -0.0183 -0.0210 -0.0239 -0.0268 -0.0299 -  
 0.0332  
 F'' 4.9440 4.9757 5.0073 5.0390 5.0708 5.1026 5.1345 5.1665 5.1986 5.2306  
 2.70 TO 2.79 F' -0.0365 -0.0400 -0.0436 -0.0474 -0.0512 -0.0552 -0.0593 -0.0636 -0.0680 -  
 0.0725  
 F'' 5.2628 5.2950 5.3273 5.3597 5.3921 5.4246 5.4571 5.4898 5.5224 5.5552  
 2.80 TO 2.89 F' -0.0771 -0.0819 -0.0868 -0.0918 -0.0970 -0.1023 -0.1077 -0.1133 -0.1251 -  
 0.1310  
 F'' 5.5880 5.6208 5.6538 5.6868 5.7198 5.7529 5.7861 5.8194 5.8526 5.8859  
 ATOMIC SYMBOL = ZR ATOMIC NUMBER = 40

0.10 TO 0.19 F'	-0.1901	-0.1714	-0.1525	-0.1334	-0.1144	-0.0956	-0.0772	-0.0593	-0.0420	-	
0.0252	F''	0.1100	0.1325	0.1570	0.1834	0.2118	0.2420	0.2741	0.3079	0.3434	0.3806
0.20 TO 0.29 F'	-0.0091	0.0062	0.0208	0.0344	0.0470	0.0586	0.0690	0.0783	0.0863	0.0929	
	F''	0.4194	0.4598	0.5017	0.5452	0.5901	0.6365	0.6844	0.7336	0.7843	0.8363
0.30 TO 0.39 F'	0.0981	0.1018	0.1039	0.1043	0.1029	0.0950	0.0895	0.0820	0.0724	0.0607	
	F''	0.8896	0.9443	1.0002	1.0574	1.1159	1.1752	1.2353	1.2965	1.3588	1.4221
0.40 TO 0.49 F'	0.0466	0.0301	0.0109	-0.0109	-0.0356	-0.0635	-0.0946	-0.1292	-0.1674	-0.2096	
	F''	1.4864	1.5517	1.6181	1.6854	1.7536	1.8228	1.8930	1.9637	2.0351	2.1073
0.50 TO 0.59 F'	-0.2560	-0.3069	-0.3628	-0.4252	-0.4927	-0.5668	-0.6483	-0.7381	-0.8376	-	
0.9481	F''	2.1802	2.2539	2.3284	2.4036	2.4793	2.5556	2.6325	2.7100	2.7882	2.8668
0.60 TO 0.69 F'	-1.0718	-1.2114	-1.3707	-1.5551	-1.7733	-2.0396	-2.3435	-2.8261	-3.6642	-	
5.8549	F''	2.9461	3.0259	3.1062	3.1871	3.2684	3.3503	3.4378	3.5373	3.6399	0.5304
0.70 TO 0.79 F'	-3.6422	-3.0630	-2.7288	-2.4971	-2.3215	-2.1811	-2.0647	-1.9656	-1.8795	-	
1.8036	F''	0.5445	0.5588	0.5732	0.5879	0.6026	0.6176	0.6327	0.6479	0.6633	0.6789
0.80 TO 0.89 F'	-1.7358	-1.6745	-1.6187	-1.5674	-1.5200	-1.4759	-1.4347	-1.3960	-1.3595	-	
1.3250	F''	0.6946	0.7104	0.7265	0.7426	0.7590	0.7754	0.7921	0.8089	0.8258	0.8429
0.90 TO 0.99 F'	-1.2922	-1.2610	-1.2312	-1.2027	-1.1753	-1.1490	-1.1239	-1.0994	-1.0758	-	
1.0529	F''	0.8601	0.8775	0.8951	0.9128	0.9306	0.9486	0.9667	0.9850	1.0034	1.0220
1.00 TO 1.09 F'	-1.0306	-1.0091	-0.9881	-0.9677	-0.9478	-0.9284	-0.9095	-0.8910	-0.8729	-	
0.8553	F''	1.0407	1.0596	1.0786	1.0977	1.1171	1.1365	1.1561	1.1758	1.1957	1.2157
1.10 TO 1.19 F'	-0.8379	-0.8210	-0.8044	-0.7880	-0.7753	-0.7597	-0.7443	-0.7292	-0.7144	-	
0.6997	F''	1.2359	1.2562	1.2766	1.2972	1.3179	1.3387	1.3596	1.3806	1.4018	1.4231
1.20 TO 1.29 F'	-0.6854	-0.6712	-0.6573	-0.6436	-0.6301	-0.6203	-0.6073	-0.5945	-0.5818	-	
0.5736	F''	1.4446	1.4662	1.4880	1.5098	1.5318	1.5539	1.5761	1.5984	1.6209	1.6434
1.30 TO 1.39 F'	-0.5614	-0.5494	-0.5376	-0.5259	-0.5145	-0.5031	-0.4920	-0.4810	-0.4701	-	
0.4594	F''	1.6660	1.6888	1.7116	1.7346	1.7577	1.7809	1.8043	1.8278	1.8514	1.8751
1.40 TO 1.49 F'	-0.4489	-0.4384	-0.4281	-0.4180	-0.4079	-0.3980	-0.3883	-0.3786	-0.3691	-	
0.3598	F''	1.8988	1.9227	1.9466	1.9707	1.9949	2.0192	2.0436	2.0681	2.0927	2.1174
1.50 TO 1.59 F'	-0.3505	-0.3414	-0.3324	-0.3235	-0.3147	-0.3061	-0.2975	-0.2891	-0.2809	-	
0.2727	F''	2.1423	2.1672	2.1923	2.2175	2.2427	2.2681	2.2936	2.3192	2.3449	2.3707
1.60 TO 1.69 F'	-0.2646	-0.2567	-0.2489	-0.2412	-0.2336	-0.2261	-0.2187	-0.2115	-0.2043	-	
0.1973	F''	2.3967	2.4227	2.4488	2.4750	2.5014	2.5278	2.5544	2.5810	2.6077	2.6346
1.70 TO 1.79 F'	-0.1904	-0.1836	-0.1769	-0.1704	-0.1639	-0.1576	-0.1513	-0.1452	-0.1392	-	
0.1333	F''	2.6615	2.6886	2.7157	2.7430	2.7704	2.7978	2.8254	2.8530	2.8808	2.9086
1.80 TO 1.89 F'	-0.1275	-0.1218	-0.1163	-0.1108	-0.1055	-0.1003	-0.0952	-0.0902	-0.0853	-	
0.0805	F''	2.9366	2.9646	2.9928	3.0210	3.0493	3.0778	3.1063	3.1349	3.1636	3.1924
1.90 TO 1.99 F'	-0.0758	-0.0713	-0.0679	-0.0636	-0.0594	-0.0553	-0.0514	-0.0475	-0.0438	-	
0.0402	F''	3.2214	3.2504	3.2795	3.3086	3.3379	3.3673	3.3967	3.4263	3.4559	3.4857



2.00 TO 2.09 F' -0.0386 -0.0353 -0.0321 -0.0290 -0.0260 -0.0232 -0.0204 -0.0178 -0.0153 -  
0.0129  
F'' 3.5155 3.5454 3.5754 3.6055 3.6356 3.6659 3.6962 3.7267 3.7572 3.7878

2.10 TO 2.19 F' -0.0107 -0.0085 -0.0065 -0.0046 -0.0028 -0.0011 0.0004 0.0018 0.0031 0.0043  
F'' 3.8185 3.8493 3.8802 3.9111 3.9422 3.9733 4.0045 4.0358 4.0672 4.0987

2.20 TO 2.29 F' 0.0053 0.0062 0.0070 0.0077 0.0082 0.0087 0.0090 0.0091 0.0092 0.0091  
F'' 4.1302 4.1619 4.1936 4.2254 4.2573 4.2893 4.3213 4.3535 4.3857 4.4180

2.30 TO 2.39 F' 0.0088 0.0085 0.0080 0.0074 0.0067 0.0058 0.0048 0.0037 0.0024 0.0010  
F'' 4.4504 4.4828 4.5154 4.5480 4.5807 4.6135 4.6464 4.6793 4.7123 4.7454

2.40 TO 2.49 F' -0.0006 -0.0022 -0.0040 -0.0060 -0.0081 -0.0140 -0.0164 -0.0189 -0.0216 -  
0.0244  
F'' 4.7786 4.8119 4.8452 4.8786 4.9121 4.9457 4.9792 5.0129 5.0466 5.0804

2.50 TO 2.59 F' -0.0273 -0.0304 -0.0336 -0.0370 -0.0405 -0.0441 -0.0479 -0.0518 -0.0559 -  
0.0601  
F'' 5.1143 5.1482 5.1822 5.2163 5.2505 5.2847 5.3190 5.3534 5.3879 5.4224

2.60 TO 2.69 F' -0.0645 -0.0690 -0.0737 -0.0785 -0.0834 -0.0885 -0.0938 -0.0992 -0.1048 -  
0.1161  
F'' 5.4570 5.4917 5.5264 5.5612 5.5961 5.6311 5.6661 5.7012 5.7364 5.7716

2.70 TO 2.79 F' -0.1220 -0.1281 -0.1343 -0.1407 -0.1472 -0.1539 -0.1608 -0.1678 -0.1749 -  
0.1921  
F'' 5.8068 5.8421 5.8774 5.9128 5.9482 5.9838 6.0194 6.0550 6.0908 6.1266

2.80 TO 2.89 F' -0.1997 -0.2074 -0.2153 -0.2234 -0.2316 -0.2399 -0.2485 -0.2572 -0.2660 -  
0.2750  
F'' 6.1622 6.1979 6.2337 6.2696 6.3055 6.3414 6.3775 6.4136 6.4497 6.4859

ATOMIC SYMBOL = NB ATOMIC NUMBER = 41

0.10 TO 0.19 F' -0.1996 -0.1798 -0.1598 -0.1399 -0.1200 -0.1004 -0.0814 -0.0630 -0.0453 -  
0.0284  
F'' 0.1219 0.1468 0.1738 0.2029 0.2341 0.2674 0.3026 0.3398 0.3788 0.4196

0.20 TO 0.29 F' -0.0123 0.0029 0.0171 0.0302 0.0421 0.0527 0.0620 0.0698 0.0761 0.0808  
F'' 0.4621 0.5063 0.5523 0.5998 0.6490 0.6998 0.7521 0.8059 0.8613 0.9181

0.30 TO 0.39 F' 0.0838 0.0849 0.0841 0.0766 0.0713 0.0639 0.0541 0.0418 0.0271 0.0096  
F'' 0.9763 1.0360 1.0971 1.1592 1.2222 1.2863 1.3516 1.4181 1.4857 1.5544

0.40 TO 0.49 F' -0.0107 -0.0341 -0.0608 -0.0908 -0.1246 -0.1624 -0.2046 -0.2514 -0.3028 -  
0.3595  
F'' 1.6243 1.6952 1.7671 1.8401 1.9141 1.9891 2.0650 2.1416 2.2187 2.2966

0.50 TO 0.59 F' -0.4220 -0.4912 -0.5673 -0.6516 -0.7450 -0.8490 -0.9653 -1.0965 -1.2458 -  
1.4178  
F'' 2.3753 2.4548 2.5350 2.6159 2.6976 2.7800 2.8630 2.9467 3.0311 3.1161

0.60 TO 0.69 F' -1.6198 -1.8631 -2.1681 -2.5494 -3.1861 -4.7567 -4.0231 -3.2078 -2.8052 -  
2.5419  
F'' 3.2018 3.2880 3.3749 3.4719 3.5744 3.6798 0.5431 0.5582 0.5736 0.5891

0.70 TO 0.79 F' -2.3486 -2.1970 -2.0730 -1.9685 -1.8784 -1.7994 -1.7291 -1.6658 -1.6083 -  
1.5557  
F'' 0.6047 0.6206 0.6366 0.6528 0.6692 0.6857 0.7024 0.7193 0.7364 0.7537

0.80 TO 0.89 F' -1.5071 -1.4622 -1.4201 -1.3806 -1.3434 -1.3082 -1.2749 -1.2431 -1.2128 -  
1.1837  
F'' 0.7711 0.7887 0.8064 0.8243 0.8424 0.8607 0.8791 0.8977 0.9165 0.9354

0.90 TO 0.99 F' -1.1559 -1.1291 -1.1033 -1.0784 -1.0543 -1.0310 -1.0084 -0.9864 -0.9651 -  
0.9443  
F'' 0.9545 0.9738 0.9932 1.0128 1.0326 1.0525 1.0726 1.0929 1.1133 1.1338

1.00 TO 1.09 F' -0.9240 -0.9043 -0.8850 -0.8662 -0.8477 -0.8297 -0.8120 -0.7980 -0.7811 -  
0.7646  
F'' 1.1546 1.1755 1.1965 1.2178 1.2391 1.2607 1.2824 1.3042 1.3261 1.3482

1.10 TO 1.19 F' -0.7483 -0.7323 -0.7166 -0.7012 -0.6861 -0.6712 -0.6565 -0.6451 -0.6310 -

0.6171  
F'' 1.3704 1.3928 1.4153 1.4380 1.4608 1.4838 1.5070 1.5302 1.5536 1.5771  
1.20 TO 1.29 F' -0.6034 -0.5940 -0.5809 -0.5679 -0.5551 -0.5425 -0.5302 -0.5179 -0.5059 -  
0.4941  
F'' 1.6008 1.6245 1.6484 1.6724 1.6965 1.7208 1.7452 1.7697 1.7944 1.8192  
1.30 TO 1.39 F' -0.4824 -0.4709 -0.4595 -0.4484 -0.4374 -0.4265 -0.4159 -0.4054 -0.3951 -  
0.3850  
F'' 1.8442 1.8693 1.8945 1.9199 1.9454 1.9710 1.9968 2.0227 2.0488 2.0750  
1.40 TO 1.49 F' -0.3750 -0.3651 -0.3552 -0.3455 -0.3360 -0.3266 -0.3173 -0.3082 -0.2992 -  
0.2903  
F'' 2.1012 2.1275 2.1539 2.1804 2.2071 2.2338 2.2607 2.2877 2.3149 2.3422  
1.50 TO 1.59 F' -0.2816 -0.2730 -0.2645 -0.2562 -0.2479 -0.2399 -0.2319 -0.2241 -0.2164 -  
0.2088  
F'' 2.3695 2.3970 2.4247 2.4524 2.4802 2.5082 2.5363 2.5645 2.5928 2.6213  
1.60 TO 1.69 F' -0.2013 -0.1940 -0.1868 -0.1798 -0.1728 -0.1660 -0.1593 -0.1528 -0.1464 -  
0.1401  
F'' 2.6498 2.6785 2.7073 2.7362 2.7652 2.7943 2.8235 2.8529 2.8823 2.9119  
1.70 TO 1.79 F' -0.1339 -0.1278 -0.1219 -0.1161 -0.1104 -0.1056 -0.1002 -0.0949 -0.0898 -  
0.0848  
F'' 2.9416 2.9714 3.0013 3.0313 3.0614 3.0916 3.1220 3.1524 3.1830 3.2136  
1.80 TO 1.89 F' -0.0799 -0.0751 -0.0719 -0.0674 -0.0631 -0.0589 -0.0548 -0.0509 -0.0471 -  
0.0434  
F'' 3.2444 3.2752 3.3062 3.3373 3.3684 3.3997 3.4311 3.4625 3.4941 3.5258  
1.90 TO 1.99 F' -0.0399 -0.0365 -0.0332 -0.0300 -0.0270 -0.0241 -0.0214 -0.0188 -0.0163 -  
0.0140  
F'' 3.5576 3.5895 3.6215 3.6535 3.6857 3.7180 3.7504 3.7829 3.8155 3.8481  
2.00 TO 2.09 F' -0.0118 -0.0097 -0.0078 -0.0060 -0.0043 -0.0028 -0.0014 -0.0002 0.0009 0.0019  
F'' 3.8809 3.9138 3.9468 3.9799 4.0130 4.0463 4.0797 4.1131 4.1467 4.1803  
2.10 TO 2.19 F' 0.0027 0.0034 0.0039 0.0043 0.0045 0.0046 0.0046 0.0044 0.0041 0.0036  
F'' 4.2140 4.2479 4.2818 4.3158 4.3500 4.3842 4.4185 4.4529 4.4874 4.5219  
2.20 TO 2.29 F' 0.0030 0.0022 0.0013 0.0002 -0.0010 -0.0024 -0.0039 -0.0056 -0.0074 -0.0094  
F'' 4.5566 4.5914 4.6262 4.6612 4.6962 4.7313 4.7665 4.8018 4.8372 4.8727  
2.30 TO 2.39 F' -0.0148 -0.0172 -0.0196 -0.0223 -0.0251 -0.0280 -0.0311 -0.0344 -0.0378 -  
0.0414  
F'' 4.9082 4.9438 4.9795 5.0152 5.0511 5.0870 5.1230 5.1591 5.1952 5.2315  
2.40 TO 2.49 F' -0.0451 -0.0490 -0.0531 -0.0573 -0.0617 -0.0663 -0.0710 -0.0759 -0.0810 -  
0.0862  
F'' 5.2678 5.3043 5.3408 5.3773 5.4140 5.4508 5.4876 5.5245 5.5615 5.5986  
2.50 TO 2.59 F' -0.0916 -0.0971 -0.1079 -0.1138 -0.1200 -0.1263 -0.1328 -0.1394 -0.1463 -  
0.1533  
F'' 5.6358 5.6730 5.7103 5.7476 5.7849 5.8224 5.8599 5.8975 5.9352 5.9729  
2.60 TO 2.69 F' -0.1604 -0.1678 -0.1840 -0.1919 -0.1999 -0.2080 -0.2164 -0.2249 -0.2336 -  
0.2425  
F'' 6.0107 6.0486 6.0865 6.1244 6.1623 6.2003 6.2384 6.2765 6.3148 6.3530  
2.70 TO 2.79 F' -0.2516 -0.2609 -0.2703 -0.2800 -0.2898 -0.2998 -0.3100 -0.3204 -0.3310 -  
0.3418  
F'' 6.3914 6.4298 6.4683 6.5068 6.5455 6.5842 6.6229 6.6617 6.7006 6.7396  
2.80 TO 2.89 F' -0.3527 -0.3639 -0.3753 -0.3868 -0.3986 -0.4105 -0.4227 -0.4351 -0.4476 -  
0.4604  
F'' 6.7786 6.8177 6.8568 6.8961 6.9353 6.9747 7.0141 7.0536 7.0931 7.1327  
ATOMIC SYMBOL = MO ATOMIC NUMBER = 42  
0.10 TO 0.19 F' -0.2107 -0.1897 -0.1687 -0.1477 -0.1269 -0.1066 -0.0870 -0.0683 -0.0505 -  
0.0336  
F'' 0.1344 0.1617 0.1914 0.2234 0.2578 0.2944 0.3332 0.3740 0.4168 0.4615

0.20 TO 0.29 F' -0.0178 -0.0031 0.0104 0.0226 0.0333 0.0425 0.0500 0.0559 0.0599 0.0619  
F'' 0.5081 0.5565 0.6067 0.6587 0.7124 0.7678 0.8248 0.8834 0.9436 1.0053

0.30 TO 0.39 F' 0.0619 0.0565 0.0517 0.0446 0.0350 0.0227 0.0076 -0.0104 -0.0315 -0.0560  
F'' 1.0686 1.1333 1.1989 1.2658 1.3340 1.4035 1.4743 1.5463 1.6194 1.6938

0.40 TO 0.49 F' -0.0841 -0.1159 -0.1519 -0.1923 -0.2374 -0.2880 -0.3446 -0.4075 -0.4765 -  
0.5530  
F'' 1.7693 1.8459 1.9237 2.0025 2.0824 2.1633 2.2453 2.3278 2.4109 2.4948

0.50 TO 0.59 F' -0.6380 -0.7327 -0.8386 -0.9577 -1.0926 -1.2470 -1.4262 -1.6383 -1.8969 -  
2.2268  
F'' 2.5794 2.6649 2.7512 2.8382 2.9259 3.0144 3.1036 3.1934 3.2839 3.3751

0.60 TO 0.69 F' -2.6581 -3.4272 -8.1220 -3.6283 -3.0142 -2.6713 -2.4370 -2.2608 -2.1206 -  
2.0047  
F'' 3.4787 3.5861 0.5365 0.5525 0.5686 0.5849 0.6015 0.6182 0.6351 0.6522

0.70 TO 0.79 F' -1.9062 -1.8208 -1.7455 -1.6783 -1.6176 -1.5622 -1.5113 -1.4642 -1.4204 -  
1.3796  
F'' 0.6695 0.6870 0.7047 0.7226 0.7407 0.7590 0.7775 0.7962 0.8150 0.8341

0.80 TO 0.89 F' -1.3410 -1.3047 -1.2702 -1.2375 -1.2062 -1.1763 -1.1477 -1.1202 -1.0937 -  
1.0681  
F'' 0.8533 0.8727 0.8923 0.9121 0.9321 0.9523 0.9726 0.9931 1.0139 1.0348

0.90 TO 0.99 F' -1.0434 -1.0195 -0.9963 -0.9738 -0.9519 -0.9306 -0.9099 -0.8896 -0.8699 -  
0.8506  
F'' 1.0559 1.0771 1.0986 1.1202 1.1420 1.1640 1.1862 1.2085 1.2311 1.2538

1.00 TO 1.09 F' -0.8349 -0.8165 -0.7985 -0.7809 -0.7636 -0.7466 -0.7300 -0.7137 -0.6976 -  
0.6847  
F'' 1.2766 1.2996 1.3227 1.3460 1.3695 1.3932 1.4170 1.4410 1.4651 1.4895

1.10 TO 1.19 F' -0.6693 -0.6542 -0.6393 -0.6246 -0.6135 -0.5994 -0.5855 -0.5719 -0.5584 -  
0.5452  
F'' 1.5139 1.5385 1.5632 1.5881 1.6131 1.6383 1.6636 1.6890 1.7146 1.7404

1.20 TO 1.29 F' -0.5322 -0.5193 -0.5067 -0.4942 -0.4820 -0.4699 -0.4580 -0.4463 -0.4348 -  
0.4235  
F'' 1.7663 1.7924 1.8186 1.8450 1.8715 1.8982 1.9251 1.9521 1.9792 2.0065

1.30 TO 1.39 F' -0.4123 -0.4017 -0.3909 -0.3803 -0.3698 -0.3596 -0.3495 -0.3395 -0.3298 -  
0.3202  
F'' 2.0339 2.0615 2.0892 2.1171 2.1452 2.1733 2.2017 2.2301 2.2587 2.2875

1.40 TO 1.49 F' -0.3107 -0.3013 -0.2921 -0.2830 -0.2740 -0.2652 -0.2565 -0.2480 -0.2396 -  
0.2314  
F'' 2.3163 2.3451 2.3741 2.4033 2.4325 2.4619 2.4914 2.5211 2.5509 2.5808

1.50 TO 1.59 F' -0.2233 -0.2153 -0.2075 -0.1998 -0.1923 -0.1849 -0.1777 -0.1706 -0.1636 -  
0.1568  
F'' 2.6109 2.6410 2.6713 2.7018 2.7323 2.7630 2.7938 2.8248 2.8558 2.8870

1.60 TO 1.69 F' -0.1501 -0.1436 -0.1377 -0.1315 -0.1254 -0.1195 -0.1137 -0.1080 -0.1025 -  
0.0981  
F'' 2.9183 2.9498 2.9813 3.0130 3.0448 3.0768 3.1088 3.1410 3.1733 3.2057

1.70 TO 1.79 F' -0.0929 -0.0879 -0.0830 -0.0783 -0.0737 -0.0692 -0.0649 -0.0607 -0.0567 -  
0.0529  
F'' 3.2382 3.2708 3.3036 3.3364 3.3694 3.4025 3.4357 3.4691 3.5025 3.5361

1.80 TO 1.89 F' -0.0491 -0.0456 -0.0421 -0.0389 -0.0357 -0.0328 -0.0299 -0.0273 -0.0247 -  
0.0224  
F'' 3.5698 3.6036 3.6375 3.6715 3.7056 3.7399 3.7742 3.8087 3.8432 3.8779

1.90 TO 1.99 F' -0.0201 -0.0181 -0.0162 -0.0144 -0.0128 -0.0114 -0.0101 -0.0090 -0.0080 -  
0.0072  
F'' 3.9127 3.9476 3.9826 4.0177 4.0530 4.0883 4.1238 4.1593 4.1950 4.2307

2.00 TO 2.09 F' -0.0065 -0.0060 -0.0057 -0.0055 -0.0055 -0.0057 -0.0060 -0.0065 -0.0071 -  
0.0080

F''	4.2666	4.3026	4.3386	4.3748	4.4111	4.4475	4.4840	4.5206	4.5573	4.5941	
2.10 TO 2.19 F'	-0.0089	-0.0101	-0.0114	-0.0129	-0.0146	-0.0164	-0.0184	-0.0234	-0.0258	-	0.0284
F''	4.6310	4.6680	4.7051	4.7423	4.7796	4.8170	4.8545	4.8920	4.9297	4.9674	
2.20 TO 2.29 F'	-0.0311	-0.0340	-0.0371	-0.0403	-0.0438	-0.0474	-0.0512	-0.0551	-0.0593	-	0.0636
F''	5.0052	5.0431	5.0811	5.1193	5.1575	5.1958	5.2341	5.2726	5.3112	5.3499	
2.30 TO 2.39 F'	-0.0682	-0.0729	-0.0778	-0.0828	-0.0881	-0.0936	-0.0992	-0.1095	-0.1156	-	0.1218
F''	5.3886	5.4275	5.4664	5.5055	5.5446	5.5838	5.6232	5.6625	5.7019	5.7413	
2.40 TO 2.49 F'	-0.1283	-0.1350	-0.1418	-0.1489	-0.1561	-0.1636	-0.1789	-0.1868	-0.1950	-	0.2033
F''	5.7809	5.8206	5.8603	5.9001	5.9400	5.9800	6.0201	6.0601	6.1002	6.1403	
2.50 TO 2.59 F'	-0.2119	-0.2206	-0.2296	-0.2387	-0.2481	-0.2577	-0.2674	-0.2774	-0.2876	-	0.2980
F''	6.1805	6.2208	6.2612	6.3017	6.3422	6.3828	6.4235	6.4643	6.5052	6.5461	
2.60 TO 2.69 F'	-0.3087	-0.3195	-0.3306	-0.3418	-0.3533	-0.3650	-0.3769	-0.3891	-0.4015	-	0.4141
F''	6.5871	6.6282	6.6693	6.7106	6.7519	6.7932	6.8347	6.8762	6.9178	6.9595	
2.70 TO 2.79 F'	-0.4269	-0.4399	-0.4532	-0.4667	-0.4805	-0.4944	-0.5087	-0.5231	-0.5378	-	0.5527
F''	7.0012	7.0430	7.0849	7.1269	7.1689	7.2110	7.2532	7.2954	7.3378	7.3801	
2.80 TO 2.89 F'	-0.5679	-0.5833	-0.5989	-0.6148	-0.6310	-0.6474	-0.6640	-0.6829	-0.7001	-	0.7175
F''	7.4226	7.4651	7.5077	7.5504	7.5931	7.6359	7.6788	7.7217	7.7647	7.8078	
ATOMIC SYMBOL = TC    ATOMIC NUMBER = 43											
0.10 TO 0.19 F'	-0.2215	-0.1995	-0.1775	-0.1556	-0.1342	-0.1133	-0.0933	-0.0744	-0.0566	-	0.0398
F''	0.1481	0.1781	0.2107	0.2457	0.2833	0.3234	0.3658	0.4104	0.4570	0.5058	
0.20 TO 0.29 F'	-0.0243	-0.0102	0.0025	0.0136	0.0229	0.0305	0.0361	0.0397	0.0411	0.0401	
F''	0.5565	0.6093	0.6640	0.7205	0.7790	0.8392	0.9012	0.9650	1.0304	1.0975	
0.30 TO 0.39 F'	0.0329	0.0265	0.0175	0.0056	-0.0094	-0.0275	-0.0490	-0.0742	-0.1032	-0.1364	
F''	1.1659	1.2354	1.3064	1.3789	1.4526	1.5278	1.6042	1.6820	1.7610	1.8412	
0.40 TO 0.49 F'	-0.1741	-0.2166	-0.2644	-0.3179	-0.3778	-0.4446	-0.5205	-0.6042	-0.6981	-	0.8035
F''	1.9227	2.0053	2.0891	2.1741	2.2601	2.3473	2.4354	2.5242	2.6137	2.7041	
0.50 TO 0.59 F'	-0.9223	-1.0574	-1.2125	-1.3930	-1.6072	-1.8693	-2.2054	-2.6509	-3.4598	-	5.9230
F''	2.7952	2.8870	2.9795	3.0727	3.1665	3.2611	3.3562	3.4626	3.5740	0.5414	
0.60 TO 0.69 F'	-3.5131	-2.9391	-2.6113	-2.3852	-2.2143	-2.0779	-1.9648	-1.8686	-1.7849	-	1.7111
F''	0.5583	0.5754	0.5927	0.6103	0.6280	0.6460	0.6642	0.6827	0.7013	0.7202	
0.70 TO 0.79 F'	-1.6451	-1.5854	-1.5308	-1.4807	-1.4342	-1.3909	-1.3503	-1.3121	-1.2760	-	1.2418
F''	0.7393	0.7585	0.7780	0.7978	0.8177	0.8378	0.8582	0.8787	0.8995	0.9205	
0.80 TO 0.89 F'	-1.2092	-1.1781	-1.1483	-1.1197	-1.0922	-1.0658	-1.0402	-1.0154	-0.9915	-	0.9682
F''	0.9417	0.9631	0.9847	1.0065	1.0285	1.0507	1.0731	1.0957	1.1185	1.1415	
0.90 TO 0.99 F'	-0.9456	-0.9236	-0.9022	-0.8814	-0.8610	-0.8443	-0.8249	-0.8060	-0.7875	-	0.7693
F''	1.1648	1.1882	1.2118	1.2356	1.2596	1.2838	1.3081	1.3326	1.3572	1.3821	
1.00 TO 1.09 F'	-0.7515	-0.7341	-0.7170	-0.7030	-0.6866	-0.6705	-0.6547	-0.6423	-0.6271	-	0.6122
F''	1.4072	1.4324	1.4579	1.4835	1.5092	1.5351	1.5612	1.5875	1.6139	1.6404	

1.10 TO 1.19 F'	-0.5975	-0.5830	-0.5688	-0.5548	-0.5411	-0.5275	-0.5142	-0.5011	-0.4882	-	
0.4755	F''	1.6672	1.6941	1.7211	1.7484	1.7758	1.8034	1.8311	1.8591	1.8872	1.9154
1.20 TO 1.29 F'	-0.4630	-0.4510	-0.4388	-0.4269	-0.4152	-0.4037	-0.3923	-0.3812	-0.3702	-	
0.3595	F''	1.9439	1.9725	2.0012	2.0302	2.0593	2.0885	2.1180	2.1475	2.1773	2.2072
1.30 TO 1.39 F'	-0.3489	-0.3385	-0.3283	-0.3183	-0.3085	-0.2989	-0.2896	-0.2804	-0.2715	-	
0.2628	F''	2.2373	2.2675	2.2979	2.3285	2.3592	2.3901	2.4212	2.4524	2.4837	2.5152
1.40 TO 1.49 F'	-0.2541	-0.2454	-0.2368	-0.2284	-0.2201	-0.2120	-0.2041	-0.1963	-0.1887	-	
0.1815	F''	2.5468	2.5784	2.6101	2.6420	2.6740	2.7062	2.7385	2.7710	2.8036	2.8363
1.50 TO 1.59 F'	-0.1742	-0.1671	-0.1601	-0.1533	-0.1467	-0.1402	-0.1345	-0.1283	-0.1224	-	
0.1166	F''	2.8692	2.9022	2.9354	2.9687	3.0021	3.0357	3.0694	3.1032	3.1372	3.1713
1.60 TO 1.69 F'	-0.1109	-0.1055	-0.1002	-0.0950	-0.0900	-0.0852	-0.0805	-0.0760	-0.0717	-	
0.0675	F''	3.2055	3.2399	3.2744	3.3090	3.3438	3.3787	3.4137	3.4489	3.4841	3.5195
1.70 TO 1.79 F'	-0.0635	-0.0597	-0.0560	-0.0525	-0.0492	-0.0460	-0.0430	-0.0402	-0.0375	-	
0.0350	F''	3.5551	3.5907	3.6265	3.6624	3.6985	3.7347	3.7709	3.8074	3.8439	3.8806
1.80 TO 1.89 F'	-0.0327	-0.0305	-0.0286	-0.0268	-0.0251	-0.0237	-0.0224	-0.0213	-0.0204	-	
0.0196	F''	3.9173	3.9542	3.9913	4.0284	4.0657	4.1031	4.1406	4.1782	4.2160	4.2538
1.90 TO 1.99 F'	-0.0191	-0.0187	-0.0185	-0.0185	-0.0186	-0.0190	-0.0195	-0.0202	-0.0211	-	
0.0222	F''	4.2918	4.3299	4.3681	4.4064	4.4449	4.4834	4.5221	4.5609	4.5998	4.6388
2.00 TO 2.09 F'	-0.0235	-0.0249	-0.0266	-0.0284	-0.0329	-0.0352	-0.0376	-0.0403	-0.0431	-	
0.0462	F''	4.6780	4.7172	4.7566	4.7960	4.8356	4.8752	4.9150	4.9548	4.9948	5.0348
2.10 TO 2.19 F'	-0.0494	-0.0529	-0.0565	-0.0603	-0.0644	-0.0686	-0.0731	-0.0778	-0.0826	-	
0.0877	F''	5.0750	5.1153	5.1556	5.1961	5.2367	5.2774	5.3182	5.3591	5.4001	5.4412
2.20 TO 2.29 F'	-0.0930	-0.0985	-0.1080	-0.1139	-0.1201	-0.1265	-0.1331	-0.1400	-0.1470	-	
0.1543	F''	5.4824	5.5238	5.5652	5.6066	5.6481	5.6897	5.7314	5.7733	5.8152	5.8572
2.30 TO 2.39 F'	-0.1618	-0.1695	-0.1841	-0.1924	-0.2008	-0.2095	-0.2185	-0.2276	-0.2370	-	
0.2466	F''	5.8993	5.9415	5.9837	6.0260	6.0683	6.1107	6.1532	6.1958	6.2384	6.2812
2.40 TO 2.49 F'	-0.2565	-0.2665	-0.2768	-0.2874	-0.2982	-0.3092	-0.3204	-0.3319	-0.3437	-	
0.3557	F''	6.3241	6.3670	6.4100	6.4531	6.4963	6.5396	6.5830	6.6264	6.6700	6.7136
2.50 TO 2.59 F'	-0.3679	-0.3804	-0.3931	-0.4061	-0.4193	-0.4328	-0.4466	-0.4606	-0.4764	-	
0.4910	F''	6.7573	6.8011	6.8450	6.8889	6.9330	6.9771	7.0213	7.0656	7.1099	7.1544
2.60 TO 2.69 F'	-0.5058	-0.5208	-0.5377	-0.5533	-0.5692	-0.5854	-0.6019	-0.6186	-0.6356	-	
0.6529	F''	7.1989	7.2435	7.2882	7.3329	7.3777	7.4226	7.4676	7.5127	7.5578	7.6030
2.70 TO 2.79 F'	-0.6705	-0.6883	-0.7065	-0.7249	-0.7436	-0.7626	-0.7820	-0.8016	-0.8215	-	
0.8417	F''	7.6483	7.6937	7.7391	7.7846	7.8302	7.8759	7.9216	7.9674	8.0133	8.0593
2.80 TO 2.89 F'	-0.8622	-0.8831	-0.9042	-0.9257	-0.9474	-0.9695	-0.9920	-1.0147	-1.0378	-	
1.0612	F''	8.1053	8.1514	8.1976	8.2438	8.2902	8.3366	8.3830	8.4296	8.4762	8.5228

ATOMIC SYMBOL = RU ATOMIC NUMBER = 44

0.10 TO 0.19 F'	-0.2319	-0.2088	-0.1859	-0.1632	-0.1411	-0.1197	-0.0994	-0.0805	-0.0628	-
0.0464										
F''	0.1627	0.1955	0.2312	0.2695	0.3106	0.3544	0.4007	0.4492	0.5000	0.5531
0.20 TO 0.29 F'	-0.0315	-0.0182	-0.0067	0.0030	0.0106	0.0161	0.0193	0.0200	0.0180	0.0094
F''	0.6083	0.6657	0.7251	0.7866	0.8501	0.9155	0.9828	1.0519	1.1229	1.1950
0.30 TO 0.39 F'	0.0015	-0.0095	-0.0238	-0.0415	-0.0628	-0.0881	-0.1176	-0.1516	-0.1905	-0.2346
F''	1.2686	1.3438	1.4205	1.4987	1.5784	1.6595	1.7420	1.8258	1.9110	1.9975
0.40 TO 0.49 F'	-0.2846	-0.3409	-0.4042	-0.4753	-0.5562	-0.6461	-0.7476	-0.8627	-0.9940	-
1.1448										
F''	2.0852	2.1742	2.2645	2.3559	2.4483	2.5418	2.6363	2.7316	2.8273	2.9238
0.50 TO 0.59 F'	-1.3203	-1.5281	-1.7813	-2.1035	-2.5222	-3.2514	-6.3079	-3.5921	-2.9578	-
2.6119										
F''	3.0209	3.1186	3.2169	3.3158	3.4225	3.5380	3.6577	0.5604	0.5784	0.5968
0.60 TO 0.69 F'	-2.3778	-2.2026	-2.0637	-1.9491	-1.8518	-1.7674	-1.6931	-1.6266	-1.5665	-
1.5117										
F''	0.6154	0.6342	0.6532	0.6725	0.6921	0.7119	0.7319	0.7522	0.7727	0.7934
0.70 TO 0.79 F'	-1.4613	-1.4146	-1.3710	-1.3302	-1.2918	-1.2555	-1.2210	-1.1882	-1.1569	-
1.1268										
F''	0.8144	0.8356	0.8571	0.8788	0.9007	0.9228	0.9452	0.9678	0.9906	1.0137
0.80 TO 0.89 F'	-1.0980	-1.0703	-1.0435	-1.0177	-0.9927	-0.9684	-0.9449	-0.9220	-0.8997	-
0.8810										
F''	1.0370	1.0605	1.0843	1.1082	1.1324	1.1568	1.1815	1.2063	1.2314	1.2567
0.90 TO 0.99 F'	-0.8600	-0.8394	-0.8193	-0.7997	-0.7805	-0.7617	-0.7432	-0.7279	-0.7102	-
0.6929										
F''	1.2821	1.3078	1.3336	1.3597	1.3860	1.4124	1.4391	1.4660	1.4930	1.5203
1.00 TO 1.09 F'	-0.6760	-0.6624	-0.6461	-0.6301	-0.6144	-0.5990	-0.5838	-0.5689	-0.5542	-
0.5398										
F''	1.5477	1.5753	1.6031	1.6310	1.6591	1.6875	1.7160	1.7447	1.7736	1.8027
1.10 TO 1.19 F'	-0.5256	-0.5116	-0.4979	-0.4846	-0.4713	-0.4582	-0.4454	-0.4327	-0.4202	-
0.4080										
F''	1.8320	1.8615	1.8911	1.9210	1.9510	1.9813	2.0117	2.0423	2.0730	2.1040
1.20 TO 1.29 F'	-0.3959	-0.3841	-0.3724	-0.3609	-0.3497	-0.3386	-0.3277	-0.3170	-0.3065	-
0.2962										
F''	2.1352	2.1665	2.1980	2.2297	2.2615	2.2936	2.3258	2.3582	2.3908	2.4236
1.30 TO 1.39 F'	-0.2861	-0.2762	-0.2665	-0.2570	-0.2477	-0.2387	-0.2299	-0.2244	-0.2162	-
0.2085										
F''	2.4565	2.4896	2.5229	2.5564	2.5900	2.6238	2.6578	2.6920	2.7262	2.7607
1.40 TO 1.49 F'	-0.2006	-0.1926	-0.1848	-0.1772	-0.1699	-0.1627	-0.1557	-0.1488	-0.1421	-
0.1356										
F''	2.7952	2.8297	2.8644	2.8993	2.9343	2.9695	3.0048	3.0403	3.0760	3.1117
1.50 TO 1.59 F'	-0.1293	-0.1232	-0.1172	-0.1114	-0.1058	-0.1004	-0.0951	-0.0901	-0.0852	-
0.0805										
F''	3.1477	3.1838	3.2200	3.2564	3.2929	3.3296	3.3664	3.4033	3.4405	3.4777
1.60 TO 1.69 F'	-0.0760	-0.0717	-0.0675	-0.0636	-0.0598	-0.0562	-0.0528	-0.0496	-0.0466	-
0.0438										
F''	3.5151	3.5526	3.5903	3.6282	3.6661	3.7042	3.7425	3.7809	3.8194	3.8580
1.70 TO 1.79 F'	-0.0411	-0.0387	-0.0364	-0.0344	-0.0325	-0.0308	-0.0293	-0.0281	-0.0270	-
0.0261										
F''	3.8968	3.9358	3.9748	4.0141	4.0534	4.0929	4.1325	4.1722	4.2121	4.2521
1.80 TO 1.89 F'	-0.0254	-0.0249	-0.0247	-0.0246	-0.0247	-0.0250	-0.0256	-0.0263	-0.0273	-
0.0285										
F''	4.2923	4.3325	4.3729	4.4135	4.4541	4.4949	4.5359	4.5769	4.6181	4.6594
1.90 TO 1.99 F'	-0.0298	-0.0314	-0.0332	-0.0373	-0.0395	-0.0420	-0.0447	-0.0476	-0.0508	-

0.0541  
F'' 4.7008 4.7424 4.7841 4.8258 4.8677 4.9097 4.9518 4.9940 5.0364 5.0789  
2.00 TO 2.09 F' -0.0577 -0.0615 -0.0656 -0.0698 -0.0743 -0.0790 -0.0839 -0.0891 -0.0945 -  
0.1034  
F'' 5.1215 5.1642 5.2070 5.2500 5.2931 5.3362 5.3795 5.4230 5.4665 5.5102  
2.10 TO 2.19 F' -0.1094 -0.1155 -0.1219 -0.1286 -0.1355 -0.1426 -0.1500 -0.1576 -0.1655 -  
0.1794  
F'' 5.5538 5.5976 5.6415 5.6855 5.7297 5.7739 5.8182 5.8627 5.9072 5.9518  
2.20 TO 2.29 F' -0.1878 -0.1965 -0.2055 -0.2147 -0.2242 -0.2339 -0.2439 -0.2541 -0.2646 -  
0.2754  
F'' 5.9965 6.0412 6.0860 6.1309 6.1760 6.2211 6.2663 6.3116 6.3571 6.4026  
2.30 TO 2.39 F' -0.2864 -0.2977 -0.3092 -0.3223 -0.3344 -0.3468 -0.3595 -0.3737 -0.3869 -  
0.4004  
F'' 6.4482 6.4939 6.5398 6.5857 6.6317 6.6778 6.7240 6.7702 6.8166 6.8631  
2.40 TO 2.49 F' -0.4142 -0.4283 -0.4427 -0.4574 -0.4724 -0.4876 -0.5032 -0.5190 -0.5352 -  
0.5517  
F'' 6.9096 6.9563 7.0030 7.0499 7.0968 7.1438 7.1909 7.2381 7.2854 7.3328  
2.50 TO 2.59 F' -0.5684 -0.5855 -0.6029 -0.6205 -0.6385 -0.6569 -0.6755 -0.6945 -0.7138 -  
0.7334  
F'' 7.3802 7.4278 7.4754 7.5231 7.5710 7.6189 7.6668 7.7149 7.7631 7.8113  
2.60 TO 2.69 F' -0.7533 -0.7736 -0.7942 -0.8151 -0.8364 -0.8581 -0.8801 -0.9024 -0.9251 -  
0.9481  
F'' 7.8597 7.9081 7.9566 8.0051 8.0538 8.1026 8.1514 8.2003 8.2493 8.2984  
2.70 TO 2.79 F' -0.9715 -0.9953 -1.0194 -1.0440 -1.0688 -1.0941 -1.1197 -1.1458 -1.1722 -  
1.1990  
F'' 8.3475 8.3967 8.4461 8.4955 8.5449 8.5945 8.6441 8.6938 8.7436 8.7935  
2.80 TO 2.89 F' -1.2262 -1.2538 -1.2818 -1.3103 -1.3391 -1.3683 -1.3980 -1.4281 -1.4587 -  
1.4897  
F'' 8.8434 8.8935 8.9436 8.9937 9.0440 9.0943 9.1447 9.1952 9.2457 9.2964  
ATOMIC SYMBOL = RH ATOMIC NUMBER = 45  
0.10 TO 0.19 F' -0.2450 -0.2210 -0.1973 -0.1740 -0.1513 -0.1296 -0.1093 -0.0905 -0.0731 -  
0.0573  
F'' 0.1788 0.2146 0.2534 0.2951 0.3399 0.3875 0.4377 0.4904 0.5454 0.6029  
0.20 TO 0.29 F' -0.0433 -0.0312 -0.0211 -0.0133 -0.0078 -0.0049 -0.0047 -0.0110 -0.0172 -  
0.0266  
F'' 0.6628 0.7249 0.7892 0.8558 0.9244 0.9952 1.0680 1.1426 1.2185 1.2962  
0.30 TO 0.39 F' -0.0394 -0.0560 -0.0764 -0.1010 -0.1301 -0.1641 -0.2033 -0.2482 -0.2993 -  
0.3573  
F'' 1.3755 1.4566 1.5393 1.6235 1.7094 1.7967 1.8855 1.9757 2.0674 2.1605  
0.40 TO 0.49 F' -0.4230 -0.4972 -0.5842 -0.6793 -0.7871 -0.9101 -1.0514 -1.2157 -1.4095 -  
1.6437  
F'' 2.2549 2.3506 2.4470 2.5444 2.6429 2.7426 2.8433 2.9448 3.0469 3.1498  
0.50 TO 0.59 F' -1.9374 -2.3100 -2.9034 -4.2432 -3.9506 -3.0828 -2.6770 -2.4164 -2.2268 -  
2.0789  
F'' 3.2536 3.3593 3.4769 3.5998 0.5584 0.5775 0.5968 0.6164 0.6362 0.6563  
0.60 TO 0.69 F' -1.9583 -1.8568 -1.7693 -1.6925 -1.6242 -1.5626 -1.5065 -1.4550 -1.4073 -  
1.3629  
F'' 0.6767 0.6974 0.7183 0.7395 0.7609 0.7826 0.8046 0.8268 0.8493 0.8721  
0.70 TO 0.79 F' -1.3214 -1.2823 -1.2454 -1.2103 -1.1770 -1.1451 -1.1146 -1.0853 -1.0571 -  
1.0299  
F'' 0.8951 0.9184 0.9419 0.9657 0.9897 1.0140 1.0385 1.0633 1.0884 1.1136  
0.80 TO 0.89 F' -1.0036 -0.9782 -0.9535 -0.9296 -0.9088 -0.8862 -0.8642 -0.8428 -0.8219 -  
0.8014  
F'' 1.1392 1.1650 1.1910 1.2173 1.2438 1.2705 1.2974 1.3245 1.3519 1.3795

0.90 TO 0.99 F' -0.7814 -0.7643 -0.7453 -0.7266 -0.7083 -0.6904 -0.6757 -0.6586 -0.6417 -  
0.6252  
F'' 1.4074 1.4355 1.4637 1.4922 1.5209 1.5498 1.5788 1.6081 1.6376 1.6673

1.00 TO 1.09 F' -0.6089 -0.5930 -0.5773 -0.5619 -0.5467 -0.5318 -0.5174 -0.5030 -0.4888 -  
0.4749  
F'' 1.6972 1.7273 1.7576 1.7882 1.8190 1.8499 1.8811 1.9125 1.9441 1.9759

1.10 TO 1.19 F' -0.4612 -0.4478 -0.4345 -0.4215 -0.4088 -0.3962 -0.3838 -0.3717 -0.3598 -  
0.3480  
F'' 2.0079 2.0401 2.0725 2.1051 2.1380 2.1710 2.2042 2.2376 2.2713 2.3051

1.20 TO 1.29 F' -0.3365 -0.3252 -0.3141 -0.3032 -0.2925 -0.2820 -0.2718 -0.2644 -0.2546 -  
0.2450  
F'' 2.3391 2.3733 2.4078 2.4424 2.4772 2.5122 2.5474 2.5828 2.6183 2.6540

1.30 TO 1.39 F' -0.2356 -0.2264 -0.2174 -0.2085 -0.2037 -0.1954 -0.1873 -0.1794 -0.1717 -  
0.1642  
F'' 2.6900 2.7261 2.7624 2.7989 2.8355 2.8723 2.9093 2.9465 2.9839 3.0215

1.40 TO 1.49 F' -0.1570 -0.1500 -0.1432 -0.1366 -0.1302 -0.1239 -0.1179 -0.1121 -0.1065 -  
0.1011  
F'' 3.0590 3.0967 3.1345 3.1725 3.2107 3.2490 3.2875 3.3262 3.3650 3.4040

1.50 TO 1.59 F' -0.0959 -0.0909 -0.0861 -0.0816 -0.0772 -0.0730 -0.0690 -0.0653 -0.0617 -  
0.0584  
F'' 3.4431 3.4824 3.5219 3.5615 3.6013 3.6412 3.6813 3.7215 3.7619 3.8025

1.60 TO 1.69 F' -0.0553 -0.0524 -0.0497 -0.0472 -0.0449 -0.0428 -0.0410 -0.0394 -0.0380 -  
0.0368  
F'' 3.8432 3.8841 3.9251 3.9663 4.0076 4.0491 4.0907 4.1324 4.1744 4.2164

1.70 TO 1.79 F' -0.0358 -0.0351 -0.0346 -0.0343 -0.0342 -0.0344 -0.0348 -0.0354 -0.0362 -  
0.0373  
F'' 4.2587 4.3010 4.3435 4.3862 4.4290 4.4719 4.5150 4.5582 4.6016 4.6451

