

Table A3.1

Atomic Scattering Amplitudes for Electrons  $f$  in Å. Self-consistent Field Calculations\*. These Values are Based on the Rest Mass of the Electron. For Electrons of Energy  $E$ , Multiply by  $m/m_0 = [1 - (v/c)^2]^{-1/2}$  (Table A4.1)

Element	Z	$(\sin \theta)/\lambda$ ( $\text{\AA}^{-1}$ )																
		0.00	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
H	1	0.529	0.508	0.453	0.382	0.311	0.249	0.199	0.160	0.131	0.089	0.064	0.048	0.037	0.029	0.024	0.020	0.017
He	2	(0.445)	0.431	0.403	0.368	0.328	0.288	0.250	0.216	0.188	0.142	0.109	0.086	0.068	0.055	0.046	0.038	0.032
Li	3	3.31	2.78	1.88	1.17	0.75	0.53	0.40	0.31	0.26	0.19	0.14	0.11	0.09	0.08	0.06	0.05	0.05
Be	4	3.09	2.82	2.23	1.63	1.16	0.83	0.61	0.47	0.37	0.25	0.19	0.15	0.12	0.10	0.08	0.07	0.06
B	5	2.82	2.62	2.24	1.78	1.37	1.04	0.80	0.62	0.50	0.33	0.24	0.18	0.14	0.12	0.10	0.08	0.07
C	6	2.45	2.26	2.09	1.74	1.43	1.15	0.92	0.74	0.60	0.41	0.30	0.22	0.18	0.14	0.12	0.10	0.08
N	7	2.20	2.10	1.91	1.68	1.44	1.20	1.00	0.83	0.69	0.48	0.35	0.27	0.21	0.17	0.14	0.11	0.10
O	8	2.01	1.95	1.80	1.62	1.42	1.22	1.04	0.88	0.75	0.54	0.40	0.31	0.24	0.19	0.16	0.13	0.11
F	9	(1.84)	(1.77)	1.69	(1.53)	1.38	(1.20)	1.05	(0.91)	0.78	0.59	0.44	0.35	0.27	0.22	0.18	0.15	(0.13)
Ne	10	(1.66)	1.59	1.53	1.43	1.30	1.17	1.04	0.92	0.80	0.62	0.48	0.38	0.30	0.24	0.20	0.17	0.14
Na	11	4.89	4.21	2.97	2.11	1.59	1.29	1.09	0.95	0.83	0.64	0.51	0.40	0.33	0.27	0.22	0.18	0.16
Mg	12	5.01	4.60	3.59	2.63	1.95	1.50	1.21	1.01	0.87	0.67	0.53	0.43	0.35	0.29	0.24	0.20	0.17
Al	13	(6.1)	5.36	4.24	3.13	2.30	1.73	1.36	1.11	0.93	0.70	0.55	0.45	0.36	0.30	0.25	0.22	(0.19)
Si	14	(6.0)	5.26	4.40	3.41	2.59	1.97	1.54	1.23	1.02	0.74	0.58	0.47	0.38	0.32	0.27	0.23	(0.20)
P	15	(5.4)	5.07	4.38	3.55	2.79	2.17	1.70	1.36	1.12	0.80	0.61	0.49	0.40	0.33	0.28	0.24	0.21
S	16	(4.7)	4.40	4.00	3.46	2.87	2.32	1.86	1.50	1.22	0.86	0.64	0.51	0.42	0.35	0.30	0.25	0.22
Cl	17	(4.6)	4.31	4.00	3.53	2.99	2.47	2.01	1.63	1.34	0.93	0.69	0.54	0.44	0.37	0.31	0.26	0.23
A	18	4.71	4.40	4.07	3.56	3.03	2.52	2.07	1.71	1.42	1.00	0.74	0.58	0.46	0.38	0.32	0.27	0.24
K	19	(9.0)	(7.0)	5.43	(4.10)	3.15	(2.60)	2.14	(1.90)	1.49	1.07	0.79	0.61	0.49	0.40	0.34	0.29	(0.25)
Ca	20	10.46	8.71	6.40	4.54	3.40	2.69	2.20	1.84	1.55	1.12	0.84	0.65	0.52	0.42	0.35	0.30	0.26

Note. ( ) = interpolation or extrapolation. Values at  $(\sin \theta)/\lambda = 0$  not in brackets are calculated.

