Table 4.3.1.2. *Atomic scattering amplitudes (Å) for electrons for ionized atoms (cont.)*

| Element | $Ra^{2+}$ | $Ac^{3+}$ | $U^{3+}$ | $U^{4+}$ | $U^{6+}$ |
|---|---|---|---|---|---|
| $Z$ | 88 | 89 | 92 | 92 | 92 |
| $(\sin\theta)/\lambda$ ($Å^{-1}$) Method | *DS | *DS | *DS | *DS | *DS |
| 0.00 | | | | | |
| 0.01 | | | | | |
| 0.02 | | | | | |
| 0.03 | | | | | |
| 0.04 | 40.04 | 54.00 | 54.02 | 68.15 | 96.83 |
| 0.05 | 29.19 | 37.78 | 37.81 | 46.56 | 64.49 |
| 0.06 | 23.23 | 28.91 | 28.95 | 34.80 | 46.89 |
| 0.07 | 19.57 | 23.53 | 23.57 | 27.67 | 36.26 |
| 0.08 | 17.14 | 19.98 | 20.03 | 23.01 | 29.33 |
| 0.09 | 15.42 | 17.51 | 17.57 | 19.78 | 24.56 |
| 0.10 | 14.12 | 15.70 | 15.76 | 17.44 | 21.12 |
| 0.11 | 13.11 | 14.31 | 14.39 | 15.67 | 18.55 |
| 0.12 | 12.291 | 13.217 | 13.300 | 14.296 | 16.573 |
| 0.13 | 11.602 | 12.324 | 12.416 | 13.192 | 15.010 |
| 0.14 | 11.008 | 11.577 | 11.679 | 12.287 | 13.749 |
| 0.15 | 10.486 | 10.939 | 11.050 | 11.528 | 12.709 |
| 0.16 | 10.018 | 10.382 | 10.503 | 10.879 | 11.837 |
| 0.17 | 9.592 | 9.889 | 10.018 | 10.314 | 11.093 |
| 0.18 | 9.200 | 9.446 | 9.583 | 9.816 | 10.451 |
| 0.19 | 8.836 | 9.042 | 9.188 | 9.371 | 9.889 |
| 0.20 | 8.495 | 8.671 | 8.824 | 8.967 | 9.391 |
| 0.22 | 7.873 | 8.008 | 8.174 | 8.261 | 8.544 |
| 0.24 | 7.315 | 7.427 | 7.602 | 7.655 | 7.843 |
| 0.25 | 7.057 | 7.161 | 7.340 | 7.380 | 7.534 |
| 0.26 | 6.811 | 6.909 | 7.091 | 7.122 | 7.247 |
| 0.28 | 6.355 | 6.444 | 6.629 | 6.647 | 6.729 |
| 0.30 | 5.940 | 6.022 | 6.208 | 6.219 | 6.273 |
| 0.32 | 5.563 | 5.639 | 5.824 | 5.830 | 5.865 |
| 0.34 | 5.219 | 5.291 | 5.472 | 5.475 | 5.497 |
| 0.35 | 5.059 | 5.128 | 5.307 | 5.309 | 5.327 |
| 0.36 | 4.906 | 4.973 | 5.149 | 5.151 | 5.164 |
| 0.38 | 4.621 | 4.683 | 4.853 | 4.853 | 4.861 |
| 0.40 | 4.360 | 4.417 | 4.580 | 4.580 | 4.584 |
| 0.42 | 4.122 | 4.174 | 4.329 | 4.328 | 4.330 |
| 0.44 | 3.904 | 3.951 | 4.098 | 4.097 | 4.096 |
| 0.45 | 3.801 | 3.847 | 3.989 | 3.988 | 3.987 |
| 0.46 | 3.703 | 3.747 | 3.885 | 3.883 | 3.881 |
| 0.48 | 3.518 | 3.558 | 3.688 | 3.686 | 3.683 |
| 0.50 | 3.348 | 3.385 | 3.506 | 3.504 | 3.500 |
| 0.55 | 2.975 | 3.005 | 3.107 | 3.106 | 3.100 |