1.80 TO 1.89 F' -0.0387 -0.0402 -0.0436 -0.0457 -0.0480 -0.0506 -0.0533 -0.0564 -0.0597 -  
0.0632  
F'' 4.6888 4.7326 4.7765 4.8205 4.8647 4.9090 4.9534 4.9980 5.0427 5.0875

1.90 TO 1.99 F' -0.0670 -0.0710 -0.0753 -0.0798 -0.0846 -0.0896 -0.0949 -0.1004 -0.1091 -  
0.1152  
F'' 5.1325 5.1776 5.2228 5.2682 5.3137 5.3593 5.4051 5.4509 5.4969 5.5429

2.00 TO 2.09 F' -0.1216 -0.1282 -0.1352 -0.1424 -0.1498 -0.1576 -0.1656 -0.1788 -0.1874 -  
0.1964  
F'' 5.5891 5.6354 5.6819 5.7284 5.7751 5.8219 5.8688 5.9158 5.9628 6.0100

2.10 TO 2.19 F' -0.2056 -0.2151 -0.2258 -0.2359 -0.2463 -0.2569 -0.2688 -0.2801 -0.2917 -  
0.3035  
F'' 6.0572 6.1046 6.1521 6.1997 6.2474 6.2952 6.3431 6.3911 6.4392 6.4875

2.20 TO 2.29 F' -0.3157 -0.3282 -0.3409 -0.3540 -0.3674 -0.3811 -0.3951 -0.4094 -0.4240 -  
0.4390  
F'' 6.5358 6.5843 6.6329 6.6815 6.7303 6.7792 6.8282 6.8773 6.9265 6.9758

2.30 TO 2.39 F' -0.4543 -0.4699 -0.4858 -0.5021 -0.5187 -0.5356 -0.5529 -0.5705 -0.5885 -  
0.6068  
F'' 7.0252 7.0747 7.1243 7.1740 7.2238 7.2737 7.3237 7.3738 7.4241 7.4744

2.40 TO 2.49 F' -0.6254 -0.6444 -0.6638 -0.6835 -0.7036 -0.7240 -0.7449 -0.7660 -0.7876 -  
0.8095  
F'' 7.5248 7.5753 7.6259 7.6766 7.7274 7.7783 7.8292 7.8803 7.9315 7.9828

2.50 TO 2.59 F' -0.8319 -0.8546 -0.8777 -0.9012 -0.9251 -0.9494 -0.9741 -0.9992 -1.0247 -  
1.0506  
F'' 8.0341 8.0856 8.1371 8.1888 8.2405 8.2923 8.3443 8.3963 8.4484 8.5005

2.60 TO 2.69 F' -1.0770 -1.1038 -1.1310 -1.1586 -1.1867 -1.2152 -1.2442 -1.2737 -1.3036 -  
1.3339  
F'' 8.5528 8.6052 8.6576 8.7102 8.7628 8.8155 8.8683 8.9212 8.9742 9.0273



2.70 TO 2.79 F' -1.3648 -1.3961 -1.4279 -1.4601 -1.4929 -1.5262 -1.5600 -1.5942 -1.6291 -  
1.6644  
F'' 9.0804 9.1336 9.1870 9.2404 9.2938 9.3474 9.4011 9.4548 9.5086 9.5625

2.80 TO 2.89 F' -1.7049 -1.7413 -1.7783 -1.8158 -1.8539 -1.8926 -1.9318 -1.9716 -2.0120 -  
2.0529  
F'' 9.6164 9.6703 9.7243 9.7783 9.8324 9.8866 9.9409 9.9952 10.0497 10.1042

ATOMIC SYMBOL = PD ATOMIC NUMBER = 46

0.10 TO 0.19 F' -0.2574 -0.2325 -0.2079 -0.1840 -0.1609 -0.1390 -0.1187 -0.1002 -0.0834 -  
0.0685  
F'' 0.1957 0.2346 0.2768 0.3223 0.3709 0.4226 0.4772 0.5342 0.5939 0.6561

0.20 TO 0.29 F' -0.0556 -0.0450 -0.0368 -0.0312 -0.0284 -0.0286 -0.0355 -0.0428 -0.0536 -  
0.0683  
F'' 0.7209 0.7881 0.8577 0.9296 1.0038 1.0802 1.1584 1.2383 1.3201 1.4037

0.30 TO 0.39 F' -0.0871 -0.1103 -0.1383 -0.1713 -0.2100 -0.2546 -0.3059 -0.3646 -0.4314 -  
0.5074  
F'' 1.4891 1.5763 1.6652 1.7558 1.8480 1.9419 2.0372 2.1341 2.2325 2.3324

0.40 TO 0.49 F' -0.5953 -0.6938 -0.8064 -0.9358 -1.0859 -1.2623 -1.4737 -1.7337 -2.0673 -  
2.5196  
F'' 2.4334 2.5356 2.6392 2.7440 2.8501 2.9574 3.0659 3.1742 3.2820 3.3941

0.50 TO 0.59 F' -3.3144 -5.7516 -3.3865 -2.8278 -2.5094 -2.2902 -2.1245 -1.9923 -1.8826 -  
1.7891  
F'' 3.5155 0.5523 0.5722 0.5925 0.6130 0.6339 0.6550 0.6765 0.6982 0.7203

0.60 TO 0.69 F' -1.7077 -1.6358 -1.5712 -1.5127 -1.4592 -1.4098 -1.3639 -1.3210 -1.2807 -  
1.2427  
F'' 0.7426 0.7652 0.7881 0.8113 0.8348 0.8586 0.8827 0.9070 0.9317 0.9566

0.70 TO 0.79 F' -1.2066 -1.1724 -1.1396 -1.1083 -1.0782 -1.0493 -1.0214 -0.9945 -0.9684 -  
0.9432  
F'' 0.9818 1.0073 1.0330 1.0590 1.0854 1.1119 1.1388 1.1659 1.1933 1.2210

0.80 TO 0.89 F' -0.9211 -0.8973 -0.8742 -0.8517 -0.8297 -0.8083 -0.7895 -0.7692 -0.7492 -  
0.7297  
F'' 1.2489 1.2770 1.3054 1.3341 1.3630 1.3921 1.4216 1.4512 1.4810 1.5111

0.90 TO 0.99 F' -0.7106 -0.6947 -0.6765 -0.6586 -0.6411 -0.6238 -0.6069 -0.5904 -0.5741 -  
0.5582  
F'' 1.5415 1.5720 1.6028 1.6338 1.6650 1.6965 1.7282 1.7601 1.7923 1.8247

1.00 TO 1.09 F' -0.5425 -0.5271 -0.5119 -0.4970 -0.4824 -0.4680 -0.4539 -0.4400 -0.4263 -  
0.4129  
F'' 1.8573 1.8902 1.9233 1.9566 1.9902 2.0239 2.0580 2.0922 2.1266 2.1613

1.10 TO 1.19 F' -0.3998 -0.3869 -0.3742 -0.3617 -0.3495 -0.3375 -0.3257 -0.3142 -0.3029 -  
0.2943  
F'' 2.1962 2.2314 2.2667 2.3023 2.3381 2.3741 2.4103 2.4467 2.4834 2.5202

1.20 TO 1.29 F' -0.2835 -0.2729 -0.2625 -0.2524 -0.2425 -0.2362 -0.2268 -0.2176 -0.2087 -  
0.1999  
F'' 2.5573 2.5946 2.6320 2.6697 2.7076 2.7457 2.7839 2.8224 2.8611 2.9000

1.30 TO 1.39 F' -0.1914 -0.1832 -0.1751 -0.1673 -0.1598 -0.1524 -0.1453 -0.1384 -0.1318 -  
0.1254  
F'' 2.9391 2.9783 3.0178 3.0575 3.0974 3.1375 3.1778 3.2183 3.2589 3.2998

1.40 TO 1.49 F' -0.1193 -0.1133 -0.1077 -0.1022 -0.0969 -0.0919 -0.0872 -0.0826 -0.0783 -  
0.0742  
F'' 3.3407 3.3816 3.4228 3.4641 3.5056 3.5473 3.5891 3.6312 3.6734 3.7158

1.50 TO 1.59 F' -0.0703 -0.0667 -0.0633 -0.0601 -0.0572 -0.0545 -0.0521 -0.0499 -0.0479 -  
0.0462  
F'' 3.7583 3.8010 3.8439 3.8870 3.9302 3.9736 4.0172 4.0609 4.1048 4.1489

1.60 TO 1.69 F' -0.0447 -0.0435 -0.0425 -0.0417 -0.0412 -0.0410 -0.0410 -0.0413 -0.0418 -  
0.0426

F''	4.1932	4.2376	4.2821	4.3268	4.3717	4.4168	4.4620	4.5074	4.5529	4.5986
1.70 TO 1.79 F'	-0.0436	-0.0449	-0.0477	-0.0496	-0.0517	-0.0541	-0.0568	-0.0597	-0.0629	-0.0664
F''	4.6444	4.6904	4.7366	4.7829	4.8293	4.8759	4.9226	4.9695	5.0165	5.0637
1.80 TO 1.89 F'	-0.0701	-0.0741	-0.0784	-0.0830	-0.0879	-0.0930	-0.0984	-0.1065	-0.1126	-0.1189
F''	5.1110	5.1585	5.2061	5.2539	5.3018	5.3499	5.3981	5.4463	5.4948	5.5433
1.90 TO 1.99 F'	-0.1256	-0.1325	-0.1398	-0.1473	-0.1551	-0.1640	-0.1766	-0.1855	-0.1954	-0.2049
F''	5.5920	5.6409	5.6898	5.7390	5.7882	5.8376	5.8870	5.9365	5.9862	6.0360
2.00 TO 2.09 F'	-0.2147	-0.2248	-0.2353	-0.2461	-0.2572	-0.2686	-0.2804	-0.2924	-0.3049	-0.3176
F''	6.0859	6.1359	6.1860	6.2363	6.2867	6.3373	6.3879	6.4387	6.4896	6.5406
2.10 TO 2.19 F'	-0.3307	-0.3441	-0.3579	-0.3720	-0.3865	-0.4013	-0.4164	-0.4319	-0.4478	-0.4641
F''	6.5917	6.6430	6.6943	6.7458	6.7974	6.8492	6.9010	6.9530	7.0050	7.0572
2.20 TO 2.29 F'	-0.4807	-0.4976	-0.5150	-0.5327	-0.5508	-0.5693	-0.5881	-0.6074	-0.6270	-0.6471
F''	7.1095	7.1620	7.2145	7.2671	7.3199	7.3728	7.4257	7.4788	7.5320	7.5853
2.30 TO 2.39 F'	-0.6675	-0.6883	-0.7096	-0.7312	-0.7533	-0.7758	-0.7987	-0.8220	-0.8458	-0.8700
F''	7.6387	7.6923	7.7459	7.7996	7.8535	7.9074	7.9615	8.0157	8.0699	8.1243
2.40 TO 2.49 F'	-0.8946	-0.9197	-0.9452	-0.9712	-0.9977	-1.0246	-1.0519	-1.0798	-1.1081	-1.1369
F''	8.1788	8.2334	8.2880	8.3428	8.3977	8.4527	8.5078	8.5630	8.6183	8.6736
2.50 TO 2.59 F'	-1.1662	-1.1960	-1.2263	-1.2571	-1.2884	-1.3203	-1.3526	-1.3855	-1.4189	-1.4529
F''	8.7291	8.7847	8.8404	8.8962	8.9520	9.0080	9.0641	9.1202	9.1765	9.2329
2.60 TO 2.69 F'	-1.4875	-1.5225	-1.5582	-1.5944	-1.6313	-1.6737	-1.7117	-1.7504	-1.7896	-1.8295
F''	9.2893	9.3458	9.4025	9.4592	9.5160	9.5728	9.6297	9.6865	9.7435	9.8006
2.70 TO 2.79 F'	-1.8700	-1.9112	-1.9530	-1.9954	-2.0386	-2.0824	-2.1269	-2.1721	-2.2180	-2.2646
F''	9.8578	9.9150	9.9723	10.0297	10.0872	10.1448	10.2025	10.2602	10.3180	10.3759
2.80 TO 2.89 F'	-2.3120	-2.3602	-2.4091	-2.4587	-2.5092	-2.5605	-2.6126	-2.6702	-2.7241	-2.7788
F''	10.4339	10.4920	10.5502	10.6084	10.6667	10.7251	10.7836	10.8420	10.9005	10.9591
ATOMIC SYMBOL = AG ATOMIC NUMBER = 47										
0.10 TO 0.19 F'	-0.2707	-0.2449	-0.2196	-0.1951	-0.1718	-0.1499	-0.1299	-0.1120	-0.0960	-0.0823
F''	0.2135	0.2559	0.3017	0.3510	0.4037	0.4599	0.5190	0.5806	0.6451	0.7124
0.20 TO 0.29 F'	-0.0710	-0.0623	-0.0565	-0.0537	-0.0542	-0.0616	-0.0698	-0.0821	-0.0986	-0.1197
F''	0.7823	0.8548	0.9299	1.0074	1.0874	1.1693	1.2531	1.3389	1.4268	1.5166
0.30 TO 0.39 F'	-0.1457	-0.1771	-0.2143	-0.2578	-0.3083	-0.3665	-0.4333	-0.5098	-0.5999	-0.7003
F''	1.6083	1.7019	1.7972	1.8944	1.9933	2.0938	2.1961	2.2999	2.4048	2.5110
0.40 TO 0.49 F'	-0.8156	-0.9489	-1.1043	-1.2881	-1.5102	-1.7874	-2.1526	-2.7001	-3.7279	-4.2294
F''	2.6185	2.7274	2.8375	2.9490	3.0617	3.1756	3.2907	3.4012	3.5304	0.5624
0.50 TO 0.59 F'	-3.1252	-2.6786	-2.4031	-2.2064	-2.0547	-1.9319	-1.8290	-1.7407	-1.6633	-1.5944
F''	0.5835	0.6050	0.6268	0.6489	0.6714	0.6942	0.7173	0.7407	0.7645	0.7886
0.60 TO 0.69 F'	-1.5324	-1.4760	-1.4241	-1.3761	-1.3314	-1.2895	-1.2500	-1.2127	-1.1772	-

1.1434  
F'' 0.8130 0.8377 0.8627 0.8881 0.9137 0.9397 0.9660 0.9926 1.0195 1.0467  
0.70 TO 0.79 F' -1.1111 -1.0801 -1.0503 -1.0216 -0.9939 -0.9671 -0.9434 -0.9183 -0.8939 -  
0.8702  
F'' 1.0742 1.1020 1.1302 1.1586 1.1873 1.2164 1.2456 1.2751 1.3049 1.3350  
0.80 TO 0.89 F' -0.8471 -0.8246 -0.8048 -0.7834 -0.7625 -0.7421 -0.7244 -0.7050 -0.6860 -  
0.6673  
F'' 1.3654 1.3961 1.4270 1.4582 1.4896 1.5213 1.5533 1.5854 1.6179 1.6506  
0.90 TO 0.99 F' -0.6490 -0.6311 -0.6135 -0.5963 -0.5794 -0.5628 -0.5465 -0.5305 -0.5148 -  
0.4994  
F'' 1.6835 1.7168 1.7503 1.7840 1.8180 1.8523 1.8868 1.9216 1.9566 1.9919  
1.00 TO 1.09 F' -0.4842 -0.4694 -0.4548 -0.4405 -0.4264 -0.4126 -0.3991 -0.3858 -0.3728 -  
0.3600  
F'' 2.0274 2.0632 2.0992 2.1355 2.1720 2.2087 2.2457 2.2830 2.3205 2.3582  
1.10 TO 1.19 F' -0.3498 -0.3376 -0.3256 -0.3139 -0.3024 -0.2912 -0.2832 -0.2726 -0.2622 -  
0.2520  
F'' 2.3962 2.4344 2.4728 2.5115 2.5503 2.5895 2.6288 2.6684 2.7081 2.7481  
1.20 TO 1.29 F' -0.2421 -0.2324 -0.2230 -0.2138 -0.2049 -0.1962 -0.1878 -0.1796 -0.1717 -  
0.1640  
F'' 2.7884 2.8288 2.8695 2.9104 2.9516 2.9929 3.0345 3.0763 3.1183 3.1606  
1.30 TO 1.39 F' -0.1566 -0.1494 -0.1426 -0.1359 -0.1296 -0.1235 -0.1176 -0.1121 -0.1068 -  
0.1018  
F'' 3.2030 3.2457 3.2886 3.3317 3.3750 3.4186 3.4623 3.5063 3.5504 3.5948  
1.40 TO 1.49 F' -0.0971 -0.0926 -0.0883 -0.0843 -0.0805 -0.0770 -0.0738 -0.0708 -0.0681 -  
0.0656  
F'' 3.6392 3.6836 3.7282 3.7731 3.8181 3.8633 3.9086 3.9542 4.0000 4.0459  
1.50 TO 1.59 F' -0.0634 -0.0615 -0.0599 -0.0585 -0.0574 -0.0566 -0.0560 -0.0557 -0.0558 -  
0.0560  
F'' 4.0920 4.1384 4.1849 4.2315 4.2784 4.3254 4.3727 4.4200 4.4676 4.5154  
1.60 TO 1.69 F' -0.0566 -0.0575 -0.0586 -0.0610 -0.0627 -0.0648 -0.0671 -0.0698 -0.0727 -  
0.0759  
F'' 4.5633 4.6114 4.6597 4.7081 4.7567 4.8055 4.8544 4.9035 4.9528 5.0022  
1.70 TO 1.79 F' -0.0795 -0.0833 -0.0875 -0.0919 -0.0967 -0.1018 -0.1090 -0.1148 -0.1214 -  
0.1278  
F'' 5.0518 5.1016 5.1515 5.2016 5.2518 5.3023 5.3528 5.4035 5.4543 5.5053  
1.80 TO 1.89 F' -0.1345 -0.1421 -0.1496 -0.1573 -0.1654 -0.1771 -0.1860 -0.1952 -0.2047 -  
0.2146  
F'' 5.5565 5.6077 5.6592 5.7108 5.7625 5.8144 5.8663 5.9184 5.9707 6.0230  
1.90 TO 1.99 F' -0.2248 -0.2354 -0.2464 -0.2577 -0.2693 -0.2813 -0.2937 -0.3065 -0.3196 -  
0.3331  
F'' 6.0755 6.1282 6.1810 6.2339 6.2870 6.3402 6.3935 6.4470 6.5006 6.5544  
2.00 TO 2.09 F' -0.3469 -0.3612 -0.3758 -0.3908 -0.4062 -0.4220 -0.4382 -0.4548 -0.4718 -  
0.4892  
F'' 6.6083 6.6623 6.7164 6.7707 6.8251 6.8796 6.9343 6.9891 7.0440 7.0991  
2.10 TO 2.19 F' -0.5070 -0.5252 -0.5438 -0.5629 -0.5824 -0.6023 -0.6227 -0.6434 -0.6647 -  
0.6863  
F'' 7.1543 7.2096 7.2650 7.3206 7.3763 7.4321 7.4880 7.5441 7.6002 7.6565  
2.20 TO 2.29 F' -0.7085 -0.7311 -0.7541 -0.7776 -0.8016 -0.8260 -0.8510 -0.8764 -0.9023 -  
0.9287  
F'' 7.7129 7.7695 7.8261 7.8829 7.9398 7.9968 8.0539 8.1112 8.1685 8.2260  
2.30 TO 2.39 F' -0.9556 -0.9830 -1.0109 -1.0394 -1.0683 -1.0978 -1.1279 -1.1584 -1.1896 -  
1.2213  
F'' 8.2836 8.3413 8.3991 8.4571 8.5151 8.5733 8.6315 8.6899 8.7484 8.8070  
2.40 TO 2.49 F' -1.2535 -1.2863 -1.3197 -1.3537 -1.3883 -1.4235 -1.4593 -1.4957 -1.5328 -

1.5705  
F'' 8.8657 8.9245 8.9834 9.0424 9.1016 9.1608 9.2202 9.2796 9.3392 9.3988  
2.50 TO 2.59 F' -1.6088 -1.6528 -1.6925 -1.7329 -1.7739 -1.8156 -1.8581 -1.9012 -1.9451 -  
1.9897  
F'' 9.4586 9.5184 9.5781 9.6380 9.6979 9.7580 9.8181 9.8784 9.9387 9.9992  
2.60 TO 2.69 F' -2.0351 -2.0812 -2.1281 -2.1758 -2.2243 -2.2736 -2.3237 -2.3747 -2.4266 -  
2.4793  
F'' 10.0597 10.1203 10.1811 10.2419 10.3028 10.3638 10.4249 10.4861 10.5473 10.6087  
2.70 TO 2.79 F' -2.5330 -2.5925 -2.6480 -2.7045 -2.7620 -2.8205 -2.8800 -2.9405 -3.0021 -  
3.0648  
F'' 10.6702 10.7316 10.7931 10.8546 10.9162 10.9779 11.0397 11.1016 11.1635 11.2255  
2.80 TO 2.89 F' -3.1286 -3.1935 -3.2596 -3.3269 -3.3955 -3.4729 -3.5441 -3.6167 -3.6906 -  
3.7660  
F'' 11.2876 11.3498 11.4121 11.4744 11.5369 11.5993 11.6616 11.7239 11.7864 11.8489  
ATOMIC SYMBOL = CD ATOMIC NUMBER = 48  
0.10 TO 0.19 F' -0.2847 -0.2581 -0.2321 -0.2073 -0.1838 -0.1621 -0.1426 -0.1254 -0.1106 -  
0.0984  
F'' 0.2325 0.2784 0.3281 0.3815 0.4386 0.4994 0.5632 0.6298 0.6994 0.7719  
0.20 TO 0.29 F' -0.0891 -0.0828 -0.0798 -0.0804 -0.0881 -0.0972 -0.1107 -0.1289 -0.1522 -  
0.1810  
F'' 0.8473 0.9255 1.0063 1.0898 1.1754 1.2630 1.3530 1.4451 1.5393 1.6356  
0.30 TO 0.39 F' -0.2158 -0.2572 -0.3058 -0.3624 -0.4279 -0.5034 -0.5927 -0.6931 -0.8091 -  
0.9438  
F'' 1.7339 1.8342 1.9363 2.0404 2.1462 2.2538 2.3629 2.4732 2.5850 2.6983  
0.40 TO 0.49 F' -1.1018 -1.2898 -1.5185 -1.8067 -2.1923 -2.7632 -4.0488 -3.8593 -2.9928 -  
2.5938  
F'' 2.8130 2.9291 3.0466 3.1654 3.2855 3.4128 3.5447 0.5700 0.5923 0.6150  
0.50 TO 0.59 F' -2.3390 -2.1540 -2.0099 -1.8923 -1.7933 -1.7079 -1.6328 -1.5658 -1.5052 -  
1.4500  
F'' 0.6381 0.6615 0.6853 0.7094 0.7339 0.7588 0.7840 0.8095 0.8355 0.8617  
0.60 TO 0.69 F' -1.3991 -1.3519 -1.3078 -1.2665 -1.2274 -1.1904 -1.1552 -1.1216 -1.0895 -  
1.0586  
F'' 0.8883 0.9153 0.9426 0.9702 0.9982 1.0265 1.0552 1.0842 1.1135 1.1432  
0.70 TO 0.79 F' -1.0289 -1.0002 -0.9746 -0.9479 -0.9220 -0.8968 -0.8724 -0.8505 -0.8275 -  
0.8050  
F'' 1.1732 1.2035 1.2341 1.2650 1.2962 1.3278 1.3596 1.3918 1.4242 1.4569  
0.80 TO 0.89 F' -0.7830 -0.7637 -0.7428 -0.7224 -0.7025 -0.6829 -0.6639 -0.6451 -0.6268 -  
0.6088  
F'' 1.4899 1.5232 1.5567 1.5905 1.6247 1.6591 1.6938 1.7288 1.7640 1.7996  
0.90 TO 0.99 F' -0.5912 -0.5739 -0.5570 -0.5404 -0.5241 -0.5081 -0.4924 -0.4770 -0.4620 -  
0.4472  
F'' 1.8354 1.8716 1.9080 1.9447 1.9816 2.0189 2.0564 2.0942 2.1322 2.1706  
1.00 TO 1.09 F' -0.4327 -0.4185 -0.4066 -0.3930 -0.3797 -0.3666 -0.3539 -0.3414 -0.3318 -  
0.3199  
F'' 2.2092 2.2480 2.2872 2.3266 2.3662 2.4061 2.4463 2.4867 2.5274 2.5683  
1.10 TO 1.19 F' -0.3083 -0.2970 -0.2859 -0.2752 -0.2646 -0.2544 -0.2444 -0.2347 -0.2253 -  
0.2161  
F'' 2.6094 2.6509 2.6925 2.7345 2.7766 2.8191 2.8617 2.9047 2.9478 2.9913  
1.20 TO 1.29 F' -0.2072 -0.1986 -0.1903 -0.1822 -0.1745 -0.1670 -0.1598 -0.1529 -0.1463 -  
0.1399  
F'' 3.0349 3.0788 3.1230 3.1674 3.2120 3.2568 3.3020 3.3473 3.3929 3.4387  
1.30 TO 1.39 F' -0.1339 -0.1282 -0.1227 -0.1176 -0.1128 -0.1083 -0.1042 -0.1003 -0.0968 -  
0.0937  
F'' 3.4847 3.5310 3.5775 3.6243 3.6713 3.7185 3.7659 3.8136 3.8615 3.9096

1.40 TO 1.49 F' -0.0907 -0.0879 -0.0854 -0.0832 -0.0813 -0.0797 -0.0784 -0.0774 -0.0767 -  
0.0763  
F'' 3.9576 4.0058 4.0541 4.1026 4.1514 4.2003 4.2494 4.2988 4.3483 4.3980

1.50 TO 1.59 F' -0.0762 -0.0764 -0.0770 -0.0778 -0.0790 -0.0811 -0.0830 -0.0851 -0.0877 -  
0.0905  
F'' 4.4480 4.4981 4.5484 4.5989 4.6496 4.7005 4.7516 4.8029 4.8543 4.9059

1.60 TO 1.69 F' -0.0937 -0.0974 -0.1013 -0.1054 -0.1102 -0.1151 -0.1204 -0.1274 -0.1333 -  
0.1397  
F'' 4.9578 5.0098 5.0619 5.1143 5.1668 5.2196 5.2725 5.3255 5.3787 5.4321

1.70 TO 1.79 F' -0.1464 -0.1535 -0.1609 -0.1687 -0.1768 -0.1854 -0.1969 -0.2062 -0.2160 -  
0.2261  
F'' 5.4857 5.5394 5.5933 5.6474 5.7016 5.7560 5.8105 5.8651 5.9199 5.9749

1.80 TO 1.89 F' -0.2366 -0.2475 -0.2588 -0.2705 -0.2826 -0.2951 -0.3079 -0.3212 -0.3349 -  
0.3490  
F'' 6.0300 6.0853 6.1408 6.1963 6.2521 6.3080 6.3640 6.4202 6.4766 6.5331

1.90 TO 1.99 F' -0.3636 -0.3785 -0.3939 -0.4097 -0.4260 -0.4427 -0.4598 -0.4774 -0.4954 -  
0.5139  
F'' 6.5898 6.6466 6.7035 6.7606 6.8179 6.8753 6.9328 6.9905 7.0483 7.1063

2.00 TO 2.09 F' -0.5328 -0.5522 -0.5720 -0.5924 -0.6132 -0.6345 -0.6563 -0.6785 -0.7013 -  
0.7246  
F'' 7.1644 7.2226 7.2810 7.3395 7.3982 7.4570 7.5159 7.5750 7.6342 7.6936

2.10 TO 2.19 F' -0.7483 -0.7726 -0.7974 -0.8228 -0.8486 -0.8750 -0.9020 -0.9295 -0.9575 -  
0.9861  
F'' 7.7530 7.8126 7.8724 7.9323 7.9923 8.0524 8.1127 8.1731 8.2336 8.2943

2.20 TO 2.29 F' -1.0153 -1.0451 -1.0754 -1.1063 -1.1379 -1.1700 -1.2028 -1.2361 -1.2701 -  
1.3048  
F'' 8.3550 8.4160 8.4770 8.5382 8.5994 8.6608 8.7224 8.7840 8.8458 8.9077

2.30 TO 2.39 F' -1.3401 -1.3760 -1.4126 -1.4499 -1.4879 -1.5266 -1.5660 -1.6061 -1.6509 -  
1.6925  
F'' 8.9697 9.0319 9.0941 9.1565 9.2190 9.2816 9.3443 9.4072 9.4700 9.5329

2.40 TO 2.49 F' -1.7349 -1.7780 -1.8219 -1.8665 -1.9120 -1.9583 -2.0054 -2.0534 -2.1022 -  
2.1519  
F'' 9.5959 9.6591 9.7223 9.7856 9.8491 9.9127 9.9763 10.0401 10.1040 10.1680

2.50 TO 2.59 F' -2.2025 -2.2539 -2.3064 -2.3597 -2.4140 -2.4694 -2.5308 -2.5882 -2.6467 -  
2.7062  
F'' 10.2321 10.2963 10.3606 10.4250 10.4895 10.5541 10.6188 10.6834 10.7481 10.8129

2.60 TO 2.69 F' -2.7668 -2.8285 -2.8914 -2.9554 -3.0206 -3.0871 -3.1549 -3.2239 -3.2943 -  
3.3660  
F'' 10.8778 10.9428 11.0079 11.0731 11.1383 11.2037 11.2691 11.3347 11.4003 11.4661

2.70 TO 2.79 F' -3.4473 -3.5220 -3.5982 -3.6760 -3.7553 -3.8363 -3.9190 -4.0035 -4.0898 -  
4.1780  
F'' 11.5317 11.5973 11.6630 11.7288 11.7946 11.8605 11.9265 11.9926 12.0587 12.1250

2.80 TO 2.89 F' -4.2683 -4.3605 -4.4549 -4.5516 -4.6507 -4.7522 -4.8564 -4.9633 -5.0731 -  
5.1860  
F'' 12.1913 12.2576 12.3241 12.3906 12.4572 12.5239 12.5906 12.6575 12.7244 12.7913

ATOMIC SYMBOL = IN ATOMIC NUMBER = 49

0.10 TO 0.19 F' -0.2989 -0.2714 -0.2450 -0.2198 -0.1964 -0.1751 -0.1564 -0.1403 -0.1270 -  
0.1168  
F'' 0.2527 0.3023 0.3560 0.4138 0.4755 0.5411 0.6100 0.6818 0.7567 0.8347

0.20 TO 0.29 F' -0.1098 -0.1064 -0.1070 -0.1146 -0.1242 -0.1387 -0.1584 -0.1838 -0.2152 -  
0.2534  
F'' 0.9158 0.9999 1.0868 1.1759 1.2675 1.3614 1.4578 1.5564 1.6573 1.7603

0.30 TO 0.39 F' -0.2989 -0.3525 -0.4152 -0.4881 -0.5728 -0.6725 -0.7867 -0.9199 -1.0769 -  
1.2645

F'' 1.8655 1.9726 2.0818 2.1930 2.3060 2.4205 2.5366 2.6545 2.7739 2.8949  
 0.40 TO 0.49 F' -1.4936 -1.7835 -2.1734 -2.7615 -4.1146 -3.7628 -2.9431 -2.5568 -2.3082 -  
 2.1272

F'' 3.0175 3.1416 3.2671 3.3969 3.5302 0.5738 0.5979 0.6221 0.6464 0.6711  
 0.50 TO 0.59 F' -1.9858 -1.8702 -1.7728 -1.6886 -1.6144 -1.5482 -1.4882 -1.4335 -1.3830 -  
 1.3361

F'' 0.6963 0.7218 0.7477 0.7740 0.8006 0.8277 0.8552 0.8830 0.9112 0.9398  
 0.60 TO 0.69 F' -1.2922 -1.2510 -1.2121 -1.1752 -1.1400 -1.1064 -1.0743 -1.0433 -1.0153 -  
 0.9867

F'' 0.9688 0.9981 1.0278 1.0579 1.0883 1.1192 1.1503 1.1819 1.2138 1.2460  
 0.70 TO 0.79 F' -0.9590 -0.9322 -0.9062 -0.8827 -0.8583 -0.8345 -0.8113 -0.7906 -0.7687 -  
 0.7472

F'' 1.2785 1.3114 1.3446 1.3782 1.4121 1.4463 1.4808 1.5156 1.5507 1.5862  
 0.80 TO 0.89 F' -0.7263 -0.7058 -0.6858 -0.6662 -0.6470 -0.6283 -0.6099 -0.5919 -0.5742 -  
 0.5570

F'' 1.6219 1.6580 1.6944 1.7311 1.7682 1.8055 1.8432 1.8811 1.9194 1.9580  
 0.90 TO 0.99 F' -0.5400 -0.5235 -0.5072 -0.4913 -0.4757 -0.4622 -0.4473 -0.4327 -0.4184 -  
 0.4044

F'' 1.9968 2.0360 2.0755 2.1153 2.1554 2.1957 2.2364 2.2773 2.3186 2.3601  
 1.00 TO 1.09 F' -0.3930 -0.3798 -0.3668 -0.3541 -0.3417 -0.3296 -0.3177 -0.3062 -0.2950 -  
 0.2841

F'' 2.4019 2.4440 2.4863 2.5290 2.5719 2.6151 2.6585 2.7023 2.7463 2.7906  
 1.10 TO 1.19 F' -0.2735 -0.2632 -0.2531 -0.2434 -0.2340 -0.2248 -0.2160 -0.2075 -0.1993 -  
 0.1913

F'' 2.8352 2.8801 2.9252 2.9706 3.0163 3.0622 3.1084 3.1548 3.2016 3.2486  
 1.20 TO 1.29 F' -0.1837 -0.1764 -0.1695 -0.1628 -0.1564 -0.1504 -0.1447 -0.1394 -0.1343 -  
 0.1296

F'' 3.2958 3.3433 3.3911 3.4391 3.4874 3.5360 3.5848 3.6338 3.6831 3.7327  
 1.30 TO 1.39 F' -0.1253 -0.1213 -0.1177 -0.1144 -0.1115 -0.1091 -0.1070 -0.1053 -0.1042 -  
 0.1035

F'' 3.7825 3.8326 3.8829 3.9334 3.9842 4.0353 4.0866 4.1381 4.1899 4.2419  
 1.40 TO 1.49 F' -0.1027 -0.1021 -0.1018 -0.1018 -0.1021 -0.1029 -0.1039 -0.1057 -0.1075 -  
 0.1100

F'' 4.2939 4.3458 4.3981 4.4505 4.5031 4.5560 4.6090 4.6623 4.7158 4.7695  
 1.50 TO 1.59 F' -0.1124 -0.1153 -0.1186 -0.1222 -0.1262 -0.1306 -0.1354 -0.1405 -0.1470 -  
 0.1530

F'' 4.8234 4.8775 4.9318 4.9863 5.0410 5.0959 5.1510 5.2063 5.2618 5.3175  
 1.60 TO 1.69 F' -0.1594 -0.1661 -0.1733 -0.1808 -0.1888 -0.1971 -0.2059 -0.2170 -0.2267 -  
 0.2372

F'' 5.3733 5.4294 5.4856 5.5420 5.5986 5.6555 5.7124 5.7696 5.8269 5.8843  
 1.70 TO 1.79 F' -0.2477 -0.2586 -0.2700 -0.2819 -0.2941 -0.3068 -0.3199 -0.3335 -0.3476 -  
 0.3621

F'' 5.9420 5.9998 6.0578 6.1159 6.1743 6.2328 6.2915 6.3503 6.4093 6.4685  
 1.80 TO 1.89 F' -0.3770 -0.3925 -0.4084 -0.4247 -0.4416 -0.4589 -0.4767 -0.4950 -0.5138 -  
 0.5331

F'' 6.5279 6.5874 6.6471 6.7069 6.7669 6.8271 6.8875 6.9479 7.0086 7.0694  
 1.90 TO 1.99 F' -0.5530 -0.5733 -0.5941 -0.6155 -0.6374 -0.6599 -0.6828 -0.7064 -0.7304 -  
 0.7551

F'' 7.1304 7.1915 7.2528 7.3142 7.3758 7.4375 7.4994 7.5615 7.6237 7.6860  
 2.00 TO 2.09 F' -0.7803 -0.8061 -0.8324 -0.8594 -0.8869 -0.9150 -0.9438 -0.9731 -1.0031 -  
 1.0337

F'' 7.7485 7.8112 7.8739 7.9369 8.0000 8.0632 8.1266 8.1901 8.2537 8.3175  
 2.10 TO 2.19 F' -1.0650 -1.0969 -1.1295 -1.1627 -1.1966 -1.2312 -1.2665 -1.3025 -1.3392 -  
 1.3766

F''	8.3815	8.4455	8.5097	8.5741	8.6386	8.7032	8.7680	8.8329	8.8979	8.9631	
2.20 TO 2.29 F'	-1.4148	-1.4537	-1.4934	-1.5339	-1.5751	-1.6171	-1.6637	-1.7074	-1.7519	-	1.7973
F''	9.0284	9.0938	9.1594	9.2251	9.2909	9.3569	9.4228	9.4889	9.5550	9.6213	
2.30 TO 2.39 F'	-1.8435	-1.8907	-1.9387	-1.9876	-2.0375	-2.0883	-2.1400	-2.1928	-2.2465	-	2.3013
F''	9.6878	9.7543	9.8210	9.8877	9.9546	10.0217	10.0888	10.1560	10.2234	10.2909	
2.40 TO 2.49 F'	-2.3571	-2.4140	-2.4720	-2.5365	-2.5968	-2.6583	-2.7210	-2.7849	-2.8500	-	2.9165
F''	10.3585	10.4262	10.4941	10.5619	10.6297	10.6976	10.7657	10.8338	10.9021	10.9705	
2.50 TO 2.59 F'	-2.9842	-3.0533	-3.1238	-3.1957	-3.2692	-3.3441	-3.4290	-3.5072	-3.5871	-	3.6686
F''	11.0389	11.1075	11.1762	11.2449	11.3138	11.3828	11.4518	11.5206	11.5895	11.6585	
2.60 TO 2.69 F'	-3.7520	-3.8372	-3.9243	-4.0134	-4.1046	-4.1979	-4.2934	-4.3913	-4.4917	-	4.5946
F''	11.7277	11.7968	11.8661	11.9355	12.0050	12.0745	12.1441	12.2138	12.2836	12.3535	
2.70 TO 2.79 F'	-4.7003	-4.8088	-4.9204	-5.0352	-5.1534	-5.2752	-5.4010	-5.5311	-5.6657	-	5.7999
F''	12.4234	12.4935	12.5636	12.6338	12.7041	12.7745	12.8449	12.9154	12.9860	13.0568	
2.80 TO 2.89 F'	-5.9452	-6.0968	-6.2554	-6.4221	-6.5981	-6.7852	-6.9859	-7.2038	-7.4447	-	7.7183
F''	13.1280	13.1994	13.2709	13.3424	13.4140	13.4858	13.5576	13.6295	13.7015	13.7736	
ATOMIC SYMBOL = SN    ATOMIC NUMBER = 50											
0.10 TO 0.19 F'	-0.3138	-0.2857	-0.2588	-0.2336	-0.2104	-0.1897	-0.1721	-0.1575	-0.1461	-	0.1382
F''	0.2740	0.3276	0.3856	0.4479	0.5144	0.5852	0.6594	0.7365	0.8171	0.9009	
0.20 TO 0.29 F'	-0.1342	-0.1343	-0.1416	-0.1516	-0.1669	-0.1879	-0.2151	-0.2490	-0.2903	-	0.3398
F''	0.9879	1.0781	1.1708	1.2662	1.3641	1.4646	1.5676	1.6731	1.7808	1.8908	
0.30 TO 0.39 F'	-0.3984	-0.4674	-0.5480	-0.6441	-0.7542	-0.8833	-1.0358	-1.2183	-1.4413	-	1.7229
F''	2.0031	2.1175	2.2339	2.3523	2.4721	2.5937	2.7171	2.8422	2.9689	3.0973	
0.40 TO 0.49 F'	-2.0997	-2.6563	-3.8620	-3.8552	-2.9578	-2.5571	-2.3038	-2.1206	-1.9780	-	1.8619
F''	3.2273	3.3621	3.5028	0.5744	0.5996	0.6253	0.6515	0.6778	0.7042	0.7311	
0.50 TO 0.59 F'	-1.7640	-1.6796	-1.6053	-1.5389	-1.4789	-1.4240	-1.3734	-1.3263	-1.2823	-	1.2410
F''	0.7584	0.7861	0.8143	0.8429	0.8719	0.9013	0.9311	0.9614	0.9921	1.0231	
0.60 TO 0.69 F'	-1.2019	-1.1648	-1.1294	-1.0957	-1.0633	-1.0337	-1.0038	-0.9750	-0.9471	-	0.9216
F''	1.0546	1.0865	1.1188	1.1515	1.1845	1.2179	1.2517	1.2859	1.3205	1.3554	
0.70 TO 0.79 F'	-0.8955	-0.8701	-0.8455	-0.8232	-0.7999	-0.7772	-0.7551	-0.7335	-0.7124	-	0.6918
F''	1.3907	1.4263	1.4623	1.4987	1.5353	1.5723	1.6097	1.6474	1.6854	1.7238	
0.80 TO 0.89 F'	-0.6716	-0.6519	-0.6326	-0.6138	-0.5953	-0.5772	-0.5596	-0.5423	-0.5268	-	0.5103
F''	1.7626	1.8017	1.8411	1.8809	1.9210	1.9615	2.0023	2.0434	2.0848	2.1265	
0.90 TO 0.99 F'	-0.4942	-0.4784	-0.4629	-0.4497	-0.4350	-0.4206	-0.4066	-0.3929	-0.3795	-	0.3664
F''	2.1686	2.2110	2.2537	2.2968	2.3401	2.3837	2.4277	2.4720	2.5165	2.5614	
1.00 TO 1.09 F'	-0.3537	-0.3413	-0.3292	-0.3174	-0.3060	-0.2948	-0.2840	-0.2736	-0.2634	-	0.2536
F''	2.6066	2.6521	2.6979	2.7440	2.7904	2.8371	2.8842	2.9315	2.9791	3.0270	
1.10 TO 1.19 F'	-0.2441	-0.2349	-0.2260	-0.2175	-0.2093	-0.2018	-0.1943	-0.1872	-0.1803	-	

0.1739  
F'' 3.0751 3.1236 3.1724 3.2214 3.2708 3.3204 3.3703 3.4205 3.4710 3.5218  
1.20 TO 1.29 F' -0.1677 -0.1619 -0.1565 -0.1514 -0.1467 -0.1423 -0.1383 -0.1347 -0.1314 -  
0.1285  
F'' 3.5728 3.6241 3.6757 3.7276 3.7797 3.8321 3.8848 3.9378 3.9910 4.0445  
1.30 TO 1.39 F' -0.1260 -0.1239 -0.1222 -0.1209 -0.1210 -0.1205 -0.1205 -0.1218 -0.1228 -  
0.1272  
F'' 4.0983 4.1523 4.2066 4.2612 4.3160 4.3711 4.4264 4.4820 4.5378 4.5939  
1.40 TO 1.49 F' -0.1288 -0.1307 -0.1331 -0.1358 -0.1389 -0.1424 -0.1463 -0.1507 -0.1554 -  
0.1606  
F'' 4.6499 4.7059 4.7622 4.8187 4.8754 4.9324 4.9896 5.0470 5.1046 5.1625  
1.50 TO 1.59 F' -0.1667 -0.1728 -0.1793 -0.1862 -0.1936 -0.2014 -0.2097 -0.2184 -0.2288 -  
0.2385  
F'' 5.2205 5.2788 5.3372 5.3959 5.4548 5.5139 5.5732 5.6327 5.6924 5.7523  
1.60 TO 1.69 F' -0.2486 -0.2592 -0.2703 -0.2818 -0.2938 -0.3063 -0.3193 -0.3328 -0.3467 -  
0.3612  
F'' 5.8124 5.8726 5.9331 5.9938 6.0546 6.1157 6.1769 6.2383 6.2999 6.3617  
1.70 TO 1.79 F' -0.3761 -0.3916 -0.4076 -0.4241 -0.4411 -0.4586 -0.4767 -0.4953 -0.5145 -  
0.5342  
F'' 6.4237 6.4859 6.5482 6.6107 6.6735 6.7364 6.7994 6.8627 6.9261 6.9897  
1.80 TO 1.89 F' -0.5545 -0.5753 -0.5967 -0.6187 -0.6413 -0.6644 -0.6881 -0.7125 -0.7374 -  
0.7630  
F'' 7.0535 7.1175 7.1816 7.2459 7.3104 7.3750 7.4398 7.5048 7.5700 7.6353  
1.90 TO 1.99 F' -0.7892 -0.8160 -0.8435 -0.8716 -0.9004 -0.9298 -0.9599 -0.9907 -1.0222 -  
1.0544  
F'' 7.7008 7.7664 7.8322 7.8982 7.9643 8.0306 8.0970 8.1637 8.2304 8.2973  
2.00 TO 2.09 F' -1.0873 -1.1209 -1.1552 -1.1903 -1.2262 -1.2628 -1.3002 -1.3383 -1.3773 -  
1.4171  
F'' 8.3644 8.4317 8.4991 8.5666 8.6343 8.7021 8.7701 8.8383 8.9066 8.9750  
2.10 TO 2.19 F' -1.4577 -1.4992 -1.5415 -1.5847 -1.6320 -1.6770 -1.7229 -1.7697 -1.8175 -  
1.8662  
F'' 9.0436 9.1124 9.1813 9.2503 9.3194 9.3886 9.4579 9.5273 9.5969 9.6666  
2.20 TO 2.29 F' -1.9160 -1.9667 -2.0185 -2.0712 -2.1251 -2.1801 -2.2361 -2.2933 -2.3516 -  
2.4112  
F'' 9.7365 9.8064 9.8766 9.9468 10.0172 10.0877 10.1584 10.2292 10.3001 10.3711  
2.30 TO 2.39 F' -2.4773 -2.5393 -2.6027 -2.6673 -2.7332 -2.8006 -2.8693 -2.9395 -3.0112 -  
3.0844  
F'' 10.4422 10.5132 10.5844 10.6557 10.7271 10.7986 10.8703 10.9420 11.0139 11.0859  
2.40 TO 2.49 F' -3.1591 -3.2355 -3.3136 -3.4021 -3.4838 -3.5673 -3.6528 -3.7402 -3.8297 -  
3.9213  
F'' 11.1580 11.2303 11.3026 11.3750 11.4472 11.5194 11.5918 11.6643 11.7369 11.8096  
2.50 TO 2.59 F' -4.0151 -4.1113 -4.2099 -4.3110 -4.4148 -4.5214 -4.6309 -4.7436 -4.8596 -  
4.9791  
F'' 11.8824 11.9553 12.0282 12.1013 12.1745 12.2477 12.3211 12.3945 12.4680 12.5417  
2.60 TO 2.69 F' -5.1024 -5.2298 -5.3615 -5.4979 -5.6395 -5.7812 -5.9348 -6.0956 -6.2645 -  
6.4429  
F'' 12.6154 12.6892 12.7631 12.8370 12.9111 12.9854 13.0602 13.1351 13.2101 13.2852  
2.70 TO 2.79 F' -6.6324 -6.8354 -7.0554 -7.2978 -7.5719 -7.8956 -8.3124 -8.9917 -9.5923 -  
8.9169  
F'' 13.3604 13.4357 13.5112 13.5867 13.6623 13.7380 13.8138 13.8897 12.1154 12.1867  
2.80 TO 2.89 F' -8.7484 -8.7063 -8.7265 -8.7863 -8.8751 -8.9015 -9.0358 -9.1909 -9.3668 -  
9.5646  
F'' 12.2582 12.3297 12.4013 12.4730 12.5448 12.6221 12.7021 12.7826 12.8635 12.9449  
ATOMIC SYMBOL = SB ATOMIC NUMBER = 51



0.10 TO 0.19 F' -0.3304 -0.3017 -0.2745 -0.2492 -0.2265 -0.2068 -0.1906 -0.1778 -0.1686 -  
0.1636  
F'' 0.2963 0.3541 0.4166 0.4837 0.5554 0.6316 0.7115 0.7943 0.8807 0.9707

0.20 TO 0.29 F' -0.1631 -0.1697 -0.1798 -0.1955 -0.2175 -0.2462 -0.2823 -0.3265 -0.3798 -  
0.4432  
F'' 1.0640 1.1603 1.2594 1.3613 1.4660 1.5733 1.6833 1.7958 1.9107 2.0281

0.30 TO 0.39 F' -0.5182 -0.6065 -0.7121 -0.8344 -0.9793 -1.1529 -1.3646 -1.6306 -1.9819 -  
2.4865  
F'' 2.1477 2.2695 2.3932 2.5187 2.6461 2.7754 2.9066 3.0395 3.1742 3.3118

0.40 TO 0.49 F' -3.4537 -4.2393 -3.0486 -2.6006 -2.3290 -2.1368 -1.9893 -1.8699 -1.7698 -  
1.6836  
F'' 3.4554 0.5722 0.5984 0.6251 0.6524 0.6802 0.7085 0.7370 0.7657 0.7949

0.50 TO 0.59 F' -1.6081 -1.5407 -1.4798 -1.4242 -1.3729 -1.3253 -1.2808 -1.2390 -1.1995 -  
1.1619  
F'' 0.8245 0.8546 0.8852 0.9162 0.9477 0.9796 1.0119 1.0447 1.0780 1.1117

0.60 TO 0.69 F' -1.1262 -1.0933 -1.0606 -1.0292 -0.9990 -0.9698 -0.9429 -0.9157 -0.8892 -  
0.8636  
F'' 1.1458 1.1803 1.2153 1.2506 1.2864 1.3226 1.3592 1.3961 1.4335 1.4713

0.70 TO 0.79 F' -0.8402 -0.8160 -0.7925 -0.7695 -0.7472 -0.7253 -0.7040 -0.6832 -0.6629 -  
0.6430  
F'' 1.5094 1.5479 1.5868 1.6261 1.6657 1.7057 1.7461 1.7869 1.8281 1.8696

0.80 TO 0.89 F' -0.6236 -0.6047 -0.5874 -0.5693 -0.5517 -0.5344 -0.5175 -0.5028 -0.4867 -  
0.4710  
F'' 1.9115 1.9538 1.9964 2.0394 2.0828 2.1265 2.1705 2.2149 2.2596 2.3047