\* Some reasons for the large differences, particularly at low scattering angles, between data common to Tables A3.1 and A3.2 are discussed by Ibers.†

Table A3.1—(continued)

Element	Z	$(\sin \theta)/\lambda$ ( $\text{\AA}^{-1}$ )																
		0.00	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
Sc	21	(9.7)	8.35	6.30	4.63	3.50	2.75	2.29	1.92	1.62	1.18	0.89	0.69	0.54	0.44	0.37	0.32	0.27
Ti	22	(8.9)	7.95	6.20	4.63	3.55	2.84	2.34	(1.97)	1.67	1.23	0.93	0.72	0.57	0.47	0.39	0.33	0.29
V	23	(8.4)	7.60	6.06	4.60	3.57	2.88	2.39	(2.02)	1.72	1.28	0.97	0.76	0.60	0.49	0.41	0.35	0.30
Cr	24	(8.0)	7.26	5.86	4.55	3.56	2.89	2.42	2.06	1.76	1.32	1.01	0.80	0.63	0.51	0.43	0.36	0.31
Mn	25	(7.7)	7.00	5.72	4.48	3.55	2.91	2.44	(2.08)	1.79	1.36	1.04	0.83	0.66	0.54	0.45	0.38	0.32
Fe	26	(7.4)	6.70	5.55	4.41	3.54	2.91	2.45	(2.11)	1.82	1.39	1.08	0.86	0.69	0.56	0.47	0.39	0.34
Co	27	(7.1)	6.41	5.41	4.34	3.51	2.91	2.46	(2.12)	1.84	1.42	1.11	0.89	0.71	0.58	0.49	0.41	0.35
Ni	28	(6.8)	6.22	5.27	4.27	3.48	2.90	2.47	(2.13)	1.86	1.46	1.14	0.92	0.74	0.61	0.50	0.43	0.36
Cu	29	(6.5)	6.00	5.11	4.19	3.44	2.88	2.46	2.12	1.87	1.47	1.16	0.95	0.77	0.63	0.52	0.45	0.38
Zn	30	6.2	5.84	4.98	4.11	3.39	2.86	2.45	(2.11)	1.88	1.48	1.19	0.96	0.78	0.65	0.54	0.46	0.39
Ga	31	(7.5)	6.70	5.62	4.51	3.64	3.00	2.53	2.18	1.91	1.50	1.20	0.98	0.81	0.67	0.56	0.47	0.41
Ge	32	(7.8)	6.89	5.93	4.81	3.87	3.16	2.63	2.24	1.94	1.51	1.22	0.99	0.83	0.69	0.58	0.49	0.42
As	33	(7.8)	6.99	6.05	5.01	4.07	3.32	2.74	2.31	1.99	1.54	1.23	1.01	0.85	0.71	0.59	0.50	0.43
Se	34	(7.7)	6.99	6.15	5.18	4.24	3.47	2.86	2.40	2.05	1.57	1.23	1.02	0.86	0.72	0.61	0.52	0.44
Br	35	(7.3)	6.80	6.15	5.25	4.37	3.60	2.97	2.49	2.12	1.60	1.27	1.04	0.88	0.73	0.62	0.53	0.45
Kr	36	(7.1)	6.70	6.13	5.31	4.47	3.71	3.08	2.58	2.19	1.64	1.29	1.05	0.90	0.75	0.64	0.55	0.47
Ag	47	(8.8)	8.24	7.47	6.51	5.58	4.75	4.05	3.46	2.97	2.22	1.70	1.35	1.09	0.90	0.76	0.66	0.57
W	74	(14)	—	11.80	—	7.43	—	5.16	—	3.85	2.99	2.39	1.96	1.63	1.38	1.18	1.02	0.89
Hg	80	(13.3)	12.26	10.82	9.18	7.70	6.48	5.50	4.72	4.09	3.16	2.51	2.05	1.70	1.44	1.23	1.07	0.93

Note. ( ) = interpolation or extrapolation. Values at  $(\sin \theta)/\lambda = 0$  not in brackets are calculated.

\* Some reasons for the large differences, particularly at low scattering angles, between data common to Tables A3.1 and A3.2 are discussed by Ibers.†

† Ibers, J. A. (1957). *Acta Cryst.* **10**, 86.