| 0.60 | 2.664 | 2.689 | 2.776 | 2.774 | 2.768 |
| 0.65 | 2.400 | 2.421 | 2.496 | 2.494 | 2.489 |
| 0.70 | 2.174 | 2.193 | 2.258 | 2.256 | 2.252 |
| 0.80 | 1.808 | 1.824 | 1.875 | 1.874 | 1.872 |
| 0.90 | 1.527 | 1.541 | 1.583 | 1.582 | 1.582 |
| 1.00 | 1.307 | 1.319 | 1.354 | 1.354 | 1.354 |
| 1.10 | 1.132 | 1.142 | 1.171 | 1.172 | 1.172 |
| 1.20 | 0.991 | 0.999 | 1.024 | 1.025 | 1.025 |
| 1.30 | 0.874 | 0.882 | 0.904 | 0.904 | 0.905 |
| 1.40 | 0.778 | 0.784 | 0.804 | 0.804 | 0.804 |
| 1.50 | 0.696 | 0.702 | 0.720 | 0.720 | 0.720 |
| 1.60 | 0.626 | 0.632 | 0.648 | 0.648 | 0.648 |
| 1.70 | 0.566 | 0.571 | 0.586 | 0.586 | 0.586 |
| 1.80 | 0.513 | 0.518 | 0.533 | 0.533 | 0.533 |
| 1.90 | 0.467 | 0.472 | 0.486 | 0.486 | 0.486 |
| 2.00 | 0.427 | 0.431 | 0.444 | 0.444 | 0.444 |

Table 4.3.2.1. *Parameters useful in electron diffraction as a function of accelerating voltage, E*

| $E$ (keV) | $\lambda$ | $1/\lambda$ | $m/m_0$ | $v/c$ | $\sigma$ |
|---|---|---|---|---|---|
| 1 | 0.387629 | 2.57979 | 1.00196 | 0.06247 | 0.0081126 |
| 2 | 0.273961 | 3.65016 | 1.00391 | 0.08821 | 0.0057448 |
| 3 | 0.223579 | 4.47270 | 1.00587 | 0.10788 | 0.0046975 |
| 4 | 0.193530 | 5.16715 | 1.00783 | 0.12439 | 0.0040741 |
| 5 | 0.173015 | 5.77986 | 1.00978 | 0.13887 | 0.0036493 |
| 6 | 0.157863 | 6.33460 | 1.01174 | 0.15191 | 0.0033361 |
| 7 | 0.146082 | 6.84548 | 1.01370 | 0.16384 | 0.0030931 |
| 8 | 0.136581 | 7.32168 | 1.01566 | 0.17490 | 0.0028975 |
| 9 | 0.128707 | 7.76958 | 1.01761 | 0.18524 | 0.0027358 |
| 10 | 0.122043 | 8.19383 | 1.01957 | 0.19498 | 0.0025991 |
| 15 | 0.099407 | 10.05963 | 1.02935 | 0.23711 | 0.0021374 |
| 20 | 0.085882 | 11.64383 | 1.03914 | 0.27186 | 0.0018641 |
| 25 | 0.076632 | 13.04940 | 1.04892 | 0.30184 | 0.0016790 |
| 30 | 0.069789 | 14.32899 | 1.05871 | 0.32837 | 0.0015433 |
| 35 | 0.064459 | 15.51381 | 1.06849 | 0.35227 | 0.0014386 |
| 40 | 0.060153 | 16.62414 | 1.07828 | 0.37406 | 0.0013548 |
| 45 | 0.056580 | 17.67403 | 1.08806 | 0.39410 | 0.0012859 |
| 50 | 0.053551 | 18.67366 | 1.09784 | 0.41268 | 0.0012280 |
| 55 | 0.050941 | 19.63072 | 1.10763 | 0.43000 | 0.0011786 |
| 60 | 0.048659 | 20.55115 | 1.11741 | 0.44622 | 0.0011357 |