0.90 TO 0.99 F' -0.4557 -0.4408 -0.4262 -0.4120 -0.3981 -0.3846 -0.3715 -0.3587 -0.3463 -  
0.3342  
F'' 2.3501 2.3959 2.4420 2.4885 2.5353 2.5824 2.6299 2.6777 2.7258 2.7743

1.00 TO 1.09 F' -0.3225 -0.3111 -0.3001 -0.2894 -0.2791 -0.2691 -0.2595 -0.2503 -0.2414 -  
0.2329  
F'' 2.8230 2.8722 2.9216 2.9714 3.0215 3.0719 3.1226 3.1736 3.2250 3.2767

1.10 TO 1.19 F' -0.2247 -0.2170 -0.2095 -0.2025 -0.1958 -0.1895 -0.1836 -0.1781 -0.1729 -  
0.1681  
F'' 3.3287 3.3810 3.4336 3.4865 3.5397 3.5932 3.6471 3.7012 3.7556 3.8104

1.20 TO 1.29 F' -0.1638 -0.1598 -0.1562 -0.1538 -0.1511 -0.1487 -0.1476 -0.1461 -0.1451 -  
0.1445  
F'' 3.8654 3.9207 3.9764 4.0323 4.0885 4.1450 4.2018 4.2588 4.3162 4.3738

1.30 TO 1.39 F' -0.1443 -0.1446 -0.1485 -0.1498 -0.1515 -0.1538 -0.1566 -0.1601 -0.1642 -  
0.1694  
F'' 4.4317 4.4899 4.5484 4.6070 4.6659 4.7251 4.7846 4.8443 4.9043 4.9646

1.40 TO 1.49 F' -0.1744 -0.1793 -0.1848 -0.1906 -0.1970 -0.2038 -0.2111 -0.2188 -0.2271 -  
0.2358  
F'' 5.0247 5.0850 5.1455 5.2063 5.2673 5.3285 5.3900 5.4516 5.5136 5.5757

1.50 TO 1.59 F' -0.2450 -0.2555 -0.2658 -0.2766 -0.2880 -0.2998 -0.3121 -0.3250 -0.3384 -  
0.3524  
F'' 5.6381 5.7006 5.7634 5.8264 5.8896 5.9531 6.0167 6.0806 6.1446 6.2089

1.60 TO 1.69 F' -0.3669 -0.3819 -0.3975 -0.4137 -0.4304 -0.4477 -0.4656 -0.4840 -0.5031 -  
0.5227  
F'' 6.2734 6.3381 6.4030 6.4681 6.5334 6.5989 6.6646 6.7305 6.7966 6.8629

1.70 TO 1.79 F' -0.5430 -0.5638 -0.5853 -0.6074 -0.6301 -0.6535 -0.6775 -0.7021 -0.7275 -  
0.7535  
F'' 6.9294 6.9961 7.0630 7.1300 7.1973 7.2648 7.3324 7.4002 7.4683 7.5365

1.80 TO 1.89 F' -0.7802 -0.8075 -0.8356 -0.8644 -0.8939 -0.9241 -0.9550 -0.9867 -1.0192 -  
1.0524  
F'' 7.6048 7.6734 7.7422 7.8111 7.8802 7.9495 8.0190 8.0886 8.1584 8.2284

1.90 TO 1.99 F' -1.0864 -1.1212 -1.1568 -1.1933 -1.2305 -1.2686 -1.3075 -1.3474 -1.3881 -  
1.4297  
F'' 8.2986 8.3689 8.4394 8.5101 8.5810 8.6520 8.7232 8.7945 8.8660 8.9377

2.00 TO 2.09 F' -1.4722 -1.5156 -1.5600 -1.6084 -1.6548 -1.7021 -1.7505 -1.7999 -1.8504 -  
1.9020  
F'' 9.0095 9.0816 9.1537 9.2260 9.2984 9.3709 9.4435 9.5163 9.5893 9.6624

2.10 TO 2.19 F' -1.9546 -2.0084 -2.0634 -2.1195 -2.1768 -2.2353 -2.2951 -2.3561 -2.4237 -  
2.4875  
F'' 9.7356 9.8090 9.8826 9.9562 10.0301 10.1041 10.1782 10.2525 10.3268 10.4011

2.20 TO 2.29 F' -2.5527 -2.6193 -2.6873 -2.7569 -2.8279 -2.9006 -2.9748 -3.0508 -3.1285 -  
3.2079  
F'' 10.4756 10.5502 10.6249 10.6997 10.7747 10.8498 10.9250 11.0004 11.0759 11.1515

2.30 TO 2.39 F' -3.2892 -3.3798 -3.4651 -3.5524 -3.6418 -3.7335 -3.8274 -3.9237 -4.0225 -  
4.1239  
F'' 11.2272 11.3030 11.3787 11.4545 11.5303 11.6063 11.6824 11.7587 11.8350 11.9114

2.40 TO 2.49 F' -4.2281 -4.3351 -4.4452 -4.5585 -4.6752 -4.7955 -4.9196 -5.0479 -5.1806 -  
5.3182  
F'' 11.9880 12.0646 12.1414 12.2182 12.2952 12.3723 12.4494 12.5267 12.6041 12.6815

2.50 TO 2.59 F' -5.4609 -5.6095 -5.7590 -5.9210 -6.0913 -6.2709 -6.4615 -6.6653 -6.8857 -  
7.1275  
F'' 12.7591 12.8368 12.9148 12.9933 13.0718 13.1505 13.2293 13.3082 13.3872 13.4663

2.60 TO 2.69 F' -7.3990 -7.7158 -8.1136 -8.7136 -10.0129 -8.8930 -8.6912 -8.6421 -8.6634 -  
8.7283  
F'' 13.5456 13.6249 13.7044 13.7840 12.0205 12.0953 12.1702 12.2452 12.3203 12.3955

2.70 TO 2.79 F' -8.7290 -8.8522 -8.9998 -9.1710 -9.3665 -9.5882 -9.8398 -10.1269 -10.4589 -  
10.8514  
F'' 12.4731 12.5579 12.6431 12.7289 12.8152 12.9020 12.9894 13.0773 13.1658 13.2548

2.80 TO 2.89 F' -11.3336 -11.9708 -12.9663 -17.6971 -13.3979 -12.7268 -12.2255 -12.0837 -12.0373 -  
12.0598  
F'' 13.3443 13.4344 13.5251 13.6163 9.8198 9.8765 9.9341 10.0092 10.0852 10.1620

ATOMIC SYMBOL = TE ATOMIC NUMBER = 52

0.10 TO 0.19 F' -0.3491 -0.3201 -0.2930 -0.2681 -0.2462 -0.2280 -0.2138 -0.2033 -0.1971 -  
0.1956  
F'' 0.3199 0.3821 0.4493 0.5215 0.5986 0.6806 0.7662 0.8550 0.9477 1.0440

0.20 TO 0.29 F' -0.2013 -0.2112 -0.2271 -0.2498 -0.2797 -0.3176 -0.3645 -0.4212 -0.4892 -  
0.5701  
F'' 1.1436 1.2463 1.3521 1.4609 1.5725 1.6870 1.8042 1.9241 2.0465 2.1714

0.30 TO 0.39 F' -0.6669 -0.7804 -0.9152 -1.0768 -1.2734 -1.5184 -1.8368 -2.2838 -3.0334 -  
6.4304  
F'' 2.2986 2.4279 2.5593 2.6929 2.8285 2.9661 3.1057 3.2472 3.3914 0.5669

0.40 TO 0.49 F' -3.2487 -2.6975 -2.3902 -2.1804 -2.0227 -1.8969 -1.7928 -1.7037 -1.6257 -  
1.5564  
F'' 0.5941 0.6218 0.6502 0.6791 0.7086 0.7386 0.7693 0.8001 0.8312 0.8628

0.50 TO 0.59 F' -1.4939 -1.4371 -1.3847 -1.3362 -1.2908 -1.2482 -1.2080 -1.1698 -1.1344 -  
1.0998  
F'' 0.8949 0.9275 0.9606 0.9941 1.0282 1.0628 1.0978 1.1333 1.1693 1.2057

0.60 TO 0.69 F' -1.0666 -1.0347 -1.0040 -0.9755 -0.9469 -0.9193 -0.8937 -0.8678 -0.8426 -  
0.8181  
F'' 1.2426 1.2799 1.3177 1.3559 1.3945 1.4336 1.4731 1.5130 1.5534 1.5941

0.70 TO 0.79 F' -0.7942 -0.7710 -0.7484 -0.7263 -0.7047 -0.6837 -0.6643 -0.6443 -0.6248 -  
0.6058  
F'' 1.6353 1.6769 1.7189 1.7613 1.8041 1.8473 1.8910 1.9350 1.9794 2.0243

0.80 TO 0.89 F' -0.5872 -0.5704 -0.5528 -0.5355 -0.5187 -0.5023 -0.4863 -0.4707 -0.4555 -  
0.4407

F'' 2.0695 2.1151 2.1610 2.2074 2.2541 2.3013 2.3488 2.3966 2.4449 2.4935  
 0.90 TO 0.99 F' -0.4263 -0.4123 -0.3986 -0.3854 -0.3725 -0.3601 -0.3480 -0.3363 -0.3250 -  
 0.3141

F'' 2.5425 2.5919 2.6416 2.6917 2.7421 2.7930 2.8441 2.8957 2.9475 2.9998  
 1.00 TO 1.09 F' -0.3035 -0.2934 -0.2836 -0.2743 -0.2653 -0.2568 -0.2486 -0.2408 -0.2335 -  
 0.2265

F'' 3.0524 3.1053 3.1586 3.2122 3.2662 3.3205 3.3752 3.4302 3.4855 3.5412  
 1.10 TO 1.19 F' -0.2200 -0.2138 -0.2081 -0.2028 -0.1986 -0.1942 -0.1909 -0.1873 -0.1842 -  
 0.1815

F'' 3.5972 3.6535 3.7102 3.7672 3.8245 3.8821 3.9401 3.9983 4.0569 4.1158  
 1.20 TO 1.29 F' -0.1793 -0.1775 -0.1762 -0.1754 -0.1750 -0.1751 -0.1790 -0.1801 -0.1817 -  
 0.1837

F'' 4.1750 4.2346 4.2944 4.3546 4.4151 4.4759 4.5369 4.5981 4.6597 4.7215  
 1.30 TO 1.39 F' -0.1863 -0.1893 -0.1929 -0.1970 -0.2017 -0.2112 -0.2171 -0.2236 -0.2309 -  
 0.2391

F'' 4.7836 4.8461 4.9088 4.9718 5.0352 5.0987 5.1624 5.2264 5.2907 5.3552  
 1.40 TO 1.49 F' -0.2474 -0.2559 -0.2649 -0.2747 -0.2849 -0.2956 -0.3068 -0.3187 -0.3311 -  
 0.3441

F'' 5.4198 5.4845 5.5494 5.6146 5.6800 5.7457 5.8116 5.8777 5.9441 6.0107  
 1.50 TO 1.59 F' -0.3576 -0.3718 -0.3865 -0.4018 -0.4178 -0.4343 -0.4515 -0.4693 -0.4877 -  
 0.5068

F'' 6.0776 6.1447 6.2120 6.2795 6.3473 6.4153 6.4835 6.5519 6.6206 6.6895  
 1.60 TO 1.69 F' -0.5265 -0.5469 -0.5679 -0.5896 -0.6120 -0.6351 -0.6588 -0.6833 -0.7085 -  
 0.7344

F'' 6.7586 6.8279 6.8975 6.9672 7.0372 7.1074 7.1777 7.2483 7.3191 7.3902  
 1.70 TO 1.79 F' -0.7611 -0.7884 -0.8166 -0.8455 -0.8752 -0.9056 -0.9369 -0.9689 -1.0018 -  
 1.0355

F'' 7.4614 7.5328 7.6044 7.6762 7.7483 7.8205 7.8929 7.9655 8.0383 8.1114  
 1.80 TO 1.89 F' -1.0701 -1.1055 -1.1418 -1.1790 -1.2171 -1.2560 -1.2960 -1.3368 -1.3787 -  
 1.4215

F'' 8.1846 8.2580 8.3315 8.4053 8.4793 8.5534 8.6278 8.7023 8.7770 8.8519  
 1.90 TO 1.99 F' -1.4653 -1.5101 -1.5560 -1.6029 -1.6538 -1.7029 -1.7532 -1.8046 -1.8571 -  
 1.9108

F'' 8.9269 9.0022 9.0776 9.1532 9.2289 9.3047 9.3806 9.4568 9.5331 9.6096  
 2.00 TO 2.09 F' -1.9658 -2.0220 -2.0794 -2.1382 -2.1982 -2.2597 -2.3225 -2.3910 -2.4568 -  
 2.5241

F'' 9.6862 9.7630 9.8400 9.9171 9.9944 10.0719 10.1495 10.2272 10.3049 10.3828  
 2.10 TO 2.19 F' -2.5929 -2.6634 -2.7354 -2.8091 -2.8846 -2.9618 -3.0409 -3.1219 -3.2049 -  
 3.2899

F'' 10.4608 10.5390 10.6173 10.6957 10.7743 10.8531 10.9320 11.0110 11.0902 11.1695  
 2.20 TO 2.29 F' -3.3841 -3.4735 -3.5652 -3.6592 -3.7557 -3.8548 -3.9566 -4.0612 -4.1688 -  
 4.2795

F'' 11.2489 11.3281 11.4075 11.4870 11.5667 11.6464 11.7263 11.8063 11.8864 11.9667  
 2.30 TO 2.39 F' -4.3935 -4.5109 -4.6321 -4.7573 -4.8867 -5.0206 -5.1595 -5.3037 -5.4538 -  
 5.6103

F'' 12.0471 12.1275 12.2081 12.2889 12.3697 12.4507 12.5317 12.6129 12.6942 12.7756  
 2.40 TO 2.49 F' -5.7687 -5.9407 -6.1222 -6.3147 -6.5204 -6.7424 -6.9854 -7.2570 -7.5716 -  
 7.9606

F'' 12.8576 12.9398 13.0222 13.1047 13.1873 13.2701 13.3529 13.4360 13.5191 13.6024  
 2.50 TO 2.59 F' -8.5233 -11.7978 -8.8698 -8.6425 -8.5909 -8.6164 -8.6890 -8.7027 -8.8392 -  
 9.0028

F'' 13.6858 13.7693 12.0108 12.0893 12.1679 12.2466 12.3254 12.4118 12.5007 12.5901  
 2.60 TO 2.69 F' -9.1934 -9.4126 -9.6638 -9.9531 -10.2904 -10.6932 -11.1951 -11.8754 -13.0136 -  
 14.9749

F'' 12.6801 12.7706 12.8618 12.9535 13.0458 13.1387 13.2322 13.3263 13.4210 9.6927  
 2.70 TO 2.79 F' -12.9284 -12.3832 -12.1317 -11.8256 -11.7993 -11.8388 -11.9343 -12.0828 -12.2857 -  
 12.5494  
 F'' 9.7520 9.8114 9.8709 9.9456 10.0242 10.1038 10.1842 10.2656 10.3480 10.4313  
 2.80 TO 2.89 F' -12.8860 -13.3172 -13.8823 -14.6617 -15.8596 -18.3585 -19.0524 -16.1488 -14.8685 -  
 14.0365  
 F'' 10.5156 10.6009 10.6871 10.7744 10.8626 10.9519 3.3226 3.3411 3.3596 3.3782  
 ATOMIC SYMBOL = I ATOMIC NUMBER = 53  
 0.10 TO 0.19 F' -0.3672 -0.3379 -0.3107 -0.2863 -0.2653 -0.2487 -0.2369 -0.2290 -0.2261 -  
 0.2302  
 F'' 0.3449 0.4117 0.4839 0.5614 0.6441 0.7320 0.8238 0.9188 1.0178 1.1206  
 0.20 TO 0.29 F' -0.2393 -0.2550 -0.2777 -0.3083 -0.3476 -0.3965 -0.4562 -0.5283 -0.6145 -  
 0.7184  
 F'' 1.2267 1.3362 1.4489 1.5648 1.6837 1.8055 1.9302 2.0577 2.1878 2.3203  
 0.30 TO 0.39 F' -0.8413 -0.9887 -1.1674 -1.3884 -1.6706 -2.0529 -2.6356 -3.9589 -3.6504 -  
 2.8548  
 F'' 2.4551 2.5922 2.7315 2.8731 3.0168 3.1625 3.3107 3.4620 0.5864 0.6152  
 0.40 TO 0.49 F' -2.4822 -2.2432 -2.0693 -1.9334 -1.8223 -1.7285 -1.6474 -1.5756 -1.5109 -  
 1.4521  
 F'' 0.6446 0.6746 0.7052 0.7365 0.7683 0.8008 0.8338 0.8672 0.9008 0.9349  
 0.50 TO 0.59 F' -1.3982 -1.3483 -1.3018 -1.2582 -1.2170 -1.1779 -1.1416 -1.1062 -1.0723 -  
 1.0407  
 F'' 0.9696 1.0049 1.0407 1.0769 1.1138 1.1511 1.1889 1.2273 1.2661 1.3054  
 0.60 TO 0.69 F' -1.0094 -0.9793 -0.9502 -0.9231 -0.8959 -0.8695 -0.8439 -0.8190 -0.7948 -  
 0.7712  
 F'' 1.3452 1.3855 1.4262 1.4674 1.5091 1.5512 1.5938 1.6368 1.6803 1.7243  
 0.70 TO 0.79 F' -0.7482 -0.7268 -0.7050 -0.6838 -0.6631 -0.6429 -0.6245 -0.6053 -0.5867 -  
 0.5685  
 F'' 1.7687 1.8135 1.8588 1.9046 1.9507 1.9973 2.0443 2.0918 2.1396 2.1879  
 0.80 TO 0.89 F' -0.5508 -0.5335 -0.5167 -0.5003 -0.4844 -0.4689 -0.4538 -0.4391 -0.4249 -  
 0.4111  
 F'' 2.2366 2.2857 2.3353 2.3852 2.4356 2.4863 2.5375 2.5891 2.6410 2.6934  
 0.90 TO 0.99 F' -0.3978 -0.3848 -0.3723 -0.3602 -0.3485 -0.3373 -0.3264 -0.3160 -0.3061 -  
 0.2965  
 F'' 2.7462 2.7993 2.8529 2.9068 2.9612 3.0159 3.0710 3.1265 3.1823 3.2385  
 1.00 TO 1.09 F' -0.2874 -0.2787 -0.2705 -0.2627 -0.2554 -0.2490 -0.2426 -0.2372 -0.2317 -  
 0.2267  
 F'' 3.2952 3.3521 3.4095 3.4672 3.5253 3.5837 3.6426 3.7017 3.7612 3.8211  
 1.10 TO 1.19 F' -0.2221 -0.2180 -0.2144 -0.2112 -0.2085 -0.2064 -0.2047 -0.2035 -0.2028 -  
 0.2026  
 F'' 3.8813 3.9419 4.0029 4.0642 4.1258 4.1878 4.2501 4.3128 4.3758 4.4391  
 1.20 TO 1.29 F' -0.2063 -0.2072 -0.2086 -0.2105 -0.2130 -0.2160 -0.2195 -0.2236 -0.2327 -  
 0.2379  
 F'' 4.5027 4.5666 4.6307 4.6953 4.7601 4.8253 4.8908 4.9566 5.0226 5.0889  
 1.30 TO 1.39 F' -0.2438 -0.2501 -0.2571 -0.2646 -0.2728 -0.2815 -0.2908 -0.3062 -0.3168 -  
 0.3281  
 F'' 5.1555 5.2223 5.2895 5.3570 5.4247 5.4928 5.5612 5.6297 5.6984 5.7674  
 1.40 TO 1.49 F' -0.3401 -0.3528 -0.3662 -0.3802 -0.3949 -0.4101 -0.4261 -0.4427 -0.4600 -  
 0.4780  
 F'' 5.8366 5.9059 5.9754 6.0453 6.1153 6.1857 6.2563 6.3271 6.3982 6.4695  
 1.50 TO 1.59 F' -0.4966 -0.5160 -0.5361 -0.5568 -0.5783 -0.6006 -0.6235 -0.6473 -0.6717 -  
 0.6970  
 F'' 6.5411 6.6129 6.6850 6.7573 6.8299 6.9026 6.9757 7.0489 7.1224 7.1961  
 1.60 TO 1.69 F' -0.7230 -0.7498 -0.7775 -0.8059 -0.8352 -0.8653 -0.8963 -0.9281 -0.9608 -

0.9944  
F'' 7.2701 7.3442 7.4186 7.4933 7.5681 7.6432 7.7185 7.7940 7.8697 7.9457  
1.70 TO 1.79 F' -1.0289 -1.0643 -1.1006 -1.1379 -1.1762 -1.2154 -1.2556 -1.2969 -1.3392 -  
1.3825  
F'' 8.0218 8.0982 8.1748 8.2516 8.3286 8.4058 8.4833 8.5609 8.6387 8.7168  
1.80 TO 1.89 F' -1.4270 -1.4725 -1.5191 -1.5669 -1.6174 -1.6676 -1.7189 -1.7715 -1.8254 -  
1.8805  
F'' 8.7950 8.8734 8.9521 9.0309 9.1099 9.1891 9.2684 9.3479 9.4276 9.5075  
1.90 TO 1.99 F' -1.9370 -1.9947 -2.0539 -2.1145 -2.1766 -2.2401 -2.3051 -2.3759 -2.4442 -  
2.5142  
F'' 9.5876 9.6679 9.7483 9.8290 9.9098 9.9908 10.0720 10.1532 10.2345 10.3160  
2.00 TO 2.09 F' -2.5858 -2.6592 -2.7344 -2.8114 -2.8904 -2.9713 -3.0543 -3.1394 -3.2267 -  
3.3163  
F'' 10.3976 10.4794 10.5614 10.6435 10.7258 10.8083 10.8909 10.9737 11.0566 11.1397  
2.10 TO 2.19 F' -3.4149 -3.5095 -3.6066 -3.7063 -3.8089 -3.9144 -4.0230 -4.1348 -4.2501 -  
4.3690  
F'' 11.2227 11.3057 11.3889 11.4723 11.5558 11.6394 11.7231 11.8070 11.8911 11.9752  
2.20 TO 2.29 F' -4.4918 -4.6187 -4.7500 -4.8860 -5.0271 -5.1738 -5.3266 -5.4861 -5.6536 -  
5.8291  
F'' 12.0595 12.1439 12.2285 12.3132 12.3980 12.4829 12.5680 12.6532 12.7385 12.8239  
2.30 TO 2.39 F' -6.0142 -6.2107 -6.4207 -6.6474 -6.8956 -7.1731 -7.4946 -7.8926 -8.4724 -  
10.5371  
F'' 12.9094 12.9950 13.0807 13.1666 13.2525 13.3386 13.4248 13.5111 13.5976 11.8574  
2.40 TO 2.49 F' -8.7856 -8.5815 -8.5455 -8.5857 -8.5853 -8.7097 -8.8659 -9.0527 -9.2710 -  
9.5244  
F'' 11.9393 12.0214 12.1035 12.1859 12.2727 12.3649 12.4577 12.5511 12.6450 12.7396  
2.50 TO 2.59 F' -9.8192 -10.1669 -10.5880 -11.1244 -11.8838 -13.3552 -13.5931 -12.4501 -12.0325 -  
11.8365  
F'' 12.8349 12.9307 13.0272 13.1243 13.2220 13.3204 9.6277 9.6897 9.7519 9.8142  
2.60 TO 2.69 F' -11.5750 -11.5738 -11.6347 -11.7507 -11.9205 -12.1477 -12.4410 -12.8171 -13.3035 -  
13.9561  
F'' 9.8894 9.9706 10.0527 10.1359 10.2200 10.3051 10.3912 10.4783 10.5664 10.6556  
2.70 TO 2.79 F' -14.8985 -16.5155 -23.8650 -16.8196 -15.1007 -14.1132 -13.4172 -12.8793 -12.4406 -  
12.0702  
F'' 10.7458 10.8371 10.9294 3.3585 3.3781 3.3978 3.4175 3.4372 3.4570 3.4768  
2.80 TO 2.89 F' -11.7498 -11.4674 -11.2150 -10.9870 -10.7791 -10.5881 -10.4115 -10.2474 -10.0942 -  
9.9505  
F'' 3.4966 3.5165 3.5364 3.5564 3.5764 3.5964 3.6164 3.6365 3.6567 3.6768  
ATOMIC SYMBOL = XE ATOMIC NUMBER = 54  
0.10 TO 0.19 F' -0.3849 -0.3553 -0.3283 -0.3044 -0.2847 -0.2702 -0.2612 -0.2564 -0.2586 -  
0.2665  
F'' 0.3712 0.4429 0.5203 0.6033 0.6919 0.7861 0.8843 0.9858 1.0915 1.2008  
0.20 TO 0.29 F' -0.2813 -0.3038 -0.3345 -0.3746 -0.4250 -0.4872 -0.5627 -0.6538 -0.7644 -  
0.8961  
F'' 1.3138 1.4303 1.5503 1.6735 1.7999 1.9294 2.0618 2.1971 2.3349 2.4752  
0.30 TO 0.39 F' -1.0557 -1.2517 -1.4982 -1.8219 -2.2829 -3.0811 -5.0212 -3.1262 -2.6235 -  
2.3351  
F'' 2.6179 2.7630 2.9105 3.0603 3.2122 3.3678 0.5751 0.6049 0.6353 0.6664  
0.40 TO 0.49 F' -2.1357 -1.9847 -1.8635 -1.7626 -1.6763 -1.6008 -1.5339 -1.4731 -1.4171 -  
1.3654  
F'' 0.6982 0.7306 0.7637 0.7975 0.8319 0.8669 0.9027 0.9387 0.9750 1.0119  
0.50 TO 0.59 F' -1.3174 -1.2723 -1.2299 -1.1903 -1.1523 -1.1160 -1.0813 -1.0487 -1.0167 -  
0.9859  
F'' 1.0494 1.0875 1.1261 1.1653 1.2050 1.2453 1.2861 1.3274 1.3693 1.4117

0.60 TO 0.69 F' -0.9570 -0.9283 -0.9006 -0.8736 -0.8475 -0.8221 -0.7975 -0.7742 -0.7509 -  
0.7283  
F'' 1.4546 1.4980 1.5419 1.5863 1.6312 1.6766 1.7225 1.7689 1.8158 1.8631  
0.70 TO 0.79 F' -0.7062 -0.6856 -0.6648 -0.6444 -0.6246 -0.6053 -0.5865 -0.5682 -0.5504 -  
0.5331  
F'' 1.9110 1.9593 2.0081 2.0573 2.1070 2.1572 2.2078 2.2589 2.3105 2.3625  
0.80 TO 0.89 F' -0.5163 -0.5000 -0.4841 -0.4687 -0.4537 -0.4393 -0.4253 -0.4117 -0.3986 -  
0.3860  
F'' 2.4149 2.4678 2.5211 2.5749 2.6291 2.6838 2.7389 2.7944 2.8504 2.9067  
0.90 TO 0.99 F' -0.3739 -0.3622 -0.3510 -0.3402 -0.3299 -0.3201 -0.3108 -0.3024 -0.2941 -  
0.2867  
F'' 2.9635 3.0208 3.0784 3.1364 3.1949 3.2538 3.3131 3.3728 3.4329 3.4934  
1.00 TO 1.09 F' -0.2793 -0.2724 -0.2661 -0.2602 -0.2548 -0.2500 -0.2456 -0.2418 -0.2385 -  
0.2357  
F'' 3.5543 3.6155 3.6772 3.7393 3.8018 3.8646 3.9279 3.9915 4.0555 4.1199  
1.10 TO 1.19 F' -0.2335 -0.2318 -0.2306 -0.2300 -0.2333 -0.2339 -0.2350 -0.2367 -0.2390 -  
0.2418  
F'' 4.1847 4.2498 4.3153 4.3812 4.4474 4.5139 4.5807 4.6479 4.7155 4.7834  
1.20 TO 1.29 F' -0.2452 -0.2493 -0.2586 -0.2639 -0.2699 -0.2764 -0.2836 -0.2914 -0.2999 -  
0.3090  
F'' 4.8516 4.9202 4.9891 5.0582 5.1276 5.1974 5.2675 5.3379 5.4087 5.4798  
1.30 TO 1.39 F' -0.3245 -0.3350 -0.3462 -0.3581 -0.3707 -0.3839 -0.3979 -0.4125 -0.4279 -  
0.4440  
F'' 5.5512 5.6227 5.6945 5.7666 5.8390 5.9118 5.9848 6.0582 6.1319 6.2058  
1.40 TO 1.49 F' -0.4609 -0.4787 -0.4972 -0.5165 -0.5365 -0.5574 -0.5789 -0.6013 -0.6245 -  
0.6485  
F'' 6.2799 6.3541 6.4286 6.5033 6.5783 6.6536 6.7292 6.8050 6.8810 6.9574  
1.50 TO 1.59 F' -0.6734 -0.6990 -0.7255 -0.7529 -0.7812 -0.8103 -0.8404 -0.8713 -0.9032 -  
0.9360  
F'' 7.0340 7.1108 7.1879 7.2653 7.3429 7.4208 7.4989 7.5773 7.6559 7.7347  
1.60 TO 1.69 F' -0.9698 -1.0046 -1.0404 -1.0771 -1.1149 -1.1538 -1.1937 -1.2346 -1.2767 -  
1.3199  
F'' 7.8138 7.8931 7.9727 8.0525 8.1325 8.2128 8.2933 8.3741 8.4550 8.5362  
1.70 TO 1.79 F' -1.3643 -1.4098 -1.4565 -1.5044 -1.5536 -1.6052 -1.6570 -1.7101 -1.7645 -  
1.8203  
F'' 8.6177 8.6993 8.7812 8.8633 8.9456 9.0281 9.1108 9.1937 9.2768 9.3602  
1.80 TO 1.89 F' -1.8775 -1.9361 -1.9963 -2.0580 -2.1212 -2.1860 -2.2525 -2.3246 -2.3945 -  
2.4663  
F'' 9.4437 9.5274 9.6114 9.6955 9.7799 9.8644 9.9492 10.0341 10.1190 10.2041  
1.90 TO 1.99 F' -2.5399 -2.6154 -2.6929 -2.7723 -2.8539 -2.9376 -3.0236 -3.1119 -3.2026 -  
3.2958  
F'' 10.2894 10.3749 10.4606 10.5465 10.6325 10.7187 10.8051 10.8917 10.9784 11.0653  
2.00 TO 2.09 F' -3.3983 -3.4969 -3.5984 -3.7029 -3.8105 -3.9214 -4.0357 -4.1538 -4.2756 -  
4.4017  
F'' 11.1522 11.2392 11.3262 11.4135 11.5008 11.5884 11.6761 11.7639 11.8519 11.9400  
2.10 TO 2.19 F' -4.5321 -4.6673 -4.8075 -4.9533 -5.1051 -5.2636 -5.4294 -5.6039 -5.7874 -  
5.9817  
F'' 12.0283 12.1167 12.2053 12.2940 12.3829 12.4719 12.5610 12.6503 12.7397 12.8291  
2.20 TO 2.29 F' -6.1888 -6.4115 -6.6538 -6.9221 -7.2276 -7.5933 -8.0807 -9.0245 -8.8845 -  
8.5315  
F'' 12.9188 13.0085 13.0984 13.1885 13.2786 13.3689 13.4593 13.5498 11.8168 11.9025  
2.30 TO 2.39 F' -8.4569 -8.4823 -8.4816 -8.6061 -8.7664 -8.9607 -9.1902 -9.4596 -9.7772 -  
10.1588  
F'' 11.9884 12.0745 12.1651 12.2610 12.3576 12.4548 12.5526 12.6511 12.7502 12.8500

2.40 TO 2.49 F' -10.6347 -11.2746 -12.3109 -15.3029 -12.4808 -11.9016 -11.6419 -11.5267 -11.3279 -  
11.3689  
F'' 12.9504 13.0515 13.1533 9.5205 9.5854 9.6504 9.7156 9.7808 9.8627 9.9471

2.50 TO 2.59 F' -11.4681 -11.6212 -11.8311 -12.1050 -12.4569 -12.9121 -13.5181 -14.3776 -15.7833 -  
19.6899  
F'' 10.0325 10.1189 10.2064 10.2948 10.3844 10.4750 10.5667 10.6595 10.7534 10.8484

2.60 TO 2.69 F' -17.0383 -15.0465 -13.9845 -13.2558 -12.7004 -12.2515 -11.8747 -11.5500 -11.2649 -  
11.0107  
F'' 3.3810 3.4018 3.4226 3.4435 3.4644 3.4854 3.5064 3.5275 3.5486 3.5697

2.70 TO 2.79 F' -10.7816 -10.5730 -10.3816 -10.2050 -10.0410 -9.8880 -9.7447 -9.6100 -9.4829 -  
9.3627  
F'' 3.5909 3.6121 3.6334 3.6547 3.6760 3.6974 3.7188 3.7403 3.7618 3.7833

2.80 TO 2.89 F' -9.2487 -9.1403 -9.0371 -8.9385 -8.8443 -8.7541 -8.6676 -8.5844 -8.5045 -  
8.4275  
F'' 3.8049 3.8265 3.8482 3.8699 3.8916 3.9134 3.9352 3.9570 3.9789 4.0009

ATOMIC SYMBOL = CS ATOMIC NUMBER = 55

0.10 TO 0.19 F' -0.4047 -0.3750 -0.3483 -0.3254 -0.3071 -0.2952 -0.2897 -0.2887 -0.2955 -  
0.3090  
F'' 0.3993 0.4760 0.5589 0.6478 0.7426 0.8434 0.9483 1.0565 1.1689 1.2853

0.20 TO 0.29 F' -0.3304 -0.3608 -0.4009 -0.4521 -0.5159 -0.5940 -0.6889 -0.8045 -0.9440 -  
1.1148  
F'' 1.4055 1.5295 1.6570 1.7879 1.9221 2.0595 2.2000 2.3434 2.4895 2.6383

0.30 TO 0.39 F' -1.3273 -1.5996 -1.9680 -2.5283 -3.7155 -3.7099 -2.8548 -2.4733 -2.2320 -  
2.0574  
F'' 2.7898 2.9439 3.1004 3.2590 3.4176 0.5933 0.6248 0.6570 0.6900 0.7237

0.40 TO 0.49 F' -1.9214 -1.8102 -1.7163 -1.6350 -1.5634 -1.4994 -1.4417 -1.3884 -1.3382 -  
1.2914  
F'' 0.7581 0.7933 0.8291 0.8657 0.9030 0.9409 0.9796 1.0186 1.0579 1.0978

0.50 TO 0.59 F' -1.2474 -1.2062 -1.1668 -1.1293 -1.0940 -1.0600 -1.0271 -0.9954 -0.9656 -  
0.9362  
F'' 1.1384 1.1795 1.2213 1.2636 1.3065 1.3500 1.3941 1.4387 1.4839 1.5297

0.60 TO 0.69 F' -0.9077 -0.8801 -0.8533 -0.8273 -0.8021 -0.7776 -0.7537 -0.7314 -0.7089 -  
0.6870  
F'' 1.5759 1.6228 1.6701 1.7181 1.7665 1.8155 1.8650 1.9151 1.9656 2.0167

0.70 TO 0.79 F' -0.6657 -0.6450 -0.6249 -0.6053 -0.5862 -0.5677 -0.5498 -0.5323 -0.5154 -  
0.4990  
F'' 2.0682 2.1203 2.1729 2.2260 2.2796 2.3337 2.3883 2.4433 2.4989 2.5549

0.80 TO 0.89 F' -0.4831 -0.4677 -0.4528 -0.4384 -0.4245 -0.4112 -0.3983 -0.3859 -0.3741 -  
0.3628  
F'' 2.6114 2.6684 2.7259 2.7838 2.8423 2.9011 2.9605 3.0203 3.0805 3.1412

0.90 TO 0.99 F' -0.3523 -0.3415 -0.3327 -0.3235 -0.3148 -0.3066 -0.2990 -0.2919 -0.2854 -  
0.2794  
F'' 3.2024 3.2640 3.3260 3.3885 3.4515 3.5148 3.5786 3.6429 3.7075 3.7726

1.00 TO 1.09 F' -0.2739 -0.2691 -0.2647 -0.2610 -0.2578 -0.2552 -0.2532 -0.2518 -0.2510 -  
0.2542  
F'' 3.8382 3.9041 3.9705 4.0372 4.1044 4.1721 4.2401 4.3085 4.3774 4.4465

1.10 TO 1.19 F' -0.2547 -0.2558 -0.2575 -0.2598 -0.2628 -0.2664 -0.2753 -0.2803 -0.2860 -  
0.2923  
F'' 4.5160 4.5859 4.6561 4.7268 4.7978 4.8693 4.9410 5.0130 5.0853 5.1580

1.20 TO 1.29 F' -0.2994 -0.3069 -0.3153 -0.3244 -0.3401 -0.3508 -0.3622 -0.3743 -0.3872 -  
0.4008  
F'' 5.2311 5.3046 5.3784 5.4525 5.5270 5.6016 5.6766 5.7519 5.8275 5.9035

1.30 TO 1.39 F' -0.4151 -0.4303 -0.4462 -0.4629 -0.4805 -0.4988 -0.5180 -0.5380 -0.5589 -  
0.5806

F'' 5.9798 6.0564 6.1334 6.2107 6.2883 6.3663 6.4446 6.5232 6.6021 6.6814  
 1.40 TO 1.49 F' -0.6033 -0.6269 -0.6514 -0.6768 -0.7031 -0.7303 -0.7585 -0.7876 -0.8177 -  
 0.8488

F'' 6.7606 6.8400 6.9197 6.9997 7.0800 7.1605 7.2414 7.3225 7.4038 7.4855  
 1.50 TO 1.59 F' -0.8809 -0.9140 -0.9481 -0.9833 -1.0196 -1.0569 -1.0954 -1.1350 -1.1757 -  
 1.2176

F'' 7.5674 7.6496 7.7321 7.8148 7.8978 7.9811 8.0646 8.1484 8.2324 8.3167  
 1.60 TO 1.69 F' -1.2607 -1.3050 -1.3506 -1.3974 -1.4455 -1.4950 -1.5458 -1.5991 -1.6527 -  
 1.7078

F'' 8.4012 8.4860 8.5711 8.6564 8.7419 8.8277 8.9137 9.0000 9.0865 9.1731  
 1.70 TO 1.79 F' -1.7643 -1.8224 -1.8820 -1.9433 -2.0061 -2.0706 -2.1369 -2.2049 -2.2782 -  
 2.3500

F'' 9.2601 9.3472 9.4346 9.5222 9.6100 9.6981 9.7864 9.8749 9.9636 10.0524  
 1.80 TO 1.89 F' -2.4237 -2.4995 -2.5773 -2.6572 -2.7393 -2.8237 -2.9104 -2.9996 -3.0913 -  
 3.1857

F'' 10.1413 10.2305 10.3198 10.4094 10.4992 10.5891 10.6793 10.7697 10.8602 10.9510  
 1.90 TO 1.99 F' -3.2828 -3.3870 -3.4901 -3.5963 -3.7059 -3.8190 -3.9357 -4.0563 -4.1810 -  
 4.3102

F'' 11.0419 11.1329 11.2240 11.3153 11.4067 11.4983 11.5901 11.6821 11.7742 11.8666  
 2.00 TO 2.09 F' -4.4440 -4.5829 -4.7273 -4.8776 -5.0344 -5.1983 -5.3702 -5.5528 -5.7438 -  
 5.9470

F'' 11.9590 12.0517 12.1445 12.2375 12.3306 12.4239 12.5174 12.6109 12.7045 12.7982  
 2.10 TO 2.19 F' -6.1641 -6.3985 -6.6552 -6.9420 -7.2736 -7.6827 -8.2744 -10.2656 -8.6157 -  
 8.4356

F'' 12.8920 12.9860 13.0802 13.1745 13.2689 13.3634 13.4581 11.7415 11.8314 11.9215  
 2.20 TO 2.29 F' -8.4242 -8.4026 -8.5218 -8.6833 -8.8841 -9.1255 -9.4134 -9.7591 -10.1850 -  
 10.7388

F'' 12.0117 12.1076 12.2089 12.3110 12.4138 12.5174 12.6217 12.7268 12.8327 12.9393  
 2.30 TO 2.39 F' -11.5517 -13.3822 -12.7114 -11.8358 -11.4873 -11.3281 -11.1082 -11.1288 -11.2108 -  
 11.3494

F'' 13.0468 13.1550 9.5314 9.5999 9.6685 9.7372 9.8104 9.8979 9.9866 10.0764  
 2.40 TO 2.49 F' -11.5459 -11.8054 -12.1410 -12.5759 -13.1535 -13.9658 -15.2627 -18.4117 -17.1274 -  
 14.9193

F'' 10.1672 10.2592 10.3524 10.4466 10.5421 10.6387 10.7364 10.8354 3.4503 3.4726  
 2.50 TO 2.59 F' -13.8080 -13.0597 -12.4947 -12.0406 -11.6610 -11.3348 -11.0490 -10.7946 -10.5656 -  
 10.3574

F'' 3.4948 3.5172 3.5395 3.5620 3.5844 3.6069 3.6295 3.6521 3.6747 3.6974  
 2.60 TO 2.69 F' -10.1666 -9.9906 -9.8273 -9.6751 -9.5327 -9.3988 -9.2726 -9.1533 -9.0401 -  
 8.9396

F'' 3.7202 3.7429 3.7658 3.7886 3.8116 3.8345 3.8575 3.8806 3.9037 3.9268  
 2.70 TO 2.79 F' -8.8374 -8.7398 -8.6465 -8.5572 -8.4716 -8.3894 -8.3103 -8.2342 -8.1609 -  
 8.0902

F'' 3.9499 3.9730 3.9962 4.0194 4.0427 4.0660 4.0894 4.1128 4.1362 4.1597  
 2.80 TO 2.89 F' -8.0219 -7.9558 -7.8920 -7.8301 -7.7702 -7.7120 -7.6556 -7.6000 -7.5468 -  
 7.4950

F'' 4.1832 4.2068 4.2304 4.2540 4.2777 4.3014 4.3252 4.3490 4.3728 4.3967  
 ATOMIC SYMBOL = BA ATOMIC NUMBER = 56

0.10 TO 0.19 F' -0.4258 -0.3962 -0.3701 -0.3483 -0.3318 -0.3229 -0.3221 -0.3263 -0.3379 -  
 0.3578

F'' 0.4284 0.5104 0.5990 0.6939 0.7952 0.9027 1.0145 1.1296 1.2490 1.3726  
 0.20 TO 0.29 F' -0.3871 -0.4268 -0.4782 -0.5428 -0.6227 -0.7207 -0.8410 -0.9874 -1.1682 -  
 1.3959

F'' 1.5003 1.6318 1.7670 1.9057 2.0479 2.1935 2.3421 2.4936 2.6481 2.8053  
 0.30 TO 0.39 F' -1.6929 -2.1073 -2.7825 -5.0241 -3.2850 -2.6871 -2.3708 -2.1589 -2.0010 -



1.8755  
F'' 2.9653 3.1280 3.2922 3.4572 0.6081 0.6413 0.6753 0.7101 0.7456 0.7819  
0.40 TO 0.49 F' -1.7715 -1.6826 -1.6050 -1.5360 -1.4739 -1.4177 -1.3667 -1.3193 -1.2736 -  
1.2304  
F'' 0.8190 0.8568 0.8954 0.9347 0.9748 1.0157 1.0573 1.0992 1.1415 1.1845  
0.50 TO 0.59 F' -1.1896 -1.1511 -1.1143 -1.0790 -1.0451 -1.0133 -0.9819 -0.9517 -0.9225 -  
0.8942  
F'' 1.2281 1.2724 1.3173 1.3628 1.4089 1.4557 1.5030 1.5509 1.5995 1.6486  
0.60 TO 0.69 F' -0.8669 -0.8403 -0.8146 -0.7896 -0.7653 -0.7417 -0.7188 -0.6966 -0.6750 -  
0.6540  
F'' 1.6983 1.7486 1.7995 1.8509 1.9030 1.9556 2.0087 2.0624 2.1167 2.1715  
0.70 TO 0.79 F' -0.6334 -0.6136 -0.5944 -0.5758 -0.5577 -0.5402 -0.5232 -0.5069 -0.4910 -  
0.4757  
F'' 2.2268 2.2827 2.3392 2.3962 2.4537 2.5117 2.5703 2.6293 2.6889 2.7490  
0.80 TO 0.89 F' -0.4610 -0.4468 -0.4332 -0.4204 -0.4079 -0.3963 -0.3850 -0.3742 -0.3639 -  
0.3543  
F'' 2.8097 2.8708 2.9324 2.9946 3.0572 3.1203 3.1839 3.2480 3.3126 3.3777  
0.90 TO 0.99 F' -0.3452 -0.3367 -0.3288 -0.3215 -0.3147 -0.3086 -0.3030 -0.2981 -0.2938 -  
0.2901  
F'' 3.4432 3.5092 3.5757 3.6427 3.7101 3.7780 3.8464 3.9152 3.9845 4.0542  
1.00 TO 1.09 F' -0.2871 -0.2847 -0.2829 -0.2818 -0.2847 -0.2850 -0.2859 -0.2875 -0.2898 -  
0.2928  
F'' 4.1244 4.1950 4.2661 4.3376 4.4095 4.4817 4.5544 4.6275 4.7010 4.7749  
1.10 TO 1.19 F' -0.2965 -0.3057 -0.3109 -0.3168 -0.3235 -0.3309 -0.3391 -0.3480 -0.3577 -  
0.3742  
F'' 4.8493 4.9239 4.9988 5.0741 5.1499 5.2260 5.3026 5.3795 5.4568 5.5343  
1.20 TO 1.29 F' -0.3856 -0.3977 -0.4107 -0.4245 -0.4391 -0.4546 -0.4709 -0.4881 -0.5061 -  
0.5250  
F'' 5.6121 5.6903 5.7688 5.8478 5.9270 6.0067 6.0867 6.1671 6.2478 6.3289  
1.30 TO 1.39 F' -0.5448 -0.5656 -0.5873 -0.6099 -0.6334 -0.6580 -0.6835 -0.7101 -0.7377 -  
0.7663  
F'' 6.4103 6.4921 6.5742 6.6567 6.7395 6.8227 6.9062 6.9900 7.0742 7.1587  
1.40 TO 1.49 F' -0.7960 -0.8267 -0.8585 -0.8914 -0.9253 -0.9605 -0.9967 -1.0341 -1.0727 -  
1.1125  
F'' 7.2432 7.3278 7.4127 7.4979 7.5834 7.6692 7.7553 7.8417 7.9284 8.0154  
1.50 TO 1.59 F' -1.1536 -1.1959 -1.2395 -1.2843 -1.3306 -1.3781 -1.4271 -1.4775 -1.5294 -  
1.5827  
F'' 8.1026 8.1901 8.2779 8.3660 8.4544 8.5430 8.6319 8.7211 8.8106 8.9003  
1.60 TO 1.69 F' -1.6384 -1.6949 -1.7530 -1.8127 -1.8741 -1.9373 -2.0022 -2.0689 -2.1375 -  
2.2080  
F'' 8.9903 9.0804 9.1709 9.2616 9.3526 9.4438 9.5352 9.6270 9.7189 9.8111  
1.70 TO 1.79 F' -2.2826 -2.3573 -2.4340 -2.5130 -2.5942 -2.6778 -2.7638 -2.8523 -2.9434 -  
3.0372  
F'' 9.9035 9.9961 10.0889 10.1819 10.2751 10.3686 10.4623 10.5562 10.6504 10.7447  
1.80 TO 1.89 F' -3.1339 -3.2336 -3.3400 -3.4461 -3.5556 -3.6687 -3.7856 -3.9067 -4.0319 -  
4.1615  
F'' 10.8393 10.9341 11.0291 11.1241 11.2193 11.3148 11.4104 11.5062 11.6022 11.6984  
1.90 TO 1.99 F' -4.2960 -4.4357 -4.5810 -4.7324 -4.8905 -5.0558 -5.2293 -5.4119 -5.6094 -  
5.8145  
F'' 11.7948 11.8914 11.9882 12.0851 12.1823 12.2796 12.3771 12.4748 12.5723 12.6697  
2.00 TO 2.09 F' -6.0338 -6.2705 -6.5294 -6.8182 -7.1509 -7.5585 -8.1373 -10.7994 -8.5574 -  
8.3734  
F'' 12.7673 12.8651 12.9629 13.0610 13.1591 13.2575 13.3559 13.4545 11.7491 11.8432  
2.10 TO 2.19 F' -8.3687 -8.3663 -8.5000 -8.6796 -8.9033 -9.1748 -9.5035 -9.9092 -10.4337 -

