

4. PRODUCTION AND PROPERTIES OF RADIATIONS

Table 4.3.2.2. *Elastic atomic scattering factors of electrons for neutral atoms and s up to 2.0Å^{-1}*

Element	Z	a_1	a_2	a_3	a_4	a_5	b_1	b_2	b_3	b_4	b_5
H	1	0.0349	0.1201	0.1970	0.0573	0.1195	0.5347	3.5867	12.3471	18.9525	38.6269
He	2	0.0317	0.0838	0.1526	0.1334	0.0164	0.2507	1.4751	4.4938	12.6646	31.1653
Li	3	0.0750	0.2249	0.5548	1.4954	0.9354	0.3864	2.9383	15.3829	53.5545	138.7337
Be	4	0.0780	0.2210	0.6740	1.3867	0.6925	0.3131	2.2381	10.1517	30.9061	78.3273
B	5	0.0909	0.2551	0.7738	1.2136	0.4606	0.2995	2.1155	8.3816	24.1292	63.1314
C	6	0.0893	0.2563	0.7570	1.0487	0.3575	0.2465	1.7100	6.4094	18.6113	50.2523
N	7	0.1022	0.3219	0.7982	0.8197	0.1715	0.2451	1.7481	6.1925	17.3894	48.1431
O	8	0.0974	0.2921	0.6910	0.6990	0.2039	0.2067	1.3815	4.6943	12.7105	32.4726
F	9	0.1083	0.3175	0.6487	0.5846	0.1421	0.2057	1.3439	4.2788	11.3932	28.7881
Ne	10	0.1269	0.3535	0.5582	0.4674	0.1460	0.2200	1.3779	4.0203	9.4934	23.1278
Na	11	0.2142	0.6853	0.7692	1.6589	1.4482	0.3334	2.3446	10.0830	48.3037	138.2700
Mg	12	0.2314	0.6866	0.9677	2.1882	1.1339	0.3278	2.2720	10.9241	39.2898	101.9748
Al	13	0.2390	0.6573	1.2011	2.5586	1.2312	0.3138	2.1063	10.4163	34.4552	98.5344
Si	14	0.2519	0.6372	1.3795	2.5082	1.0500	0.3075	2.0174	9.6746	29.3744	80.4732
P	15	0.2548	0.6106	1.4541	2.3204	0.8477	0.2908	1.8740	8.5176	24.3434	63.2996
S	16	0.2497	0.5628	1.3899	2.1865	0.7715	0.2681	1.6711	7.0267	19.5377	50.3888
Cl	17	0.2443	0.5397	1.3919	2.0197	0.6621	0.2468	1.5242	6.1537	16.6687	42.3086
Ar	18	0.2385	0.5017	1.3428	1.8899	0.6079	0.2289	1.3694	5.2561	14.0928	35.5361
K	19	0.4115	1.4031	2.2784	2.6742	2.2162	0.3703	3.3874	13.1029	68.9592	194.4329
Ca	20	0.4054	1.3880	2.1602	3.7532	2.2063	0.3499	3.0991	11.9608	53.9353	142.3892
Sc	21	0.3787	1.2181	2.0594	3.2618	2.3870	0.3133	2.5856	9.5813	41.7688	116.7282
Ti	22	0.3825	1.2598	2.0008	3.0617	2.0694	0.3040	2.4863	9.2783	39.0751	109.4583
V	23	0.3876	1.2750	1.9109	2.8314	1.8979	0.2967	2.3780	8.7981	35.9528	101.7201
Cr	24	0.4046	1.3696	1.8941	2.0800	1.2196	0.2986	2.3958	9.1406	37.4701	113.7121
Mn	25	0.3796	1.2094	1.7815	2.5420	1.5937	0.2699	2.0455	7.4726	31.0604	91.5622
Fe	26	0.3946	1.2725	1.7031	2.3140	1.4795	0.2717	2.0443	7.6007	29.9714	86.2265
Co	27	0.4118	1.3161	1.6493	2.1930	1.2830	0.2742	2.0372	7.7205	29.9680	84.9383
Ni	28	0.3860	1.1765	1.5451	2.0730	1.3814	0.2478	1.7660	6.3107	25.2204	74.3146
Cu	29	0.4314	1.3208	1.5236	1.4671	0.8562	0.2694	1.9223	7.3474	28.9892	90.6246
Zn	30	0.4288	1.2646	1.4472	1.8294	1.0934	0.2593	1.7998	6.7500	25.5860	73.5284
Ga	31	0.4818	1.4032	1.6561	2.4605	1.1054	0.2825	1.9785	8.7546	32.5238	98.5523
Ge	32	0.4655	1.3014	1.6088	2.6998	1.3003	0.2647	1.7926	7.6071	26.5541	77.5238
As	33	0.4517	1.2229	1.5852	2.7958	1.2638	0.2493	1.6436	6.8154	22.3681	62.0390
Se	34	0.4477	1.1678	1.5843	2.8087	1.1956	0.2405	1.5442	6.3231	19.4610	52.0233
Br	35	0.4798	1.1948	1.8695	2.6953	0.8203	0.2504	1.5963	6.9653	19.8492	50.3233
Kr	36	0.4546	1.0993	1.7696	2.7068	0.8672	0.2309	1.4279	5.9449	16.6752	42.2243
Rb	37	1.0160	2.8528	3.5466	-7.7804	12.1148	0.4853	5.0925	25.7851	130.4515	138.6775
Sr	38	0.6703	1.4926	3.3368	4.4600	3.1501	0.3190	2.2287	10.3504	52.3291	151.2216
Y	39	0.6894	1.5474	3.2450	4.2126	2.9764	0.3189	2.2904	10.0062	44.0771	125.0120
Zr	40	0.6719	1.4684	3.1668	3.9557	2.8920	0.3036	2.1249	8.9236	36.8458	108.2049
Nb	41	0.6123	1.2677	3.0348	3.3841	2.3683	0.2709	1.7683	7.2489	27.9465	98.5624
Mo	42	0.6773	1.4798	3.1788	3.0824	1.8384	0.2920	2.0606	8.1129	30.5336	100.0658
Tc	43	0.7082	1.6392	3.1993	3.4327	1.8711	0.2976	2.2106	8.5246	33.1456	96.6377
Ru	44	0.6735	1.4934	3.0966	2.7254	1.5597	0.2773	1.9716	7.3249	26.6891	90.5581
Rh	45	0.6413	1.3690	2.9854	2.6952	1.5433	0.2580	1.7721	6.3854	23.2549	85.1517
Pd	46	0.5904	1.1775	2.6519	2.2875	0.8689	0.2324	1.5019	5.1591	15.5428	46.8213
Ag	47	0.6377	1.3790	2.8294	2.3631	1.4553	0.2466	1.6974	5.7656	20.0943	76.7372
Cd	48	0.6364	1.4247	2.7802	2.5973	1.7886	0.2407	1.6823	5.6588	20.7219	69.1109
In	49	0.6768	1.6589	2.7740	3.1835	2.1326	0.2522	1.8545	6.2936	25.1457	84.5448