| 65 | 0.046642 | 21.43968 | 1.12720 | 0.46147 | 0.0010982 |
| 70 | 0.044843 | 22.30012 | 1.13698 | 0.47586 | 0.0010650 |
| 75 | 0.043223 | 23.13560 | 1.14677 | 0.48948 | 0.0010354 |
| 80 | 0.041756 | 23.94874 | 1.15655 | 0.50239 | 0.0010087 |
| 85 | 0.040418 | 24.74173 | 1.16634 | 0.51467 | 0.0009847 |
| 90 | 0.039190 | 25.51646 | 1.17612 | 0.52637 | 0.0009628 |
| 95 | 0.038060 | 26.27454 | 1.18591 | 0.53754 | 0.0009428 |
| 100 | 0.037013 | 27.01738 | 1.19569 | 0.54822 | 0.0009244 |
| 120 | 0.033491 | 29.85866 | 1.23483 | 0.58667 | 0.0008638 |
| 140 | 0.030739 | 32.53222 | 1.27397 | 0.61956 | 0.0008180 |
| 160 | 0.028509 | 35.07642 | 1.31310 | 0.64810 | 0.0007820 |
| 180 | 0.026654 | 37.51759 | 1.35224 | 0.67314 | 0.0007529 |
| 200 | 0.025079 | 39.87466 | 1.39138 | 0.69531 | 0.0007289 |
| 250 | 0.021986 | 45.48412 | 1.48922 | 0.74101 | 0.0006839 |
| 300 | 0.019687 | 50.79517 | 1.58707 | 0.77652 | 0.0006526 |
| 350 | 0.017891 | 55.89295 | 1.68491 | 0.80483 | 0.0006297 |
| 400 | 0.016439 | 60.83109 | 1.78276 | 0.82786 | 0.0006122 |
| 450 | 0.015233 | 65.64563 | 1.88060 | 0.84691 | 0.0005984 |
| 500 | 0.014212 | 70.36195 | 1.97845 | 0.86286 | 0.0005873 |
| 550 | 0.013334 | 74.99858 | 2.07629 | 0.87638 | 0.0005783 |
| 600 | 0.012568 | 79.56945 | 2.17414 | 0.88794 | 0.0005707 |
| 650 | 0.011893 | 84.08529 | 2.27198 | 0.89793 | 0.0005644 |
| 700 | 0.011292 | 88.55452 | 2.36983 | 0.90661 | 0.0005590 |
| 750 | 0.010755 | 92.98385 | 2.46767 | 0.91421 | 0.0005543 |
| 800 | 0.010269 | 97.37874 | 2.56552 | 0.92091 | 0.0005503 |
| 850 | 0.009829 | 101.74364 | 2.66336 | 0.92684 | 0.0005468 |
| 900 | 0.009427 | 106.08226 | 2.76121 | 0.93212 | 0.0005437 |
| 950 | 0.009058 | 110.39769 | 2.85905 | 0.93684 | 0.0005410 |
| 1000 | 0.008719 | 114.69256 | 2.95690 | 0.94108 | 0.0005385 |
| 1100 | 0.008115 | 123.22919 | 3.15259 | 0.94836 | 0.0005344 |
| 1200 | 0.007593 | 131.70646 | 3.34828 | 0.95436 | 0.0005310 |
| 1300 | 0.007136 | 140.13516 | 3.54397 | 0.95936 | 0.0005282 |
| 1400 | 0.006733 | 148.52355 | 3.73966 | 0.96358 | 0.0005259 |
| 1500 | 0.006374 | 156.87810 | 3.93535 | 0.96718 | 0.0005240 |





references