11.1878  
 F'' 11.9376 12.0408 12.1460 12.2519 12.3586 12.4661 12.5743 12.6834 12.7932 12.9038  
 2.20 TO 2.29 F' -12.7074 -12.6970 -11.6747 -11.2942 -11.1215 -11.0608 -10.9161 -10.9947 -11.1309 -  
 11.3255  
 F'' 13.0153 9.4410 9.5124 9.5839 9.6556 9.7275 9.8143 9.9057 9.9983 10.0921  
 2.30 TO 2.39 F' -11.5847 -11.9213 -12.3593 -12.9442 -13.7733 -15.1209 -18.6997 -16.5346 -14.5250 -  
 13.4711  
 F'' 10.1870 10.2832 10.3806 10.4791 10.5790 10.6800 10.7824 3.4800 3.5035 3.5271  
 2.40 TO 2.49 F' -12.7523 -12.2061 -11.7654 -11.3961 -11.0782 -10.7993 -10.5509 -10.3270 -10.1234 -  
 9.9368  
 F'' 3.5507 3.5744 3.5981 3.6219 3.6457 3.6696 3.6935 3.7175 3.7415 3.7655  
 2.50 TO 2.59 F' -9.7645 -9.6047 -9.4621 -9.3226 -9.1916 -9.0680 -8.9512 -8.8405 -8.7353 -  
 8.6351  
 F'' 3.7897 3.8138 3.8380 3.8622 3.8865 3.9108 3.9351 3.9595 3.9839 4.0084  
 2.60 TO 2.69 F' -8.5395 -8.4475 -8.3600 -8.2762 -8.1957 -8.1183 -8.0438 -7.9720 -7.9027 -  
 7.8358  
 F'' 4.0329 4.0575 4.0821 4.1068 4.1315 4.1563 4.1811 4.2060 4.2309 4.2558  
 2.70 TO 2.79 F' -7.7810 -7.7186 -7.6581 -7.5996 -7.5428 -7.4877 -7.4342 -7.3822 -7.3317 -  
 7.2826  
 F'' 4.2808 4.3057 4.3307 4.3557 4.3807 4.4059 4.4310 4.4562 4.4814 4.5067  
 2.80 TO 2.89 F' -7.2347 -7.1882 -7.1428 -7.0986 -7.0554 -7.0134 -6.9723 -6.9322 -6.8931 -  
 6.8548  
 F'' 4.5320 4.5574 4.5828 4.6083 4.6337 4.6593 4.6849 4.7105 4.7361 4.7618  
 ATOMIC SYMBOL = LA ATOMIC NUMBER = 57  
 0.10 TO 0.19 F' -0.4477 -0.4183 -0.3929 -0.3723 -0.3577 -0.3515 -0.3578 -0.3668 -0.3846 -  
 0.4122  
 F'' 0.4589 0.5464 0.6409 0.7421 0.8500 0.9646 1.0836 1.2057 1.3324 1.4634  
 0.20 TO 0.29 F' -0.4505 -0.5011 -0.5657 -0.6464 -0.7462 -0.8699 -1.0215 -1.2103 -1.4509 -  
 1.7700  
 F'' 1.5987 1.7380 1.8811 2.0279 2.1784 2.3321 2.4889 2.6489 2.8118 2.9777  
 0.30 TO 0.39 F' -2.2284 -3.0342 -4.7917 -3.0595 -2.5777 -2.2998 -2.1070 -1.9603 -1.8421 -  
 1.7431  
 F'' 3.1464 3.3166 0.5872 0.6212 0.6561 0.6919 0.7284 0.7659 0.8041 0.8431  
 0.40 TO 0.49 F' -1.6578 -1.5828 -1.5157 -1.4548 -1.3991 -1.3478 -1.3055 -1.2611 -1.2185 -  
 1.1784  
 F'' 0.8830 0.9237 0.9652 1.0075 1.0506 1.0945 1.1391 1.1841 1.2295 1.2756  
 0.50 TO 0.59 F' -1.1401 -1.1035 -1.0686 -1.0354 -1.0031 -0.9720 -0.9419 -0.9129 -0.8848 -  
 0.8576  
 F'' 1.3225 1.3700 1.4182 1.4670 1.5165 1.5666 1.6174 1.6688 1.7209 1.7735  
 0.60 TO 0.69 F' -0.8312 -0.8057 -0.7809 -0.7568 -0.7335 -0.7109 -0.6889 -0.6676 -0.6470 -  
 0.6270  
 F'' 1.8268 1.8808 1.9353 1.9905 2.0462 2.1026 2.1595 2.2171 2.2752 2.3339  
 0.70 TO 0.79 F' -0.6076 -0.5888 -0.5707 -0.5532 -0.5363 -0.5199 -0.5042 -0.4891 -0.4748 -  
 0.4609  
 F'' 2.3932 2.4531 2.5136 2.5746 2.6361 2.6983 2.7610 2.8242 2.8880 2.9524  
 0.80 TO 0.89 F' -0.4479 -0.4353 -0.4232 -0.4118 -0.4009 -0.3905 -0.3810 -0.3720 -0.3637 -  
 0.3560  
 F'' 3.0172 3.0826 3.1486 3.2151 3.2821 3.3496 3.4176 3.4862 3.5553 3.6249  
 0.90 TO 0.99 F' -0.3489 -0.3425 -0.3368 -0.3317 -0.3273 -0.3236 -0.3206 -0.3182 -0.3166 -  
 0.3189  
 F'' 3.6950 3.7656 3.8367 3.9082 3.9803 4.0529 4.1260 4.1996 4.2736 4.3481  
 1.00 TO 1.09 F' -0.3187 -0.3193 -0.3206 -0.3226 -0.3254 -0.3289 -0.3382 -0.3433 -0.3493 -  
 0.3561  
 F'' 4.4229 4.4982 4.5740 4.6502 4.7269 4.8040 4.8814 4.9592 5.0374 5.1160

1.10 TO 1.19 F' -0.3636 -0.3720 -0.3812 -0.3913 -0.4081 -0.4199 -0.4327 -0.4463 -0.4607 -  
0.4761  
F'' 5.1951 5.2746 5.3546 5.4349 5.5154 5.5963 5.6776 5.7593 5.8414 5.9239

1.20 TO 1.29 F' -0.4924 -0.5096 -0.5278 -0.5469 -0.5670 -0.5880 -0.6101 -0.6332 -0.6573 -  
0.6824  
F'' 6.0068 6.0901 6.1737 6.2578 6.3422 6.4270 6.5122 6.5978 6.6837 6.7700

1.30 TO 1.39 F' -0.7086 -0.7359 -0.7644 -0.7939 -0.8246 -0.8565 -0.8896 -0.9238 -0.9594 -  
0.9962  
F'' 6.8567 6.9437 7.0312 7.1189 7.2071 7.2955 7.3844 7.4736 7.5631 7.6530

1.40 TO 1.49 F' -1.0342 -1.0734 -1.1139 -1.1558 -1.1990 -1.2436 -1.2896 -1.3370 -1.3859 -  
1.4363  
F'' 7.7428 7.8328 7.9230 8.0135 8.1044 8.1956 8.2870 8.3788 8.4709 8.5632

1.50 TO 1.59 F' -1.4883 -1.5418 -1.5969 -1.6536 -1.7121 -1.7724 -1.8344 -1.8982 -1.9640 -  
2.0316  
F'' 8.6559 8.7488 8.8421 8.9356 9.0294 9.1235 9.2179 9.3126 9.4075 9.5028

1.60 TO 1.69 F' -2.1013 -2.1731 -2.2489 -2.3250 -2.4035 -2.4843 -2.5675 -2.6532 -2.7416 -  
2.8326  
F'' 9.5983 9.6940 9.7901 9.8863 9.9827 10.0794 10.1764 10.2736 10.3711 10.4688

1.70 TO 1.79 F' -2.9265 -3.0234 -3.1233 -3.2265 -3.3360 -3.4462 -3.5601 -3.6779 -3.8000 -  
3.9264  
F'' 10.5667 10.6649 10.7634 10.8620 10.9609 11.0599 11.1591 11.2585 11.3581 11.4580

1.80 TO 1.89 F' -4.0575 -4.1937 -4.3354 -4.4828 -4.6366 -4.7974 -4.9658 -5.1427 -5.3293 -  
5.5371  
F'' 11.5581 11.6583 11.7588 11.8595 11.9604 12.0615 12.1629 12.2644 12.3661 12.4674

1.90 TO 1.99 F' -5.7475 -5.9725 -6.2158 -6.4825 -6.7812 -7.1275 -7.5575 -8.1949 -9.3695 -  
8.4413  
F'' 12.5681 12.6689 12.7698 12.8708 12.9720 13.0733 13.1747 13.2762 11.5895 11.6872

2.00 TO 2.09 F' -8.3143 -8.3160 -8.4190 -8.5773 -8.7841 -9.0404 -9.3539 -9.7428 -10.2466 -  
10.9705  
F'' 11.7852 11.8845 11.9860 12.0878 12.1901 12.2927 12.3957 12.4991 12.6029 12.7070

2.10 TO 2.19 F' -12.4222 -12.4434 -11.4439 -11.0748 -10.9092 -10.8537 -10.8332 -10.9149 -11.0529 -  
11.2480  
F'' 12.8116 9.3611 9.4353 9.5098 9.5844 9.6592 9.7364 9.8166 9.8971 9.9781

2.20 TO 2.29 F' -11.5067 -11.8424 -12.2801 -12.8681 -13.7139 -15.1412 -20.1466 -15.7372 -14.0361 -  
13.0808  
F'' 10.0595 10.1413 10.2236 10.3063 10.3894 10.4730 10.5570 3.5091 3.5339 3.5587

2.30 TO 2.39 F' -12.4126 -11.8979 -11.4791 -11.1259 -10.8207 -10.5520 -10.3121 -10.0955 -9.9040 -  
9.7229  
F'' 3.5836 3.6085 3.6335 3.6586 3.6837 3.7088 3.7340 3.7593 3.7846 3.8099

2.40 TO 2.49 F' -9.5556 -9.4003 -9.2553 -9.1195 -8.9918 -8.8708 -8.7569 -8.6489 -8.5462 -  
8.4485  
F'' 3.8353 3.8607 3.8861 3.9116 3.9372 3.9628 3.9885 4.0142 4.0400 4.0659

2.50 TO 2.59 F' -8.3552 -8.2660 -8.1806 -8.0987 -8.0201 -7.9535 -7.8809 -7.8108 -7.7433 -  
7.6781  
F'' 4.0918 4.1177 4.1437 4.1697 4.1958 4.2219 4.2480 4.2741 4.3003 4.3266

2.60 TO 2.69 F' -7.6150 -7.5540 -7.4950 -7.4378 -7.3824 -7.3286 -7.2763 -7.2256 -7.1763 -  
7.1283  
F'' 4.3528 4.3792 4.4055 4.4320 4.4584 4.4850 4.5115 4.5381 4.5648 4.5915

2.70 TO 2.79 F' -7.0816 -7.0362 -6.9919 -6.9487 -6.9066 -6.8656 -6.8255 -6.7864 -6.7482 -  
6.7109  
F'' 4.6183 4.6451 4.6719 4.6988 4.7257 4.7527 4.7798 4.8068 4.8340 4.8611

2.80 TO 2.89 F' -6.6745 -6.6388 -6.6040 -6.5699 -6.5365 -6.5038 -6.4718 -6.4405 -6.4098 -  
6.3798  
F'' 4.8883 4.9156 4.9429 4.9703 4.9976 5.0251 5.0526 5.0801 5.1077 5.1353

ATOMIC SYMBOL = CE ATOMIC NUMBER = 58

0.10 TO 0.19 F' -0.4705 -0.4414 -0.4168 -0.3976 -0.3848 -0.3795 -0.3964 -0.4113 -0.4362 -  
0.4724

F'' 0.4910 0.5844 0.6851 0.7930 0.9080 1.0301 1.1559 1.2854 1.4197 1.5585

0.20 TO 0.29 F' -0.5214 -0.5849 -0.6652 -0.7655 -0.8905 -1.0455 -1.2403 -1.4911 -1.8287 -  
2.3272

F'' 1.7017 1.8491 2.0005 2.1558 2.3148 2.4772 2.6431 2.8122 2.9845 3.1599

0.30 TO 0.39 F' -3.2786 -4.0395 -2.9242 -2.5052 -2.2512 -2.0709 -1.9317 -1.8185 -1.7229 -  
1.6401

F'' 3.3342 0.5972 0.6329 0.6695 0.7071 0.7455 0.7848 0.8251 0.8662 0.9082

0.40 TO 0.49 F' -1.5667 -1.5008 -1.4408 -1.3856 -1.3397 -1.2921 -1.2476 -1.2087 -1.1686 -  
1.1304

F'' 0.9510 0.9948 1.0394 1.0849 1.1311 1.1779 1.2255 1.2737 1.3225 1.3720

0.50 TO 0.59 F' -1.0942 -1.0592 -1.0256 -0.9933 -0.9622 -0.9321 -0.9030 -0.8749 -0.8477 -  
0.8213

F'' 1.4222 1.4732 1.5248 1.5772 1.6302 1.6840 1.7384 1.7935 1.8493 1.9058

0.60 TO 0.69 F' -0.7958 -0.7711 -0.7471 -0.7239 -0.7014 -0.6796 -0.6585 -0.6381 -0.6183 -  
0.5993

F'' 1.9629 2.0207 2.0792 2.1383 2.1980 2.2584 2.3194 2.3811 2.4433 2.5062

0.70 TO 0.79 F' -0.5808 -0.5631 -0.5460 -0.5294 -0.5138 -0.4989 -0.4845 -0.4707 -0.4575 -  
0.4451

F'' 2.5697 2.6339 2.6986 2.7639 2.8299 2.8964 2.9635 3.0312 3.0995 3.1684

0.80 TO 0.89 F' -0.4332 -0.4221 -0.4116 -0.4019 -0.3928 -0.3843 -0.3766 -0.3696 -0.3633 -  
0.3577

F'' 3.2378 3.3079 3.3784 3.4496 3.5213 3.5936 3.6664 3.7397 3.8137 3.8881

0.90 TO 0.99 F' -0.3529 -0.3488 -0.3454 -0.3428 -0.3409 -0.3430 -0.3428 -0.3433 -0.3446 -  
0.3467

F'' 3.9631 4.0386 4.1147 4.1913 4.2684 4.3460 4.4240 4.5024 4.5814 4.6609

1.00 TO 1.09 F' -0.3497 -0.3583 -0.3630 -0.3686 -0.3750 -0.3823 -0.3904 -0.3994 -0.4094 -  
0.4261

F'' 4.7409 4.8213 4.9020 4.9832 5.0648 5.1470 5.2296 5.3126 5.3962 5.4799

1.10 TO 1.19 F' -0.4380 -0.4509 -0.4646 -0.4794 -0.4951 -0.5118 -0.5295 -0.5482 -0.5680 -  
0.5888

F'' 5.5641 5.6486 5.7336 5.8191 5.9050 5.9913 6.0780 6.1651 6.2527 6.3407

1.20 TO 1.29 F' -0.6106 -0.6336 -0.6577 -0.6829 -0.7092 -0.7367 -0.7654 -0.7953 -0.8264 -  
0.8588

F'' 6.4291 6.5179 6.6071 6.6967 6.7867 6.8772 6.9680 7.0592 7.1508 7.2428

1.30 TO 1.39 F' -0.8924 -0.9274 -0.9637 -1.0014 -1.0405 -1.0810 -1.1230 -1.1666 -1.2128 -  
1.2596

F'' 7.3352 7.4280 7.5212 7.6147 7.7086 7.8029 7.8976 7.9927 8.0881 8.1839

1.40 TO 1.49 F' -1.3076 -1.3571 -1.4082 -1.4609 -1.5154 -1.5715 -1.6292 -1.6889 -1.7505 -  
1.8140

F'' 8.2795 8.3752 8.4712 8.5675 8.6642 8.7612 8.8585 8.9561 9.0541 9.1524

1.50 TO 1.59 F' -1.8795 -1.9470 -2.0167 -2.0885 -2.1625 -2.2403 -2.3191 -2.4004 -2.4843 -  
2.5708

F'' 9.2509 9.3498 9.4490 9.5485 9.6484 9.7484 9.8488 9.9493 10.0502 10.1514

1.60 TO 1.69 F' -2.6601 -2.7522 -2.8474 -2.9456 -3.0471 -3.1521 -3.2606 -3.3750 -3.4913 -  
3.6118

F'' 10.2528 10.3545 10.4565 10.5588 10.6613 10.7641 10.8672 10.9704 11.0739 11.1776

1.70 TO 1.79 F' -3.7368 -3.8665 -4.0013 -4.1414 -4.2874 -4.4397 -4.5989 -4.7655 -4.9406 -  
5.1250

F'' 11.2815 11.3857 11.4901 11.5948 11.6997 11.8049 11.9102 12.0159 12.1217 12.2278

1.80 TO 1.89 F' -5.3199 -5.5399 -5.7610 -5.9990 -6.2582 -6.5451 -6.8715 -7.2609 -7.7777 -  
8.7993

F'' 12.3341 12.4396 12.5444 12.6494 12.7544 12.8597 12.9650 13.0704 13.1760 13.2817  
 1.90 TO 1.99 F' -8.5719 -8.2973 -8.2664 -8.3536 -8.5068 -8.7151 -8.9786 -9.3063 -9.7206 -  
 10.2738  
 F'' 11.6057 11.7079 11.8110 11.9159 12.0210 12.1266 12.2325 12.3387 12.4454 12.5523  
 2.00 TO 2.09 F' -11.1271 -13.7610 -11.7511 -11.0903 -10.8135 -10.6952 -10.6718 -10.5721 -10.6788 -  
 10.8443  
 F'' 12.6596 12.7673 9.3411 9.4190 9.4970 9.5752 9.6536 9.7421 9.8398 9.9388  
 2.10 TO 2.19 F' -11.0722 -11.3725 -11.7642 -12.2828 -13.0013 -14.1023 -16.3438 -17.4464 -14.5487 -  
 13.3233  
 F'' 10.0390 10.1406 10.2435 10.3477 10.4533 10.5602 10.6685 3.5211 3.5472 3.5733  
 2.20 TO 2.29 F' -12.5356 -11.9540 -11.4927 -11.1104 -10.7841 -10.5050 -10.2528 -10.0265 -9.8207 -  
 9.6330  
 F'' 3.5996 3.6258 3.6522 3.6786 3.7051 3.7316 3.7581 3.7847 3.8113 3.8380  
 2.30 TO 2.39 F' -9.4603 -9.3003 -9.1514 -9.0123 -8.8817 -8.7587 -8.6426 -8.5326 -8.4282 -  
 8.3289  
 F'' 3.8648 3.8916 3.9185 3.9454 3.9724 3.9995 4.0266 4.0538 4.0810 4.1083  
 2.40 TO 2.49 F' -8.2343 -8.1439 -8.0659 -7.9832 -7.9038 -7.8275 -7.7541 -7.6834 -7.6153 -  
 7.5496  
 F'' 4.1357 4.1631 4.1905 4.2179 4.2454 4.2729 4.3005 4.3281 4.3558 4.3836  
 2.50 TO 2.59 F' -7.4861 -7.4246 -7.3652 -7.3077 -7.2519 -7.1978 -7.1453 -7.0943 -7.0447 -  
 6.9966  
 F'' 4.4114 4.4392 4.4671 4.4951 4.5231 4.5512 4.5793 4.6075 4.6357 4.6640  
 2.60 TO 2.69 F' -6.9497 -6.9041 -6.8596 -6.8163 -6.7741 -6.7330 -6.6928 -6.6536 -6.6153 -  
 6.5780  
 F'' 4.6923 4.7207 4.7491 4.7776 4.8061 4.8347 4.8634 4.8920 4.9208 4.9496  
 2.70 TO 2.79 F' -6.5414 -6.5057 -6.4708 -6.4367 -6.4033 -6.3706 -6.3386 -6.3072 -6.2765 -  
 6.2465  
 F'' 4.9784 5.0073 5.0363 5.0653 5.0943 5.1234 5.1525 5.1817 5.2110 5.2403  
 2.80 TO 2.89 F' -6.2170 -6.1881 -6.1598 -6.1320 -6.1048 -6.0780 -6.0518 -6.0261 -6.0008 -  
 5.9760  
 F'' 5.2696 5.2990 5.3285 5.3580 5.3875 5.4171 5.4467 5.4764 5.5061 5.5359  
 ATOMIC SYMBOL = PR ATOMIC NUMBER = 59  
 0.10 TO 0.19 F' -0.4935 -0.4651 -0.4420 -0.4251 -0.4156 -0.4274 -0.4385 -0.4603 -0.4937 -  
 0.5402  
 F'' 0.5248 0.6244 0.7319 0.8471 0.9699 1.0991 1.2311 1.3683 1.5104 1.6572  
 0.20 TO 0.29 F' -0.6017 -0.6807 -0.7804 -0.9055 -1.0619 -1.2601 -1.5173 -1.8677 -2.3958 -  
 3.4753  
 F'' 1.8085 1.9642 2.1241 2.2879 2.4554 2.6266 2.8013 2.9794 3.1607 3.3417  
 0.30 TO 0.39 F' -3.7514 -2.8432 -2.4597 -2.2206 -2.0484 -1.9143 -1.8045 -1.7113 -1.6302 -  
 1.5582  
 F'' 0.6055 0.6429 0.6813 0.7206 0.7609 0.8022 0.8444 0.8876 0.9317 0.9768  
 0.40 TO 0.49 F' -1.4932 -1.4338 -1.3835 -1.3328 -1.2854 -1.2441 -1.2026 -1.1632 -1.1252 -  
 1.0887  
 F'' 1.0228 1.0697 1.1175 1.1660 1.2153 1.2654 1.3163 1.3678 1.4200 1.4730  
 0.50 TO 0.59 F' -1.0538 -1.0203 -0.9879 -0.9568 -0.9267 -0.8977 -0.8696 -0.8425 -0.8162 -  
 0.7908  
 F'' 1.5268 1.5813 1.6365 1.6926 1.7493 1.8068 1.8650 1.9240 1.9837 2.0440  
 0.60 TO 0.69 F' -0.7662 -0.7424 -0.7194 -0.6971 -0.6756 -0.6548 -0.6348 -0.6155 -0.5969 -  
 0.5790  
 F'' 2.1051 2.1669 2.2294 2.2925 2.3564 2.4209 2.4861 2.5520 2.6185 2.6857  
 0.70 TO 0.79 F' -0.5619 -0.5457 -0.5299 -0.5147 -0.5004 -0.4867 -0.4738 -0.4617 -0.4502 -  
 0.4395  
 F'' 2.7536 2.8221 2.8912 2.9610 3.0314 3.1024 3.1741 3.2464 3.3193 3.3928  
 0.80 TO 0.89 F' -0.4295 -0.4203 -0.4118 -0.4040 -0.3971 -0.3909 -0.3855 -0.3808 -0.3770 -

0.3740  
 F'' 3.4669 3.5417 3.6170 3.6929 3.7694 3.8465 3.9242 4.0025 4.0814 4.1608  
 0.90 TO 0.99 F' -0.3718 -0.3738 -0.3733 -0.3737 -0.3750 -0.3771 -0.3801 -0.3888 -0.3937 -  
 0.3996  
 F'' 4.2408 4.3213 4.4022 4.4837 4.5657 4.6483 4.7314 4.8148 4.8987 4.9831  
 1.00 TO 1.09 F' -0.4063 -0.4140 -0.4226 -0.4322 -0.4486 -0.4603 -0.4731 -0.4868 -0.5015 -  
 0.5173  
 F'' 5.0680 5.1534 5.2393 5.3257 5.4126 5.4997 5.5873 5.6754 5.7639 5.8529  
 1.10 TO 1.19 F' -0.5342 -0.5521 -0.5711 -0.5913 -0.6125 -0.6350 -0.6585 -0.6833 -0.7093 -  
 0.7365  
 F'' 5.9423 6.0322 6.1226 6.2134 6.3047 6.3964 6.4886 6.5812 6.6742 6.7677  
 1.20 TO 1.29 F' -0.7650 -0.7948 -0.8258 -0.8591 -0.8928 -0.9280 -0.9645 -1.0026 -1.0420 -  
 1.0830  
 F'' 6.8616 6.9559 7.0507 7.1459 7.2415 7.3375 7.4339 7.5308 7.6280 7.7257  
 1.30 TO 1.39 F' -1.1256 -1.1697 -1.2154 -1.2628 -1.3119 -1.3627 -1.4154 -1.4699 -1.5263 -  
 1.5850  
 F'' 7.8238 7.9223 8.0211 8.1204 8.2201 8.3202 8.4206 8.5215 8.6227 8.7243  
 1.40 TO 1.49 F' -1.6458 -1.7078 -1.7719 -1.8380 -1.9063 -1.9769 -2.0497 -2.1250 -2.2026 -  
 2.2840  
 F'' 8.8257 8.9273 9.0292 9.1314 9.2340 9.3369 9.4401 9.5436 9.6475 9.7515  
 1.50 TO 1.59 F' -2.3670 -2.4527 -2.5412 -2.6327 -2.7272 -2.8249 -2.9260 -3.0306 -3.1388 -  
 3.2509  
 F'' 9.8559 9.9606 10.0656 10.1709 10.2764 10.3823 10.4884 10.5948 10.7015 10.8085  
 1.60 TO 1.69 F' -3.3696 -3.4901 -3.6153 -3.7452 -3.8803 -4.0209 -4.1675 -4.3205 -4.4805 -  
 4.6481  
 F'' 10.9157 11.0231 11.1307 11.2385 11.3466 11.4550 11.5635 11.6724 11.7814 11.8907  
 1.70 TO 1.79 F' -4.8242 -5.0098 -5.2060 -5.4213 -5.6442 -5.8841 -6.1452 -6.4341 -6.7618 -  
 7.1507  
 F'' 12.0003 12.1101 12.2201 12.3302 12.4396 12.5492 12.6590 12.7689 12.8790 12.9892  
 1.80 TO 1.89 F' -7.6595 -8.5939 -8.5705 -8.2642 -8.2228 -8.3190 -8.4866 -8.7153 -9.0077 -  
 9.3788  
 F'' 13.0997 13.2102 11.5390 11.6449 11.7531 11.8635 11.9743 12.0856 12.1975 12.3098  
 1.90 TO 1.99 F' -9.8659 -10.5671 -11.9486 -12.1187 -11.0857 -10.7136 -10.5490 -10.4963 -10.5204 -  
 10.4570  
 F'' 12.4226 12.5358 12.6496 9.2480 9.3287 9.4095 9.4906 9.5718 9.6533 9.7524  
 2.00 TO 2.09 F' -10.6032 -10.8109 -11.0882 -11.4510 -11.9294 -12.5832 -13.5525 -15.3209 -19.5840 -  
 14.7851  
 F'' 9.8550 9.9591 10.0646 10.1715 10.2800 10.3899 10.5013 10.6142 3.5371 3.5645  
 2.10 TO 2.19 F' -13.3701 -12.5128 -11.8961 -11.4142 -11.0236 -10.6883 -10.3973 -10.1400 -9.9101 -  
 9.7022  
 F'' 3.5919 3.6195 3.6470 3.6747 3.7024 3.7301 3.7579 3.7858 3.8137 3.8417  
 2.20 TO 2.29 F' -9.5125 -9.3382 -9.1770 -9.0272 -8.8873 -8.7562 -8.6329 -8.5165 -8.4064 -  
 8.3019  
 F'' 3.8697 3.8979 3.9261 3.9543 3.9826 4.0110 4.0395 4.0680 4.0966 4.1252  
 2.30 TO 2.39 F' -8.2026 -8.1160 -8.0258 -7.9396 -7.8570 -7.7778 -7.7017 -7.6286 -7.5582 -  
 7.4903  
 F'' 4.1539 4.1826 4.2113 4.2401 4.2690 4.2979 4.3268 4.3559 4.3850 4.4141  
 2.40 TO 2.49 F' -7.4249 -7.3616 -7.3005 -7.2414 -7.1842 -7.1287 -7.0750 -7.0228 -6.9721 -  
 6.9229  
 F'' 4.4433 4.4726 4.5019 4.5313 4.5607 4.5902 4.6198 4.6494 4.6791 4.7088  
 2.50 TO 2.59 F' -6.8751 -6.8285 -6.7832 -6.7392 -6.6962 -6.6543 -6.6135 -6.5737 -6.5348 -  
 6.4969  
 F'' 4.7386 4.7684 4.7983 4.8283 4.8583 4.8884 4.9185 4.9487 4.9790 5.0093  
 2.60 TO 2.69 F' -6.4599 -6.4237 -6.3883 -6.3537 -6.3199 -6.2868 -6.2545 -6.2228 -6.1918 -

6.1614  
F'' 5.0396 5.0700 5.1005 5.1310 5.1616 5.1922 5.2229 5.2536 5.2844 5.3153  
2.70 TO 2.79 F' -6.1317 -6.1025 -6.0740 -6.0460 -6.0185 -5.9916 -5.9652 -5.9393 -5.9139 -  
5.8890  
F'' 5.3462 5.3772 5.4082 5.4392 5.4703 5.5015 5.5327 5.5640 5.5953 5.6267  
2.80 TO 2.89 F' -5.8659 -5.8419 -5.8183 -5.7951 -5.7724 -5.7501 -5.7282 -5.7066 -5.6855 -  
5.6647  
F'' 5.6582 5.6896 5.7212 5.7527 5.7844 5.8161 5.8478 5.8796 5.9114 5.9433  
ATOMIC SYMBOL = ND ATOMIC NUMBER = 60  
0.10 TO 0.19 F' -0.5190 -0.4916 -0.4703 -0.4561 -0.4506 -0.4689 -0.4864 -0.5161 -0.5591 -  
0.6176  
F'' 0.5603 0.6665 0.7811 0.9039 1.0348 1.1696 1.3092 1.4542 1.6044 1.7594  
0.20 TO 0.29 F' -0.6939 -0.7914 -0.9145 -1.0702 -1.2689 -1.5286 -1.8853 -2.4304 -3.5990 -  
3.6258  
F'' 1.9192 2.0834 2.2520 2.4247 2.6014 2.7820 2.9663 3.1541 3.3387 0.6118  
0.30 TO 0.39 F' -2.8028 -2.4376 -2.2066 -2.0390 -1.9079 -1.8000 -1.7082 -1.6280 -1.5566 -  
1.4920  
F'' 0.6509 0.6910 0.7322 0.7744 0.8176 0.8618 0.9071 0.9534 1.0007 1.0491  
0.40 TO 0.49 F' -1.4329 -1.3829 -1.3322 -1.2878 -1.2431 -1.2007 -1.1603 -1.1253 -1.0888 -  
1.0538  
F'' 1.0984 1.1484 1.1993 1.2511 1.3036 1.3571 1.4115 1.4666 1.5224 1.5790  
0.50 TO 0.59 F' -1.0202 -0.9879 -0.9567 -0.9266 -0.8976 -0.8695 -0.8424 -0.8162 -0.7909 -  
0.7665  
F'' 1.6364 1.6946 1.7537 1.8135 1.8741 1.9355 1.9977 2.0606 2.1243 2.1888  
0.60 TO 0.69 F' -0.7429 -0.7201 -0.6981 -0.6769 -0.6565 -0.6369 -0.6180 -0.6000 -0.5829 -  
0.5663  
F'' 2.2540 2.3199 2.3866 2.4540 2.5221 2.5910 2.6605 2.7308 2.8017 2.8734  
0.70 TO 0.79 F' -0.5506 -0.5356 -0.5213 -0.5077 -0.4950 -0.4831 -0.4720 -0.4617 -0.4522 -  
0.4435  
F'' 2.9457 3.0188 3.0925 3.1668 3.2419 3.3176 3.3940 3.4710 3.5487 3.6270  
0.80 TO 0.89 F' -0.4356 -0.4286 -0.4223 -0.4170 -0.4125 -0.4088 -0.4061 -0.4073 -0.4064 -  
0.4064  
F'' 3.7060 3.7856 3.8659 3.9467 4.0282 4.1104 4.1931 4.2764 4.3602 4.4445  
0.90 TO 0.99 F' -0.4074 -0.4092 -0.4121 -0.4206 -0.4255 -0.4314 -0.4382 -0.4461 -0.4550 -  
0.4649  
F'' 4.5295 4.6150 4.7011 4.7876 4.8746 4.9621 5.0502 5.1388 5.2280 5.3177  
1.00 TO 1.09 F' -0.4815 -0.4937 -0.5069 -0.5213 -0.5368 -0.5534 -0.5712 -0.5901 -0.6102 -  
0.6316  
F'' 5.4079 5.4984 5.5893 5.6808 5.7728 5.8653 5.9583 6.0518 6.1457 6.2402  
1.10 TO 1.19 F' -0.6541 -0.6779 -0.7030 -0.7294 -0.7571 -0.7862 -0.8166 -0.8484 -0.8817 -  
0.9164  
F'' 6.3351 6.4305 6.5264 6.6228 6.7197 6.8170 6.9147 7.0130 7.1117 7.2108  
1.20 TO 1.29 F' -0.9526 -0.9903 -1.0296 -1.0704 -1.1129 -1.1571 -1.2029 -1.2505 -1.2999 -  
1.3512  
F'' 7.3104 7.4105 7.5110 7.6119 7.7133 7.8151 7.9173 8.0200 8.1231 8.2266  
1.30 TO 1.39 F' -1.4053 -1.4604 -1.5175 -1.5766 -1.6385 -1.7019 -1.7677 -1.8358 -1.9064 -  
1.9798  
F'' 8.3306 8.4349 8.5397 8.6449 8.7505 8.8565 8.9629 9.0696 9.1768 9.2844  
1.40 TO 1.49 F' -2.0552 -2.1329 -2.2134 -2.2965 -2.3825 -2.4714 -2.5634 -2.6587 -2.7572 -  
2.8593  
F'' 9.3918 9.4993 9.6071 9.7152 9.8237 9.9325 10.0416 10.1510 10.2608 10.3708  
1.50 TO 1.59 F' -2.9650 -3.0746 -3.1883 -3.3062 -3.4301 -3.5575 -3.6899 -3.8278 -3.9716 -  
4.1216  
F'' 10.4812 10.5918 10.7028 10.8141 10.9256 11.0373 11.1494 11.2617 11.3743 11.4871

1.60 TO 1.69 F' -4.2785 -4.4429 -4.6154 -4.7970 -4.9889 -5.1923 -5.4179 -5.6504 -5.9018 -  
6.1772  
F'' 11.6002 11.7136 11.8272 11.9411 12.0553 12.1697 12.2841 12.3977 12.5113 12.6251

1.70 TO 1.79 F' -6.4845 -6.8383 -7.2704 -7.8815 -10.2342 -8.3300 -8.1293 -8.1837 -8.3311 -  
8.5499  
F'' 12.7391 12.8532 12.9675 13.0819 11.4244 11.5344 11.6469 11.7690 11.8920 12.0161

1.80 TO 1.89 F' -8.8395 -9.2141 -9.7128 -10.4420 -11.9357 -11.8858 -10.9080 -10.5464 -10.3872 -  
10.3385  
F'' 12.1413 12.2675 12.3948 12.5232 12.6527 9.1919 9.2757 9.3597 9.4439 9.5283

1.90 TO 1.99 F' -10.3667 -10.3262 -10.4770 -10.6904 -10.9751 -11.3485 -11.8433 -12.5261 -13.5596 -  
15.5683  
F'' 9.6130 9.7096 9.8135 9.9187 10.0252 10.1332 10.2426 10.3534 10.4656 10.5793

2.00 TO 2.09 F' -17.6111 -14.2947 -13.0246 -12.2249 -11.6444 -11.1832 -10.8023 -10.4781 -10.1958 -  
9.9461  
F'' 3.5625 3.5912 3.6199 3.6488 3.6777 3.7066 3.7356 3.7647 3.7938 3.8231

2.10 TO 2.19 F' -9.7218 -9.5190 -9.3338 -9.1634 -9.0058 -8.8592 -8.7222 -8.5937 -8.4728 -  
8.3587  
F'' 3.8524 3.8817 3.9112 3.9407 3.9703 3.9999 4.0297 4.0595 4.0893 4.1193

2.20 TO 2.29 F' -8.2507 -8.1555 -8.0582 -7.9654 -7.8768 -7.7922 -7.7110 -7.6332 -7.5585 -  
7.4866  
F'' 4.1493 4.1793 4.2094 4.2395 4.2696 4.2999 4.3302 4.3606 4.3910 4.4215

2.30 TO 2.39 F' -7.4175 -7.3508 -7.2864 -7.2243 -7.1642 -7.1061 -7.0498 -6.9953 -6.9424 -  
6.8911  
F'' 4.4521 4.4828 4.5135 4.5442 4.5751 4.6060 4.6369 4.6679 4.6990 4.7302

2.40 TO 2.49 F' -6.8413 -6.7929 -6.7458 -6.7001 -6.6555 -6.6122 -6.5699 -6.5287 -6.4886 -  
6.4494  
F'' 4.7614 4.7927 4.8240 4.8554 4.8869 4.9184 4.9500 4.9816 5.0133 5.0451

2.50 TO 2.59 F' -6.4112 -6.3739 -6.3375 -6.3019 -6.2671 -6.2331 -6.1999 -6.1674 -6.1355 -  
6.1044  
F'' 5.0769 5.1088 5.1408 5.1728 5.2049 5.2370 5.2692 5.3015 5.3338 5.3661

2.60 TO 2.69 F' -6.0739 -6.0441 -6.0148 -5.9862 -5.9581 -5.9306 -5.9036 -5.8772 -5.8513 -  
5.8258  
F'' 5.3986 5.4311 5.4636 5.4962 5.5289 5.5616 5.5944 5.6272 5.6601 5.6931

2.70 TO 2.79 F' -5.8009 -5.7764 -5.7536 -5.7301 -5.7069 -5.6842 -5.6619 -5.6400 -5.6185 -  
5.5974  
F'' 5.7261 5.7592 5.7923 5.8255 5.8587 5.8920 5.9253 5.9587 5.9922 6.0257

2.80 TO 2.89 F' -5.5767 -5.5563 -5.5363 -5.5166 -5.4973 -5.4783 -5.4596 -5.4412 -5.4232 -  
5.4054  
F'' 6.0593 6.0929 6.1266 6.1603 6.1941 6.2279 6.2618 6.2958 6.3298 6.3638

ATOMIC SYMBOL = PM ATOMIC NUMBER = 61

0.10 TO 0.19 F' -0.5452 -0.5192 -0.5001 -0.4893 -0.5016 -0.5141 -0.5389 -0.5777 -0.6321 -  
0.7047  
F'' 0.5976 0.7107 0.8327 0.9634 1.1014 1.2429 1.3905 1.5436 1.7020 1.8655

0.20 TO 0.29 F' -0.7987 -0.9189 -1.0718 -1.2683 -1.5265 -1.8827 -2.4299 -3.6179 -3.5883 -  
2.7891  
F'' 2.0339 2.2069 2.3844 2.5661 2.7520 2.9418 3.1354 3.3274 0.6165 0.6572

0.30 TO 0.39 F' -2.4307 -2.2033 -2.0379 -1.9082 -1.8014 -1.7102 -1.6305 -1.5594 -1.4950 -  
1.4407  
F'' 0.6991 0.7421 0.7863 0.8315 0.8778 0.9253 0.9738 1.0234 1.0741 1.1257

0.40 TO 0.49 F' -1.3862 -1.3382 -1.2906 -1.2458 -1.2032 -1.1660 -1.1275 -1.0907 -1.0556 -  
1.0219  
F'' 1.1781 1.2315 1.2857 1.3410 1.3971 1.4542 1.5120 1.5708 1.6303 1.6908

0.50 TO 0.59 F' -0.9894 -0.9582 -0.9281 -0.8990 -0.8710 -0.8439 -0.8179 -0.7928 -0.7685 -  
0.7451



F'' 1.7521 1.8142 1.8772 1.9411 2.0057 2.0713 2.1376 2.2047 2.2726 2.3414  
 0.60 TO 0.69 F' -0.7226 -0.7009 -0.6801 -0.6601 -0.6410 -0.6227 -0.6052 -0.5885 -0.5727 -  
 0.5577

F'' 2.4109 2.4812 2.5522 2.6241 2.6967 2.7701 2.8442 2.9190 2.9946 3.0710  
 0.70 TO 0.79 F' -0.5435 -0.5302 -0.5177 -0.5059 -0.4951 -0.4852 -0.4762 -0.4681 -0.4608 -  
 0.4545

F'' 3.1481 3.2258 3.3043 3.3836 3.4635 3.5441 3.6255 3.7075 3.7902 3.8736  
 0.80 TO 0.89 F' -0.4490 -0.4446 -0.4410 -0.4384 -0.4397 -0.4391 -0.4395 -0.4409 -0.4433 -  
 0.4514

F'' 3.9576 4.0424 4.1278 4.2138 4.3005 4.3877 4.4755 4.5639 4.6530 4.7426  
 0.90 TO 0.99 F' -0.4560 -0.4617 -0.4684 -0.4763 -0.4852 -0.4953 -0.5117 -0.5242 -0.5379 -  
 0.5527

F'' 4.8326 4.9232 5.0145 5.1063 5.1987 5.2917 5.3853 5.4791 5.5735 5.6684  
 1.00 TO 1.09 F' -0.5688 -0.5860 -0.6046 -0.6243 -0.6454 -0.6677 -0.6915 -0.7165 -0.7430 -  
 0.7708

F'' 5.7639 5.8600 5.9565 6.0536 6.1512 6.2494 6.3480 6.4472 6.5469 6.6471  
 1.10 TO 1.19 F' -0.8001 -0.8309 -0.8631 -0.8969 -0.9323 -0.9692 -1.0078 -1.0481 -1.0900 -  
 1.1337

F'' 6.7478 6.8491 6.9508 7.0530 7.1557 7.2589 7.3625 7.4667 7.5713 7.6764  
 1.20 TO 1.29 F' -1.1792 -1.2265 -1.2757 -1.3269 -1.3800 -1.4352 -1.4924 -1.5518 -1.6134 -  
 1.6777

F'' 7.7820 7.8881 7.9946 8.1016 8.2090 8.3169 8.4252 8.5340 8.6433 8.7529  
 1.30 TO 1.39 F' -1.7451 -1.8139 -1.8851 -1.9590 -2.0355 -2.1149 -2.1976 -2.2829 -2.3714 -  
 2.4632

F'' 8.8630 8.9735 9.0845 9.1959 9.3077 9.4199 9.5326 9.6456 9.7591 9.8730  
 1.40 TO 1.49 F' -2.5582 -2.6567 -2.7587 -2.8646 -2.9744 -3.0884 -3.2068 -3.3299 -3.4579 -  
 3.5911

F'' 9.9866 10.1003 10.2143 10.3285 10.4431 10.5580 10.6732 10.7887 10.9045 11.0205  
 1.50 TO 1.59 F' -3.7300 -3.8749 -4.0263 -4.1848 -4.3509 -4.5255 -4.7095 -4.9040 -5.1105 -  
 5.3307

F'' 11.1369 11.2535 11.3704 11.4876 11.6051 11.7228 11.8408 11.9590 12.0775 12.1963  
 1.60 TO 1.69 F' -5.5734 -5.8297 -6.1108 -6.4251 -6.7880 -7.2335 -7.8736 -9.3876 -8.2625 -  
 8.0896

F'' 12.3144 12.4326 12.5509 12.6694 12.7881 12.9069 13.0258 11.3769 11.4909 11.6115  
 1.70 TO 1.79 F' -8.1675 -8.3399 -8.5900 -8.9227 -9.3650 -9.9883 -11.0646 -12.7147 -10.9500 -  
 10.4706

F'' 11.7391 11.8680 11.9982 12.1297 12.2624 12.3965 12.5319 9.1073 9.1946 9.2821  
 1.80 TO 1.89 F' -10.2612 -10.1829 -10.1899 -10.1469 -10.2804 -10.4758 -10.7400 -11.0877 -11.5469 -  
 12.1733

F'' 9.3699 9.4579 9.5462 9.6359 9.7414 9.8482 9.9564 10.0659 10.1769 10.2892  
 1.90 TO 1.99 F' -13.0951 -14.7378 -20.7427 -14.5355 -13.0785 -12.2169 -11.5993 -11.1190 -10.7258 -  
 10.3932

F'' 10.4030 10.5182 3.5757 3.6058 3.6359 3.6661 3.6963 3.7266 3.7570 3.7874  
 2.00 TO 2.09 F' -10.1046 -9.8504 -9.6232 -9.4179 -9.2308 -9.0589 -8.9001 -8.7526 -8.6149 -  
 8.4859

F'' 3.8180 3.8486 3.8793 3.9101 3.9410 3.9719 4.0029 4.0340 4.0652 4.0965  
 2.10 TO 2.19 F' -8.3646 -8.2568 -8.1487 -8.0462 -7.9488 -7.8560 -7.7675 -7.6829 -7.6019 -  
 7.5243

F'' 4.1278 4.1592 4.1906 4.2221 4.2536 4.2852 4.3169 4.3487 4.3805 4.4124  
 2.20 TO 2.29 F' -7.4497 -7.3780 -7.3091 -7.2426 -7.1785 -7.1166 -7.0568 -6.9989 -6.9429 -  
 6.8887

F'' 4.4444 4.4764 4.5086 4.5408 4.5730 4.6053 4.6377 4.6702 4.7028 4.7354  
 2.30 TO 2.39 F' -6.8361 -6.7851 -6.7355 -6.6874 -6.6407 -6.5952 -6.5509 -6.5079 -6.4659 -  
 6.4251

F'' 4.7681 4.8008 4.8336 4.8665 4.8995 4.9325 4.9656 4.9988 5.0320 5.0653  
 2.40 TO 2.49 F' -6.3852 -6.3464 -6.3085 -6.2715 -6.2353 -6.2000 -6.1656 -6.1319 -6.0990 -  
 6.0667  
 F'' 5.0987 5.1321 5.1656 5.1992 5.2328 5.2665 5.3003 5.3341 5.3680 5.4020  
 2.50 TO 2.59 F' -6.0352 -6.0044 -5.9742 -5.9447 -5.9158 -5.8874 -5.8597 -5.8325 -5.8058 -  
 5.7797  
 F'' 5.4360 5.4701 5.5042 5.5385 5.5727 5.6071 5.6415 5.6760 5.7105 5.7451  
 2.60 TO 2.69 F' -5.7552 -5.7301 -5.7055 -5.6814 -5.6577 -5.6344 -5.6116 -5.5892 -5.5673 -  
 5.5457  
 F'' 5.7798 5.8145 5.8493 5.8842 5.9191 5.9541 5.9891 6.0242 6.0594 6.0946  
 2.70 TO 2.79 F' -5.5245 -5.5038 -5.4833 -5.4702 -5.4506 -5.4314 -5.4125 -5.3939 -5.3757 -  
 5.3629  
 F'' 6.1299 6.1652 6.2006 6.2360 6.2715 6.3070 6.3425 6.3782 6.4138 6.4496  
 2.80 TO 2.89 F' -5.3465 -5.3293 -5.3124 -5.2958 -5.2794 -5.2634 -5.2476 -5.2322 -5.2169 -  
 5.2020  
 F'' 6.4853 6.5211 6.5569 6.5928 6.6288 6.6648 6.7009 6.7370 6.7732 6.8094  
 ATOMIC SYMBOL = SM ATOMIC NUMBER = 62  
 0.10 TO 0.19 F' -0.5731 -0.5488 -0.5325 -0.5258 -0.5448 -0.5640 -0.5973 -0.6465 -0.7141 -  
 0.8033  
 F'' 0.6367 0.7570 0.8868 1.0259 1.1696 1.3191 1.4749 1.6363 1.8032 1.9755  
 0.20 TO 0.29 F' -0.9186 -1.0667 -1.2582 -1.5111 -1.8605 -2.3960 -3.5353 -3.6290 -2.8027 -  
 2.4406  
 F'' 2.1528 2.3349 2.5218 2.7132 2.9090 3.1088 3.3055 0.6188 0.6612 0.7048  
 0.30 TO 0.39 F' -2.2122 -2.0466 -1.9168 -1.8098 -1.7186 -1.6388 -1.5675 -1.5075 -1.4485 -  
 1.3938  
 F'' 0.7497 0.7957 0.8430 0.8914 0.9410 0.9918 1.0437 1.0968 1.1507 1.2057  
 0.40 TO 0.49 F' -1.3456 -1.2978 -1.2527 -1.2132 -1.1726 -1.1339 -1.0968 -1.0614 -1.0275 -  
 0.9949  
 F'' 1.2615 1.3184 1.3764 1.4353 1.4950 1.5558 1.6176 1.6802 1.7438 1.8082  
 0.50 TO 0.59 F' -0.9636 -0.9334 -0.9043 -0.8763 -0.8494 -0.8234 -0.7984 -0.7743 -0.7511 -  
 0.7289  
 F'' 1.8736 1.9398 2.0070 2.0750 2.1439 2.2137 2.2844 2.3559 2.4283 2.5015  
 0.60 TO 0.69 F' -0.7076 -0.6872 -0.6677 -0.6491 -0.6314 -0.6145 -0.5986 -0.5836 -0.5694 -  
 0.5562  
 F'' 2.5755 2.6504 2.7260 2.8025 2.8798 2.9579 3.0368 3.1165 3.1970 3.2782  
 0.70 TO 0.79 F' -0.5439 -0.5326 -0.5221 -0.5124 -0.5039 -0.4963 -0.4897 -0.4841 -0.4795 -  
 0.4759  
 F'' 3.3602 3.4430 3.5265 3.6108 3.6958 3.7816 3.8681 3.9553 4.0432 4.1319  
 0.80 TO 0.89 F' -0.4734 -0.4746 -0.4742 -0.4749 -0.4767 -0.4838 -0.4880 -0.4932 -0.4996 -  
 0.5072  
 F'' 4.2213 4.3112 4.4018 4.4931 4.5851 4.6777 4.7707 4.8644 4.9587 5.0536  
 0.90 TO 0.99 F' -0.5159 -0.5258 -0.5370 -0.5547 -0.5685 -0.5836 -0.5999 -0.6176 -0.6366 -  
 0.6570  
 F'' 5.1492 5.2454 5.3423 5.4395 5.5373 5.6356 5.7346 5.8341 5.9342 6.0348  
 1.00 TO 1.09 F' -0.6788 -0.7019 -0.7266 -0.7527 -0.7802 -0.8094 -0.8400 -0.8723 -0.9062 -  
 0.9417  
 F'' 6.1361 6.2379 6.3402 6.4431 6.5466 6.6506 6.7552 6.8603 6.9659 7.0721  
 1.10 TO 1.19 F' -0.9790 -1.0180 -1.0588 -1.1013 -1.1458 -1.1922 -1.2405 -1.2908 -1.3432 -  
 1.3978  
 F'' 7.1788 7.2860 7.3937 7.5020 7.6107 7.7200 7.8298 7.9401 8.0508 8.1621  
 1.20 TO 1.29 F' -1.4545 -1.5135 -1.5747 -1.6384 -1.7071 -1.7758 -1.8471 -1.9211 -1.9980 -  
 2.0788  
 F'' 8.2739 8.3861 8.4989 8.6121 8.7256 8.8396 8.9540 9.0688 9.1842 9.2999  
 1.30 TO 1.39 F' -2.1616 -2.2481 -2.3373 -2.4299 -2.5260 -2.6260 -2.7298 -2.8379 -2.9504 -