4.3. ELECTRON DIFFRACTION

Table 4.3.2.2. *Elastic atomic scattering factors of electrons for neutral atoms and s up to 2.0 \AA^{-1} (cont.)*

Element	Z	a_1	a_2	a_3	a_4	a_5	b_1	b_2	b_3	b_4	b_5
Sn	50	0.7224	1.9610	2.7161	3.5603	1.8972	0.2651	2.0604	7.3011	27.5493	81.3349
Sb	51	0.7106	1.9247	2.6149	3.8322	1.8899	0.2562	1.9646	6.8852	24.7648	68.9168
Te	52	0.6947	1.8690	2.5356	4.0013	1.8955	0.2459	1.8542	6.4411	22.1730	59.2206
I	53	0.7047	1.9484	2.5940	4.1526	1.5057	0.2455	1.8638	6.7639	21.8007	56.4395
Xe	54	0.6737	1.7908	2.4129	4.2100	1.7058	0.2305	1.6890	5.8218	18.3928	47.2496
Cs	55	1.2704	3.8018	5.6618	0.9205	4.8105	0.4356	4.2058	23.4342	136.7783	171.7561
Ba	56	0.9049	2.6076	4.8498	5.1603	4.7388	0.3066	2.4363	12.1821	54.6135	161.9978
La	57	0.8405	2.3863	4.6139	5.1514	4.7949	0.2791	2.1410	10.3400	41.9148	132.0204
Ce	58	0.8551	2.3915	4.5772	5.0278	4.5118	0.2805	2.1200	10.1808	42.0633	130.9893
Pr	59	0.9096	2.5313	4.5266	4.6376	4.3690	0.2939	2.2471	10.8266	48.8842	147.6020
Nd	60	0.8807	2.4183	4.4448	4.6858	4.1725	0.2802	2.0836	10.0357	47.4506	146.9976
Pm	61	0.9471	2.5463	4.3523	4.4789	3.9080	0.2977	2.2276	10.5762	49.3619	145.3580
Sm	62	0.9699	2.5837	4.2778	4.4575	3.5985	0.3003	2.2447	10.6487	50.7994	146.4179
Eu	63	0.8694	2.2413	3.9196	3.9694	4.5498	0.2653	1.8590	8.3998	36.7397	125.7089
Gd	64	0.9673	2.4702	4.1148	4.4972	3.2099	0.2909	2.1014	9.7067	43.4270	125.9474
Tb	65	0.9325	2.3673	3.8791	3.9674	3.7996	0.2761	1.9511	8.9296	41.5937	131.0122
Dy	66	0.9505	2.3705	3.8218	4.0471	3.4451	0.2773	1.9469	8.8862	43.0938	133.1396
Ho	67	0.9248	2.2428	3.6182	3.7910	3.7912	0.2660	1.8183	7.9655	33.1129	101.8139
Er	68	1.0373	2.4824	3.6558	3.8925	3.0056	0.2944	2.0797	9.4156	45.8056	132.7720
Tm	69	1.0075	2.3787	3.5440	3.6932	3.1759	0.2816	1.9486	8.7162	41.8420	125.0320
Yb	70	1.0347	2.3911	3.4619	3.6556	3.0052	0.2855	1.9679	8.7619	42.3304	125.6499
Lu	71	0.9927	2.2436	3.3554	3.7813	3.0994	0.2701	1.8073	7.8112	34.4849	103.3526
Hf	72	1.0295	2.2911	3.4110	3.9497	2.4925	0.2761	1.8625	8.0961	34.2712	98.5295