3.0679  
F'' 9.4162 9.5328 9.6499 9.7674 9.8853 10.0037 10.1225 10.2417 10.3614 10.4815  
1.40 TO 1.49 F' -3.1897 -3.3160 -3.4476 -3.5851 -3.7284 -3.8783 -4.0352 -4.1998 -4.3728 -  
4.5551  
F'' 10.6012 10.7210 10.8410 10.9614 11.0821 11.2030 11.3243 11.4458 11.5677 11.6898  
1.50 TO 1.59 F' -4.7477 -4.9521 -5.1699 -5.4092 -5.6617 -5.9375 -6.2437 -6.5926 -7.0097 -  
7.5649  
F'' 11.8122 11.9348 12.0578 12.1807 12.3031 12.4257 12.5483 12.6711 12.7940 12.9170  
1.60 TO 1.69 F' -8.7221 -8.3439 -8.0704 -8.1207 -8.2843 -8.5352 -8.8776 -9.3430 -10.0227 -  
11.3322  
F'' 13.0401 11.3972 11.5201 11.6518 11.7850 11.9198 12.0562 12.1942 12.3338 12.4751  
1.70 TO 1.79 F' -11.7757 -10.6434 -10.2534 -10.0829 -10.0288 -10.0542 -9.9919 -10.1420 -10.3567 -  
10.6452  
F'' 9.0624 9.1526 9.2431 9.3339 9.4249 9.5161 9.6091 9.7236 9.8399 9.9581  
1.80 TO 1.89 F' -11.0260 -11.5342 -12.2425 -13.3339 -15.5804 -16.4878 -13.7526 -12.5778 -11.8212 -  
11.2624  
F'' 10.0781 10.2000 10.3239 10.4497 10.5775 3.6067 3.6382 3.6697 3.7013 3.7330  
1.90 TO 1.99 F' -10.8192 -10.4518 -10.1385 -9.8654 -9.6234 -9.4064 -9.2096 -9.0298 -8.8644 -  
8.7112  
F'' 3.7647 3.7966 3.8286 3.8606 3.8927 3.9250 3.9573 3.9897 4.0221 4.0547  
2.00 TO 2.09 F' -8.5687 -8.4356 -8.3167 -8.1993 -8.0884 -7.9835 -7.8840 -7.7893 -7.6991 -  
7.6130  
F'' 4.0874 4.1201 4.1529 4.1857 4.2186 4.2515 4.2846 4.3177 4.3509 4.3842  
2.10 TO 2.19 F' -7.5306 -7.4518 -7.3761 -7.3035 -7.2336 -7.1663 -7.1015 -7.0389 -6.9785 -  
6.9201  
F'' 4.4176 4.4511 4.4846 4.5182 4.5519 4.5857 4.6195 4.6534 4.6874 4.7215  
2.20 TO 2.29 F' -6.8637 -6.8090 -6.7560 -6.7046 -6.6548 -6.6064 -6.5594 -6.5137 -6.4692 -  
6.4260  
F'' 4.7556 4.7899 4.8242 4.8586 4.8930 4.9276 4.9622 4.9968 5.0316 5.0664  
2.30 TO 2.39 F' -6.3839 -6.3429 -6.3029 -6.2640 -6.2260 -6.1889 -6.1528 -6.1174 -6.0830 -  
6.0493  
F'' 5.1013 5.1363 5.1714 5.2065 5.2417 5.2770 5.3123 5.3477 5.3832 5.4188  
2.40 TO 2.49 F' -6.0163 -5.9841 -5.9526 -5.9218 -5.8917 -5.8622 -5.8334 -5.8051 -5.7774 -  
5.7513  
F'' 5.4544 5.4901 5.5259 5.5617 5.5977 5.6336 5.6697 5.7058 5.7420 5.7783  
2.50 TO 2.59 F' -5.7248 -5.6988 -5.6733 -5.6483 -5.6238 -5.5998 -5.5763 -5.5532 -5.5305 -  
5.5147  
F'' 5.8146 5.8510 5.8875 5.9240 5.9607 5.9973 6.0341 6.0709 6.1078 6.1447  
2.60 TO 2.69 F' -5.4930 -5.4717 -5.4508 -5.4303 -5.4101 -5.3951 -5.3757 -5.3577 -5.3391 -  
5.3208  
F'' 6.1816 6.2186 6.2557 6.2928 6.3300 6.3673 6.4046 6.4419 6.4793 6.5167  
2.70 TO 2.79 F' -5.3029 -5.2853 -5.2680 -5.2510 -5.2343 -5.2179 -5.2018 -5.1861 -5.1706 -  
5.1553  
F'' 6.5542 6.5918 6.6295 6.6672 6.7049 6.7427 6.7806 6.8186 6.8566 6.8946  
2.80 TO 2.89 F' -5.1404 -5.1257 -5.1113 -5.0972 -5.0833 -5.0696 -5.0563 -5.0431 -5.0302 -  
5.0176  
F'' 6.9327 6.9709 7.0091 7.0474 7.0858 7.1242 7.1627 7.2012 7.2398 7.2784  
ATOMIC SYMBOL = EU ATOMIC NUMBER = 63  
0.10 TO 0.19 F' -0.6028 -0.5806 -0.5676 -0.5791 -0.5921 -0.6189 -0.6620 -0.7235 -0.8066 -  
0.9157  
F'' 0.6776 0.8055 0.9434 1.0899 1.2404 1.3981 1.5624 1.7323 1.9080 2.0892  
0.20 TO 0.29 F' -1.0572 -1.2414 -1.4853 -1.8219 -2.3330 -3.3690 -3.7548 -2.8410 -2.4647 -  
2.2313  
F'' 2.2756 2.4671 2.6634 2.8644 3.0698 3.2742 0.6192 0.6632 0.7086 0.7553

0.30 TO 0.39 F' -2.0632 -1.9320 -1.8242 -1.7323 -1.6519 -1.5801 -1.5198 -1.4604 -1.4081 -1.3569  
F'' 0.8032 0.8525 0.9030 0.9548 1.0078 1.0621 1.1174 1.1737 1.2311 1.2895

0.40 TO 0.49 F' -1.3087 -1.2633 -1.2228 -1.1819 -1.1429 -1.1055 -1.0697 -1.0355 -1.0027 -0.9712  
F'' 1.3491 1.4097 1.4713 1.5340 1.5977 1.6625 1.7283 1.7950 1.8627 1.9313

0.50 TO 0.59 F' -0.9409 -0.9118 -0.8838 -0.8568 -0.8309 -0.8060 -0.7821 -0.7592 -0.7373 -0.7163  
F'' 2.0009 2.0714 2.1429 2.2153 2.2886 2.3629 2.4381 2.5142 2.5911 2.6690

0.60 TO 0.69 F' -0.6964 -0.6773 -0.6593 -0.6422 -0.6261 -0.6109 -0.5967 -0.5835 -0.5713 -0.5601  
F'' 2.7477 2.8273 2.9078 2.9891 3.0713 3.1543 3.2382 3.3229 3.4084 3.4947

0.70 TO 0.79 F' -0.5500 -0.5408 -0.5327 -0.5256 -0.5196 -0.5146 -0.5108 -0.5106 -0.5091 -0.5087  
F'' 3.5818 3.6697 3.7585 3.8480 3.9383 4.0294 4.1212 4.2139 4.3071 4.4010

0.80 TO 0.89 F' -0.5094 -0.5113 -0.5186 -0.5230 -0.5287 -0.5356 -0.5435 -0.5530 -0.5637 -0.5807  
F'' 4.4957 4.5911 4.6871 4.7836 4.8809 4.9789 5.0775 5.1768 5.2768 5.3774

0.90 TO 0.99 F' -0.5943 -0.6092 -0.6255 -0.6432 -0.6623 -0.6829 -0.7050 -0.7286 -0.7537 -0.7804  
F'' 5.4784 5.5801 5.6824 5.7853 5.8888 5.9930 6.0977 6.2031 6.3091 6.4156

1.00 TO 1.09 F' -0.8087 -0.8387 -0.8703 -0.9037 -0.9388 -0.9757 -1.0144 -1.0550 -1.0976 -1.1421  
F'' 6.5228 6.6305 6.7389 6.8478 6.9573 7.0674 7.1780 7.2892 7.4009 7.5132

1.10 TO 1.19 F' -1.1886 -1.2372 -1.2880 -1.3409 -1.3961 -1.4536 -1.5135 -1.5759 -1.6408 -1.7105  
F'' 7.6261 7.7395 7.8534 7.9679 8.0829 8.1985 8.3145 8.4311 8.5482 8.6657

1.20 TO 1.29 F' -1.7808 -1.8538 -1.9298 -2.0087 -2.0908 -2.1771 -2.2690 -2.3613 -2.4572 -2.5569  
F'' 8.7837 8.9021 9.0210 9.1404 9.2603 9.3807 9.5014 9.6225 9.7440 9.8660

1.30 TO 1.39 F' -2.6606 -2.7685 -2.8809 -2.9979 -3.1198 -3.2470 -3.3797 -3.5180 -3.6631 -3.8150  
F'' 9.9884 10.1113 10.2346 10.3584 10.4826 10.6073 10.7324 10.8579 10.9839 11.1103

1.40 TO 1.49 F' -3.9744 -4.1421 -4.3186 -4.5049 -4.7023 -4.9122 -5.1365 -5.3856 -5.6479 -5.9354  
F'' 11.2367 11.3632 11.4901 11.6173 11.7448 11.8727 12.0008 12.1289 12.2561 12.3832

1.50 TO 1.59 F' -6.2564 -6.6257 -7.0754 -7.7068 -9.8919 -8.2039 -8.0555 -8.1598 -8.3714 -8.6798  
F'' 12.5103 12.6373 12.7642 12.8911 11.2649 11.3872 11.5198 11.6554 11.7929 11.9323

1.60 TO 1.69 F' -9.1046 -9.7173 -10.7974 -12.2690 -10.6257 -10.1632 -9.9623 -9.8902 -9.9028 -9.9823  
F'' 12.0734 12.2165 12.3615 8.9844 9.0773 9.1705 9.2639 9.3575 9.4514 9.5455

1.70 TO 1.79 F' -9.9569 -10.1605 -10.4371 -10.8039 -11.2939 -11.9738 -13.0072 -15.0279 -16.9451 -13.7437  
F'' 9.6560 9.7774 9.9010 10.0269 10.1551 10.2856 10.4184 10.5537 3.6225 3.6553

1.80 TO 1.89 F' -12.5056 -11.7259 -11.1560 -10.7068 -10.3359 -10.0205 -9.7461 -9.5034 -9.2859 -9.0891  
F'' 3.6883 3.7213 3.7544 3.7876 3.8209 3.8543 3.8878 3.9214 3.9551 3.9889

1.90 TO 1.99 F' -8.9093 -8.7440 -8.5911 -8.4489 -8.3215 -8.1972 -8.0801 -7.9697 -7.8653 -7.7661  
F'' 4.0228 4.0568 4.0908 4.1250 4.1592 4.1935 4.2278 4.2622 4.2968 4.3314

2.00 TO 2.09 F' -7.6719 -7.5822 -7.4965 -7.4146 -7.3361 -7.2609 -7.1887 -7.1192 -7.0523 -6.9879  
F'' 4.3661 4.4009 4.4357 4.4707 4.5057 4.5409 4.5761 4.6114 4.6468 4.6823

2.10 TO 2.19 F' -6.9257 -6.8657 -6.8077 -6.7516 -6.6973 -6.6446 -6.5936 -6.5441 -6.4960 -  
6.4494  
F'' 4.7178 4.7534 4.7892 4.8250 4.8609 4.8968 4.9329 4.9690 5.0052 5.0415

2.20 TO 2.29 F' -6.4040 -6.3599 -6.3169 -6.2751 -6.2344 -6.1948 -6.1561 -6.1184 -6.0816 -  
6.0458  
F'' 5.0779 5.1144 5.1509 5.1875 5.2242 5.2610 5.2979 5.3348 5.3718 5.4089

2.30 TO 2.39 F' -6.0107 -5.9765 -5.9431 -5.9112 -5.8793 -5.8481 -5.8176 -5.7877 -5.7585 -  
5.7299  
F'' 5.4461 5.4834 5.5207 5.5581 5.5956 5.6332 5.6708 5.7085 5.7463 5.7842

2.40 TO 2.49 F' -5.7019 -5.6745 -5.6476 -5.6214 -5.5956 -5.5704 -5.5456 -5.5274 -5.5037 -  
5.4805  
F'' 5.8221 5.8601 5.8982 5.9364 5.9746 6.0130 6.0513 6.0898 6.1282 6.1668

2.50 TO 2.59 F' -5.4577 -5.4354 -5.4135 -5.3965 -5.3754 -5.3548 -5.3345 -5.3147 -5.2962 -  
5.2771  
F'' 6.2054 6.2441 6.2828 6.3216 6.3605 6.3994 6.4384 6.4774 6.5165 6.5557

2.60 TO 2.69 F' -5.2584 -5.2400 -5.2220 -5.2043 -5.1869 -5.1699 -5.1532 -5.1368 -5.1206 -  
5.1048  
F'' 6.5949 6.6342 6.6736 6.7131 6.7526 6.7921 6.8318 6.8715 6.9113 6.9511

2.70 TO 2.79 F' -5.0893 -5.0741 -5.0591 -5.0445 -5.0301 -5.0160 -5.0021 -4.9885 -4.9752 -  
4.9621  
F'' 6.9910 7.0310 7.0710 7.1111 7.1512 7.1915 7.2317 7.2721 7.3125 7.3530

2.80 TO 2.89 F' -4.9492 -4.9366 -4.9243 -4.9122 -4.9003 -4.8886 -4.8772 -4.8660 -4.8550 -  
4.8443  
F'' 7.3935 7.4341 7.4748 7.5155 7.5563 7.5971 7.6380 7.6790 7.7200 7.7611

ATOMIC SYMBOL = GD ATOMIC NUMBER = 64

0.10 TO 0.19 F' -0.6347 -0.6152 -0.6061 -0.6244 -0.6443 -0.6800 -0.7344 -0.8103 -0.9119 -  
1.0451  
F'' 0.7206 0.8562 1.0026 1.1551 1.3138 1.4800 1.6529 1.8316 2.0161 2.2063

0.20 TO 0.29 F' -1.2197 -1.4515 -1.7706 -2.2483 -3.1599 -4.0144 -2.9075 -2.5045 -2.2615 -  
2.0887  
F'' 2.4019 2.6028 2.8086 3.0191 3.2311 0.6168 0.6625 0.7095 0.7580 0.8078

0.30 TO 0.39 F' -1.9548 -1.8451 -1.7519 -1.6705 -1.5979 -1.5370 -1.4770 -1.4241 -1.3724 -  
1.3238  
F'' 0.8590 0.9116 0.9656 1.0209 1.0775 1.1351 1.1939 1.2537 1.3148 1.3771

0.40 TO 0.49 F' -1.2806 -1.2373 -1.1960 -1.1567 -1.1191 -1.0830 -1.0485 -1.0155 -0.9840 -  
0.9537  
F'' 1.4404 1.5049 1.5704 1.6372 1.7050 1.7740 1.8441 1.9151 1.9870 2.0600

0.50 TO 0.59 F' -0.9246 -0.8967 -0.8699 -0.8442 -0.8196 -0.7961 -0.7736 -0.7522 -0.7318 -  
0.7125  
F'' 2.1340 2.2089 2.2849 2.3619 2.4398 2.5187 2.5986 2.6794 2.7611 2.8438

0.60 TO 0.69 F' -0.6941 -0.6769 -0.6606 -0.6455 -0.6313 -0.6183 -0.6063 -0.5954 -0.5856 -  
0.5769  
F'' 2.9274 3.0119 3.0973 3.1837 3.2709 3.3590 3.4479 3.5378 3.6285 3.7201

0.70 TO 0.79 F' -0.5693 -0.5629 -0.5576 -0.5535 -0.5506 -0.5514 -0.5507 -0.5515 -0.5536 -  
0.5609  
F'' 3.8125 3.9057 3.9998 4.0947 4.1905 4.2868 4.3840 4.4820 4.5807 4.6800

0.80 TO 0.89 F' -0.5657 -0.5718 -0.5792 -0.5880 -0.5982 -0.6097 -0.6275 -0.6421 -0.6581 -  
0.6757  
F'' 4.7800 4.8807 4.9822 5.0844 5.1874 5.2910 5.3953 5.5001 5.6055 5.7116

0.90 TO 0.99 F' -0.6948 -0.7155 -0.7377 -0.7615 -0.7870 -0.8142 -0.8431 -0.8738 -0.9062 -  
0.9405  
F'' 5.8184 5.9259 6.0340 6.1427 6.2521 6.3622 6.4729 6.5842 6.6962 6.8087

1.00 TO 1.09 F' -0.9767 -1.0147 -1.0548 -1.0969 -1.1410 -1.1873 -1.2357 -1.2864 -1.3394 -  
1.3948

F'' 6.9219 7.0357 7.1501 7.2651 7.3807 7.4969 7.6137 7.7311 7.8490 7.9675  
 1.10 TO 1.19 F' -1.4526 -1.5129 -1.5758 -1.6414 -1.7102 -1.7814 -1.8556 -1.9329 -2.0134 -  
 2.0971

F'' 8.0866 8.2063 8.3265 8.4472 8.5686 8.6904 8.8128 8.9357 9.0591 9.1831  
 1.20 TO 1.29 F' -2.1844 -2.2789 -2.3736 -2.4722 -2.5748 -2.6818 -2.7933 -2.9096 -3.0310 -  
 3.1577

F'' 9.3076 9.4324 9.5576 9.6833 9.8095 9.9362 10.0633 10.1910 10.3191 10.4477  
 1.30 TO 1.39 F' -3.2902 -3.4287 -3.5731 -3.7253 -3.8853 -4.0551 -4.2329 -4.4211 -4.6213 -  
 4.8360

F'' 10.5768 10.7063 10.8363 10.9669 11.0978 11.2293 11.3612 11.4935 11.6263 11.7595  
 1.40 TO 1.49 F' -5.0637 -5.3064 -5.5689 -5.8571 -6.1787 -6.5482 -6.9963 -7.6169 -10.0387 -  
 8.1726

F'' 11.8908 12.0212 12.1519 12.2829 12.4140 12.5454 12.6770 12.8089 12.9409 11.3235  
 1.50 TO 1.59 F' -8.0903 -8.2056 -8.4342 -8.7683 -9.2386 -9.9583 -11.6047 -11.0290 -10.2240 -  
 9.9124

F'' 11.4531 11.5836 11.7150 11.8472 11.9803 12.1143 12.2491 8.9654 9.0620 9.1589  
 1.60 TO 1.69 F' -9.7809 -9.7527 -9.7991 -9.9086 -9.9337 -10.1703 -10.4872 -10.9085 -11.4805 -  
 12.3058

F'' 9.2561 9.3536 9.4513 9.5492 9.6674 9.7911 9.9173 10.0460 10.1773 10.3111  
 1.70 TO 1.79 F' -13.6879 -18.0046 -14.5777 -12.8627 -11.9253 -11.2778 -10.7828 -10.3825 -10.0464 -  
 9.7569

F'' 10.4476 10.5868 3.6596 3.6939 3.7283 3.7628 3.7975 3.8322 3.8670 3.9020  
 1.80 TO 1.89 F' -9.5028 -9.2765 -9.0726 -8.8872 -8.7172 -8.5605 -8.4198 -8.2845 -8.1579 -  
 8.0391

F'' 3.9370 3.9722 4.0074 4.0428 4.0782 4.1138 4.1494 4.1850 4.2208 4.2567  
 1.90 TO 1.99 F' -7.9271 -7.8213 -7.7210 -7.6259 -7.5353 -7.4490 -7.3665 -7.2877 -7.2121 -  
 7.1396

F'' 4.2926 4.3287 4.3648 4.4011 4.4374 4.4739 4.5104 4.5470 4.5837 4.6205  
 2.00 TO 2.09 F' -7.0699 -7.0029 -6.9384 -6.8762 -6.8162 -6.7582 -6.7022 -6.6479 -6.5955 -  
 6.5446

F'' 4.6574 4.6944 4.7315 4.7687 4.8059 4.8433 4.8807 4.9183 4.9559 4.9936  
 2.10 TO 2.19 F' -6.4953 -6.4475 -6.4010 -6.3559 -6.3121 -6.2694 -6.2279 -6.1876 -6.1482 -  
 6.1099

F'' 5.0314 5.0693 5.1073 5.1453 5.1835 5.2217 5.2600 5.2984 5.3369 5.3755  
 2.20 TO 2.29 F' -6.0726 -6.0362 -6.0007 -5.9660 -5.9322 -5.8992 -5.8670 -5.8355 -5.8047 -  
 5.7754

F'' 5.4142 5.4529 5.4918 5.5307 5.5697 5.6088 5.6480 5.6873 5.7266 5.7660  
 2.30 TO 2.39 F' -5.7460 -5.7173 -5.6891 -5.6616 -5.6347 -5.6083 -5.5881 -5.5630 -5.5383 -  
 5.5142

F'' 5.8055 5.8451 5.8848 5.9245 5.9644 6.0043 6.0442 6.0842 6.1243 6.1644  
 2.40 TO 2.49 F' -5.4906 -5.4674 -5.4488 -5.4266 -5.4057 -5.3844 -5.3636 -5.3432 -5.3232 -  
 5.3035

F'' 6.2047 6.2450 6.2854 6.3258 6.3663 6.4068 6.4474 6.4882 6.5289 6.5698  
 2.50 TO 2.59 F' -5.2843 -5.2655 -5.2470 -5.2289 -5.2111 -5.1937 -5.1766 -5.1599 -5.1435 -  
 5.1274

F'' 6.6107 6.6517 6.6928 6.7339 6.7752 6.8164 6.8578 6.8992 6.9407 6.9823  
 2.60 TO 2.69 F' -5.1117 -5.0962 -5.0810 -5.0662 -5.0516 -5.0374 -5.0234 -5.0097 -4.9963 -  
 4.9831

F'' 7.0240 7.0657 7.1075 7.1493 7.1912 7.2332 7.2753 7.3174 7.3596 7.4019  
 2.70 TO 2.79 F' -4.9702 -4.9576 -4.9452 -4.9331 -4.9212 -4.9096 -4.8983 -4.8871 -4.8762 -  
 4.8656

F'' 7.4442 7.4866 7.5291 7.5716 7.6142 7.6569 7.6996 7.7424 7.7853 7.8282  
 2.80 TO 2.89 F' -4.8552 -4.8450 -4.8350 -4.8253 -4.8158 -4.8065 -4.7974 -4.7885 -4.7799 -  
 4.7714

F''	7.8712	7.9143	7.9574	8.0006	8.0439	8.0872	8.1306	8.1740	8.2176	8.2611
ATOMIC SYMBOL = TB    ATOMIC NUMBER = 65										
0.10 TO 0.19 F'	-0.6680	-0.6515	-0.6605	-0.6727	-0.7003	-0.7461	-0.8135	-0.9061	-1.0296	-1.1924
F''	0.7654	0.9094	1.0642	1.2230	1.3902	1.5652	1.7471	1.9348	2.1287	2.3285
0.20 TO 0.29 F'	-1.4097	-1.7080	-2.1478	-2.9396	-4.6095	-3.0083	-2.5608	-2.3023	-2.1220	-1.9837
F''	2.5340	2.7451	2.9613	3.1802	0.6127	0.6599	0.7086	0.7589	0.8106	0.8638
0.30 TO 0.39 F'	-1.8711	-1.7758	-1.6928	-1.6235	-1.5569	-1.4985	-1.4422	-1.3897	-1.3404	-1.2965
F''	0.9185	0.9747	1.0322	1.0912	1.1512	1.2125	1.2749	1.3387	1.4038	1.4699
0.40 TO 0.49 F'	-1.2526	-1.2108	-1.1709	-1.1328	-1.0963	-1.0614	-1.0280	-0.9960	-0.9655	-0.9363
F''	1.5373	1.6058	1.6756	1.7467	1.8189	1.8923	1.9668	2.0424	2.1188	2.1964
0.50 TO 0.59 F'	-0.9083	-0.8815	-0.8558	-0.8313	-0.8079	-0.7857	-0.7645	-0.7445	-0.7256	-0.7079
F''	2.2750	2.3547	2.4355	2.5173	2.6001	2.6839	2.7687	2.8546	2.9414	3.0292
0.60 TO 0.69 F'	-0.6912	-0.6757	-0.6613	-0.6481	-0.6360	-0.6251	-0.6154	-0.6069	-0.5996	-0.5935
F''	3.1180	3.2078	3.2985	3.3902	3.4828	3.5763	3.6707	3.7661	3.8624	3.9596
0.70 TO 0.79 F'	-0.5885	-0.5849	-0.5849	-0.5840	-0.5845	-0.5862	-0.5931	-0.5978	-0.6039	-0.6115
F''	4.0576	4.1566	4.2563	4.3568	4.4582	4.5604	4.6632	4.7668	4.8712	4.9764
0.80 TO 0.89 F'	-0.6204	-0.6309	-0.6429	-0.6609	-0.6761	-0.6930	-0.7114	-0.7315	-0.7533	-0.7768
F''	5.0824	5.1892	5.2967	5.4048	5.5136	5.6231	5.7333	5.8442	5.9559	6.0682
0.90 TO 0.99 F'	-0.8020	-0.8291	-0.8579	-0.8887	-0.9213	-0.9559	-0.9925	-1.0312	-1.0720	-1.1149
F''	6.1812	6.2950	6.4094	6.5245	6.6403	6.7568	6.8739	6.9917	7.1101	7.2292
1.00 TO 1.09 F'	-1.1600	-1.2075	-1.2572	-1.3094	-1.3641	-1.4213	-1.4811	-1.5436	-1.6098	-1.6780
F''	7.3490	7.4693	7.5903	7.7120	7.8342	7.9571	8.0806	8.2047	8.3294	8.4547
1.10 TO 1.19 F'	-1.7504	-1.8248	-1.9025	-1.9834	-2.0679	-2.1560	-2.2493	-2.3452	-2.4452	-2.5495
F''	8.5806	8.7069	8.8339	8.9614	9.0895	9.2182	9.3474	9.4770	9.6072	9.7380
1.20 TO 1.29 F'	-2.6584	-2.7721	-2.8909	-3.0151	-3.1450	-3.2810	-3.4236	-3.5750	-3.7323	-3.8978
F''	9.8693	10.0011	10.1334	10.2663	10.3997	10.5336	10.6680	10.8030	10.9383	11.0740
1.30 TO 1.39 F'	-4.0725	-4.2571	-4.4530	-4.6614	-4.8843	-5.1241	-5.4175	-5.7012	-6.0156	-6.3727
F''	11.2103	11.3471	11.4843	11.6221	11.7603	11.8990	12.0361	12.1691	12.3022	12.4353
1.40 TO 1.49 F'	-6.7880	-7.3271	-8.3114	-8.3077	-8.0435	-8.1178	-8.3294	-8.6599	-9.1424	-9.9076
F''	12.5707	12.7098	12.8520	11.2452	11.3808	11.5220	11.6673	11.8169	11.9708	12.1292
1.50 TO 1.59 F'	-11.8648	-10.8102	-10.0690	-9.7739	-9.6512	-9.6298	-9.6825	-9.7986	-9.8307	-10.0751
F''	12.2921	8.9261	9.0260	9.1262	9.2267	9.3274	9.4284	9.5297	9.6492	9.7776
1.60 TO 1.69 F'	-10.4037	-10.8431	-11.4481	-12.3359	-13.8941	-25.1836	-13.9990	-12.5145	-11.6514	-11.0416
F''	9.9093	10.0442	10.1825	10.3241	10.4693	3.6560	3.6918	3.7277	3.7638	3.7999
1.70 TO 1.79 F'	-10.5699	-10.1853	-9.8609	-9.5804	-9.3336	-9.1133	-8.9144	-8.7334	-8.5711	-8.4178
F''	3.8362	3.8726	3.9091	3.9457	3.9825	4.0193	4.0563	4.0934	4.1305	4.1677
1.80 TO 1.89 F'	-8.2756	-8.1430	-8.0189	-7.9022	-7.7923	-7.6883	-7.5898	-7.4963	-7.4072	-

7.3223  
F'' 4.2051 4.2425 4.2800 4.3177 4.3554 4.3933 4.4312 4.4693 4.5075 4.5457  
1.90 TO 1.99 F' -7.2412 -7.1635 -7.0891 -7.0177 -6.9491 -6.8831 -6.8195 -6.7582 -6.6991 -  
6.6419  
F'' 4.5841 4.6226 4.6611 4.6998 4.7386 4.7775 4.8164 4.8555 4.8947 4.9340  
2.00 TO 2.09 F' -6.5867 -6.5332 -6.4815 -6.4313 -6.3827 -6.3355 -6.2897 -6.2451 -6.2019 -  
6.1598  
F'' 4.9733 5.0128 5.0524 5.0920 5.1318 5.1717 5.2116 5.2517 5.2918 5.3321  
2.10 TO 2.19 F' -6.1189 -6.0790 -6.0402 -6.0031 -5.9662 -5.9303 -5.8953 -5.8611 -5.8278 -  
5.7952  
F'' 5.3724 5.4128 5.4534 5.4940 5.5347 5.5755 5.6164 5.6574 5.6985 5.7396  
2.20 TO 2.29 F' -5.7634 -5.7323 -5.7020 -5.6723 -5.6433 -5.6200 -5.5924 -5.5653 -5.5389 -  
5.5130  
F'' 5.7809 5.8223 5.8637 5.9052 5.9469 5.9885 6.0303 6.0721 6.1140 6.1560  
2.30 TO 2.39 F' -5.4877 -5.4665 -5.4430 -5.4193 -5.3961 -5.3734 -5.3512 -5.3294 -5.3080 -  
5.2871  
F'' 6.1981 6.2402 6.2825 6.3247 6.3671 6.4096 6.4521 6.4947 6.5374 6.5802  
2.40 TO 2.49 F' -5.2667 -5.2466 -5.2270 -5.2077 -5.1888 -5.1703 -5.1522 -5.1345 -5.1171 -  
5.1000  
F'' 6.6230 6.6660 6.7090 6.7521 6.7953 6.8386 6.8819 6.9253 6.9688 7.0124  
2.50 TO 2.59 F' -5.0833 -5.0670 -5.0509 -5.0352 -5.0199 -5.0048 -4.9900 -4.9755 -4.9614 -  
4.9475  
F'' 7.0561 7.0998 7.1436 7.1875 7.2315 7.2755 7.3196 7.3638 7.4081 7.4524  
2.60 TO 2.69 F' -4.9339 -4.9206 -4.9076 -4.8948 -4.8824 -4.8701 -4.8582 -4.8465 -4.8351 -  
4.8239  
F'' 7.4969 7.5414 7.5859 7.6306 7.6753 7.7201 7.7650 7.8099 7.8549 7.9000  
2.70 TO 2.79 F' -4.8130 -4.8023 -4.7919 -4.7817 -4.7717 -4.7620 -4.7525 -4.7432 -4.7342 -  
4.7254  
F'' 7.9452 7.9904 8.0357 8.0811 8.1265 8.1720 8.2176 8.2633 8.3090 8.3548  
2.80 TO 2.89 F' -4.7168 -4.7084 -4.7003 -4.6923 -4.6846 -4.6771 -4.6698 -4.6627 -4.6558 -  
4.6492  
F'' 8.4007 8.4466 8.4926 8.5387 8.5848 8.6311 8.6773 8.7237 8.7701 8.8166  
ATOMIC SYMBOL = DY ATOMIC NUMBER = 66  
0.10 TO 0.19 F' -0.7036 -0.6908 -0.7064 -0.7254 -0.7620 -0.8194 -0.9020 -1.0143 -1.1643 -  
1.3653  
F'' 0.8122 0.9647 1.1258 1.2930 1.4688 1.6528 1.8438 2.0408 2.2441 2.4536  
0.20 TO 0.29 F' -1.6404 -2.0396 -2.7183 -5.5576 -3.1550 -2.6354 -2.3544 -2.1636 -2.0193 -  
1.9029  
F'' 2.6690 2.8900 3.1161 3.3385 0.6544 0.7047 0.7567 0.8103 0.8654 0.9221  
0.30 TO 0.39 F' -1.8049 -1.7198 -1.6489 -1.5810 -1.5214 -1.4641 -1.4107 -1.3632 -1.3161 -  
1.2715  
F'' 0.9804 1.0402 1.1014 1.1638 1.2275 1.2926 1.3590 1.4267 1.4956 1.5659  
0.40 TO 0.49 F' -1.2291 -1.1887 -1.1501 -1.1132 -1.0779 -1.0441 -1.0118 -0.9810 -0.9516 -  
0.9235  
F'' 1.6375 1.7103 1.7844 1.8598 1.9365 2.0144 2.0936 2.1737 2.2548 2.3371  
0.50 TO 0.59 F' -0.8966 -0.8710 -0.8466 -0.8234 -0.8014 -0.7806 -0.7611 -0.7427 -0.7255 -  
0.7095  
F'' 2.4205 2.5050 2.5906 2.6773 2.7651 2.8539 2.9439 3.0348 3.1268 3.2199  
0.60 TO 0.69 F' -0.6947 -0.6812 -0.6689 -0.6579 -0.6482 -0.6397 -0.6326 -0.6268 -0.6223 -  
0.6213  
F'' 3.3139 3.4090 3.5051 3.6021 3.7002 3.7992 3.8992 4.0002 4.1021 4.2049  
0.70 TO 0.79 F' -0.6197 -0.6195 -0.6207 -0.6268 -0.6312 -0.6370 -0.6443 -0.6532 -0.6637 -  
0.6758  
F'' 4.3085 4.4131 4.5185 4.6247 4.7316 4.8394 4.9481 5.0576 5.1679 5.2791



0.80 TO 0.89 F' -0.6937 -0.7093 -0.7266 -0.7456 -0.7664 -0.7891 -0.8135 -0.8398 -0.8681 -  
0.8984  
F'' 5.3910 5.5035 5.6168 5.7308 5.8457 5.9613 6.0776 6.1947 6.3126 6.4311

0.90 TO 0.99 F' -0.9306 -0.9650 -1.0014 -1.0401 -1.0809 -1.1241 -1.1696 -1.2175 -1.2679 -  
1.3209  
F'' 6.5505 6.6705 6.7912 6.9127 7.0349 7.1577 7.2813 7.4055 7.5305 7.6561

1.00 TO 1.09 F' -1.3765 -1.4348 -1.4960 -1.5600 -1.6276 -1.6978 -1.7725 -1.8492 -1.9294 -  
2.0133  
F'' 7.7823 7.9093 8.0368 8.1651 8.2940 8.4235 8.5536 8.6843 8.8156 8.9475

1.10 TO 1.19 F' -2.1008 -2.1924 -2.2932 -2.3932 -2.4977 -2.6070 -2.7212 -2.8406 -2.9656 -  
3.0966  
F'' 9.0800 9.2131 9.3465 9.4803 9.6146 9.7496 9.8851 10.0211 10.1577 10.2948

1.20 TO 1.29 F' -3.2339 -3.3779 -3.5293 -3.6944 -3.8624 -4.0399 -4.2279 -4.4275 -4.6404 -  
4.8684  
F'' 10.4325 10.5706 10.7093 10.8483 10.9875 11.1273 11.2675 11.4082 11.5493 11.6909

1.30 TO 1.39 F' -5.1142 -5.3905 -5.6840 -6.0117 -6.3882 -6.8433 -7.4669 -9.3851 -8.1669 -  
8.1053  
F'' 11.8330 11.9749 12.1160 12.2574 12.3991 12.5411 12.6835 12.8261 11.2270 11.3539

1.40 TO 1.49 F' -8.2344 -8.4901 -8.8938 -9.5390 -10.9050 -11.0256 -10.0267 -9.6679 -9.5143 -  
9.4732  
F'' 11.4897 11.6395 11.8012 11.9754 12.1624 8.8400 8.9442 9.0489 9.1540 9.2594

1.50 TO 1.59 F' -9.5112 -9.6147 -9.6643 -9.8923 -10.2017 -10.6165 -11.1853 -12.0100 -13.4019 -  
18.0002  
F'' 9.3653 9.4716 9.5846 9.7134 9.8461 9.9827 10.1232 10.2678 10.4165 10.5694

1.60 TO 1.69 F' -14.1821 -12.5222 -11.6067 -10.9725 -10.4872 -10.0942 -9.7640 -9.4795 -9.2297 -  
9.0072  
F'' 3.7007 3.7381 3.7757 3.8133 3.8511 3.8890 3.9271 3.9652 4.0035 4.0419

1.70 TO 1.79 F' -8.8067 -8.6274 -8.4604 -8.3063 -8.1634 -8.0303 -7.9057 -7.7886 -7.6784 -  
7.5742  
F'' 4.0804 4.1190 4.1577 4.1965 4.2355 4.2745 4.3137 4.3529 4.3923 4.4318

1.80 TO 1.89 F' -7.4755 -7.3817 -7.2925 -7.2074 -7.1262 -7.0484 -6.9739 -6.9024 -6.8337 -  
6.7676  
F'' 4.4714 4.5112 4.5510 4.5909 4.6310 4.6712 4.7114 4.7518 4.7923 4.8329

1.90 TO 1.99 F' -6.7039 -6.6426 -6.5833 -6.5261 -6.4708 -6.4172 -6.3654 -6.3152 -6.2664 -  
6.2198  
F'' 4.8736 4.9145 4.9554 4.9964 5.0376 5.0788 5.1202 5.1616 5.2032 5.2449

2.00 TO 2.09 F' -6.1738 -6.1292 -6.0859 -6.0437 -6.0027 -5.9628 -5.9239 -5.8860 -5.8491 -  
5.8131  
F'' 5.2866 5.3285 5.3705 5.4126 5.4547 5.4970 5.5394 5.5819 5.6245 5.6672

2.10 TO 2.19 F' -5.7779 -5.7437 -5.7102 -5.6775 -5.6456 -5.6190 -5.5886 -5.5590 -5.5299 -  
5.5016  
F'' 5.7100 5.7529 5.7958 5.8389 5.8821 5.9254 5.9687 6.0121 6.0556 6.0992

2.20 TO 2.29 F' -5.4738 -5.4499 -5.4234 -5.3975 -5.3721 -5.3473 -5.3237 -5.2999 -5.2766 -  
5.2538  
F'' 6.1429 6.1867 6.2306 6.2745 6.3185 6.3626 6.4068 6.4511 6.4955 6.5400

2.30 TO 2.39 F' -5.2314 -5.2095 -5.1881 -5.1671 -5.1465 -5.1264 -5.1066 -5.0873 -5.0683 -  
5.0498  
F'' 6.5846 6.6292 6.6739 6.7188 6.7637 6.8087 6.8538 6.8989 6.9442 6.9895

2.40 TO 2.49 F' -5.0316 -5.0137 -4.9963 -4.9791 -4.9624 -4.9459 -4.9298 -4.9141 -4.8986 -  
4.8835  
F'' 7.0350 7.0805 7.1261 7.1718 7.2175 7.2634 7.3093 7.3554 7.4015 7.4476

2.50 TO 2.59 F' -4.8687 -4.8541 -4.8399 -4.8260 -4.8124 -4.7990 -4.7860 -4.7732 -4.7607 -  
4.7484  
F'' 7.4939 7.5403 7.5867 7.6332 7.6798 7.7265 7.7732 7.8201 7.8670 7.9140

2.60 TO 2.69 F' -4.7365 -4.7248 -4.7133 -4.7022 -4.6912 -4.6805 -4.6701 -4.6599 -4.6500 -  
4.6403  
F'' 7.9611 8.0082 8.0555 8.1028 8.1501 8.1976 8.2452 8.2928 8.3405 8.3883

2.70 TO 2.79 F' -4.6308 -4.6216 -4.6126 -4.6038 -4.5953 -4.5870 -4.5789 -4.5710 -4.5634 -  
4.5559  
F'' 8.4361 8.4840 8.5320 8.5801 8.6283 8.6765 8.7248 8.7732 8.8216 8.8701

2.80 TO 2.89 F' -4.5487 -4.5417 -4.5349 -4.5283 -4.5220 -4.5158 -4.5098 -4.5041 -4.4985 -  
4.4932  
F'' 8.9187 8.9674 9.0162 9.0650 9.1139 9.1628 9.2118 9.2610 9.3101 9.3594

ATOMIC SYMBOL = HO ATOMIC NUMBER = 67

0.10 TO 0.19 F' -0.7406 -0.7322 -0.7551 -0.7818 -0.8285 -0.8993 -0.9996 -1.1356 -1.3186 -  
1.5692  
F'' 0.8610 1.0224 1.1898 1.3656 1.5502 1.7435 1.9439 2.1505 2.3638 2.5835

0.20 TO 0.29 F' -1.9278 -2.5033 -3.9409 -3.3793 -2.7345 -2.4204 -2.2150 -2.0626 -1.9411 -  
1.8396  
F'' 2.8094 3.0412 3.2699 0.6465 0.6984 0.7520 0.8074 0.8644 0.9231 0.9836

0.30 TO 0.39 F' -1.7519 -1.6790 -1.6094 -1.5484 -1.4899 -1.4355 -1.3871 -1.3392 -1.2938 -  
1.2507  
F'' 1.0456 1.1091 1.1739 1.2401 1.3077 1.3768 1.4473 1.5190 1.5922 1.6668

0.40 TO 0.49 F' -1.2097 -1.1705 -1.1332 -1.0975 -1.0633 -1.0307 -0.9995 -0.9699 -0.9418 -  
0.9150  
F'' 1.7428 1.8201 1.8988 1.9788 2.0601 2.1428 2.2268 2.3118 2.3978 2.4850

0.50 TO 0.59 F' -0.8895 -0.8653 -0.8424 -0.8208 -0.8004 -0.7813 -0.7635 -0.7471 -0.7319 -  
0.7181  
F'' 2.5733 2.6629 2.7536 2.8455 2.9385 3.0326 3.1278 3.2242 3.3216 3.4201

0.60 TO 0.69 F' -0.7056 -0.6944 -0.6847 -0.6763 -0.6693 -0.6637 -0.6615 -0.6590 -0.6580 -  
0.6584  
F'' 3.5197 3.6203 3.7220 3.8248 3.9285 4.0333 4.1391 4.2458 4.3534 4.4620

0.70 TO 0.79 F' -0.6637 -0.6675 -0.6728 -0.6799 -0.6885 -0.6989 -0.7110 -0.7286 -0.7444 -  
0.7620  
F'' 4.5715 4.6818 4.7929 4.9050 5.0180 5.1319 5.2467 5.3623 5.4786 5.5957

0.80 TO 0.89 F' -0.7815 -0.8029 -0.8262 -0.8515 -0.8788 -0.9082 -0.9397 -0.9734 -1.0093 -  
1.0475  
F'' 5.7136 5.8323 5.9519 6.0722 6.1934 6.3154 6.4381 6.5616 6.6859 6.8110

0.90 TO 0.99 F' -1.0881 -1.1311 -1.1765 -1.2245 -1.2752 -1.3285 -1.3846 -1.4437 -1.5057 -  
1.5707  
F'' 6.9368 7.0634 7.1907 7.3187 7.4475 7.5770 7.7072 7.8382 7.9698 8.1021

1.00 TO 1.09 F' -1.6390 -1.7106 -1.7870 -1.8656 -1.9479 -2.0340 -2.1242 -2.2240 -2.3229 -  
2.4265  
F'' 8.2352 8.3689 8.5032 8.6382 8.7738 8.9100 9.0469 9.1845 9.3221 9.4604

1.10 TO 1.19 F' -2.5348 -2.6483 -2.7672 -2.8918 -3.0224 -3.1596 -3.3038 -3.4554 -3.6152 -  
3.7865  
F'' 9.5993 9.7387 9.8788 10.0194 10.1606 10.3024 10.4447 10.5876 10.7311 10.8749

1.20 TO 1.29 F' -3.9650 -4.1543 -4.3556 -4.5705 -4.8011 -5.0502 -5.3282 -5.6268 -5.9612 -  
6.3468  
F'' 11.0192 11.1641 11.3095 11.4553 11.6017 11.7487 11.8958 12.0422 12.1891 12.3363

1.30 TO 1.39 F' -6.8160 -7.4699 -9.6939 -7.9676 -7.9519 -8.1462 -8.4852 -9.0030 -9.8730 -  
14.3099  
F'' 12.4839 12.6319 11.0512 11.2010 11.3606 11.5223 11.6859 11.8517 12.0197 12.1897

1.40 TO 1.49 F' -10.2794 -9.6992 -9.4568 -9.3634 -9.3632 -9.4343 -9.5688 -9.6523 -9.9131 -  
10.2674  
F'' 8.8382 8.9448 9.0517 9.1589 9.2664 9.3741 9.4821 9.6025 9.7356 9.8747

1.50 TO 1.59 F' -10.7487 -11.4287 -12.4860 -14.6623 -15.6885 -12.9781 -11.8333 -11.0998 -10.5596 -  
10.1321

F''	10.0199	10.1712	10.3289	10.4932	3.7013	3.7402	3.7793	3.8184	3.8578	3.8972
1.60 TO 1.69 F'	-9.7785	-9.4770	-9.2145	-8.9821	-8.7737	-8.5875	-8.4153	-8.2568	-8.1102	-7.9739
F''	3.9368	3.9765	4.0163	4.0563	4.0964	4.1366	4.1769	4.2174	4.2580	4.2987
1.70 TO 1.79 F'	-7.8466	-7.7272	-7.6149	-7.5089	-7.4085	-7.3134	-7.2229	-7.1367	-7.0544	-6.9757
F''	4.3395	4.3804	4.4215	4.4627	4.5040	4.5454	4.5869	4.6286	4.6704	4.7123
1.80 TO 1.89 F'	-6.9003	-6.8280	-6.7586	-6.6919	-6.6276	-6.5657	-6.5060	-6.4483	-6.3925	-6.3386
F''	4.7543	4.7965	4.8387	4.8811	4.9236	4.9662	5.0090	5.0518	5.0948	5.1379
1.90 TO 1.99 F'	-6.2864	-6.2358	-6.1867	-6.1397	-6.0935	-6.0486	-6.0051	-5.9627	-5.9214	-5.8813
F''	5.1811	5.2244	5.2678	5.3113	5.3550	5.3987	5.4426	5.4866	5.5306	5.5748
2.00 TO 2.09 F'	-5.8422	-5.8042	-5.7671	-5.7309	-5.6956	-5.6612	-5.6317	-5.5990	-5.5671	-5.5359
F''	5.6192	5.6636	5.7081	5.7527	5.7975	5.8423	5.8873	5.9323	5.9774	6.0226
2.10 TO 2.19 F'	-5.5054	-5.4756	-5.4494	-5.4211	-5.3933	-5.3661	-5.3402	-5.3143	-5.2889	-5.2640
F''	6.0679	6.1133	6.1588	6.2044	6.2501	6.2959	6.3418	6.3878	6.4338	6.4800
2.20 TO 2.29 F'	-5.2397	-5.2159	-5.1925	-5.1697	-5.1474	-5.1255	-5.1040	-5.0831	-5.0625	-5.0424
F''	6.5263	6.5726	6.6191	6.6657	6.7123	6.7591	6.8059	6.8529	6.8999	6.9470
2.30 TO 2.39 F'	-5.0227	-5.0033	-4.9844	-4.9659	-4.9477	-4.9300	-4.9126	-4.8955	-4.8788	-4.8625
F''	6.9943	7.0416	7.0890	7.1365	7.1841	7.2318	7.2796	7.3274	7.3754	7.4235
2.40 TO 2.49 F'	-4.8464	-4.8308	-4.8154	-4.8004	-4.7857	-4.7713	-4.7572	-4.7434	-4.7299	-4.7167
F''	7.4716	7.5198	7.5681	7.6166	7.6651	7.7136	7.7623	7.8111	7.8599	7.9089
2.50 TO 2.59 F'	-4.7038	-4.6912	-4.6788	-4.6667	-4.6550	-4.6434	-4.6322	-4.6212	-4.6105	-4.6000
F''	7.9579	8.0070	8.0562	8.1055	8.1548	8.2043	8.2538	8.3035	8.3532	8.4029
2.60 TO 2.69 F'	-4.5898	-4.5798	-4.5701	-4.5607	-4.5514	-4.5425	-4.5337	-4.5252	-4.5169	-4.5089
F''	8.4528	8.5028	8.5528	8.6029	8.6531	8.7034	8.7538	8.8042	8.8547	8.9053
2.70 TO 2.79 F'	-4.5011	-4.4935	-4.4862	-4.4791	-4.4722	-4.4655	-4.4591	-4.4528	-4.4468	-4.4410
F''	8.9560	9.0068	9.0576	9.1086	9.1596	9.2106	9.2618	9.3130	9.3644	9.4158
2.80 TO 2.89 F'	-4.4354	-4.4300	-4.4249	-4.4199	-4.4152	-4.4106	-4.4063	-4.4022	-4.3982	-4.3945
F''	9.4672	9.5188	9.5704	9.6221	9.6739	9.7257	9.7776	9.8296	9.8817	9.9339
ATOMIC SYMBOL = ER    ATOMIC NUMBER = 68										
0.10 TO 0.19 F'	-0.7810	-0.7918	-0.8083	-0.8438	-0.9021	-0.9887	-1.1106	-1.2749	-1.5002	-1.8191
F''	0.9119	1.0811	1.2560	1.4407	1.6346	1.8375	2.0475	2.2634	2.4865	2.7164
0.20 TO 0.29 F'	-2.3109	-3.3112	-3.7615	-2.8653	-2.5018	-2.2764	-2.1135	-1.9856	-1.8797	-1.7889
F''	2.9527	3.1910	0.6362	0.6896	0.7448	0.8019	0.8608	0.9215	0.9840	1.0483
0.30 TO 0.39 F'	-1.7136	-1.6444	-1.5794	-1.5196	-1.4639	-1.4146	-1.3657	-1.3195	-1.2757	-1.2340
F''	1.1140	1.1812	1.2499	1.3201	1.3919	1.4651	1.5398	1.6159	1.6936	1.7727
0.40 TO 0.49 F'	-1.1943	-1.1565	-1.1204	-1.0859	-1.0530	-1.0217	-0.9918	-0.9635	-0.9368	-0.9114
F''	1.8532	1.9352	2.0186	2.1034	2.1896	2.2772	2.3661	2.4562	2.5472	2.6395
0.50 TO 0.59 F'	-0.8874	-0.8648	-0.8436	-0.8237	-0.8052	-0.7881	-0.7724	-0.7582	-0.7453	-

0.7340  
F'' 2.7331 2.8279 2.9239 3.0211 3.1195 3.2191 3.3198 3.4217 3.5247 3.6289  
0.60 TO 0.69 F' -0.7240 -0.7156 -0.7087 -0.7033 -0.7012 -0.6991 -0.6986 -0.7026 -0.7056 -  
0.7102  
F'' 3.7342 3.8406 3.9481 4.0568 4.1664 4.2770 4.3886 4.5013 4.6148 4.7292  
0.70 TO 0.79 F' -0.7166 -0.7248 -0.7347 -0.7465 -0.7601 -0.7793 -0.7970 -0.8166 -0.8383 -  
0.8620  
F'' 4.8446 4.9610 5.0784 5.1967 5.3160 5.4359 5.5568 5.6785 5.8011 5.9245  
0.80 TO 0.89 F' -0.8879 -0.9159 -0.9461 -0.9786 -1.0135 -1.0507 -1.0904 -1.1326 -1.1775 -  
1.2250  
F'' 6.0489 6.1741 6.3001 6.4270 6.5547 6.6833 6.8126 6.9428 7.0738 7.2055  
0.90 TO 0.99 F' -1.2752 -1.3283 -1.3843 -1.4437 -1.5059 -1.5714 -1.6402 -1.7124 -1.7893 -  
1.8690  
F'' 7.3381 7.4714 7.6055 7.7404 7.8760 8.0124 8.1495 8.2874 8.4260 8.5652  
1.00 TO 1.09 F' -1.9526 -2.0402 -2.1322 -2.2332 -2.3345 -2.4406 -2.5519 -2.6687 -2.7913 -  
2.9201  
F'' 8.7051 8.8458 8.9871 9.1291 9.2714 9.4143 9.5579 9.7021 9.8470 9.9925  
1.10 TO 1.19 F' -3.0554 -3.1978 -3.3477 -3.5059 -3.6731 -3.8495 -4.0373 -4.2371 -4.4507 -  
4.6798  
F'' 10.1386 10.2853 10.4327 10.5806 10.7292 10.8784 11.0281 11.1785 11.3295 11.4810  
1.20 TO 1.29 F' -4.9273 -5.1967 -5.5027 -5.8337 -6.2130 -6.6690 -7.2816 -8.7300 -7.9778 -  
7.9228  
F'' 11.6331 11.7858 11.9373 12.0889 12.2409 12.3932 12.5459 12.6991 11.1346 11.2992  
1.30 TO 1.39 F' -8.1136 -8.4662 -9.0208 -10.0151 -11.8624 -9.9868 -9.5130 -9.3152 -9.2538 -  
9.2870  
F'' 11.4660 11.6349 11.8061 11.9794 8.6996 8.8122 8.9252 9.0387 9.1528 9.2673  
1.40 TO 1.49 F' -9.3823 -9.5328 -9.6710 -9.9368 -10.3022 -10.8095 -11.5484 -12.7633 -15.8372 -  
14.4222  
F'' 9.3755 9.4806 9.5941 9.7211 9.8586 10.0068 10.1659 10.3363 10.5184 3.7302  
1.50 TO 1.59 F' -12.4738 -11.4866 -10.8224 -10.3216 -9.9198 -9.5844 -9.2967 -9.0449 -8.8231 -  
8.6220  
F'' 3.7708 3.8115 3.8523 3.8933 3.9345 3.9757 4.0172 4.0587 4.1004 4.1423  
1.60 TO 1.69 F' -8.4395 -8.2725 -8.1187 -7.9762 -7.8435 -7.7194 -7.6030 -7.4934 -7.3898 -  
7.2918  
F'' 4.1842 4.2263 4.2685 4.3109 4.3534 4.3960 4.4388 4.4816 4.5247 4.5678  
1.70 TO 1.79 F' -7.1987 -7.1102 -7.0258 -6.9452 -6.8681 -6.7942 -6.7234 -6.6553 -6.5899 -  
6.5268  
F'' 4.6111 4.6545 4.6981 4.7418 4.7856 4.8295 4.8736 4.9178 4.9621 5.0065  
1.80 TO 1.89 F' -6.4661 -6.4078 -6.3512 -6.2965 -6.2435 -6.1923 -6.1426 -6.0944 -6.0477 -  
6.0023  
F'' 5.0511 5.0958 5.1406 5.1855 5.2306 5.2758 5.3211 5.3665 5.4121 5.4578  
1.90 TO 1.99 F' -5.9583 -5.9154 -5.8738 -5.8333 -5.7938 -5.7554 -5.7180 -5.6852 -5.6498 -  
5.6152  
F'' 5.5036 5.5495 5.5955 5.6417 5.6879 5.7343 5.7808 5.8275 5.8742 5.9210  
2.00 TO 2.09 F' -5.5815 -5.5486 -5.5165 -5.4846 -5.4571 -5.4273 -5.3981 -5.3703 -5.3424 -  
5.3152  
F'' 5.9679 6.0149 6.0621 6.1093 6.1567 6.2041 6.2516 6.2993 6.3471 6.3949  
2.10 TO 2.19 F' -5.2886 -5.2626 -5.2372 -5.2123 -5.1880 -5.1642 -5.1409 -5.1181 -5.0958 -  
5.0739  
F'' 6.4429 6.4910 6.5392 6.5875 6.6359 6.6844 6.7330 6.7817 6.8305 6.8795  
2.20 TO 2.29 F' -5.0526 -5.0317 -5.0112 -4.9911 -4.9715 -4.9523 -4.9335 -4.9152 -4.8971 -  
4.8795  
F'' 6.9285 6.9776 7.0268 7.0762 7.1256 7.1751 7.2248 7.2745 7.3244 7.3743  
2.30 TO 2.39 F' -4.8623 -4.8454 -4.8289 -4.8127 -4.7969 -4.7815 -4.7663 -4.7515 -4.7371 -

4.7229  
F'' 7.4243 7.4744 7.5247 7.5750 7.6254 7.6759 7.7266 7.7773 7.8281 7.8790  
2.40 TO 2.49 F' -4.7091 -4.6955 -4.6823 -4.6694 -4.6568 -4.6445 -4.6325 -4.6207 -4.6093 -  
4.5981  
F'' 7.9300 7.9811 8.0323 8.0835 8.1349 8.1864 8.2379 8.2896 8.3413 8.3932  
2.50 TO 2.59 F' -4.5872 -4.5766 -4.5662 -4.5561 -4.5463 -4.5368 -4.5275 -4.5184 -4.5096 -  
4.5011  
F'' 8.4451 8.4971 8.5492 8.6014 8.6537 8.7061 8.7585 8.8111 8.8637 8.9165  
2.60 TO 2.69 F' -4.4928 -4.4848 -4.4770 -4.4695 -4.4621 -4.4551 -4.4482 -4.4417 -4.4353 -  
4.4292  
F'' 8.9693 9.0222 9.0752 9.1283 9.1814 9.2347 9.2880 9.3414 9.3949 9.4485  
2.70 TO 2.79 F' -4.4233 -4.4176 -4.4122 -4.4069 -4.4019 -4.3972 -4.3926 -4.3883 -4.3842 -  
4.3803  
F'' 9.5022 9.5560 9.6098 9.6637 9.7177 9.7718 9.8260 9.8803 9.9346 9.9890  
2.80 TO 2.89 F' -4.3767 -4.3780 -4.3748 -4.3718 -4.3690 -4.3664 -4.3641 -4.3619 -4.3600 -  
4.3582  
F'' 10.0435 10.0981 10.1527 10.2073 10.2620 10.3168 10.3717 10.4267 10.4817 10.5368  
ATOMIC SYMBOL = TM ATOMIC NUMBER = 69  
0.10 TO 0.19 F' -0.8242 -0.8420 -0.8658 -0.9112 -0.9828 -1.0875 -1.2354 -1.4349 -1.7158 -  
2.1360  
F'' 0.9650 1.1409 1.3245 1.5182 1.7216 1.9342 2.1539 2.3799 2.6135 2.8544  
0.20 TO 0.29 F' -2.8960 -4.7668 -3.0476 -2.6051 -2.3515 -2.1746 -2.0384 -1.9271 -1.8324 -  
1.7541  
F'' 3.1012 0.6230 0.6778 0.7345 0.7933 0.8539 0.9165 0.9811 1.0475 1.1154  
0.30 TO 0.39 F' -1.6825 -1.6157 -1.5542 -1.4972 -1.4466 -1.3967 -1.3496 -1.3049 -1.2625 -  
1.2221  
F'' 1.1850 1.2561 1.3289 1.4034 1.4794 1.5569 1.6361 1.7168 1.7990 1.8828  
0.40 TO 0.49 F' -1.1837 -1.1471 -1.1122 -1.0790 -1.0474 -1.0174 -0.9890 -0.9622 -0.9370 -  
0.9133  
F'' 1.9682 2.0550 2.1433 2.2332 2.3245 2.4172 2.5114 2.6067 2.7030 2.8007  
0.50 TO 0.59 F' -0.8911 -0.8703 -0.8509 -0.8331 -0.8168 -0.8020 -0.7888 -0.7771 -0.7669 -  
0.7584  
F'' 2.8997 2.9999 3.1014 3.2042 3.3082 3.4135 3.5200 3.6277 3.7365 3.8466  
0.60 TO 0.69 F' -0.7515 -0.7462 -0.7442 -0.7425 -0.7424 -0.7468 -0.7505 -0.7560 -0.7634 -  
0.7727  
F'' 3.9579 4.0703 4.1838 4.2983 4.4140 4.5306 4.6482 4.7669 4.8866 5.0073  
0.70 TO 0.79 F' -0.7839 -0.7971 -0.8157 -0.8331 -0.8527 -0.8744 -0.8983 -0.9245 -0.9530 -  
0.9838  
F'' 5.1291 5.2518 5.3755 5.5000 5.6254 5.7518 5.8791 6.0073 6.1365 6.2665  
0.80 TO 0.89 F' -1.0171 -1.0528 -1.0911 -1.1321 -1.1757 -1.2223 -1.2716 -1.3239 -1.3792 -  
1.4377  
F'' 6.3975 6.5293 6.6620 6.7956 6.9301 7.0654 7.2015 7.3385 7.4764 7.6150  
0.90 TO 0.99 F' -1.4995 -1.5646 -1.6333 -1.7056 -1.7816 -1.8628 -1.9469 -2.0354 -2.1283 -  
2.2259  
F'' 7.7545 7.8947 8.0358 8.1777 8.3203 8.4636 8.6077 8.7525 8.8981 9.0444  
1.00 TO 1.09 F' -2.3336 -2.4414 -2.5547 -2.6737 -2.7989 -2.9306 -3.0693 -3.2155 -3.3698 -  
3.5328  
F'' 9.1910 9.3383 9.4862 9.6348 9.7840 9.9339 10.0845 10.2358 10.3877 10.5402  
1.10 TO 1.19 F' -3.7055 -3.8932 -4.0883 -4.2966 -4.5198 -4.7604 -5.0215 -5.3159 -5.6334 -  
5.9931  
F'' 10.6934 10.8469 11.0009 11.1555 11.3106 11.4664 11.6227 11.7793 11.9348 12.0908  
1.20 TO 1.29 F' -6.4153 -6.9490 -7.7978 -8.1684 -7.8844 -8.0147 -8.3310 -8.8485 -9.7642 -  
12.5214  
F'' 12.2471 12.4039 12.5611 11.0047 11.1733 11.3442 11.5173 11.6929 11.8708 8.6153

1.30 TO 1.39 F' -9.9318 -9.4120 -9.1922 -9.1124 -9.1230 -9.2045 -9.3501 -9.6907 -9.9735 -  
 10.3446  
 F'' 8.7302 8.8455 8.9614 9.0778 9.1946 9.3119 9.4297 9.5397 9.6344 9.7277  
 1.40 TO 1.49 F' -10.7955 -11.4589 -12.6012 -15.5308 -14.3658 -12.3807 -11.3885 -10.7239 -10.2240 -  
 9.8235  
 F'' 9.8584 10.0335 10.2428 10.4879 3.7492 3.7914 3.8338 3.8763 3.9190 3.9618  
 1.50 TO 1.59 F' -9.4896 -9.2033 -8.9542 -8.7320 -8.5323 -8.3511 -8.1853 -8.0327 -7.8913 -  
 7.7597  
 F'' 4.0048 4.0480 4.0913 4.1347 4.1782 4.2220 4.2658 4.3098 4.3540 4.3983  
 1.60 TO 1.69 F' -7.6366 -7.5212 -7.4125 -7.3098 -7.2127 -7.1204 -7.0327 -6.9491 -6.8693 -  
 6.7929  
 F'' 4.4428 4.4873 4.5321 4.5770 4.6220 4.6671 4.7124 4.7579 4.8035 4.8492  
 1.70 TO 1.79 F' -6.7198 -6.6496 -6.5826 -6.5178 -6.4555 -6.3953 -6.3373 -6.2813 -6.2272 -  
 6.1748  
 F'' 4.8950 4.9410 4.9872 5.0334 5.0798 5.1264 5.1730 5.2199 5.2668 5.3139  
 1.80 TO 1.89 F' -6.1241 -6.0750 -6.0274 -5.9812 -5.9364 -5.8928 -5.8505 -5.8094 -5.7694 -  
 5.7337  
 F'' 5.3611 5.4084 5.4559 5.5035 5.5512 5.5991 5.6471 5.6952 5.7435 5.7918  
 1.90 TO 1.99 F' -5.6958 -5.6590 -5.6232 -5.5882 -5.5541 -5.5233 -5.4909 -5.4599 -5.4291 -  
 5.3990  
 F'' 5.8403 5.8889 5.9376 5.9864 6.0353 6.0844 6.1336 6.1828 6.2322 6.2817  
 2.00 TO 2.09 F' -5.3697 -5.3410 -5.3130 -5.2857 -5.2590 -5.2329 -5.2074 -5.1824 -5.1580 -  
 5.1342  
 F'' 6.3314 6.3811 6.4310 6.4810 6.5310 6.5813 6.6316 6.6820 6.7326 6.7832  
 2.10 TO 2.19 F' -5.1109 -5.0881 -5.0658 -5.0440 -5.0227 -5.0019 -4.9815 -4.9615 -4.9420 -  
 4.9230  
 F'' 6.8340 6.8849 6.9359 6.9870 7.0382 7.0896 7.1410 7.1926 7.2442 7.2960  
 2.20 TO 2.29 F' -4.9043 -4.8861 -4.8682 -4.8508 -4.8337 -4.8171 -4.8008 -4.7848 -4.7692 -  
 4.7540  
 F'' 7.3479 7.3999 7.4520 7.5042 7.5565 7.6089 7.6614 7.7141 7.7668 7.8196  
 2.30 TO 2.39 F' -4.7392 -4.7246 -4.7105 -4.6966 -4.6831 -4.6699 -4.6570 -4.6444 -4.6322 -  
 4.6202  
 F'' 7.8726 7.9256 7.9787 8.0320 8.0853 8.1388 8.1923 8.2460 8.2997 8.3536  
 2.40 TO 2.49 F' -4.6086 -4.5973 -4.5862 -4.5755 -4.5650 -4.5548 -4.5449 -4.5353 -4.5260 -  
 4.5169  
 F'' 8.4075 8.4616 8.5157 8.5700 8.6243 8.6788 8.7333 8.7880 8.8427 8.8975  
 2.50 TO 2.59 F' -4.5081 -4.4996 -4.4913 -4.4833 -4.4756 -4.4681 -4.4609 -4.4539 -4.4472 -  
 4.4407  
 F'' 8.9525 9.0075 9.0626 9.1178 9.1731 9.2285 9.2840 9.3396 9.3953 9.4510  
 2.60 TO 2.69 F' -4.4345 -4.4286 -4.4228 -4.4174 -4.4121 -4.4071 -4.4024 -4.3979 -4.3936 -  
 4.3945  
 F'' 9.5069 9.5628 9.6189 9.6750 9.7312 9.7876 9.8440 9.9005 9.9570 10.0137  
 2.70 TO 2.79 F' -4.3907 -4.3872 -4.3838 -4.3808 -4.3779 -4.3753 -4.3729 -4.3707 -4.3688 -  
 4.3670  
 F'' 10.0704 10.1271 10.1839 10.2408 10.2979 10.3549 10.4121 10.4694 10.5267 10.5841  
 2.80 TO 2.89 F' -4.3655 -4.3642 -4.3632 -4.3623 -4.3617 -4.3613 -4.3611 -4.3612 -4.3614 -  
 4.3619  
 F'' 10.6417 10.6992 10.7569 10.8147 10.8725 10.9305 10.9885 11.0465 11.1047 11.1630  
 ATOMIC SYMBOL = YB ATOMIC NUMBER = 70  
 0.10 TO 0.19 F' -0.8703 -0.8957 -0.9280 -0.9846 -1.0712 -1.1960 -1.3765 -1.6215 -1.9799 -  
 2.5710  
 F'' 1.0202 1.2025 1.3950 1.5979 1.8108 2.0334 2.2630 2.4991 2.7433 2.9955  
 0.20 TO 0.29 F' -4.2087 -3.3171 -2.7351 -2.4407 -2.2451 -2.0985 -1.9805 -1.8811 -1.7994 -  
 1.7251

F'' 3.2457 0.6634 0.7216 0.7819 0.8443 0.9088 0.9753 1.0438 1.1140 1.1859  
 0.30 TO 0.39 F' -1.6562 -1.5930 -1.5371 -1.4827 -1.4317 -1.3836 -1.3381 -1.2949 -1.2539 -  
 1.2149  
 F'' 1.2595 1.3349 1.4121 1.4907 1.5711 1.6532 1.7370 1.8224 1.9095 1.9981  
 0.40 TO 0.49 F' -1.1778 -1.1426 -1.1091 -1.0773 -1.0472 -1.0188 -0.9920 -0.9669 -0.9435 -  
 0.9217  
 F'' 2.0884 2.1802 2.2737 2.3687 2.4652 2.5632 2.6628 2.7634 2.8652 2.9684  
 0.50 TO 0.59 F' -0.9014 -0.8826 -0.8655 -0.8500 -0.8362 -0.8240 -0.8135 -0.8047 -0.7976 -  
 0.7923  
 F'' 3.0729 3.1787 3.2859 3.3944 3.5042 3.6153 3.7277 3.8414 3.9563 4.0724  
 0.60 TO 0.69 F' -0.7902 -0.7886 -0.7889 -0.7936 -0.7978 -0.8040 -0.8123 -0.8225 -0.8349 -  
 0.8494  
 F'' 4.1896 4.3081 4.4277 4.5483 4.6700 4.7928 4.9167 5.0417 5.1678 5.2950  
 0.70 TO 0.79 F' -0.8692 -0.8882 -0.9096 -0.9332 -0.9593 -0.9877 -1.0187 -1.0523 -1.0885 -  
 1.1274  
 F'' 5.4230 5.5521 5.6821 5.8131 5.9451 6.0781 6.2121 6.3470 6.4829 6.6197  
 0.80 TO 0.89 F' -1.1692 -1.2138 -1.2613 -1.3120 -1.3658 -1.4228 -1.4832 -1.5472 -1.6147 -  
 1.6861  
 F'' 6.7574 6.8961 7.0357 7.1762 7.3175 7.4598 7.6029 7.7470 7.8918 8.0375  
 0.90 TO 0.99 F' -1.7613 -1.8414 -1.9250 -2.0130 -2.1057 -2.2033 -2.3103 -2.4185 -2.5324 -  
 2.6523  
 F'' 8.1841 8.3315 8.4797 8.6286 8.7784 8.9290 9.0801 9.2318 9.3842 9.5374  
 1.00 TO 1.09 F' -2.7786 -2.9117 -3.0522 -3.2005 -3.3573 -3.5233 -3.6995 -3.8899 -4.0898 -  
 4.3038  
 F'' 9.6913 9.8459 10.0012 10.1573 10.3140 10.4714 10.6296 10.7883 10.9475 11.1073  
 1.10 TO 1.19 F' -4.5338 -4.7825 -5.0535 -5.3629 -5.6963 -6.0778 -6.5337 -7.1366 -8.3625 -  
 7.9664  
 F'' 11.2678 11.4289 11.5906 11.7522 11.9126 12.0733 12.2345 12.3961 12.5580 11.0215  
 1.20 TO 1.29 F' -7.9125 -8.1386 -8.5639 -9.2885 -11.1883 -10.1630 -9.4325 -9.1431 -9.0258 -  
 9.0105  
 F'' 11.1959 11.3727 11.5519 11.7336 11.9178 8.6383 8.7574 8.8770 8.9972 9.1179  
 1.30 TO 1.39 F' -9.0711 -9.1977 -9.3986 -9.5113 -9.8683 -10.3517 -11.0294 -12.0764 -14.2011 -  
 15.3624  
 F'' 9.2392 9.3609 9.4831 9.6323 9.7882 9.9474 10.1101 10.2762 10.4459 3.7542  
 1.40 TO 1.49 F' -12.6373 -11.5043 -10.7814 -10.2503 -9.8306 -9.4839 -9.1885 -8.9323 -8.7050 -  
 8.5014  
 F'' 3.7981 3.8421 3.8863 3.9306 3.9751 4.0197 4.0645 4.1095 4.1546 4.1999  
 1.50 TO 1.59 F' -8.3171 -8.1488 -7.9941 -7.8511 -7.7181 -7.5939 -7.4775 -7.3681 -7.2648 -  
 7.1671  
 F'' 4.2454 4.2910 4.3367 4.3827 4.4287 4.4750 4.5214 4.5679 4.6146 4.6615  
 1.60 TO 1.69 F' -7.0744 -6.9863 -6.9024 -6.8223 -6.7458 -6.6725 -6.6022 -6.5351 -6.4702 -  
 6.4078  
 F'' 4.7085 4.7556 4.8029 4.8504 4.8980 4.9457 4.9936 5.0417 5.0899 5.1382  
 1.70 TO 1.79 F' -6.3477 -6.2897 -6.2338 -6.1797 -6.1274 -6.0768 -6.0277 -5.9802 -5.9342 -  
 5.8895  
 F'' 5.1867 5.2353 5.2841 5.3330 5.3821 5.4313 5.4806 5.5301 5.5798 5.6295  
 1.80 TO 1.89 F' -5.8461 -5.8039 -5.7657 -5.7259 -5.6872 -5.6496 -5.6130 -5.5773 -5.5446 -  
 5.5108  
 F'' 5.6794 5.7295 5.7797 5.8299 5.8804 5.9309 5.9816 6.0324 6.0833 6.1344  
 1.90 TO 1.99 F' -5.4779 -5.4457 -5.4144 -5.3844 -5.3546 -5.3255 -5.2971 -5.2694 -5.2424 -  
 5.2159  
 F'' 6.1856 6.2369 6.2883 6.3399 6.3916 6.4434 6.4953 6.5474 6.5996 6.6519  
 2.00 TO 2.09 F' -5.1901 -5.1649 -5.1402 -5.1162 -5.0926 -5.0697 -5.0472 -5.0252 -5.0038 -  
 4.9828

F''	6.7043	6.7569	6.8096	6.8624	6.9153	6.9684	7.0215	7.0748	7.1282	7.1818
2.10 TO 2.19 F'	-4.9623	-4.9423	-4.9227	-4.9036	-4.8849	-4.8666	-4.8488	-4.8314	-4.8143	-4.7977
F''	7.2354	7.2892	7.3431	7.3971	7.4512	7.5054	7.5598	7.6142	7.6688	7.7235
2.20 TO 2.29 F'	-4.7815	-4.7656	-4.7501	-4.7350	-4.7202	-4.7058	-4.6918	-4.6781	-4.6648	-4.6517
F''	7.7783	7.8332	7.8883	7.9434	7.9987	8.0540	8.1095	8.1651	8.2208	8.2766
2.30 TO 2.39 F'	-4.6391	-4.6267	-4.6147	-4.6030	-4.5916	-4.5805	-4.5697	-4.5593	-4.5491	-4.5393
F''	8.3325	8.3886	8.4447	8.5009	8.5573	8.6138	8.6703	8.7270	8.7838	8.8406
2.40 TO 2.49 F'	-4.5297	-4.5204	-4.5114	-4.5027	-4.4943	-4.4862	-4.4783	-4.4708	-4.4634	-4.4564
F''	8.8976	8.9547	9.0119	9.0692	9.1266	9.1841	9.2417	9.2994	9.3572	9.4151
2.50 TO 2.59 F'	-4.4497	-4.4432	-4.4369	-4.4310	-4.4253	-4.4199	-4.4147	-4.4098	-4.4051	-4.4054
F''	9.4732	9.5313	9.5895	9.6478	9.7062	9.7647	9.8233	9.8820	9.9408	9.9996
2.60 TO 2.69 F'	-4.4013	-4.3974	-4.3938	-4.3904	-4.3873	-4.3844	-4.3817	-4.3793	-4.3772	-4.3753
F''	10.0585	10.1175	10.1766	10.2358	10.2950	10.3544	10.4138	10.4734	10.5330	10.5928
2.70 TO 2.79 F'	-4.3736	-4.3722	-4.3710	-4.3700	-4.3693	-4.3688	-4.3685	-4.3685	-4.3685	-4.3691
F''	10.6526	10.7125	10.7725	10.8326	10.8928	10.9530	11.0134	11.0738	11.1344	11.1950
2.80 TO 2.89 F'	-4.3698	-4.3707	-4.3719	-4.3732	-4.3748	-4.3767	-4.3915	-4.3939	-4.3965	-4.3993
F''	11.2557	11.3165	11.3774	11.4384	11.4995	11.5606	11.6217	11.6827	11.7439	11.8051
ATOMIC SYMBOL = LU ATOMIC NUMBER = 71										
0.10 TO 0.19 F'	-0.9337	-0.9527	-0.9945	-1.0640	-1.1684	-1.3182	-1.5365	-1.8416	-2.3183	-3.2933
F''	1.0760	1.2664	1.4682	1.6808	1.9039	2.1370	2.3754	2.6225	2.8785	3.1380
0.20 TO 0.29 F'	-3.8000	-2.9061	-2.5486	-2.3271	-2.1667	-2.0403	-1.9352	-1.8492	-1.7718	-1.7003
F''	0.6461	0.7056	0.7674	0.8314	0.8976	0.9660	1.0365	1.1089	1.1831	1.2590
0.30 TO 0.39 F'	-1.6351	-1.5774	-1.5216	-1.4693	-1.4201	-1.3736	-1.3296	-1.2878	-1.2482	-1.2106
F''	1.3370	1.4168	1.4982	1.5815	1.6665	1.7533	1.8419	1.9322	2.0242	2.1179
0.40 TO 0.49 F'	-1.1749	-1.1411	-1.1091	-1.0789	-1.0505	-1.0238	-0.9989	-0.9758	-0.9544	-0.9347
F''	2.2133	2.3104	2.4091	2.5094	2.6114	2.7149	2.8200	2.9262	3.0336	3.1424
0.50 TO 0.59 F'	-0.9167	-0.9004	-0.8859	-0.8731	-0.8621	-0.8530	-0.8457	-0.8402	-0.8379	-0.8365
F''	3.2527	3.3643	3.4773	3.5917	3.7075	3.8246	3.9430	4.0627	4.1837	4.3059
0.60 TO 0.69 F'	-0.8391	-0.8418	-0.8466	-0.8535	-0.8625	-0.8737	-0.8872	-0.9029	-0.9240	-0.9446
F''	4.4293	4.5538	4.6795	4.8064	4.9344	5.0636	5.1940	5.3254	5.4578	5.5913
0.70 TO 0.79 F'	-0.9677	-0.9933	-1.0215	-1.0524	-1.0859	-1.1223	-1.1615	-1.2037	-1.2489	-1.2973
F''	5.7258	5.8614	5.9980	6.1356	6.2743	6.4140	6.5547	6.6964	6.8391	6.9827
0.80 TO 0.89 F'	-1.3489	-1.4039	-1.4623	-1.5244	-1.5901	-1.6598	-1.7334	-1.8113	-1.8944	-1.9812
F''	7.1273	7.2729	7.4194	7.5668	7.7151	7.8644	8.0145	8.1656	8.3175	8.4702
0.90 TO 0.99 F'	-2.0728	-2.1695	-2.2714	-2.3835	-2.4970	-2.6166	-2.7428	-2.8760	-3.0172	-3.1661
F''	8.6238	8.7782	8.9335	9.0892	9.2455	9.4027	9.5607	9.7194	9.8788	10.0390
1.00 TO 1.09 F'	-3.3237	-3.4909	-3.6686	-3.8578	-4.0633	-4.2802	-4.5137	-4.7669	-5.0434	-5.3361



5.3580  
 F'' 10.2000 10.3617 10.5241 10.6873 10.8509 11.0151 11.1800 11.3455 11.5117 11.6780  
 1.10 TO 1.19 F' -5.7008 -6.0957 -6.5734 -7.2241 -9.1965 -7.8864 -7.9207 -8.2110 -8.7326 -  
 9.7142  
 F'' 11.8433 12.0090 12.1752 12.3418 12.5089 10.9885 11.1700 11.3542 11.5411 11.7308  
 1.20 TO 1.29 F' -11.3829 -9.6272 -9.1630 -8.9656 -8.8997 -8.9213 -9.0130 -9.1791 -9.2377 -  
 9.5426  
 F'' 8.5047 8.6269 8.7496 8.8729 8.9968 9.1212 9.2462 9.3717 9.5034 9.6647  
 1.30 TO 1.39 F' -9.9553 -10.5221 -11.3511 -12.7605 -17.7754 -13.4348 -11.8633 -10.9904 -10.3857 -  
 9.9244  
 F'' 9.8299 9.9990 10.1721 10.3493 10.5306 3.7914 3.8375 3.8838 3.9303 3.9770  
 1.40 TO 1.49 F' -9.5498 -9.2340 -8.9622 -8.7236 -8.5110 -8.3196 -8.1455 -7.9861 -7.8391 -  
 7.7028  
 F'' 4.0234 4.0699 4.1165 4.1633 4.2102 4.2574 4.3047 4.3521 4.3998 4.4476  
 1.50 TO 1.59 F' -7.5759 -7.4571 -7.3456 -7.2405 -7.1413 -7.0473 -6.9581 -6.8732 -6.7922 -  
 6.7149  
 F'' 4.4956 4.5437 4.5920 4.6405 4.6891 4.7379 4.7868 4.8359 4.8852 4.9347  
 1.60 TO 1.69 F' -6.6410 -6.5705 -6.5025 -6.4373 -6.3745 -6.3141 -6.2559 -6.1997 -6.1454 -  
 6.0930  
 F'' 4.9843 5.0340 5.0839 5.1340 5.1842 5.2346 5.2851 5.3358 5.3866 5.4376  
 1.70 TO 1.79 F' -6.0423 -5.9932 -5.9457 -5.8996 -5.8549 -5.8138 -5.7718 -5.7310 -5.6913 -  
 5.6528  
 F'' 5.4888 5.5401 5.5915 5.6431 5.6949 5.7468 5.7988 5.8509 5.9032 5.9557  
 1.80 TO 1.89 F' -5.6153 -5.5805 -5.5450 -5.5105 -5.4775 -5.4447 -5.4128 -5.3817 -5.3514 -  
 5.3219  
 F'' 6.0082 6.0609 6.1138 6.1668 6.2199 6.2731 6.3265 6.3800 6.4337 6.4875  
 1.90 TO 1.99 F' -5.2931 -5.2650 -5.2375 -5.2107 -5.1846 -5.1591 -5.1342 -5.1099 -5.0862 -  
 5.0631  
 F'' 6.5414 6.5955 6.6497 6.7040 6.7585 6.8131 6.8678 6.9227 6.9777 7.0328  
 2.00 TO 2.09 F' -5.0404 -5.0184 -4.9968 -4.9757 -4.9552 -4.9351 -4.9155 -4.8964 -4.8777 -  
 4.8595  
 F'' 7.0881 7.1434 7.1989 7.2546 7.3103 7.3662 7.4222 7.4784 7.5346 7.5910  
 2.10 TO 2.19 F' -4.8417 -4.8244 -4.8074 -4.7909 -4.7748 -4.7591 -4.7437 -4.7288 -4.7142 -  
 4.7000  
 F'' 7.6475 7.7042 7.7609 7.8178 7.8748 7.9319 7.9891 8.0465 8.1040 8.1616  
 2.20 TO 2.29 F' -4.6862 -4.6728 -4.6597 -4.6469 -4.6345 -4.6225 -4.6108 -4.5994 -4.5884 -  
 4.5777  
 F'' 8.2193 8.2771 8.3351 8.3931 8.4513 8.5096 8.5680 8.6266 8.6852 8.7440  
 2.30 TO 2.39 F' -4.5673 -4.5572 -4.5474 -4.5380 -4.5289 -4.5200 -4.5115 -4.5033 -4.4954 -  
 4.4878  
 F'' 8.8028 8.8618 8.9209 8.9801 9.0394 9.0989 9.1584 9.2181 9.2778 9.3377  
 2.40 TO 2.49 F' -4.4804 -4.4734 -4.4666 -4.4602 -4.4540 -4.4481 -4.4425 -4.4371 -4.4321 -  
 4.4318  
 F'' 9.3977 9.4577 9.5179 9.5782 9.6386 9.6991 9.7598 9.8205 9.8813 9.9422  
 2.50 TO 2.59 F' -4.4273 -4.4231 -4.4192 -4.4155 -4.4121 -4.4090 -4.4061 -4.4035 -4.4011 -  
 4.3990  
 F'' 10.0032 10.0642 10.1254 10.1866 10.2479 10.3094 10.3709 10.4326 10.4943 10.5562  
 2.60 TO 2.69 F' -4.3972 -4.3956 -4.3943 -4.3932 -4.3924 -4.3919 -4.3916 -4.3915 -4.3917 -  
 4.3922  
 F'' 10.6181 10.6801 10.7423 10.8045 10.8668 10.9293 10.9918 11.0544 11.1171 11.1799  
 2.70 TO 2.79 F' -4.3929 -4.3938 -4.3950 -4.3965 -4.4109 -4.4129 -4.4152 -4.4177 -4.4205 -  
 4.4235  
 F'' 11.2428 11.3058 11.3689 11.4321 11.4954 11.5585 11.6217 11.6850 11.7484 11.8118  
 2.80 TO 2.89 F' -4.4267 -4.4302 -4.4339 -4.4378 -4.4420 -4.4465 -4.4512 -4.4561 -4.4612 -

4.4666  
F'' 11.8754 11.9390 12.0028 12.0666 12.1305 12.1945 12.2585 12.3227 12.3869 12.4513  
ATOMIC SYMBOL = HF ATOMIC NUMBER = 72  
0.10 TO 0.19 F' -0.9856 -1.0124 -1.0651 -1.1497 -1.2753 -1.4608 -1.7210 -2.1128 -2.8003 -  
5.9562  
F'' 1.1329 1.3325 1.5439 1.7667 2.0004 2.2432 2.4930 2.7515 3.0181 0.6265  
0.20 TO 0.29 F' -3.1418 -2.6786 -2.4206 -2.2423 -2.1055 -1.9937 -1.9026 -1.8216 -1.7474 -  
1.6799  
F'' 0.6873 0.7504 0.8160 0.8839 0.9541 1.0267 1.1013 1.1777 1.2562 1.3366  
0.30 TO 0.39 F' -1.6204 -1.5630 -1.5094 -1.4591 -1.4117 -1.3668 -1.3244 -1.2843 -1.2462 -  
1.2102  
F'' 1.4191 1.5033 1.5895 1.6776 1.7675 1.8593 1.9530 2.0484 2.1456 2.2447  
0.40 TO 0.49 F' -1.1761 -1.1440 -1.1138 -1.0854 -1.0590 -1.0344 -1.0118 -0.9911 -0.9720 -  
0.9549  
F'' 2.3454 2.4480 2.5522 2.6581 2.7657 2.8750 2.9859 3.0980 3.2113 3.3261  
0.50 TO 0.59 F' -0.9396 -0.9261 -0.9146 -0.9050 -0.8974 -0.8927 -0.8893 -0.8879 -0.8905 -  
0.8936  
F'' 3.4424 3.5601 3.6793 3.7999 3.9219 4.0454 4.1701 4.2962 4.4236 4.5521  
0.60 TO 0.69 F' -0.8989 -0.9065 -0.9163 -0.9285 -0.9431 -0.9627 -0.9825 -1.0049 -1.0299 -  
1.0576  
F'' 4.6820 4.8130 4.9454 5.0789 5.2137 5.3497 5.4866 5.6247 5.7639 5.9043  
0.70 TO 0.79 F' -1.0881 -1.1215 -1.1578 -1.1972 -1.2397 -1.2854 -1.3344 -1.3868 -1.4429 -  
1.5026  
F'' 6.0458 6.1884 6.3320 6.4767 6.6225 6.7694 6.9173 7.0662 7.2161 7.3670  
0.80 TO 0.89 F' -1.5661 -1.6336 -1.7052 -1.7811 -1.8615 -1.9471 -2.0371 -2.1322 -2.2328 -  
2.3437  
F'' 7.5190 7.6719 7.8258 7.9806 8.1365 8.2932 8.4508 8.6094 8.7689 8.9291  
0.90 TO 0.99 F' -2.4561 -2.5749 -2.7003 -2.8330 -2.9734 -3.1221 -3.2799 -3.4474 -3.6256 -  
3.8158  
F'' 9.0899 9.2514 9.4138 9.5771 9.7411 9.9060 10.0716 10.2381 10.4053 10.5733  
1.00 TO 1.09 F' -4.0208 -4.2393 -4.4750 -4.7309 -5.0109 -5.3323 -5.6807 -6.0829 -6.5712 -  
7.2421  
F'' 10.7421 10.9114 11.0816 11.2524 11.4240 11.5958 11.7658 11.9363 12.1073 12.2787  
1.10 TO 1.19 F' -11.1884 -7.8771 -7.9545 -8.2964 -8.9198 -10.3176 -10.2408 -9.3193 -8.9820 -  
8.8416  
F'' 10.7645 10.9497 11.1383 11.3299 11.5245 11.7222 8.4895 8.6161 8.7433 8.8711  
1.20 TO 1.29 F' -8.8120 -8.8715 -8.9896 -9.1725 -9.2717 -9.6175 -10.0876 -10.7478 -11.7605 -  
13.7634  
F'' 8.9995 9.1286 9.2580 9.3880 9.5320 9.6981 9.8682 10.0422 10.2204 10.4028  
1.30 TO 1.39 F' -15.4210 -12.4905 -11.3381 -10.6124 -10.0826 -9.6657 -9.3329 -9.0413 -8.7881 -  
8.5646  
F'' 3.7821 3.8299 3.8778 3.9260 3.9744 4.0230 4.0718 4.1206 4.1697 4.2189  
1.40 TO 1.49 F' -8.3643 -8.1830 -8.0176 -7.8657 -7.7253 -7.5949 -7.4733 -7.3594 -7.2523 -  
7.1513  
F'' 4.2680 4.3172 4.3665 4.4161 4.4658 4.5157 4.5657 4.6160 4.6664 4.7170  
1.50 TO 1.59 F' -7.0559 -6.9654 -6.8796 -6.7978 -6.7198 -6.6453 -6.5740 -6.5057 -6.4402 -  
6.3772  
F'' 4.7678 4.8187 4.8699 4.9212 4.9726 5.0243 5.0761 5.1281 5.1802 5.2325  
1.60 TO 1.69 F' -6.3166 -6.2583 -6.2021 -6.1479 -6.0956 -6.0450 -5.9961 -5.9505 -5.9048 -  
5.8605  
F'' 5.2850 5.3377 5.3905 5.4435 5.4967 5.5500 5.6035 5.6571 5.7109 5.7648  
1.70 TO 1.79 F' -5.8175 -5.7759 -5.7355 -5.6975 -5.6599 -5.6230 -5.5870 -5.5521 -5.5182 -  
5.4851  
F'' 5.8189 5.8732 5.9276 5.9821 6.0368 6.0916 6.1466 6.2018 6.2571 6.3125

1.80 TO 1.89 F' -5.4530 -5.4217 -5.3912 -5.3615 -5.3326 -5.3045 -5.2770 -5.2503 -5.2243 -  
5.1989  
F'' 6.3681 6.4239 6.4798 6.5358 6.5920 6.6483 6.7048 6.7614 6.8182 6.8751

1.90 TO 1.99 F' -5.1741 -5.1500 -5.1265 -5.1036 -5.0813 -5.0595 -5.0382 -5.0175 -4.9974 -  
4.9777  
F'' 6.9322 6.9894 7.0467 7.1042 7.1618 7.2196 7.2774 7.3355 7.3936 7.4520

2.00 TO 2.09 F' -4.9586 -4.9399 -4.9217 -4.9040 -4.8867 -4.8699 -4.8536 -4.8377 -4.8222 -  
4.8071  
F'' 7.5104 7.5690 7.6277 7.6865 7.7455 7.8046 7.8639 7.9233 7.9828 8.0424

2.10 TO 2.19 F' -4.7924 -4.7782 -4.7644 -4.7509 -4.7378 -4.7252 -4.7129 -4.7009 -4.6894 -  
4.6782  
F'' 8.1022 8.1621 8.2221 8.2823 8.3426 8.4030 8.4635 8.5242 8.5850 8.6459

2.20 TO 2.29 F' -4.6674 -4.6569 -4.6468 -4.6370 -4.6276 -4.6185 -4.6097 -4.6013 -4.5932 -  
4.5854  
F'' 8.7070 8.7681 8.8294 8.8908 8.9524 9.0140 9.0758 9.1377 9.1998 9.2619

2.30 TO 2.39 F' -4.5780 -4.5709 -4.5641 -4.5576 -4.5514 -4.5456 -4.5400 -4.5348 -4.5298 -  
4.5294  
F'' 9.3242 9.3866 9.4491 9.5117 9.5744 9.6373 9.7002 9.7633 9.8265 9.8898

2.40 TO 2.49 F' -4.5251 -4.5211 -4.5174 -4.5140 -4.5109 -4.5080 -4.5055 -4.5032 -4.5012 -  
4.4995  
F'' 9.9531 10.0166 10.0801 10.1438 10.2076 10.2715 10.3355 10.3996 10.4638 10.5281

2.50 TO 2.59 F' -4.4981 -4.4970 -4.4962 -4.4956 -4.4953 -4.4953 -4.4956 -4.4961 -4.4970 -  
4.4980  
F'' 10.5926 10.6571 10.7218 10.7865 10.8514 10.9164 10.9815 11.0467 11.1119 11.1773

2.60 TO 2.69 F' -4.4994 -4.5011 -4.5030 -4.5175 -4.5200 -4.5228 -4.5259 -4.5292 -4.5328 -  
4.5367  
F'' 11.2428 11.3084 11.3741 11.4397 11.5054 11.5711 11.6370 11.7029 11.7689 11.8351

2.70 TO 2.79 F' -4.5408 -4.5452 -4.5499 -4.5548 -4.5600 -4.5654 -4.5711 -4.5771 -4.5833 -  
4.5898  
F'' 11.9013 11.9676 12.0341 12.1006 12.1672 12.2339 12.3007 12.3676 12.4346 12.5017

2.80 TO 2.89 F' -4.5966 -4.6036 -4.6109 -4.6184 -4.6262 -4.6343 -4.6426 -4.6512 -4.6600 -  
4.6691  
F'' 12.5688 12.6361 12.7035 12.7709 12.8385 12.9061 12.9738 13.0416 13.1095 13.1775

ATOMIC SYMBOL = TA ATOMIC NUMBER = 73

0.10 TO 0.19 F' -1.0418 -1.0775 -1.1425 -1.2445 -1.3950 -1.6183 -1.9411 -2.4633 -3.6713 -  
3.5317  
F'' 1.1918 1.4008 1.6222 1.8554 2.1000 2.3522 2.6131 2.8831 3.1545 0.6657

0.20 TO 0.29 F' -2.8493 -2.5346 -2.3314 -2.1808 -2.0603 -1.9628 -1.8773 -1.7997 -1.7294 -  
1.6676  
F'' 0.7300 0.7969 0.8664 0.9383 1.0127 1.0893 1.1679 1.2487 1.3316 1.4167

0.30 TO 0.39 F' -1.6083 -1.5531 -1.5013 -1.4526 -1.4066 -1.3632 -1.3222 -1.2834 -1.2468 -  
1.2122  
F'' 1.5037 1.5927 1.6837 1.7767 1.8718 1.9687 2.0676 2.1685 2.2712 2.3757

0.40 TO 0.49 F' -1.1797 -1.1492 -1.1207 -1.0943 -1.0698 -1.0475 -1.0273 -1.0090 -0.9925 -  
0.9781  
F'' 2.4821 2.5904 2.7004 2.8122 2.9258 3.0411 3.1582 3.2764 3.3958 3.5168

0.50 TO 0.59 F' -0.9656 -0.9552 -0.9470 -0.9408 -0.9376 -0.9359 -0.9381 -0.9412 -0.9466 -  
0.9545  
F'' 3.6393 3.7633 3.8889 4.0159 4.1443 4.2742 4.4055 4.5380 4.6719 4.8071

0.60 TO 0.69 F' -0.9648 -0.9776 -0.9930 -1.0133 -1.0341 -1.0578 -1.0843 -1.1137 -1.1462 -  
1.1817  
F'' 4.9436 5.0815 5.2206 5.3610 5.5025 5.6452 5.7891 5.9342 6.0805 6.2279

0.70 TO 0.79 F' -1.2204 -1.2624 -1.3077 -1.3566 -1.4090 -1.4652 -1.5253 -1.5894 -1.6577 -  
1.7303

F'' 6.3765 6.5262 6.6770 6.8290 6.9821 7.1362 7.2914 7.4477 7.6051 7.7634  
 0.80 TO 0.89 F' -1.8076 -1.8895 -1.9769 -2.0691 -2.1667 -2.2701 -2.3832 -2.4992 -2.6220 -  
 2.7521

F'' 7.9228 8.0833 8.2447 8.4070 8.5704 8.7347 8.8998 9.0656 9.2323 9.3999  
 0.90 TO 0.99 F' -2.8901 -3.0364 -3.1917 -3.3570 -3.5331 -3.7211 -3.9224 -4.1406 -4.3743 -  
 4.6280

F'' 9.5684 9.7378 9.9080 10.0791 10.2510 10.4238 10.5974 10.7718 10.9468 11.1227  
 1.00 TO 1.09 F' -4.9056 -5.2127 -5.5705 -5.9671 -6.4444 -7.0830 -8.5726 -7.9445 -7.9884 -  
 8.3219

F'' 11.2993 11.4767 11.6521 11.8273 12.0031 12.1793 12.3559 10.8543 11.0272 11.2012  
 1.10 TO 1.19 F' -8.9518 -10.5084 -9.9255 -9.1500 -8.8510 -8.7297 -8.7215 -8.7815 -8.9097 -  
 9.1047

F'' 11.3760 11.5519 8.4419 8.5722 8.7032 8.8349 8.9672 9.0999 9.2333 9.3674  
 1.20 TO 1.29 F' -9.2143 -9.5786 -10.0770 -10.7868 -11.9107 -14.4151 -14.2575 -12.0699 -11.0489 -  
 10.3793

F'' 9.5164 9.6886 9.8651 10.0459 10.2313 10.4212 3.8092 3.8588 3.9086 3.9587  
 1.30 TO 1.39 F' -9.8812 -9.4956 -9.1668 -8.8862 -8.6416 -8.4250 -8.2309 -8.0553 -7.8953 -  
 7.7487

F'' 4.0090 4.0593 4.1099 4.1606 4.2116 4.2628 4.3142 4.3658 4.4177 4.4698  
 1.40 TO 1.49 F' -7.6124 -7.4851 -7.3663 -7.2550 -7.1502 -7.0514 -6.9580 -6.8693 -6.7851 -  
 6.7050

F'' 4.5217 4.5737 4.6258 4.6782 4.7307 4.7835 4.8364 4.8895 4.9428 4.9962  
 1.50 TO 1.59 F' -6.6285 -6.5554 -6.4854 -6.4184 -6.3541 -6.2923 -6.2328 -6.1756 -6.1204 -  
 6.0672

F'' 5.0499 5.1038 5.1578 5.2120 5.2664 5.3210 5.3757 5.4307 5.4858 5.5411  
 1.60 TO 1.69 F' -6.0170 -5.9675 -5.9195 -5.8732 -5.8286 -5.7860 -5.7439 -5.7031 -5.6635 -  
 5.6251

F'' 5.5965 5.6521 5.7079 5.7639 5.8200 5.8763 5.9328 5.9894 6.0462 6.1032  
 1.70 TO 1.79 F' -5.5878 -5.5515 -5.5163 -5.4821 -5.4488 -5.4164 -5.3849 -5.3543 -5.3245 -  
 5.2955

F'' 6.1603 6.2176 6.2750 6.3326 6.3904 6.4483 6.5064 6.5647 6.6231 6.6816  
 1.80 TO 1.89 F' -5.2672 -5.2397 -5.2129 -5.1868 -5.1614 -5.1367 -5.1126 -5.0891 -5.0662 -  
 5.0439

F'' 6.7404 6.7992 6.8583 6.9175 6.9768 7.0363 7.0959 7.1557 7.2157 7.2758  
 1.90 TO 1.99 F' -5.0222 -5.0011 -4.9805 -4.9605 -4.9410 -4.9220 -4.9035 -4.8855 -4.8680 -  
 4.8510

F'' 7.3360 7.3965 7.4570 7.5177 7.5785 7.6395 7.7007 7.7620 7.8234 7.8850  
 2.00 TO 2.09 F' -4.8344 -4.8183 -4.8027 -4.7875 -4.7727 -4.7583 -4.7444 -4.7309 -4.7178 -  
 4.7052

F'' 7.9467 8.0085 8.0705 8.1327 8.1950 8.2574 8.3199 8.3826 8.4455 8.5085  
 2.10 TO 2.19 F' -4.6929 -4.6810 -4.6695 -4.6584 -4.6476 -4.6373 -4.6273 -4.6176 -4.6084 -  
 4.5995

F'' 8.5716 8.6348 8.6982 8.7617 8.8254 8.8892 8.9531 9.0172 9.0813 9.1457  
 2.20 TO 2.29 F' -4.5909 -4.5827 -4.5749 -4.5674 -4.5602 -4.5534 -4.5469 -4.5408 -4.5349 -  
 4.5334