Ta	73	1.0190	2.2291	3.4097	3.9252	2.2679	0.2694	1.7962	7.6944	31.0942	91.1089
W	74	0.9853	2.1167	3.3570	3.7981	2.2798	0.2569	1.6745	7.0098	26.9234	81.3910
Re	75	0.9914	2.0858	3.4531	3.8812	1.8526	0.2548	1.6518	6.8845	26.7234	81.7215
Os	76	0.9813	2.0322	3.3665	3.6235	1.9741	0.2487	1.5973	6.4737	23.2817	70.9254
Ir	77	1.0194	2.0645	3.4425	3.4914	1.6976	0.2554	1.6475	6.5966	23.2269	70.0272
Pt	78	0.9148	1.8096	3.2134	3.2953	1.5754	0.2263	1.3813	5.3243	17.5987	60.0171
Au	79	0.9674	1.8916	3.3993	3.0524	1.2607	0.2358	1.4712	5.6758	18.7119	61.5286
Hg	80	1.0033	1.9469	3.4396	3.1548	1.4180	0.2413	1.5298	5.8009	19.4520	60.5753
Tl	81	1.0689	2.1038	3.6039	3.4927	1.8283	0.2540	1.6715	6.3509	23.1531	78.7099
Pb	82	1.0891	2.1867	3.6160	3.8031	1.8994	0.2552	1.7174	6.5131	23.9170	74.7039
Bi	83	1.1007	2.2306	3.5689	4.1549	2.0382	0.2546	1.7351	6.4948	23.6464	70.3780
Po	84	1.1568	2.4353	3.6459	4.4064	1.7179	0.2648	1.8786	7.1749	25.1766	69.2821
At	85	1.0909	2.1976	3.3831	4.6700	2.1277	0.2466	1.6707	6.0197	20.7657	57.2663
Rn	86	1.0756	2.1630	3.3178	4.8852	2.0489	0.2402	1.6169	5.7644	19.4568	52.5009
Fr	87	1.4282	3.5081	5.6767	4.1964	3.8946	0.3183	2.6889	13.4816	54.3866	200.8321
Ra	88	1.3127	3.1243	5.2988	5.3891	5.4133	0.2887	2.2897	10.8276	43.5389	145.6109
Ac	89	1.3128	3.1021	5.3385	5.9611	4.7562	0.2861	2.2509	10.5287	41.7796	128.2973
Th	90	1.2553	2.9178	5.0862	6.1206	4.7122	0.2701	2.0636	9.3051	34.5977	107.9200
Pa	91	1.3218	3.1444	5.4371	5.6444	4.0107	0.2827	2.2250	10.2454	41.1162	124.4449
U	92	1.3382	3.2043	5.4558	5.4839	3.6342	0.2838	2.2452	10.2519	41.7251	124.9023
Np	93	1.5193	4.0053	6.5327	-1.1402	6.7489	0.3213	2.8206	14.8878	68.9103	81.7257
Pu	94	1.3517	3.2937	5.3213	4.6466	3.5714	0.2813	2.2418	9.9952	42.7939	132.1739
Am	95	1.2135	2.7962	4.7545	4.5731	4.4786	0.2483	1.8437	7.5421	29.3841	112.4579
Cm	96	1.2937	3.1100	5.0393	4.7546	3.5031	0.2638	2.0341	8.7101	35.2992	109.4972
Bk	97	1.2915	3.1023	4.9309	4.6009	3.4661	0.2611	2.0023	8.4377	34.1559	105.8911
Cf	98	1.2089	2.7391	4.3482	4.0047	4.6497	0.2421	1.7487	6.7262	23.2153	80.3108