F'' 9.2101 9.2747 9.3394 9.4043 9.4692 9.5343 9.5996 9.6649 9.7304 9.7960  
 2.30 TO 2.39 F' -4.5283 -4.5235 -4.5190 -4.5149 -4.5110 -4.5075 -4.5043 -4.5014 -4.4988 -  
 4.4965

F'' 9.8616 9.9274 9.9933 10.0593 10.1254 10.1917 10.2580 10.3245 10.3911 10.4579  
 2.40 TO 2.49 F' -4.4945 -4.4929 -4.4915 -4.4904 -4.4897 -4.4892 -4.4890 -4.4892 -4.4896 -  
 4.4903

F'' 10.5247 10.5917 10.6588 10.7260 10.7933 10.8607 10.9283 10.9960 11.0637 11.1316  
 2.50 TO 2.59 F' -4.4914 -4.4927 -4.5059 -4.5079 -4.5102 -4.5128 -4.5157 -4.5188 -4.5223 -  
 4.5260

F'' 11.1996 11.2678 11.3358 11.4039 11.4721 11.5404 11.6088 11.6773 11.7459 11.8147  
 2.60 TO 2.69 F' -4.5300 -4.5343 -4.5389 -4.5437 -4.5489 -4.5543 -4.5600 -4.5660 -4.5723 -  
 4.5789  
 F'' 11.8835 11.9525 12.0215 12.0907 12.1599 12.2293 12.2987 12.3683 12.4380 12.5077  
 2.70 TO 2.79 F' -4.5857 -4.5928 -4.6002 -4.6079 -4.6263 -4.6346 -4.6433 -4.6522 -4.6614 -  
 4.6709  
 F'' 12.5776 12.6476 12.7176 12.7878 12.8581 12.9284 12.9988 13.0693 13.1399 13.2106  
 2.80 TO 2.89 F' -4.6807 -4.6908 -4.7012 -4.7277 -4.7387 -4.7500 -4.7616 -4.7735 -4.7967 -  
 4.8091  
 F'' 13.2814 13.3523 13.4233 13.4942 13.5651 13.6360 13.7071 13.7782 13.8494 13.9207  
 ATOMIC SYMBOL = W ATOMIC NUMBER = 74  
 0.10 TO 0.19 F' -1.1015 -1.1472 -1.2263 -1.3484 -1.5346 -1.8005 -2.2093 -2.9722 -4.5264 -  
 3.0830  
 F'' 1.2524 1.4711 1.7027 1.9466 2.2012 2.4627 2.7343 3.0172 0.6413 0.7068  
 0.20 TO 0.29 F' -2.6727 -2.4337 -2.2649 -2.1335 -2.0286 -1.9375 -1.8560 -1.7827 -1.7157 -  
 1.6569  
 F'' 0.7750 0.8459 0.9194 0.9956 1.0742 1.1549 1.2379 1.3233 1.4109 1.5006  
 0.30 TO 0.39 F' -1.5998 -1.5464 -1.4963 -1.4492 -1.4047 -1.3628 -1.3232 -1.2859 -1.2508 -  
 1.2178  
 F'' 1.5924 1.6864 1.7825 1.8807 1.9809 2.0833 2.1876 2.2940 2.4023 2.5126  
 0.40 TO 0.49 F' -1.1870 -1.1584 -1.1318 -1.1075 -1.0853 -1.0655 -1.0480 -1.0326 -1.0189 -  
 1.0075  
 F'' 2.6248 2.7389 2.8549 2.9728 3.0925 3.2140 3.3374 3.4619 3.5876 3.7149  
 0.50 TO 0.59 F' -0.9982 -0.9913 -0.9872 -0.9850 -0.9864 -0.9892 -0.9945 -1.0024 -1.0128 -  
 1.0260  
 F'' 3.8439 3.9744 4.1065 4.2400 4.3751 4.5115 4.6494 4.7887 4.9294 5.0715  
 0.60 TO 0.69 F' -1.0419 -1.0626 -1.0844 -1.1091 -1.1369 -1.1678 -1.2019 -1.2394 -1.2802 -  
 1.3246  
 F'' 5.2150 5.3598 5.5057 5.6530 5.8016 5.9514 6.1024 6.2547 6.4083 6.5630  
 0.70 TO 0.79 F' -1.3727 -1.4245 -1.4803 -1.5401 -1.6041 -1.6726 -1.7456 -1.8233 -1.9060 -  
 1.9948  
 F'' 6.7189 6.8760 7.0342 7.1936 7.3542 7.5158 7.6786 7.8425 8.0075 8.1735  
 0.80 TO 0.89 F' -2.0883 -2.1876 -2.2930 -2.4089 -2.5277 -2.6538 -2.7876 -2.9297 -3.0808 -  
 3.2417  
 F'' 8.3405 8.5085 8.6776 8.8475 9.0181 9.1896 9.3621 9.5356 9.7099 9.8852  
 0.90 TO 0.99 F' -3.4133 -3.5966 -3.7930 -4.0040 -4.2321 -4.4792 -4.7493 -5.0472 -5.3904 -  
 5.7705  
 F'' 10.0614 10.2385 10.4164 10.5953 10.7750 10.9555 11.1369 11.3191 11.5013 11.6823  
 1.00 TO 1.09 F' -6.2200 -6.7936 -7.7399 -8.0301 -7.9192 -8.2053 -8.7949 -10.1985 -9.9121 -  
 9.0716  
 F'' 11.8639 12.0461 12.2288 10.7420 10.9217 11.1027 11.2848 11.4682 8.3751 8.5096  
 1.10 TO 1.19 F' -8.7563 -8.6265 -8.6137 -8.6714 -8.7974 -8.9907 -9.1054 -9.4674 -9.9635 -  
 10.6708  
 F'' 8.6449 8.7808 8.9173 9.0545 9.1923 9.3309 9.4780 9.6539 9.8343 10.0191  
 1.20 TO 1.29 F' -11.7921 -14.2972 -14.1128 -11.9480 -10.9357 -10.2715 -9.7879 -9.3948 -9.0685 -  
 8.7899  
 F'' 10.2085 10.4027 3.8272 3.8787 3.9303 3.9823 4.0343 4.0864 4.1388 4.1915  
 1.30 TO 1.39 F' -8.5470 -8.3319 -8.1390 -7.9643 -7.8049 -7.6626 -7.5272 -7.4014 -7.2841 -  
 7.1744  
 F'' 4.2444 4.2975 4.3509 4.4044 4.4583 4.5123 4.5666 4.6211 4.6758 4.7307  
 1.40 TO 1.49 F' -7.0708 -6.9729 -6.8803 -6.7924 -6.7090 -6.6295 -6.5537 -6.4813 -6.4120 -  
 6.3456  
 F'' 4.7855 4.8404 4.8955 4.9507 5.0062 5.0619 5.1177 5.1738 5.2301 5.2865  
 1.50 TO 1.59 F' -6.2819 -6.2206 -6.1617 -6.1058 -6.0513 -5.9986 -5.9481 -5.8990 -5.8516 -

5.8063  
F" 5.3432 5.4000 5.4571 5.5143 5.5717 5.6293 5.6871 5.7450 5.8032 5.8615  
1.60 TO 1.69 F' -5.7620 -5.7190 -5.6773 -5.6370 -5.5978 -5.5598 -5.5229 -5.4871 -5.4523 -  
5.4185  
F" 5.9200 5.9787 6.0375 6.0966 6.1558 6.2152 6.2747 6.3345 6.3944 6.4545  
1.70 TO 1.79 F' -5.3857 -5.3538 -5.3227 -5.2925 -5.2631 -5.2345 -5.2067 -5.1796 -5.1533 -  
5.1277  
F" 6.5148 6.5752 6.6358 6.6966 6.7575 6.8187 6.8799 6.9414 7.0030 7.0648  
1.80 TO 1.89 F' -5.1027 -5.0784 -5.0548 -5.0318 -5.0094 -4.9876 -4.9664 -4.9457 -4.9257 -  
4.9061  
F" 7.1268 7.1889 7.2511 7.3136 7.3762 7.4389 7.5019 7.5650 7.6282 7.6916  
1.90 TO 1.99 F' -4.8871 -4.8687 -4.8507 -4.8332 -4.8163 -4.7998 -4.7838 -4.7683 -4.7532 -  
4.7386  
F" 7.7552 7.8189 7.8827 7.9468 8.0109 8.0753 8.1398 8.2044 8.2692 8.3341  
2.00 TO 2.09 F' -4.7245 -4.7107 -4.6974 -4.6846 -4.6721 -4.6601 -4.6485 -4.6373 -4.6265 -  
4.6161  
F" 8.3992 8.4645 8.5299 8.5954 8.6611 8.7269 8.7929 8.8590 8.9253 8.9917  
2.10 TO 2.19 F' -4.6061 -4.5964 -4.5872 -4.5783 -4.5698 -4.5617 -4.5540 -4.5466 -4.5396 -  
4.5329  
F" 9.0583 9.1250 9.1918 9.2588 9.3259 9.3932 9.4606 9.5282 9.5959 9.6637  
2.20 TO 2.29 F' -4.5303 -4.5244 -4.5188 -4.5136 -4.5087 -4.5042 -4.5000 -4.4962 -4.4927 -  
4.4895  
F" 9.7316 9.7997 9.8678 9.9361 10.0045 10.0730 10.1417 10.2105 10.2794 10.3485  
2.30 TO 2.39 F' -4.4867 -4.4842 -4.4820 -4.4801 -4.4786 -4.4774 -4.4765 -4.4760 -4.4758 -  
4.4758  
F" 10.4177 10.4870 10.5565 10.6261 10.6958 10.7656 10.8356 10.9057 10.9759 11.0463  
2.40 TO 2.49 F' -4.4763 -4.4879 -4.4890 -4.4905 -4.4922 -4.4943 -4.4967 -4.4994 -4.5024 -  
4.5057  
F" 11.1167 11.1873 11.2577 11.3283 11.3990 11.4698 11.5408 11.6118 11.6830 11.7543  
2.50 TO 2.59 F' -4.5093 -4.5133 -4.5175 -4.5221 -4.5269 -4.5321 -4.5466 -4.5525 -4.5586 -  
4.5651  
F" 11.8257 11.8972 11.9688 12.0406 12.1124 12.1844 12.2565 12.3286 12.4008 12.4732  
2.60 TO 2.69 F' -4.5719 -4.5791 -4.5865 -4.5942 -4.6022 -4.6105 -4.6192 -4.6281 -4.6373 -  
4.6467  
F" 12.5457 12.6183 12.6910 12.7637 12.8367 12.9097 12.9828 13.0560 13.1293 13.2028  
2.70 TO 2.79 F' -4.6664 -4.6767 -4.7028 -4.7138 -4.7251 -4.7367 -4.7486 -4.7608 -4.7733 -  
4.7861  
F" 13.2763 13.3499 13.4235 13.4969 13.5705 13.6442 13.7180 13.7918 13.8658 13.9398  
2.80 TO 2.89 F' -4.7992 -4.8126 -4.8263 -4.8404 -4.8547 -4.8693 -4.8843 -4.8995 -4.9151 -  
4.9310  
F" 14.0140 14.0882 14.1626 14.2370 14.3115 14.3862 14.4609 14.5357 14.6106 14.6856  
ATOMIC SYMBOL = RE ATOMIC NUMBER = 75  
0.10 TO 0.19 F' -1.1647 -1.2217 -1.3169 -1.4627 -1.6865 -2.0126 -2.5507 -3.9287 -3.4547 -  
2.8493  
F" 1.3149 1.5437 1.7859 2.0409 2.3043 2.5756 2.8599 3.1488 0.6806 0.7499  
0.20 TO 0.29 F' -2.5549 -2.3610 -2.2155 -2.1013 -2.0039 -1.9178 -1.8410 -1.7712 -1.7099 -  
1.6508  
F" 0.8221 0.8972 0.9750 1.0555 1.1384 1.2236 1.3113 1.4014 1.4937 1.5883  
0.30 TO 0.39 F' -1.5958 -1.5443 -1.4958 -1.4503 -1.4074 -1.3670 -1.3290 -1.2933 -1.2599 -  
1.2288  
F" 1.6852 1.7843 1.8857 1.9892 2.0949 2.2027 2.3127 2.4247 2.5388 2.6549  
0.40 TO 0.49 F' -1.1999 -1.1733 -1.1490 -1.1270 -1.1074 -1.0904 -1.0761 -1.0639 -1.0535 -  
1.0455  
F" 2.7731 2.8932 3.0153 3.1393 3.2653 3.3932 3.5230 3.6539 3.7861 3.9199

0.50 TO 0.59 F' -1.0402 -1.0372 -1.0377 -1.0400 -1.0450 -1.0526 -1.0630 -1.0763 -1.0925 -  
1.1134  
F'' 4.0554 4.1925 4.3312 4.4714 4.6132 4.7564 4.9012 5.0474 5.1951 5.3442  
0.60 TO 0.69 F' -1.1358 -1.1614 -1.1902 -1.2224 -1.2580 -1.2972 -1.3400 -1.3866 -1.4371 -  
1.4918  
F'' 5.4946 5.6463 5.7994 5.9539 6.1097 6.2667 6.4251 6.5847 6.7456 6.9078  
0.70 TO 0.79 F' -1.5506 -1.6138 -1.6816 -1.7542 -1.8317 -1.9144 -2.0026 -2.0969 -2.1969 -  
2.3032  
F'' 7.0712 7.2358 7.4015 7.5685 7.7367 7.9060 8.0764 8.2480 8.4206 8.5944  
0.80 TO 0.89 F' -2.4194 -2.5398 -2.6679 -2.8041 -2.9492 -3.1038 -3.2688 -3.4452 -3.6342 -  
3.8373  
F'' 8.7691 8.9447 9.1212 9.2988 9.4774 9.6570 9.8376 10.0191 10.2016 10.3851  
0.90 TO 0.99 F' -4.0563 -4.2944 -4.5531 -4.8373 -5.1532 -5.5218 -5.9353 -6.4390 -7.1347 -  
9.3209  
F'' 10.5695 10.7548 10.9410 11.1281 11.3160 11.5027 11.6889 11.8756 12.0629 10.5929  
1.00 TO 1.09 F' -7.8890 -8.0459 -8.5194 -9.5306 -10.4007 -9.1279 -8.7279 -8.5680 -8.5216 -  
8.5599  
F'' 10.7760 10.9602 11.1456 11.3321 8.2731 8.4110 8.5497 8.6891 8.8291 8.9698  
1.10 TO 1.19 F' -8.6685 -8.8444 -9.0926 -9.4257 -9.8759 -10.5024 -11.4565 -13.3342 -14.9184 -  
12.0998  
F'' 9.1113 9.2535 9.3964 9.5404 9.6851 9.8307 9.9769 10.1240 3.8343 3.8875  
1.20 TO 1.29 F' -10.9881 -10.2959 -9.7819 -9.3767 -9.0424 -8.7582 -8.5112 -8.2930 -8.1016 -  
7.9250  
F'' 3.9410 3.9947 4.0484 4.1024 4.1566 4.2111 4.2659 4.3209 4.3762 4.4316  
1.30 TO 1.39 F' -7.7641 -7.6163 -7.4798 -7.3532 -7.2351 -7.1246 -7.0209 -6.9234 -6.8314 -  
6.7446  
F'' 4.4873 4.5433 4.5995 4.6560 4.7127 4.7696 4.8268 4.8842 4.9419 4.9998  
1.40 TO 1.49 F' -6.6615 -6.5820 -6.5063 -6.4340 -6.3648 -6.2985 -6.2349 -6.1743 -6.1156 -  
6.0594  
F'' 5.0576 5.1154 5.1735 5.2317 5.2902 5.3489 5.4078 5.4668 5.5261 5.5856  
1.50 TO 1.59 F' -6.0050 -5.9526 -5.9025 -5.8537 -5.8065 -5.7609 -5.7168 -5.6741 -5.6328 -  
5.5927  
F'' 5.6453 5.7052 5.7653 5.8256 5.8860 5.9467 6.0076 6.0686 6.1298 6.1913  
1.60 TO 1.69 F' -5.5539 -5.5162 -5.4796 -5.4441 -5.4097 -5.3762 -5.3437 -5.3121 -5.2814 -  
5.2516  
F'' 6.2529 6.3147 6.3767 6.4389 6.5013 6.5639 6.6266 6.6895 6.7526 6.8159  
1.70 TO 1.79 F' -5.2226 -5.1944 -5.1670 -5.1403 -5.1144 -5.0892 -5.0647 -5.0408 -5.0176 -  
4.9951  
F'' 6.8794 6.9431 7.0069 7.0709 7.1351 7.1995 7.2640 7.3287 7.3936 7.4587  
1.80 TO 1.89 F' -4.9732 -4.9519 -4.9312 -4.9110 -4.8915 -4.8725 -4.8540 -4.8361 -4.8187 -  
4.8018  
F'' 7.5239 7.5893 7.6549 7.7206 7.7865 7.8526 7.9189 7.9853 8.0519 8.1186  
1.90 TO 1.99 F' -4.7855 -4.7696 -4.7542 -4.7393 -4.7249 -4.7109 -4.6974 -4.6844 -4.6718 -  
4.6596  
F'' 8.1855 8.2526 8.3199 8.3873 8.4548 8.5225 8.5904 8.6585 8.7267 8.7950  
2.00 TO 2.09 F' -4.6479 -4.6366 -4.6257 -4.6153 -4.6052 -4.5956 -4.5864 -4.5776 -4.5692 -  
4.5612  
F'' 8.8636 8.9322 9.0011 9.0701 9.1392 9.2085 9.2779 9.3475 9.4173 9.4872  
2.10 TO 2.19 F' -4.5535 -4.5463 -4.5429 -4.5365 -4.5304 -4.5247 -4.5194 -4.5145 -4.5099 -  
4.5057  
F'' 9.5572 9.6274 9.6977 9.7681 9.8387 9.9094 9.9802 10.0512 10.1223 10.1936  
2.20 TO 2.29 F' -4.5018 -4.4984 -4.4952 -4.4925 -4.4900 -4.4880 -4.4863 -4.4849 -4.4839 -  
4.4832  
F'' 10.2650 10.3366 10.4083 10.4801 10.5521 10.6242 10.6964 10.7688 10.8413 10.9140

2.30 TO 2.39 F' -4.4829 -4.4829 -4.4935 -4.4943 -4.4954 -4.4969 -4.4987 -4.5009 -4.5033 -  
4.5061  
F'' 10.9868 11.0597 11.1326 11.2055 11.2786 11.3518 11.4252 11.4986 11.5722 11.6459  
2.40 TO 2.49 F' -4.5093 -4.5128 -4.5247 -4.5289 -4.5335 -4.5384 -4.5437 -4.5493 -4.5552 -  
4.5614  
F'' 11.7198 11.7937 11.8678 11.9420 12.0162 12.0907 12.1652 12.2398 12.3146 12.3895  
2.50 TO 2.59 F' -4.5679 -4.5748 -4.5820 -4.5896 -4.6062 -4.6145 -4.6231 -4.6321 -4.6414 -  
4.6510  
F'' 12.4645 12.5396 12.6149 12.6902 12.7657 12.8412 12.9169 12.9926 13.0685 13.1445  
2.60 TO 2.69 F' -4.6610 -4.6712 -4.6965 -4.7075 -4.7189 -4.7306 -4.7426 -4.7550 -4.7677 -  
4.7807  
F'' 13.2206 13.2968 13.3731 13.4493 13.5255 13.6018 13.6783 13.7548 13.8315 13.9083  
2.70 TO 2.79 F' -4.7940 -4.8077 -4.8217 -4.8360 -4.8507 -4.8657 -4.8810 -4.8966 -4.9126 -  
4.9289  
F'' 13.9851 14.0621 14.1392 14.2163 14.2936 14.3710 14.4485 14.5260 14.6037 14.6815  
2.80 TO 2.89 F' -4.9455 -4.9625 -4.9798 -4.9975 -5.0154 -5.0337 -5.0524 -5.0714 -5.0907 -  
5.1104  
F'' 14.7594 14.8373 14.9154 14.9936 15.0718 15.1502 15.2286 15.3072 15.3858 15.4646  
ATOMIC SYMBOL = OS ATOMIC NUMBER = 76  
0.10 TO 0.19 F' -1.2321 -1.3019 -1.4159 -1.5950 -1.8574 -2.2682 -3.0485 -4.3410 -3.0915 -  
2.7019  
F'' 1.3795 1.6185 1.8715 2.1375 2.4115 2.6956 2.9927 0.6514 0.7216 0.7950  
0.20 TO 0.29 F' -2.4712 -2.3069 -2.1780 -2.0745 -1.9843 -1.9033 -1.8303 -1.7662 -1.7049 -  
1.6480  
F'' 0.8713 0.9507 1.0330 1.1178 1.2051 1.2951 1.3876 1.4825 1.5798 1.6796  
0.30 TO 0.39 F' -1.5948 -1.5449 -1.4981 -1.4541 -1.4127 -1.3739 -1.3376 -1.3036 -1.2721 -  
1.2429  
F'' 1.7817 1.8861 1.9929 2.1020 2.2133 2.3269 2.4427 2.5606 2.6807 2.8029  
0.40 TO 0.49 F' -1.2161 -1.1917 -1.1698 -1.1504 -1.1336 -1.1196 -1.1089 -1.1006 -1.0940 -  
1.0900  
F'' 2.9272 3.0536 3.1821 3.3126 3.4451 3.5795 3.7160 3.8536 3.9925 4.1331  
0.50 TO 0.59 F' -1.0886 -1.0908 -1.0951 -1.1024 -1.1125 -1.1257 -1.1419 -1.1614 -1.1857 -  
1.2119  
F'' 4.2754 4.4193 4.5649 4.7120 4.8608 5.0111 5.1630 5.3164 5.4711 5.6273  
0.60 TO 0.69 F' -1.2416 -1.2746 -1.3115 -1.3522 -1.3968 -1.4454 -1.4983 -1.5555 -1.6172 -  
1.6837  
F'' 5.7850 5.9440 6.1045 6.2663 6.4296 6.5941 6.7600 6.9272 7.0958 7.2655  
0.70 TO 0.79 F' -1.7551 -1.8317 -1.9137 -2.0013 -2.0952 -2.1950 -2.3015 -2.4150 -2.5393 -  
2.6684  
F'' 7.4366 7.6089 7.7825 7.9573 8.1332 8.3103 8.4886 8.6681 8.8483 9.0296  
0.80 TO 0.89 F' -2.8061 -2.9529 -3.1098 -3.2776 -3.4574 -3.6505 -3.8585 -4.0835 -4.3275 -  
4.5952  
F'' 9.2120 9.3954 9.5799 9.7655 9.9521 10.1397 10.3283 10.5180 10.7086 10.9002  
0.90 TO 0.99 F' -4.8908 -5.2215 -5.6092 -6.0529 -6.6121 -7.4688 -8.0762 -7.8868 -8.1979 -  
8.8897  
F'' 11.0929 11.2865 11.4783 11.6704 11.8631 12.0564 10.5990 10.7881 10.9785 11.1702  
1.00 TO 1.09 F' -11.4336 -9.3620 -8.7639 -8.5275 -8.4366 -8.4424 -8.5234 -8.6724 -8.8914 -  
9.1940  
F'' 11.3631 8.2946 8.4372 8.5805 8.7246 8.8694 9.0150 9.1615 9.3087 9.4565  
1.10 TO 1.19 F' -9.5955 -10.1450 -10.9466 -12.3278 -18.8064 -12.6405 -11.2304 -10.4324 -9.8660 -  
9.4296  
F'' 9.6045 9.7531 9.9024 10.0524 10.2030 3.8868 3.9420 3.9974 4.0530 4.1089  
1.20 TO 1.29 F' -9.0748 -8.7798 -8.5222 -8.2959 -8.0943 -7.9126 -7.7475 -7.5961 -7.4566 -  
7.3273



F''	4.1650	4.2214	4.2781	4.3350	4.3922	4.4496	4.5073	4.5653	4.6235	4.6820
1.30 TO 1.39 F'	-7.2070	-7.0944	-6.9888	-6.8895	-6.7957	-6.7072	-6.6233	-6.5440	-6.4691	-6.3994
F''	4.7408	4.7998	4.8591	4.9186	4.9784	5.0385	5.0988	5.1593	5.2201	5.2812
1.40 TO 1.49 F'	-6.3314	-6.2648	-6.2011	-6.1399	-6.0811	-6.0245	-5.9703	-5.9178	-5.8672	-5.8183
F''	5.3421	5.4030	5.4642	5.5256	5.5872	5.6490	5.7110	5.7732	5.8357	5.8983
1.50 TO 1.59 F'	-5.7712	-5.7256	-5.6815	-5.6389	-5.5976	-5.5576	-5.5189	-5.4813	-5.4449	-5.4096
F''	5.9612	6.0242	6.0875	6.1510	6.2147	6.2786	6.3427	6.4070	6.4715	6.5362
1.60 TO 1.69 F'	-5.3753	-5.3420	-5.3097	-5.2783	-5.2479	-5.2183	-5.1896	-5.1617	-5.1345	-5.1082
F''	6.6011	6.6661	6.7314	6.7969	6.8626	6.9285	6.9945	7.0608	7.1272	7.1939
1.70 TO 1.79 F'	-5.0826	-5.0577	-5.0335	-5.0100	-4.9872	-4.9651	-4.9436	-4.9227	-4.9024	-4.8827
F''	7.2607	7.3277	7.3949	7.4623	7.5299	7.5977	7.6656	7.7337	7.8020	7.8705
1.80 TO 1.89 F'	-4.8636	-4.8451	-4.8271	-4.8097	-4.7928	-4.7765	-4.7607	-4.7453	-4.7305	-4.7162
F''	7.9392	8.0081	8.0771	8.1463	8.2157	8.2852	8.3550	8.4249	8.4950	8.5652
1.90 TO 1.99 F'	-4.7024	-4.6891	-4.6762	-4.6638	-4.6519	-4.6404	-4.6294	-4.6188	-4.6087	-4.5990
F''	8.6357	8.7063	8.7770	8.8480	8.9191	8.9904	9.0618	9.1334	9.2052	9.2771
2.00 TO 2.09 F'	-4.5897	-4.5809	-4.5725	-4.5645	-4.5601	-4.5530	-4.5463	-4.5399	-4.5340	-4.5285
F''	9.3492	9.4215	9.4940	9.5665	9.6392	9.7121	9.7851	9.8582	9.9315	10.0050
2.10 TO 2.19 F'	-4.5234	-4.5187	-4.5144	-4.5104	-4.5069	-4.5037	-4.5009	-4.4985	-4.4965	-4.4948
F''	10.0786	10.1523	10.2263	10.3003	10.3746	10.4489	10.5235	10.5981	10.6730	10.7479
2.20 TO 2.29 F'	-4.4935	-4.4926	-4.4921	-4.5014	-4.5017	-4.5024	-4.5034	-4.5048	-4.5065	-4.5159
F''	10.8231	10.8983	10.9737	11.0491	11.1245	11.2001	11.2759	11.3518	11.4278	11.5039
2.30 TO 2.39 F'	-4.5185	-4.5214	-4.5247	-4.5284	-4.5324	-4.5367	-4.5415	-4.5465	-4.5520	-4.5577
F''	11.5802	11.6566	11.7331	11.8097	11.8865	11.9634	12.0405	12.1176	12.1950	12.2724
2.40 TO 2.49 F'	-4.5639	-4.5704	-4.5768	-4.5925	-4.6002	-4.6082	-4.6166	-4.6253	-4.6344	-4.6438
F''	12.3500	12.4277	12.5055	12.5834	12.6614	12.7396	12.8179	12.8963	12.9748	13.0535
2.50 TO 2.59 F'	-4.6536	-4.6637	-4.6742	-4.6989	-4.7102	-4.7218	-4.7339	-4.7462	-4.7590	-4.7720
F''	13.1322	13.2111	13.2902	13.3691	13.4480	13.5271	13.6063	13.6856	13.7650	13.8445
2.60 TO 2.69 F'	-4.7854	-4.7992	-4.8133	-4.8278	-4.8427	-4.8579	-4.8734	-4.8893	-4.9056	-4.9222
F''	13.9242	14.0039	14.0838	14.1637	14.2438	14.3240	14.4043	14.4847	14.5652	14.6459
2.70 TO 2.79 F'	-4.9392	-4.9565	-4.9742	-4.9922	-5.0107	-5.0295	-5.0486	-5.0681	-5.0880	-5.1082
F''	14.7266	14.8074	14.8884	14.9694	15.0506	15.1319	15.2132	15.2947	15.3763	15.4580
2.80 TO 2.89 F'	-5.1288	-5.1498	-5.1712	-5.1929	-5.2150	-5.2375	-5.2603	-5.2836	-5.3072	-5.3312
F''	15.5397	15.6216	15.7036	15.7857	15.8679	15.9502	16.0326	16.1151	16.1977	16.2804
ATOMIC SYMBOL = IR    ATOMIC NUMBER = 77										
0.10 TO 0.19 F'	-1.3034	-1.3878	-1.5234	-1.7357	-2.0556	-2.5929	-3.9693	-3.4794	-2.8896	-2.6011
F''	1.4461	1.6958	1.9600	2.2363	2.5227	2.8198	3.1194	0.6904	0.7647	0.8423
0.20 TO 0.29 F'	-2.4102	-2.2664	-2.1530	-2.0560	-1.9701	-1.8932	-1.8259	-1.7621	-1.7029	-

1.6479  
F'' 0.9230 1.0069 1.0937 1.1830 1.2752 1.3701 1.4676 1.5676 1.6702 1.7752  
0.30 TO 0.39 F' -1.5964 -1.5481 -1.5029 -1.4605 -1.4207 -1.3836 -1.3490 -1.3170 -1.2874 -  
1.2603  
F'' 1.8828 1.9928 2.1053 2.2201 2.3373 2.4568 2.5786 2.7027 2.8290 2.9575  
0.40 TO 0.49 F' -1.2358 -1.2138 -1.1945 -1.1778 -1.1639 -1.1530 -1.1453 -1.1434 -1.1408 -  
1.1415  
F'' 3.0882 3.2211 3.3561 3.4932 3.6324 3.7736 3.9169 4.0613 4.2071 4.3546  
0.50 TO 0.59 F' -1.1449 -1.1513 -1.1608 -1.1735 -1.1895 -1.2087 -1.2328 -1.2592 -1.2893 -  
1.3232  
F'' 4.5039 4.6549 4.8075 4.9619 5.1179 5.2755 5.4346 5.5952 5.7574 5.9211  
0.60 TO 0.69 F' -1.3610 -1.4028 -1.4488 -1.4991 -1.5539 -1.6134 -1.6777 -1.7471 -1.8219 -  
1.9021  
F'' 6.0862 6.2529 6.4209 6.5904 6.7614 6.9337 7.1073 7.2824 7.4588 7.6365  
0.70 TO 0.79 F' -1.9882 -2.0805 -2.1792 -2.2847 -2.3975 -2.5204 -2.6493 -2.7870 -2.9343 -  
3.0919  
F'' 7.8155 7.9958 8.1774 8.3602 8.5443 8.7294 8.9156 9.1030 9.2915 9.4811  
0.80 TO 0.89 F' -3.2609 -3.4424 -3.6378 -3.8488 -4.0776 -4.3270 -4.6002 -4.9037 -5.2450 -  
5.6482  
F'' 9.6719 9.8638 10.0569 10.2510 10.4462 10.6424 10.8398 11.0382 11.2376 11.4348  
0.90 TO 0.99 F' -6.1142 -6.7153 -7.7383 -7.9322 -7.9370 -8.3647 -9.3449 -10.2186 -8.9444 -  
8.5540  
F'' 11.6325 11.8307 12.0296 10.5855 10.7792 10.9741 11.1702 8.1508 8.2969 8.4438  
1.00 TO 1.09 F' -8.3870 -8.3421 -8.3827 -8.4946 -8.6751 -8.9298 -9.2758 -9.7410 -10.3944 -  
11.4094  
F'' 8.5914 8.7399 8.8893 9.0396 9.1907 9.3426 9.4951 9.6482 9.8021 9.9568  
1.10 TO 1.19 F' -13.5550 -13.9886 -11.7029 -10.6939 -10.0333 -9.5474 -9.1590 -8.8373 -8.5628 -  
8.3237  
F'' 10.1123 3.8774 3.9345 3.9917 4.0492 4.1070 4.1650 4.2233 4.2818 4.3407  
1.20 TO 1.29 F' -8.1121 -7.9224 -7.7507 -7.5939 -7.4498 -7.3166 -7.1927 -7.0771 -6.9688 -  
6.8669  
F'' 4.3999 4.4593 4.5191 4.5791 4.6394 4.7000 4.7608 4.8220 4.8834 4.9451  
1.30 TO 1.39 F' -6.7709 -6.6801 -6.5940 -6.5122 -6.4374 -6.3633 -6.2994 -6.2321 -6.1678 -  
6.1071  
F'' 5.0070 5.0693 5.1318 5.1946 5.2576 5.3209 5.3843 5.4480 5.5119 5.5761  
1.40 TO 1.49 F' -6.0485 -5.9915 -5.9365 -5.8836 -5.8326 -5.7834 -5.7359 -5.6900 -5.6457 -  
5.6028  
F'' 5.6402 5.7044 5.7688 5.8335 5.8983 5.9634 6.0288 6.0943 6.1601 6.2260  
1.50 TO 1.59 F' -5.5613 -5.5211 -5.4822 -5.4445 -5.4080 -5.3726 -5.3383 -5.3050 -5.2727 -  
5.2413  
F'' 6.2922 6.3587 6.4253 6.4921 6.5592 6.6265 6.6940 6.7617 6.8296 6.8977  
1.60 TO 1.69 F' -5.2109 -5.1813 -5.1527 -5.1248 -5.0978 -5.0716 -5.0461 -5.0214 -4.9974 -  
4.9741  
F'' 6.9661 7.0346 7.1034 7.1723 7.2415 7.3108 7.3804 7.4502 7.5201 7.5903  
1.70 TO 1.79 F' -4.9515 -4.9296 -4.9083 -4.8876 -4.8676 -4.8482 -4.8295 -4.8113 -4.7936 -  
4.7766  
F'' 7.6607 7.7312 7.8020 7.8729 7.9441 8.0154 8.0869 8.1587 8.2306 8.3027  
1.80 TO 1.89 F' -4.7601 -4.7441 -4.7287 -4.7138 -4.6995 -4.6856 -4.6723 -4.6594 -4.6471 -  
4.6352  
F'' 8.3750 8.4475 8.5201 8.5930 8.6660 8.7393 8.8127 8.8863 8.9601 9.0340  
1.90 TO 1.99 F' -4.6239 -4.6130 -4.6025 -4.5926 -4.5831 -4.5740 -4.5683 -4.5602 -4.5525 -  
4.5453  
F'' 9.1082 9.1825 9.2570 9.3317 9.4065 9.4815 9.5567 9.6320 9.7074 9.7831  
2.00 TO 2.09 F' -4.5385 -4.5321 -4.5262 -4.5207 -4.5156 -4.5109 -4.5067 -4.5028 -4.4994 -

4.4964  
F'' 9.8589 9.9349 10.0110 10.0873 10.1638 10.2405 10.3173 10.3942 10.4714 10.5487  
2.10 TO 2.19 F' -4.4938 -4.4916 -4.4896 -4.4943 -4.5021 -4.5017 -4.5017 -4.5021 -4.5029 -  
4.5041  
F'' 10.6261 10.7038 10.7816 10.8595 10.9373 11.0153 11.0935 11.1717 11.2502 11.3288  
2.20 TO 2.29 F' -4.5057 -4.5076 -4.5100 -4.5127 -4.5223 -4.5259 -4.5299 -4.5343 -4.5390 -  
4.5441  
F'' 11.4075 11.4864 11.5654 11.6446 11.7239 11.8034 11.8829 11.9626 12.0425 12.1225  
2.30 TO 2.39 F' -4.5497 -4.5556 -4.5618 -4.5685 -4.5755 -4.5830 -4.5907 -4.5989 -4.6075 -  
4.6164  
F'' 12.2026 12.2829 12.3633 12.4439 12.5245 12.6054 12.6863 12.7674 12.8487 12.9300  
2.40 TO 2.49 F' -4.6257 -4.6354 -4.6455 -4.6560 -4.6797 -4.6910 -4.7028 -4.7148 -4.7273 -  
4.7402  
F'' 13.0115 13.0932 13.1750 13.2569 13.3386 13.4205 13.5025 13.5846 13.6668 13.7492  
2.50 TO 2.59 F' -4.7534 -4.7670 -4.7810 -4.7953 -4.8101 -4.8252 -4.8407 -4.8566 -4.8729 -  
4.8896  
F'' 13.8317 13.9143 13.9970 14.0799 14.1629 14.2459 14.3292 14.4125 14.4960 14.5795  
2.60 TO 2.69 F' -4.9066 -4.9241 -4.9419 -4.9601 -4.9787 -4.9977 -5.0171 -5.0369 -5.0570 -  
5.0776  
F'' 14.6632 14.7470 14.8309 14.9150 14.9991 15.0834 15.1678 15.2523 15.3369 15.4216  
2.70 TO 2.79 F' -5.0986 -5.1200 -5.1417 -5.1639 -5.1865 -5.2095 -5.2328 -5.2566 -5.2808 -  
5.3055  
F'' 15.5065 15.5914 15.6765 15.7616 15.8469 15.9323 16.0178 16.1034 16.1892 16.2750  
2.80 TO 2.89 F' -5.3305 -5.3559 -5.3818 -5.4081 -5.4348 -5.4619 -5.4894 -5.5174 -5.5458 -  
5.5747  
F'' 16.3609 16.4470 16.5331 16.6194 16.7057 16.7922 16.8788 16.9655 17.0522 17.1391  
ATOMIC SYMBOL = PT ATOMIC NUMBER = 78  
0.10 TO 0.19 F' -1.3816 -1.4828 -1.6440 -1.8977 -2.2944 -3.0419 -4.4847 -3.1543 -2.7628 -  
2.5325  
F'' 1.5154 1.7759 2.0516 2.3381 2.6359 2.9449 0.6560 0.7310 0.8094 0.8912  
0.20 TO 0.29 F' -2.3684 -2.2425 -2.1372 -2.0454 -1.9640 -1.8926 -1.8257 -1.7640 -1.7068 -  
1.6534  
F'' 0.9764 1.0648 1.1559 1.2500 1.3471 1.4469 1.5494 1.6547 1.7626 1.8732  
0.30 TO 0.39 F' -1.6034 -1.5567 -1.5130 -1.4721 -1.4340 -1.3986 -1.3658 -1.3358 -1.3083 -  
1.2836  
F'' 1.9864 2.1022 2.2205 2.3413 2.4646 2.5904 2.7185 2.8490 2.9818 3.1170  
0.40 TO 0.49 F' -1.2615 -1.2423 -1.2258 -1.2122 -1.2016 -1.1968 -1.1933 -1.1948 -1.1970 -  
1.2023  
F'' 3.2544 3.3942 3.5361 3.6803 3.8266 3.9750 4.1253 4.2769 4.4298 4.5846  
0.50 TO 0.59 F' -1.2109 -1.2229 -1.2383 -1.2572 -1.2807 -1.3071 -1.3375 -1.3718 -1.4102 -  
1.4529  
F'' 4.7411 4.8994 5.0594 5.2212 5.3846 5.5496 5.7163 5.8845 6.0543 6.2256  
0.60 TO 0.69 F' -1.5001 -1.5518 -1.6083 -1.6698 -1.7365 -1.8086 -1.8863 -1.9701 -2.0600 -  
2.1565  
F'' 6.3985 6.5729 6.7488 6.9261 7.1049 7.2852 7.4668 7.6498 7.8342 8.0200  
0.70 TO 0.79 F' -2.2601 -2.3711 -2.4924 -2.6199 -2.7564 -2.9026 -3.0595 -3.2280 -3.4093 -  
3.6047  
F'' 8.2072 8.3956 8.5853 8.7761 8.9680 9.1612 9.3556 9.5512 9.7480 9.9459  
0.80 TO 0.89 F' -3.8162 -4.0460 -4.2969 -4.5711 -4.8777 -5.2233 -5.6300 -6.1071 -6.7262 -  
7.8367  
F'' 10.1450 10.3453 10.5467 10.7493 10.9531 11.1580 11.3617 11.5659 11.7708 11.9764  
0.90 TO 0.99 F' -7.8810 -7.9567 -8.4683 -9.7986 -9.5627 -8.7235 -8.4077 -8.2800 -8.2614 -  
8.3233  
F'' 10.5466 10.7487 10.9525 11.1578 8.1336 8.2842 8.4357 8.5881 8.7415 8.8958

1.00 TO 1.09 F' -8.4556 -8.6578 -8.9385 -9.3170 -9.8333 -10.5762 -11.8046 -15.3748 -12.8131 -  
11.2259  
F'' 9.0510 9.2072 9.3643 9.5222 9.6811 9.8409 10.0016 10.1631 3.9164 3.9755

1.10 TO 1.19 F' -10.3680 -9.7797 -9.3321 -8.9710 -8.6687 -8.4089 -8.1813 -7.9790 -7.7970 -  
7.6318  
F'' 4.0348 4.0944 4.1543 4.2146 4.2751 4.3360 4.3971 4.4586 4.5204 4.5825

1.20 TO 1.29 F' -7.4806 -7.3413 -7.2123 -7.0922 -6.9800 -6.8747 -6.7756 -6.6820 -6.5961 -  
6.5122  
F'' 4.6448 4.7075 4.7705 4.8338 4.8974 4.9612 5.0254 5.0899 5.1546 5.2196

1.30 TO 1.39 F' -6.4390 -6.3632 -6.2909 -6.2218 -6.1557 -6.0964 -6.0357 -5.9775 -5.9215 -  
5.8677  
F'' 5.2849 5.3503 5.4161 5.4821 5.5483 5.6149 5.6816 5.7486 5.8159 5.8835

1.40 TO 1.49 F' -5.8159 -5.7660 -5.7179 -5.6715 -5.6266 -5.5833 -5.5414 -5.5008 -5.4616 -  
5.4236  
F'' 5.9509 6.0185 6.0863 6.1544 6.2227 6.2912 6.3600 6.4290 6.4982 6.5676

1.50 TO 1.59 F' -5.3868 -5.3511 -5.3166 -5.2831 -5.2507 -5.2192 -5.1886 -5.1590 -5.1303 -  
5.1025  
F'' 6.6373 6.7073 6.7774 6.8478 6.9184 6.9892 7.0602 7.1315 7.2030 7.2747

1.60 TO 1.69 F' -5.0755 -5.0492 -5.0238 -4.9992 -4.9753 -4.9521 -4.9296 -4.9079 -4.8868 -  
4.8663  
F'' 7.3466 7.4188 7.4911 7.5637 7.6365 7.7095 7.7827 7.8562 7.9298 8.0036

1.70 TO 1.79 F' -4.8466 -4.8274 -4.8089 -4.7910 -4.7736 -4.7569 -4.7408 -4.7252 -4.7102 -  
4.6957  
F'' 8.0777 8.1520 8.2264 8.3011 8.3760 8.4511 8.5263 8.6018 8.6775 8.7534

1.80 TO 1.89 F' -4.6818 -4.6684 -4.6555 -4.6432 -4.6313 -4.6200 -4.6092 -4.5989 -4.5890 -  
4.5823  
F'' 8.8295 8.9057 8.9822 9.0589 9.1358 9.2128 9.2901 9.3675 9.4451 9.5229

1.90 TO 1.99 F' -4.5735 -4.5651 -4.5572 -4.5498 -4.5429 -4.5364 -4.5304 -4.5248 -4.5197 -  
4.5150  
F'' 9.6008 9.6789 9.7572 9.8357 9.9144 9.9933 10.0723 10.1515 10.2309 10.3105

2.00 TO 2.09 F' -4.5157 -4.5121 -4.5088 -4.5060 -4.5037 -4.5096 -4.5082 -4.5073 -4.5067 -  
4.5066  
F'' 10.3902 10.4701 10.5502 10.6304 10.7108 10.7914 10.8719 10.9526 11.0335 11.1145

2.10 TO 2.19 F' -4.5069 -4.5132 -4.5144 -4.5161 -4.5182 -4.5207 -4.5236 -4.5269 -4.5306 -  
4.5348  
F'' 11.1957 11.2771 11.3585 11.4402 11.5220 11.6039 11.6860 11.7683 11.8507 11.9333

2.20 TO 2.29 F' -4.5393 -4.5443 -4.5497 -4.5554 -4.5616 -4.5682 -4.5753 -4.5827 -4.5905 -  
4.5987  
F'' 12.0160 12.0989 12.1819 12.2651 12.3484 12.4319 12.5156 12.5994 12.6833 12.7674

2.30 TO 2.39 F' -4.6074 -4.6164 -4.6259 -4.6358 -4.6460 -4.6687 -4.6799 -4.6916 -4.7036 -  
4.7160  
F'' 12.8516 12.9360 13.0205 13.1052 13.1900 13.2747 13.3595 13.4445 13.5296 13.6148

2.40 TO 2.49 F' -4.7289 -4.7421 -4.7558 -4.7698 -4.7843 -4.7992 -4.8145 -4.8302 -4.8463 -  
4.8629  
F'' 13.7001 13.7856 13.8712 13.9570 14.0429 14.1289 14.2150 14.3013 14.3877 14.4742

2.50 TO 2.59 F' -4.8798 -4.8972 -4.9150 -4.9332 -4.9518 -4.9708 -4.9903 -5.0102 -5.0305 -  
5.0512  
F'' 14.5609 14.6477 14.7346 14.8217 14.9088 14.9961 15.0836 15.1711 15.2588 15.3466

2.60 TO 2.69 F' -5.0724 -5.0939 -5.1160 -5.1384 -5.1613 -5.1846 -5.2084 -5.2326 -5.2572 -  
5.2823  
F'' 15.4345 15.5225 15.6107 15.6990 15.7874 15.8759 15.9646 16.0533 16.1422 16.2312

2.70 TO 2.79 F' -5.3078 -5.3338 -5.3602 -5.3871 -5.4144 -5.4422 -5.4704 -5.4991 -5.5283 -  
5.5579  
F'' 16.3203 16.4096 16.4989 16.5884 16.6780 16.7677 16.8575 16.9474 17.0375 17.1276

2.80 TO 2.89 F' -5.5880 -5.6185 -5.6711 -5.7028 -5.7350 -5.7677 -5.8009 -5.8345 -5.8686 -  
5.9032  
F'' 17.2179 17.3083 17.3986 17.4887 17.5790 17.6694 17.7599 17.8505 17.9411 18.0319  
ATOMIC SYMBOL = AU ATOMIC NUMBER = 79  
0.10 TO 0.19 F' -0.9372 -12.8376 -3.5321 -1.1345 -6.6303 -115.2711 -3.5645 -2.9499 -2.6566 -  
2.4642  
F'' 1.5877 1.8604 2.1438 2.4397 2.7453 3.0579 0.6947 0.7739 0.8567 0.9430  
0.20 TO 0.29 F' -2.3218 -2.2063 -2.1075 -2.0210 -1.9435 -1.8753 -1.8109 -1.7513 -1.6959 -  
1.6443  
F'' 1.0328 1.1257 1.2217 1.3208 1.4231 1.5280 1.6359 1.7467 1.8603 1.9766  
0.30 TO 0.39 F' -1.5960 -1.5510 -1.5090 -1.4700 -1.4338 -1.4005 -1.3699 -1.3422 -1.3173 -  
1.2953  
F'' 2.0957 2.2174 2.3419 2.4689 2.5985 2.7306 2.8653 3.0024 3.1420 3.2839  
0.40 TO 0.49 F' -1.2763 -1.2602 -1.2472 -1.2373 -1.2339 -1.2307 -1.2353 -1.2392 -1.2465 -  
1.2573  
F'' 3.4283 3.5750 3.7241 3.8754 4.0287 4.1841 4.3412 4.4999 4.6601 4.8221  
0.50 TO 0.59 F' -1.2718 -1.2899 -1.3118 -1.3386 -1.3687 -1.4030 -1.4417 -1.4849 -1.5327 -  
1.5854  
F'' 4.9860 5.1518 5.3193 5.4886 5.6595 5.8322 6.0065 6.1825 6.3601 6.5393  
0.60 TO 0.69 F' -1.6432 -1.7063 -1.7748 -1.8491 -1.9295 -2.0162 -2.1097 -2.2099 -2.3179 -  
2.4340  
F'' 6.7200 6.9023 7.0862 7.2716 7.4584 7.6468 7.8366 8.0278 8.2205 8.4146  
0.70 TO 0.79 F' -2.5602 -2.6941 -2.8379 -2.9924 -3.1587 -3.3380 -3.5316 -3.7414 -3.9696 -  
4.2192  
F'' 8.6100 8.8066 9.0045 9.2038 9.4043 9.6061 9.8092 10.0135 10.2191 10.4258  
0.80 TO 0.89 F' -4.4940 -4.7984 -5.1431 -5.5494 -6.0244 -6.6365 -7.6859 -7.8753 -7.9443 -  
8.4958  
F'' 10.6338 10.8431 11.0536 11.2632 11.4728 11.6831 11.8943 10.4795 10.6864 10.8949  
0.90 TO 0.99 F' -10.1310 -9.2867 -8.5695 -8.2881 -8.1782 -8.1719 -8.2443 -8.3870 -8.6009 -  
8.8960  
F'' 11.1049 8.0901 8.2446 8.4001 8.5567 8.7142 8.8727 9.0322 9.1926 9.3541  
1.00 TO 1.09 F' -9.2806 -9.8296 -10.6351 -12.0372 -20.1871 -12.2798 -10.9198 -10.1369 -9.5862 -  
9.1616  
F'' 9.5197 9.6872 9.8561 10.0264 10.1980 3.9472 4.0083 4.0698 4.1316 4.1937  
1.10 TO 1.19 F' -8.8164 -8.5256 -8.2748 -8.0544 -7.8580 -7.6810 -7.5200 -7.3726 -7.2366 -  
7.1105  
F'' 4.2562 4.3190 4.3821 4.4455 4.5093 4.5734 4.6378 4.7026 4.7677 4.8330  
1.20 TO 1.29 F' -6.9930 -6.8831 -6.7823 -6.6853 -6.5936 -6.5132 -6.4310 -6.3528 -6.2784 -  
6.2073  
F'' 4.8988 4.9648 5.0311 5.0977 5.1646 5.2319 5.2993 5.3670 5.4350 5.5033  
1.30 TO 1.39 F' -6.1435 -6.0786 -6.0165 -5.9569 -5.8997 -5.8447 -5.7918 -5.7409 -5.6919 -  
5.6446  
F'' 5.5718 5.6406 5.7097 5.7791 5.8487 5.9187 5.9889 6.0594 6.1302 6.2013  
1.40 TO 1.49 F' -5.5990 -5.5550 -5.5125 -5.4714 -5.4316 -5.3932 -5.3559 -5.3199 -5.2850 -  
5.2512  
F'' 6.2723 6.3434 6.4147 6.4863 6.5581 6.6301 6.7024 6.7750 6.8478 6.9208  
1.50 TO 1.59 F' -5.2185 -5.1867 -5.1560 -5.1262 -5.0974 -5.0694 -5.0423 -5.0160 -4.9906 -  
4.9659  
F'' 6.9941 7.0676 7.1414 7.2154 7.2896 7.3641 7.4388 7.5137 7.5889 7.6642  
1.60 TO 1.69 F' -4.9420 -4.9189 -4.8965 -4.8748 -4.8538 -4.8335 -4.8139 -4.7950 -4.7767 -  
4.7590  
F'' 7.7399 7.8157 7.8918 7.9681 8.0446 8.1214 8.1983 8.2755 8.3529 8.4306  
1.70 TO 1.79 F' -4.7419 -4.7255 -4.7096 -4.6944 -4.6797 -4.6656 -4.6521 -4.6391 -4.6267 -  
4.6148

F'' 8.5084 8.5865 8.6648 8.7433 8.8220 8.9009 8.9800 9.0594 9.1389 9.2187  
 1.80 TO 1.89 F' -4.6035 -4.5949 -4.5847 -4.5750 -4.5658 -4.5571 -4.5489 -4.5412 -4.5380 -  
 4.5314  
 F'' 9.2986 9.3788 9.4591 9.5396 9.6203 9.7013 9.7824 9.8637 9.9452 10.0268  
 1.90 TO 1.99 F' -4.5253 -4.5197 -4.5145 -4.5099 -4.5057 -4.5020 -4.4987 -4.5031 -4.5055 -  
 4.5038  
 F'' 10.1087 10.1908 10.2730 10.3554 10.4381 10.5209 10.6039 10.6871 10.7702 10.8535  
 2.00 TO 2.09 F' -4.5027 -4.5019 -4.5017 -4.5019 -4.5025 -4.5036 -4.5051 -4.5071 -4.5095 -  
 4.5124  
 F'' 10.9370 11.0207 11.1046 11.1886 11.2728 11.3571 11.4417 11.5264 11.6112 11.6963  
 2.10 TO 2.19 F' -4.5157 -4.5194 -4.5236 -4.5282 -4.5333 -4.5388 -4.5448 -4.5512 -4.5580 -  
 4.5653  
 F'' 11.7815 11.8669 11.9524 12.0381 12.1240 12.2100 12.2963 12.3826 12.4691 12.5558  
 2.20 TO 2.29 F' -4.5730 -4.5811 -4.5897 -4.5987 -4.6082 -4.6180 -4.6394 -4.6503 -4.6616 -  
 4.6734  
 F'' 12.6427 12.7297 12.8169 12.9042 12.9917 13.0793 13.1671 13.2548 13.3426 13.4306  
 2.30 TO 2.39 F' -4.6856 -4.6982 -4.7113 -4.7248 -4.7388 -4.7532 -4.7680 -4.7833 -4.7990 -  
 4.8152  
 F'' 13.5188 13.6070 13.6954 13.7840 13.8727 13.9616 14.0506 14.1397 14.2290 14.3184  
 2.40 TO 2.49 F' -4.8318 -4.8488 -4.8663 -4.8842 -4.9026 -4.9215 -4.9408 -4.9605 -4.9807 -  
 5.0014  
 F'' 14.4080 14.4977 14.5875 14.6775 14.7676 14.8579 14.9483 15.0388 15.1295 15.2203  
 2.50 TO 2.59 F' -5.0225 -5.0441 -5.0661 -5.0886 -5.1116 -5.1350 -5.1589 -5.1832 -5.2081 -  
 5.2334  
 F'' 15.3112 15.4023 15.4935 15.5848 15.6763 15.7679 15.8596 15.9514 16.0434 16.1355  
 2.60 TO 2.69 F' -5.2592 -5.2855 -5.3122 -5.3395 -5.3672 -5.3954 -5.4241 -5.4533 -5.4830 -  
 5.5132  
 F'' 16.2278 16.3202 16.4127 16.5053 16.5980 16.6909 16.7839 16.8770 16.9703 17.0637  
 2.70 TO 2.79 F' -5.5439 -5.5950 -5.6270 -5.6594 -5.6923 -5.7258 -5.7598 -5.7943 -5.8293 -  
 5.8687  
 F'' 17.1572 17.2506 17.3439 17.4374 17.5309 17.6246 17.7183 17.8122 17.9062 18.0002  
 2.80 TO 2.89 F' -5.9048 -5.9414 -5.9995 -6.0374 -6.0758 -6.1148 -6.1543 -6.1944 -6.2350 -  
 6.2762  
 F'' 18.0943 18.1885 18.2824 18.3763 18.4704 18.5645 18.6588 18.7531 18.8475 18.9421  
 ATOMIC SYMBOL = HG ATOMIC NUMBER = 80  
 0.10 TO 0.19 F' -0.0895 -5.6143 -3.0450 11.6993 -5.2981 -4.7167 -3.2450 -2.8323 -2.5960 -  
 2.4293  
 F'' 1.6617 1.9445 2.2391 2.5467 2.8628 0.6557 0.7352 0.8186 0.9057 0.9966  
 0.20 TO 0.29 F' -2.3010 -2.1942 -2.1013 -2.0189 -1.9466 -1.8790 -1.8167 -1.7590 -1.7053 -  
 1.6552  
 F'' 1.0909 1.1885 1.2894 1.3937 1.5010 1.6113 1.7247 1.8411 1.9605 2.0828  
 0.30 TO 0.39 F' -1.6086 -1.5652 -1.5249 -1.4877 -1.4535 -1.4222 -1.3940 -1.3688 -1.3467 -  
 1.3277  
 F'' 2.2079 2.3359 2.4667 2.6002 2.7364 2.8752 3.0168 3.1609 3.3076 3.4568  
 0.40 TO 0.49 F' -1.3118 -1.2993 -1.2943 -1.2887 -1.2915 -1.2934 -1.2991 -1.3086 -1.3218 -  
 1.3389  
 F'' 3.6085 3.7627 3.9193 4.0778 4.2384 4.4009 4.5657 4.7319 4.8997 5.0693  
 0.50 TO 0.59 F' -1.3600 -1.3858 -1.4154 -1.4495 -1.4881 -1.5315 -1.5798 -1.6332 -1.6920 -  
 1.7564  
 F'' 5.2409 5.4143 5.5896 5.7666 5.9454 6.1259 6.3082 6.4921 6.6778 6.8650  
 0.60 TO 0.69 F' -1.8265 -1.9028 -1.9855 -2.0750 -2.1717 -2.2755 -2.3878 -2.5087 -2.6402 -  
 2.7803  
 F'' 7.0539 7.2444 7.4365 7.6301 7.8252 8.0219 8.2202 8.4198 8.6208 8.8232  
 0.70 TO 0.79 F' -2.9312 -3.0939 -3.2695 -3.4594 -3.6655 -3.8898 -4.1353 -4.4057 -4.7040 -

5.0425  
F'' 9.0269 9.2321 9.4386 9.6464 9.8556 10.0660 10.2778 10.4908 10.7052 10.9211  
0.80 TO 0.89 F' -5.4403 -5.9027 -6.4877 -7.4012 -7.9454 -7.9139 -8.4487 -10.1231 -9.1847 -  
8.4849  
F'' 11.1371 11.3522 11.5683 11.7852 10.3874 10.5990 10.8122 11.0269 8.0345 8.1935  
0.90 TO 0.99 F' -8.2092 -8.1027 -8.0995 -8.1753 -8.3217 -8.5405 -8.8423 -9.2420 -9.8090 -  
10.6452  
F'' 8.3536 8.5148 8.6771 8.8404 9.0048 9.1702 9.3367 9.5061 9.6773 9.8498  
1.00 TO 1.09 F' -12.1384 -17.2714 -12.0162 -10.7520 -10.0036 -9.4715 -9.0588 -8.7220 -8.4378 -  
8.1921  
F'' 10.0235 3.9097 3.9726 4.0359 4.0996 4.1636 4.2280 4.2927 4.3577 4.4232  
1.10 TO 1.19 F' -7.9759 -7.7831 -7.6092 -7.4510 -7.3059 -7.1721 -7.0501 -6.9345 -6.8263 -  
6.7247  
F'' 4.4889 4.5551 4.6215 4.6883 4.7555 4.8230 4.8908 4.9589 5.0274 5.0962  
1.20 TO 1.29 F' -6.6353 -6.5451 -6.4597 -6.3787 -6.3017 -6.2323 -6.1624 -6.0956 -6.0317 -  
5.9705  
F'' 5.1653 5.2346 5.3043 5.3742 5.4445 5.5151 5.5859 5.6570 5.7285 5.8002  
1.30 TO 1.39 F' -5.9119 -5.8555 -5.8014 -5.7494 -5.6993 -5.6511 -5.6047 -5.5599 -5.5167 -  
5.4751  
F'' 5.8723 5.9446 6.0173 6.0903 6.1636 6.2371 6.3110 6.3852 6.4596 6.5344  
1.40 TO 1.49 F' -5.4348 -5.3959 -5.3582 -5.3218 -5.2865 -5.2524 -5.2194 -5.1874 -5.1565 -  
5.1266  
F'' 6.6090 6.6837 6.7587 6.8339 6.9094 6.9851 7.0611 7.1373 7.2139 7.2906  
1.50 TO 1.59 F' -5.0976 -5.0695 -5.0424 -5.0161 -4.9907 -4.9661 -4.9423 -4.9192 -4.8970 -  
4.8755  
F'' 7.3676 7.4449 7.5224 7.6002 7.6782 7.7564 7.8349 7.9136 7.9926 8.0718  
1.60 TO 1.69 F' -4.8547 -4.8346 -4.8152 -4.7966 -4.7786 -4.7612 -4.7445 -4.7285 -4.7130 -  
4.6982  
F'' 8.1513 8.2310 8.3109 8.3911 8.4715 8.5522 8.6330 8.7141 8.7955 8.8770  
1.70 TO 1.79 F' -4.6840 -4.6704 -4.6574 -4.6450 -4.6331 -4.6267 -4.6161 -4.6061 -4.5967 -  
4.5878  
F'' 8.9588 9.0408 9.1231 9.2055 9.2882 9.3711 9.4541 9.5374 9.6208 9.7045  
1.80 TO 1.89 F' -4.5794 -4.5715 -4.5642 -4.5575 -4.5546 -4.5489 -4.5438 -4.5392 -4.5351 -  
4.5315  
F'' 9.7884 9.8725 9.9568 10.0414 10.1261 10.2110 10.2961 10.3814 10.4670 10.5527  
1.90 TO 1.99 F' -4.5349 -4.5324 -4.5304 -4.5289 -4.5279 -4.5274 -4.5274 -4.5279 -4.5288 -  
4.5302  
F'' 10.6384 10.7244 10.8105 10.8968 10.9833 11.0700 11.1568 11.2439 11.3312 11.4186  
2.00 TO 2.09 F' -4.5321 -4.5345 -4.5373 -4.5407 -4.5445 -4.5487 -4.5535 -4.5587 -4.5644 -  
4.5705  
F'' 11.5062 11.5940 11.6820 11.7702 11.8585 11.9470 12.0357 12.1246 12.2137 12.3029  
2.10 TO 2.19 F' -4.5772 -4.5843 -4.5918 -4.5999 -4.6084 -4.6174 -4.6268 -4.6368 -4.6573 -  
4.6683  
F'' 12.3923 12.4819 12.5717 12.6616 12.7517 12.8420 12.9324 13.0230 13.1137 13.2044  
2.20 TO 2.29 F' -4.6798 -4.6917 -4.7041 -4.7170 -4.7303 -4.7441 -4.7584 -4.7732 -4.7884 -  
4.8041  
F'' 13.2953 13.3863 13.4775 13.5688 13.6603 13.7520 13.8438 13.9357 14.0278 14.1201  
2.30 TO 2.39 F' -4.8203 -4.8369 -4.8541 -4.8717 -4.8898 -4.9083 -4.9274 -4.9469 -4.9670 -  
4.9875  
F'' 14.2125 14.3051 14.3978 14.4907 14.5837 14.6769 14.7702 14.8637 14.9573 15.0511  
2.40 TO 2.49 F' -5.0085 -5.0300 -5.0520 -5.0745 -5.0975 -5.1210 -5.1450 -5.1695 -5.1945 -  
5.2200  
F'' 15.1450 15.2391 15.3333 15.4277 15.5222 15.6168 15.7116 15.8065 15.9016 15.9968  
2.50 TO 2.59 F' -5.2460 -5.2725 -5.2996 -5.3272 -5.3552 -5.3839 -5.4130 -5.4427 -5.4729 -

5.5037  
 F'' 16.0921 16.1876 16.2833 16.3790 16.4749 16.5710 16.6671 16.7634 16.8599 16.9565  
 2.60 TO 2.69 F' -5.5533 -5.5854 -5.6179 -5.6511 -5.6848 -5.7190 -5.7538 -5.7891 -5.8291 -  
 5.8656  
 F'' 17.0531 17.1496 17.2462 17.3429 17.4397 17.5366 17.6337 17.7309 17.8281 17.9254  
 2.70 TO 2.79 F' -5.9027 -5.9592 -5.9976 -6.0366 -6.0762 -6.1163 -6.1571 -6.1984 -6.2404 -  
 6.2829  
 F'' 18.0228 18.1199 18.2171 18.3145 18.4119 18.5094 18.6071 18.7048 18.8026 18.9006  
 2.80 TO 2.89 F' -6.3261 -6.3698 -6.4142 -6.4592 -6.5049 -6.5512 -6.5981 -6.6457 -6.6939 -  
 6.7428  
 F'' 18.9986 19.0968 19.1950 19.2933 19.3918 19.4903 19.5890 19.6877 19.7865 19.8854  
 ATOMIC SYMBOL = TL ATOMIC NUMBER = 81  
 0.10 TO 0.19 F' 2.7605 -4.2913 -2.3945 -8.6119 -2.1463 -3.7695 -3.0607 -2.7498 -2.5508 -2.4043  
 F'' 1.7373 2.0300 2.3358 2.6537 2.9796 0.6934 0.7773 0.8652 0.9571 1.0528  
 0.20 TO 0.29 F' -2.2861 -2.1855 -2.0975 -2.0206 -1.9494 -1.8841 -1.8238 -1.7679 -1.7160 -  
 1.6677  
 F'' 1.1520 1.2548 1.3610 1.4707 1.5835 1.6995 1.8187 1.9411 2.0666 2.1951  
 0.30 TO 0.39 F' -1.6229 -1.5814 -1.5431 -1.5081 -1.4762 -1.4475 -1.4220 -1.3997 -1.3808 -  
 1.3653  
 F'' 2.3265 2.4610 2.5983 2.7385 2.8815 3.0273 3.1758 3.3270 3.4809 3.6375  
 0.40 TO 0.49 F' -1.3533 -1.3492 -1.3446 -1.3486 -1.3519 -1.3593 -1.3709 -1.3867 -1.4064 -  
 1.4306  
 F'' 3.7966 3.9580 4.1216 4.2872 4.4550 4.6251 4.7976 4.9715 5.1470 5.3244  
 0.50 TO 0.59 F' -1.4592 -1.4924 -1.5304 -1.5734 -1.6216 -1.6751 -1.7342 -1.7993 -1.8704 -  
 1.9481  
 F'' 5.5037 5.6850 5.8681 6.0531 6.2400 6.4286 6.6190 6.8111 7.0050 7.2006  
 0.60 TO 0.69 F' -2.0325 -2.1241 -2.2233 -2.3301 -2.4460 -2.5717 -2.7068 -2.8525 -3.0100 -  
 3.1803  
 F'' 7.3978 7.5967 7.7972 7.9993 8.2031 8.4084 8.6152 8.8234 9.0332 9.2444  
 0.70 TO 0.79 F' -3.3648 -3.5652 -3.7836 -4.0227 -4.2860 -4.5785 -4.9050 -5.2912 -5.7349 -  
 6.2843  
 F'' 9.4571 9.6712 9.8867 10.1036 10.3219 10.5416 10.7627 10.9854 11.2058 11.4271  
 0.80 TO 0.89 F' -7.0755 -8.1755 -7.8466 -8.3068 -9.7133 -9.2251 -8.4445 -8.1463 -8.0285 -  
 8.0180  
 F'' 11.6494 10.2695 10.4847 10.7014 10.9195 7.9547 8.1178 8.2820 8.4474 8.6140  
 0.90 TO 0.99 F' -8.0882 -8.2300 -8.4466 -8.7440 -9.1480 -9.7048 -10.5274 -11.9936 -17.7835 -  
 11.9496  
 F'' 8.7817 8.9505 9.1204 9.2914 9.4633 9.6362 9.8101 9.9850 3.9243 3.9894  
 1.00 TO 1.09 F' -10.6770 -9.9284 -9.3974 -8.9862 -8.6509 -8.3681 -8.1238 -7.9089 -7.7173 -  
 7.5463  
 F'' 4.0549 4.1207 4.1869 4.2535 4.3205 4.3878 4.4555 4.5236 4.5921 4.6609  
 1.10 TO 1.19 F' -7.3892 -7.2451 -7.1123 -6.9891 -6.8743 -6.7669 -6.6711 -6.5763 -6.4868 -  
 6.4020  
 F'' 4.7301 4.7996 4.8695 4.9397 5.0103 5.0813 5.1525 5.2240 5.2959 5.3681  
 1.20 TO 1.29 F' -6.3256 -6.2492 -6.1765 -6.1072 -6.0409 -5.9776 -5.9169 -5.8587 -5.8029 -  
 5.7493  
 F'' 5.4406 5.5134 5.5866 5.6600 5.7338 5.8080 5.8824 5.9572 6.0323 6.1077  
 1.30 TO 1.39 F' -5.6977 -5.6482 -5.6005 -5.5546 -5.5103 -5.4677 -5.4266 -5.3870 -5.3489 -  
 5.3121  
 F'' 6.1835 6.2596 6.3360 6.4127 6.4897 6.5670 6.6447 6.7227 6.8010 6.8795  
 1.40 TO 1.49 F' -5.2764 -5.2417 -5.2081 -5.1757 -5.1443 -5.1139 -5.0846 -5.0562 -5.0288 -  
 5.0023  
 F'' 6.9579 7.0364 7.1152 7.1942 7.2735 7.3531 7.4329 7.5130 7.5934 7.6740  
 1.50 TO 1.59 F' -4.9766 -4.9518 -4.9279 -4.9048 -4.8825 -4.8609 -4.8401 -4.8201 -4.8008 -



4.7822  
F'' 7.7549 7.8361 7.9175 7.9992 8.0811 8.1633 8.2458 8.3285 8.4115 8.4947  
1.60 TO 1.69 F' -4.7643 -4.7471 -4.7306 -4.7167 -4.7016 -4.6871 -4.6733 -4.6602 -4.6492 -  
4.6373  
F'' 8.5781 8.6619 8.7458 8.8300 8.9145 8.9991 9.0841 9.1692 9.2546 9.3402  
1.70 TO 1.79 F' -4.6261 -4.6178 -4.6077 -4.5983 -4.5895 -4.5812 -4.5736 -4.5664 -4.5599 -  
4.5550  
F'' 9.4260 9.5121 9.5983 9.6848 9.7715 9.8585 9.9456 10.0330 10.1206 10.2085  
1.80 TO 1.89 F' -4.5496 -4.5447 -4.5460 -4.5424 -4.5393 -4.5367 -4.5346 -4.5331 -4.5321 -  
4.5317  
F'' 10.2965 10.3848 10.4732 10.5617 10.6505 10.7394 10.8286 10.9179 11.0075 11.0972  
1.90 TO 1.99 F' -4.5317 -4.5323 -4.5334 -4.5349 -4.5371 -4.5397 -4.5428 -4.5465 -4.5506 -  
4.5553  
F'' 11.1872 11.2774 11.3677 11.4583 11.5491 11.6400 11.7312 11.8226 11.9141 12.0058  
2.00 TO 2.09 F' -4.5605 -4.5661 -4.5723 -4.5790 -4.5862 -4.5939 -4.6021 -4.6108 -4.6201 -  
4.6319  
F'' 12.0978 12.1899 12.2822 12.3747 12.4674 12.5603 12.6534 12.7466 12.8401 12.9337  
2.10 TO 2.19 F' -4.6514 -4.6623 -4.6737 -4.6857 -4.6981 -4.7110 -4.7245 -4.7384 -4.7529 -  
4.7678  
F'' 13.0274 13.1211 13.2150 13.3091 13.4034 13.4978 13.5924 13.6872 13.7821 13.8772  
2.20 TO 2.29 F' -4.7833 -4.7993 -4.8158 -4.8328 -4.8503 -4.8684 -4.8869 -4.9060 -4.9256 -  
4.9458  
F'' 13.9725 14.0680 14.1636 14.2594 14.3553 14.4514 14.5477 14.6441 14.7407 14.8375  
2.30 TO 2.39 F' -4.9664 -4.9876 -5.0093 -5.0315 -5.0543 -5.0776 -5.1015 -5.1259 -5.1508 -  
5.1763  
F'' 14.9344 15.0315 15.1287 15.2261 15.3236 15.4213 15.5192 15.6172 15.7154 15.8137  
2.40 TO 2.49 F' -5.2023 -5.2289 -5.2560 -5.2837 -5.3119 -5.3407 -5.3701 -5.4000 -5.4306 -  
5.4617  
F'' 15.9122 16.0108 16.1096 16.2085 16.3076 16.4068 16.5062 16.6058 16.7054 16.8052  
2.50 TO 2.59 F' -5.5102 -5.5427 -5.5757 -5.6094 -5.6436 -5.6784 -5.7138 -5.7498 -5.7898 -  
5.8270  
F'' 16.9050 17.0047 17.1046 17.2046 17.3047 17.4050 17.5054 17.6059 17.7065 17.8072  
2.60 TO 2.69 F' -5.8821 -5.9208 -5.9601 -6.0000 -6.0405 -6.0817 -6.1235 -6.1660 -6.2091 -  
6.2529  
F'' 17.9078 18.0083 18.1090 18.2098 18.3106 18.4117 18.5128 18.6140 18.7153 18.8168  
2.70 TO 2.79 F' -6.2973 -6.3424 -6.3881 -6.4346 -6.4817 -6.5295 -6.5780 -6.6273 -6.6772 -  
6.7278  
F'' 18.9184 19.0201 19.1218 19.2237 19.3258 19.4279 19.5301 19.6324 19.7349 19.8374  
2.80 TO 2.89 F' -6.7885 -6.8407 -6.8936 -6.9475 -7.0020 -7.0572 -7.1131 -7.1699 -7.2275 -  
7.2858  
F'' 19.9398 20.0422 20.1447 20.2473 20.3500 20.4528 20.5557 20.6587 20.7618 20.8649  
ATOMIC SYMBOL = PB ATOMIC NUMBER = 82  
0.10 TO 0.19 F' -36.4976 -3.6824 -0.6976 -6.0304 -10.4411 -3.4093 -2.9457 -2.6949 -2.5217 -  
2.3898  
F'' 1.8150 2.1179 2.4355 2.7643 3.1024 0.7328 0.8211 0.9137 1.0104 1.1109  
0.20 TO 0.29 F' -2.2796 -2.1846 -2.1023 -2.0270 -1.9583 -1.8951 -1.8367 -1.7826 -1.7325 -  
1.6860  
F'' 1.2152 1.3232 1.4349 1.5500 1.6685 1.7903 1.9156 2.0441 2.1758 2.3107  
0.30 TO 0.39 F' -1.6430 -1.6035 -1.5674 -1.5346 -1.5052 -1.4792 -1.4567 -1.4377 -1.4223 -  
1.4106  
F'' 2.4487 2.5898 2.7339 2.8810 3.0310 3.1840 3.3398 3.4985 3.6599 3.8241  
0.40 TO 0.49 F' -1.4072 -1.4092 -1.4097 -1.4144 -1.4232 -1.4366 -1.4549 -1.4779 -1.5051 -  
1.5371  
F'' 3.9905 4.1592 4.3299 4.5031 4.6787 4.8567 5.0371 5.2190 5.4023 5.5876

0.50 TO 0.59 F' -1.5741 -1.6164 -1.6640 -1.7172 -1.7763 -1.8416 -1.9134 -1.9919 -2.0775 -  
2.1708  
F'' 5.7750 5.9643 6.1556 6.3487 6.5438 6.7406 6.9394 7.1399 7.3421 7.5462

0.60 TO 0.69 F' -2.2720 -2.3814 -2.5002 -2.6299 -2.7692 -2.9200 -3.0834 -3.2607 -3.4534 -  
3.6634  
F'' 7.7519 7.9594 8.1686 8.3794 8.5917 8.8056 9.0210 9.2380 9.4565 9.6765

0.70 TO 0.79 F' -3.8933 -4.1463 -4.4268 -4.7410 -5.0949 -5.5209 -6.0251 -6.6966 -8.1033 -  
7.8072  
F'' 9.8980 10.1210 10.3454 10.5712 10.7988 11.0262 11.2532 11.4811 11.7106 10.3433

0.80 TO 0.89 F' -8.1091 -9.1451 -9.5179 -8.4747 -8.1171 -7.9703 -7.9407 -7.9979 -8.1262 -  
8.3267  
F'' 10.5669 10.7921 7.8557 8.0229 8.1914 8.3611 8.5321 8.7043 8.8776 9.0522

0.90 TO 0.99 F' -8.6079 -8.9987 -9.5236 -10.2864 -11.5857 -16.2313 -12.1828 -10.7555 -9.9597 -  
9.4068  
F'' 9.2279 9.4039 9.5794 9.7556 9.9325 10.1101 3.9984 4.0660 4.1340 4.2024

1.00 TO 1.09 F' -8.9834 -8.6407 -8.3530 -8.1069 -7.8897 -7.6965 -7.5226 -7.3646 -7.2200 -  
7.0867  
F'' 4.2712 4.3404 4.4100 4.4800 4.5503 4.6211 4.6922 4.7637 4.8356 4.9079

1.10 TO 1.19 F' -6.9633 -6.8531 -6.7458 -6.6452 -6.5504 -6.4610 -6.3791 -6.2990 -6.2229 -  
6.1504  
F'' 4.9806 5.0536 5.1268 5.2005 5.2745 5.3489 5.4236 5.4986 5.5740 5.6497

1.20 TO 1.29 F' -6.0813 -6.0153 -5.9522 -5.8918 -5.8339 -5.7784 -5.7260 -5.6749 -5.6257 -  
5.5784  
F'' 5.7258 5.8023 5.8791 5.9562 6.0337 6.1115 6.1897 6.2682 6.3471 6.4262

1.30 TO 1.39 F' -5.5328 -5.4890 -5.4469 -5.4063 -5.3672 -5.3295 -5.2933 -5.2585 -5.2251 -  
5.1931  
F'' 6.5058 6.5856 6.6658 6.7464 6.8272 6.9084 6.9899 7.0718 7.1539 7.2364

1.40 TO 1.49 F' -5.1617 -5.1310 -5.1014 -5.0728 -5.0452 -5.0186 -4.9929 -4.9680 -4.9441 -  
4.9210  
F'' 7.3187 7.4010 7.4837 7.5666 7.6498 7.7333 7.8170 7.9011 7.9854 8.0700

1.50 TO 1.59 F' -4.8988 -4.8773 -4.8577 -4.8379 -4.8190 -4.8007 -4.7832 -4.7665 -4.7504 -  
4.7351  
F'' 8.1549 8.2400 8.3254 8.4111 8.4970 8.5833 8.6697 8.7565 8.8435 8.9308

1.60 TO 1.69 F' -4.7219 -4.7093 -4.6961 -4.6836 -4.6718 -4.6606 -4.6500 -4.6401 -4.6308 -  
4.6221  
F'' 9.0183 9.1060 9.1940 9.2823 9.3707 9.4595 9.5484 9.6377 9.7271 9.8168

1.70 TO 1.79 F' -4.6141 -4.6066 -4.5998 -4.5935 -4.5879 -4.5876 -4.5833 -4.5795 -4.5763 -  
4.5737  
F'' 9.9068 9.9970 10.0874 10.1780 10.2689 10.3600 10.4512 10.5426 10.6343 10.7262

1.80 TO 1.89 F' -4.5716 -4.5701 -4.5692 -4.5688 -4.5690 -4.5697 -4.5710 -4.5728 -4.5752 -  
4.5782  
F'' 10.8183 10.9106 11.0031 11.0959 11.1888 11.2820 11.3754 11.4691 11.5629 11.6569

1.90 TO 1.99 F' -4.5817 -4.5857 -4.5903 -4.5954 -4.6011 -4.6073 -4.6141 -4.6214 -4.6292 -  
4.6376  
F'' 11.7512 11.8456 11.9403 12.0352 12.1303 12.2255 12.3210 12.4167 12.5126 12.6087

2.00 TO 2.09 F' -4.6465 -4.6560 -4.6660 -4.6849 -4.6962 -4.7079 -4.7202 -4.7331 -4.7465 -  
4.7604  
F'' 12.7050 12.8015 12.8982 12.9949 13.0918 13.1888 13.2860 13.3834 13.4810 13.5788

2.10 TO 2.19 F' -4.7749 -4.7900 -4.8055 -4.8217 -4.8383 -4.8556 -4.8734 -4.8917 -4.9106 -  
4.9300  
F'' 13.6768 13.7749 13.8733 13.9718 14.0705 14.1694 14.2684 14.3676 14.4670 14.5666

2.20 TO 2.29 F' -4.9500 -4.9706 -4.9917 -5.0134 -5.0357 -5.0585 -5.0819 -5.1059 -5.1305 -  
5.1556  
F'' 14.6664 14.7663 14.8664 14.9667 15.0671 15.1678 15.2685 15.3695 15.4706 15.5719

2.30 TO 2.39 F' -5.1814 -5.2077 -5.2346 -5.2621 -5.2904 -5.3190 -5.3483 -5.3782 -5.4088 -  
5.4399  
F'' 15.6734 15.7750 15.8768 15.9787 16.0809 16.1831 16.2856 16.3882 16.4910 16.5939

2.40 TO 2.49 F' -5.4870 -5.5196 -5.5528 -5.5866 -5.6211 -5.6561 -5.6919 -5.7282 -5.7682 -  
5.8059  
F'' 16.6969 16.7998 16.9028 17.0060 17.1093 17.2128 17.3164 17.4201 17.5240 17.6279

2.50 TO 2.59 F' -5.8599 -5.8991 -5.9390 -5.9795 -6.0207 -6.0626 -6.1051 -6.1484 -6.1923 -  
6.2369  
F'' 17.7318 17.8357 17.9396 18.0437 18.1480 18.2523 18.3568 18.4614 18.5661 18.6710

2.60 TO 2.69 F' -6.2823 -6.3283 -6.3751 -6.4226 -6.4709 -6.5199 -6.5696 -6.6201 -6.6714 -  
6.7326  
F'' 18.7759 18.8810 18.9862 19.0916 19.1970 19.3026 19.4083 19.5141 19.6200 19.7259

2.70 TO 2.79 F' -6.7855 -6.8392 -6.8936 -6.9489 -7.0050 -7.0620 -7.1198 -7.1784 -7.2379 -  
7.2984  
F'' 19.8317 19.9376 20.0436 20.1497 20.2560 20.3623 20.4688 20.5753 20.6820 20.7887

2.80 TO 2.89 F' -7.3597 -7.4219 -7.4851 -7.5492 -7.6143 -7.6803 -7.7474 -7.8155 -7.8847 -  
7.9550  
F'' 20.8956 21.0026 21.1096 21.2168 21.3241 21.4315 21.5389 21.6465 21.7542 21.8619

ATOMIC SYMBOL = BI ATOMIC NUMBER = 83

0.10 TO 0.19 F' -6.6841 -3.2231 100.5535 -4.8582 -4.1425 -3.2121 -2.8674 -2.6562 -2.5032 -  
2.3809  
F'' 1.8933 2.2075 2.5365 2.8748 0.6853 0.7738 0.8668 0.9643 1.0660 1.1717

0.20 TO 0.29 F' -2.2776 -2.1874 -2.1089 -2.0364 -1.9701 -1.9090 -1.8527 -1.8005 -1.7524 -  
1.7080  
F'' 1.2813 1.3949 1.5121 1.6330 1.7574 1.8854 2.0168 2.1517 2.2899 2.4314

0.30 TO 0.39 F' -1.6672 -1.6301 -1.5965 -1.5665 -1.5401 -1.5173 -1.4984 -1.4832 -1.4763 -  
1.4694  
F'' 2.5761 2.7241 2.8752 3.0294 3.1867 3.3469 3.5102 3.6764 3.8454 4.0167

0.40 TO 0.49 F' -1.4726 -1.4743 -1.4803 -1.4908 -1.5060 -1.5260 -1.5509 -1.5834 -1.6189 -  
1.6599  
F'' 4.1903 4.3661 4.5446 4.7256 4.9091 5.0951 5.2836 5.4734 5.6648 5.8582

0.50 TO 0.59 F' -1.7064 -1.7589 -1.8174 -1.8824 -1.9542 -2.0330 -2.1192 -2.2134 -2.3161 -  
2.4271  
F'' 6.0537 6.2512 6.4507 6.6522 6.8556 7.0609 7.2680 7.4770 7.6878 7.9005

0.60 TO 0.69 F' -2.5483 -2.6802 -2.8230 -2.9779 -3.1463 -3.3295 -3.5293 -3.7480 -3.9883 -  
4.2542  
F'' 8.1150 8.3311 8.5490 8.7685 8.9897 9.2125 9.4369 9.6630 9.8905 10.1197

0.70 TO 0.79 F' -4.5509 -4.8857 -5.2698 -5.7374 -6.3136 -7.1755 -7.9758 -7.9144 -8.5986 -  
10.9742  
F'' 10.3503 10.5825 10.8166 11.0488 11.2817 11.5157 10.1687 10.3952 10.6231 7.7291

0.80 TO 0.89 F' -8.6367 -8.1490 -7.9482 -7.8841 -7.9131 -8.0180 -8.1950 -8.4495 -8.7977 -  
9.2753  
F'' 7.8999 8.0720 8.2455 8.4202 8.5962 8.7735 8.9520 9.1318 9.3129 9.4946

0.90 TO 0.99 F' -9.9527 -11.0410 -13.5866 -12.8285 -10.9872 -10.0850 -9.4847 -9.0351 -8.6773 -  
8.3787  
F'' 9.6774 9.8612 10.0461 3.9957 4.0654 4.1355 4.2060 4.2770 4.3484 4.4201

1.00 TO 1.09 F' -8.1233 -7.9004 -7.7029 -7.5261 -7.3655 -7.2188 -7.0839 -6.9637 -6.8478 -  
6.7396  
F'' 4.4923 4.5649 4.6380 4.7114 4.7852 4.8595 4.9341 5.0091 5.0845 5.1602

1.10 TO 1.19 F' -6.6383 -6.5456 -6.4562 -6.3714 -6.2910 -6.2146 -6.1420 -6.0728 -6.0068 -  
5.9437  
F'' 5.2363 5.3128 5.3896 5.4667 5.5443 5.6223 5.7006 5.7793 5.8583 5.9377

1.20 TO 1.29 F' -5.8833 -5.8255 -5.7701 -5.7169 -5.6658 -5.6168 -5.5696 -5.5242 -5.4806 -  
5.4386

F'' 6.0175 6.0977 6.1782 6.2591 6.3404 6.4220 6.5040 6.5863 6.6690 6.7520  
 1.30 TO 1.39 F' -5.3982 -5.3593 -5.3219 -5.2859 -5.2513 -5.2181 -5.1863 -5.1559 -5.1270 -  
 5.1000  
 F'' 6.8354 6.9191 7.0032 7.0876 7.1724 7.2575 7.3430 7.4287 7.5149 7.6014  
 1.40 TO 1.49 F' -5.0728 -5.0459 -5.0199 -4.9952 -4.9711 -4.9480 -4.9258 -4.9044 -4.8839 -  
 4.8642  
 F'' 7.6876 7.7738 7.8604 7.9473 8.0344 8.1219 8.2096 8.2976 8.3860 8.4746  
 1.50 TO 1.59 F' -4.8453 -4.8280 -4.8108 -4.7943 -4.7786 -4.7636 -4.7503 -4.7368 -4.7241 -  
 4.7120  
 F'' 8.5634 8.6526 8.7420 8.8318 8.9218 9.0120 9.1026 9.1933 9.2844 9.3757  
 1.60 TO 1.69 F' -4.7006 -4.6899 -4.6799 -4.6705 -4.6618 -4.6538 -4.6464 -4.6396 -4.6375 -  
 4.6321  
 F'' 9.4673 9.5591 9.6512 9.7436 9.8362 9.9291 10.0223 10.1157 10.2093 10.3030  
 1.70 TO 1.79 F' -4.6274 -4.6233 -4.6198 -4.6169 -4.6146 -4.6130 -4.6119 -4.6114 -4.6115 -  
 4.6122  
 F'' 10.3970 10.4913 10.5858 10.6805 10.7754 10.8706 10.9661 11.0617 11.1576 11.2537  
 1.80 TO 1.89 F' -4.6136 -4.6155 -4.6179 -4.6210 -4.6247 -4.6289 -4.6338 -4.6392 -4.6452 -  
 4.6517  
 F'' 11.3501 11.4467 11.5435 11.6405 11.7378 11.8353 11.9330 12.0309 12.1291 12.2274  
 1.90 TO 1.99 F' -4.6589 -4.6666 -4.6751 -4.6840 -4.6934 -4.7035 -4.7216 -4.7330 -4.7449 -  
 4.7574  
 F'' 12.3260 12.4248 12.5239 12.6231 12.7226 12.8222 12.9219 13.0218 13.1219 13.2221  
 2.00 TO 2.09 F' -4.7705 -4.7842 -4.7985 -4.8133 -4.8287 -4.8447 -4.8613 -4.8785 -4.8963 -  
 4.9147  
 F'' 13.3226 13.4233 13.5241 13.6252 13.7265 13.8279 13.9296 14.0314 14.1335 14.2357  
 2.10 TO 2.19 F' -4.9336 -4.9532 -4.9733 -4.9941 -5.0154 -5.0374 -5.0600 -5.0831 -5.1069 -  
 5.1313  
 F'' 14.3381 14.4407 14.5435 14.6465 14.7497 14.8531 14.9566 15.0603 15.1643 15.2683  
 2.20 TO 2.29 F' -5.1563 -5.1820 -5.2083 -5.2351 -5.2627 -5.2908 -5.3196 -5.3491 -5.3792 -  
 5.4099  
 F'' 15.3726 15.4771 15.5817 15.6865 15.7915 15.8967 16.0021 16.1076 16.2133 16.3191  
 2.30 TO 2.39 F' -5.4413 -5.4874 -5.5203 -5.5539 -5.5881 -5.6231 -5.6587 -5.6949 -5.7319 -  
 5.7718  
 F'' 16.4252 16.5313 16.6373 16.7435 16.8499 16.9564 17.0631 17.1699 17.2769 17.3840  
 2.40 TO 2.49 F' -5.8101 -5.8634 -5.9034 -5.9441 -5.9854 -6.0276 -6.0704 -6.1140 -6.1583 -  
 6.2033  
 F'' 17.4912 17.5984 17.7056 17.8129 17.9203 18.0279 18.1357 18.2435 18.3515 18.4597  
 2.50 TO 2.59 F' -6.2491 -6.2957 -6.3430 -6.3911 -6.4400 -6.4897 -6.5402 -6.5915 -6.6437 -  
 6.7056  
 F'' 18.5680 18.6764 18.7849 18.8936 19.0024 19.1113 19.2204 19.3296 19.4389 19.5480  
 2.60 TO 2.69 F' -6.7595 -6.8142 -6.8698 -6.9262 -6.9835 -7.0417 -7.1008 -7.1608 -7.2218 -  
 7.2837  
 F'' 19.6573 19.7666 19.8761 19.9856 20.0953 20.2051 20.3151 20.4251 20.5353 20.6455  
 2.70 TO 2.79 F' -7.3466 -7.4105 -7.4754 -7.5413 -7.6082 -7.6763 -7.7454 -7.8157 -7.8871 -  
 7.9596  
 F'' 20.7559 20.8664 20.9770 21.0878 21.1986 21.3095 21.4206 21.5317 21.6430 21.7544  
 2.80 TO 2.89 F' -8.0334 -8.1085 -8.1848 -8.2625 -8.3415 -8.4219 -8.5039 -8.5873 -8.6724 -  
 8.7591  
 F'' 21.8659 21.9774 22.0891 22.2009 22.3128 22.4248 22.5369 22.6491 22.7614 22.8738  
 ATOMIC SYMBOL = U ATOMIC NUMBER = 92  
 0.10 TO 0.19 F' -5.9996 -4.5089 -3.5936 -3.2703 -3.0706 -2.9230 -2.8044 -2.7047 -2.6177 -  
 2.5406  
 F'' 2.6794 0.7200 0.8368 0.9607 1.0916 1.2293 1.3734 1.5232 1.6789 1.8401  
 0.20 TO 0.29 F' -2.4718 -2.4101 -2.3550 -2.3060 -2.2630 -2.2260 -2.1948 -2.1696 -2.1506 -

2.1417  
F'' 2.0068 2.1789 2.3561 2.5385 2.7258 2.9180 3.1150 3.3167 3.5229 3.7333  
0.30 TO 0.39 F' -2.1412 -2.1423 -2.1503 -2.1653 -2.1878 -2.2180 -2.2565 -2.3077 -2.3641 -  
2.4301  
F'' 3.9473 4.1648 4.3863 4.6116 4.8409 5.0739 5.3106 5.5505 5.7937 6.0404  
0.40 TO 0.49 F' -2.5064 -2.5937 -2.6928 -2.8046 -2.9324 -3.0734 -3.2379 -3.4132 -3.6077 -  
3.8254  
F'' 6.2905 6.5440 6.8007 7.0607 7.3237 7.5895 7.8576 8.1268 8.3981 8.6721  
0.50 TO 0.59 F' -4.0701 -4.3470 -4.6641 -5.0322 -5.4711 -6.0274 -6.7869 -9.2014 -8.1392 -  
9.8323  
F'' 8.9488 9.2282 9.5103 9.7949 10.0820 10.3687 10.6558 9.4740 9.7448 10.0170  
0.60 TO 0.69 F' -8.5099 -7.8789 -7.6271 -7.5374 -7.5508 -7.6458 -7.8170 -8.0732 -8.4243 -  
8.9349  
F'' 7.2584 7.4695 7.6828 7.8983 8.1159 8.3357 8.5576 8.7816 9.0075 9.2339  
0.70 TO 0.79 F' -9.6368 -10.7913 -14.0682 -11.8459 -10.3818 -9.6059 -9.0778 -8.6805 -8.3599 -  
8.0925  
F'' 9.4538 9.6741 9.8947 4.1525 4.2439 4.3360 4.4289 4.5223 4.6164 4.7112  
0.80 TO 0.89 F' -7.8636 -7.6653 -7.4882 -7.3293 -7.1855 -7.0561 -6.9356 -6.8243 -6.7210 -  
6.6247  
F'' 4.8067 4.9028 4.9995 5.0968 5.1949 5.2935 5.3928 5.4927 5.5932 5.6944  
0.90 TO 0.99 F' -6.5368 -6.4525 -6.3732 -6.2985 -6.2279 -6.1612 -6.0980 -6.0380 -5.9811 -  
5.9269  
F'' 5.7962 5.8986 6.0016 6.1052 6.2094 6.3142 6.4196 6.5256 6.6323 6.7395  
1.00 TO 1.09 F' -5.8755 -5.8265 -5.7799 -5.7354 -5.6932 -5.6529 -5.6145 -5.5780 -5.5432 -  
5.5102  
F'' 6.8472 6.9556 7.0646 7.1741 7.2842 7.3949 7.5061 7.6180 7.7303 7.8433  
1.10 TO 1.19 F' -5.4788 -5.4490 -5.4244 -5.3977 -5.3724 -5.3485 -5.3260 -5.3049 -5.2851 -  
5.2665  
F'' 7.9568 8.0708 8.1854 8.3003 8.4158 8.5318 8.6484 8.7655 8.8831 9.0013  
1.20 TO 1.29 F' -5.2597 -5.2439 -5.2292 -5.2158 -5.2036 -5.1925 -5.1826 -5.1739 -5.1663 -  
5.1599  
F'' 9.1198 9.2385 9.3577 9.4774 9.5976 9.7183 9.8395 9.9612 10.0834 10.2061  
1.30 TO 1.39 F' -5.1546 -5.1505 -5.1475 -5.1457 -5.1451 -5.1456 -5.1474 -5.1505 -5.1549 -  
5.1609  
F'' 10.3293 10.4529 10.5770 10.7016 10.8267 10.9523 11.0783 11.2048 11.3318 11.4592  
1.40 TO 1.49 F' -5.1672 -5.1740 -5.1818 -5.1907 -5.2006 -5.2123 -5.2243 -5.2374 -5.2516 -  
5.2668  
F'' 11.5861 11.7129 11.8401 11.9677 12.0957 12.2241 12.3528 12.4819 12.6114 12.7412  
1.50 TO 1.59 F' -5.2830 -5.3002 -5.3185 -5.3378 -5.3582 -5.3796 -5.4021 -5.4257 -5.4503 -  
5.4760  
F'' 12.8715 13.0020 13.1330 13.2643 13.3959 13.5279 13.6603 13.7930 13.9261 14.0595  
1.60 TO 1.69 F' -5.5028 -5.5306 -5.5596 -5.5897 -5.6208 -5.6531 -5.6865 -5.7250 -5.7609 -  
5.7986  
F'' 14.1933 14.3274 14.4618 14.5966 14.7317 14.8672 15.0030 15.1390 15.2753 15.4119  
1.70 TO 1.79 F' -5.8368 -5.8762 -5.9168 -5.9586 -6.0027 -6.0511 -6.0968 -6.1437 -6.1919 -  
6.2414  
F'' 15.5489 15.6861 15.8237 15.9615 16.0997 16.2381 16.3768 16.5157 16.6549 16.7944  
1.80 TO 1.89 F' -6.2922 -6.3443 -6.3978 -6.4527 -6.5089 -6.5720 -6.6312 -6.6917 -6.7538 -  
6.8174  
F'' 16.9342 17.0743 17.2146 17.3552 17.4962 17.6370 17.7782 17.9196 18.0613 18.2032  
1.90 TO 1.99 F' -6.8824 -6.9491 -7.0173 -7.0872 -7.1587 -7.2320 -7.3070 -7.3838 -7.4625 -  
7.5447  
F'' 18.3454 18.4878 18.6305 18.7734 18.9166 19.0600 19.2037 19.3476 19.4918 19.6361  
2.00 TO 2.09 F' -7.6273 -7.7120 -7.7987 -7.8877 -7.9792 -8.0730 -8.1693 -8.2683 -8.3702 -

8.4751  
 F" 19.7808 19.9256 20.0707 20.2160 20.3616 20.5073 20.6533 20.7996 20.9460 21.0927  
 2.10 TO 2.19 F' -8.5833 -8.6951 -8.8108 -8.9374 -9.0622 -9.1926 -9.3294 -9.4739 -9.6282 -  
 9.7952  
 F" 21.2396 21.3867 21.5341 21.6816 21.8286 21.9758 22.1232 22.2707 22.4184 22.5664  
 2.20 TO 2.29 F' -9.9805 -10.1949 -10.4720 -10.9388 -11.0127 -10.8246 -10.8004 -10.8313 -10.8921 -  
 10.9619  
 F" 22.7144 22.8627 23.0110 23.1594 22.3546 22.5032 22.6519 22.8009 22.9500 23.1007  
 2.30 TO 2.39 F' -11.0595 -11.1716 -11.2978 -11.4392 -11.5980 -11.7790 -11.9912 -12.2544 -12.6262 -  
 13.5011  
 F" 23.2516 23.4027 23.5541 23.7058 23.8577 24.0098 24.1621 24.3147 24.4676 24.6206  
 2.40 TO 2.49 F' -13.0513 -12.7650 -12.6621 -12.6275 -12.6299 -12.6563 -12.6998 -12.7567 -12.8243 -  
 12.9011  
 F" 23.3017 23.4531 23.6048 23.7567 23.9087 24.0610 24.2135 24.3662 24.5192 24.6723  
 2.50 TO 2.59 F' -12.9858 -13.0776 -13.1760 -13.2805 -13.3907 -13.5074 -13.6245 -13.7507 -13.8821 -  
 14.0186  
 F" 24.8256 24.9791 25.1329 25.2868 25.4409 25.5952 25.7498 25.9046 26.0597 26.2149  
 2.60 TO 2.69 F' -14.1602 -14.3069 -14.4589 -14.6162 -14.7789 -14.9472 -15.1213 -15.3015 -15.4880 -  
 15.6708  
 F" 26.3703 26.5260 26.6818 26.8378 26.9940 27.1504 27.3069 27.4637 27.6206 27.7779  
 2.70 TO 2.79 F' -15.8709 -16.0786 -16.2943 -16.5188 -16.7577 -17.0240 -17.2801 -17.5494 -17.8335 -  
 18.1351  
 F" 27.9356 28.0934 28.2515 28.4097 28.5681 28.7258 28.8825 29.0393 29.1961 29.3531  
 2.80 TO 2.89 F' -18.4575 -18.8053 -19.1853 -19.6078 -20.0900 -20.6636 -21.3982 -22.5057 -26.2353 -  
 23.1508  
 F" 29.5102 29.6674 29.8248 29.9822 30.1397 30.2973 30.4550 30.6129 30.7708 26.4797