# L. Satpathy and R.C. Nayak Masses

† Nuclide is unstable to one-particle emission
‡ Nuclide is unstable to two-particle, but not one particle emission

| Isotope | Mass Excess |
|---|---|
| $^{18}$B | 48.990±2.120 |
| $^{19}$B | 50.160±4.230 |
| $^{18}$C | 24.580±0.640 |
| $^{19}$C | 32.550±0.980 |
| $^{20}$C | 34.780±1.950 |
| $^{21}$C | 43.790±4.140 † |
| $^{22}$C | 47.870±5.400 |
| $^{18}$N | 13.600±0.370 |
| $^{19}$N | 15.160±0.320 |
| $^{20}$N | 22.360±0.460 |
| $^{21}$N | 24.450±0.950 |
| $^{22}$N | 32.150±2.000 |
| $^{23}$N | 35.910±2.780 |
| $^{24}$N | 44.160±4.180 † |
| $^{25}$N | 48.050±6.110 |
| $^{18}$O | -1.130±0.390 |
| $^{19}$O | 3.040±0.300 |
| $^{20}$O | 3.070±0.280 |
| $^{21}$O | 9.030±0.340 |
| $^{22}$O | 10.400±0.570 |
| $^{23}$O | 17.180±1.090 |
| $^{24}$O | 19.760±1.680 |
| $^{25}$O | 27.340±2.540 |
| $^{26}$O | 30.580±3.730 |
| $^{27}$O | 38.750±5.350 † |
| $^{29}$O | 47.690±2.210 |
| $^{30}$O | 50.060±2.760 |
| $^{31}$O | 46.600±4.130 |
| $^{32}$O | 46.750±4.960 |
| $^{18}$F | 2.740±0.320 |
| $^{19}$F | -1.940±0.280 |
| $^{20}$F | 0.260±0.210 |
| $^{21}$F | -1.120±0.230 |
| $^{22}$F | 3.740±0.310 |
| $^{23}$F | 4.070±0.580 |
| $^{24}$F | 9.350±0.420 |
| $^{25}$F | 11.180±0.640 |
| $^{26}$F | 17.880±1.020 |
| $^{27}$F | 20.080±1.550 |
| $^{28}$F | 26.630±2.230 |
| $^{29}$F | 32.490±0.840 |
| $^{30}$F | 40.800±1.070 † |
| $^{31}$F | 41.820±1.590 |
| $^{32}$F | 44.470±2.350 |
| $^{33}$F | 48.240±2.810 |
| $^{34}$F | 51.910±3.650 |
| $^{35}$F | 50.430±4.680 |
| $^{18}$Ne | 4.090±0.430 |
| $^{19}$Ne | 0.770±0.260 |
| $^{20}$Ne | -5.800±0.230 |
| $^{21}$Ne | -5.740±0.200 |
| $^{22}$Ne | -8.790±0.290 |
| $^{23}$Ne | -4.670±0.520 |
| $^{24}$Ne | -5.840±0.280 |
| $^{25}$Ne | -1.640±0.260 |
| $^{26}$Ne | -0.270±0.360 |
| $^{27}$Ne | 6.190±0.640 |
| $^{28}$Ne | 8.590±1.050 |
| $^{29}$Ne | 15.030±0.350 |
| $^{30}$Ne | 17.950±0.450 |
| $^{31}$Ne | 24.780±0.650 |
| $^{32}$Ne | 26.940±0.960 |
| $^{33}$Ne | 32.060±1.400 |
| $^{34}$Ne | 33.980±1.850 |
| $^{35}$Ne | 39.200±2.420 |
| $^{36}$Ne | 39.730±3.110 |
| $^{37}$Ne | 43.190±3.970 |
| $^{18}$Na | 28.400±0.800 |

| Isotope | Mass Excess |
|---|---|
| $^{19}$Na | 13.090±0.420 |
| $^{20}$Na | 6.750±0.240 |
| $^{21}$Na | -2.150±0.230 |
| $^{22}$Na | -4.510±0.240 |
| $^{23}$Na | -10.380±0.480 |
| $^{24}$Na | -8.130±0.290 |
| $^{25}$Na | -10.090±0.220 |
| $^{26}$Na | -6.850±0.260 |
| $^{27}$Na | -6.490±0.290 |
| $^{28}$Na | -0.910±0.540 |
| $^{29}$Na | 2.950±0.280 |
| $^{30}$Na | 7.600±0.220 |
| $^{31}$Na | 10.930±0.220 |
| $^{32}$Na | 18.580±0.260 |
| $^{33}$Na | 21.870±0.320 |
| $^{34}$Na | 25.990±0.540 |
| $^{35}$Na | 29.280±0.730 |
| $^{36}$Na | 36.230±0.970 |
| $^{37}$Na | 35.720±1.620 |
| $^{18}$Mg | 56.190±2.560 |
| $^{19}$Mg | 37.780±1.030 |
| $^{20}$Mg | 19.290±0.470 ‡ |
| $^{21}$Mg | 10.020±0.260 |
| $^{22}$Mg | -1.260±0.260 |
| $^{23}$Mg | -5.170±0.350 |
| $^{24}$Mg | -12.810±0.250 |
| $^{25}$Mg | -13.240±0.210 |
| $^{26}$Mg | -16.850±0.210 |
| $^{27}$Mg | -14.940±0.320 |
| $^{28}$Mg | -15.730±0.330 |
| $^{29}$Mg | -10.540±0.260 |
| $^{30}$Mg | -9.490±0.190 |
| $^{31}$Mg | -4.480±0.180 |
| $^{32}$Mg | -1.550±0.210 |
| $^{33}$Mg | 5.730±0.290 |
| $^{34}$Mg | 7.940±0.270 |
| $^{35}$Mg | 13.380±0.290 |
| $^{36}$Mg | 17.110±0.370 |
| $^{37}$Mg | 22.940±0.540 |
| $^{22}$Al | 19.100±0.480 † |
| $^{23}$Al | 6.060±0.330 † |
| $^{24}$Al | 0.100±0.270 |
| $^{25}$Al | -9.050±0.230 |
| $^{26}$Al | -11.590±0.240 |
| $^{27}$Al | -17.030±0.310 |
| $^{28}$Al | -16.760±0.450 |
| $^{29}$Al | -19.130±0.200 |
| $^{30}$Al | -15.760±0.180 |
| $^{31}$Al | -15.810±0.150 |
| $^{32}$Al | -11.370±0.160 |
| $^{33}$Al | -9.420±0.190 |
| $^{34}$Al | -3.510±0.220 |
| $^{35}$Al | -1.480±0.240 |
| $^{36}$Al | 4.240±0.270 |
| $^{37}$Al | 6.770±0.310 |
| $^{38}$Al | 8.290±3.350 |
| $^{39}$Al | 9.830±4.240 |
| $^{40}$Al | 14.670±5.810 |
| $^{23}$Si | 25.370±0.850 ‡ |
| $^{24}$Si | 10.260±0.460 |
| $^{25}$Si | 2.920±0.280 |
| $^{26}$Si | -8.030±0.220 |
| $^{27}$Si | -12.280±0.250 |
| $^{28}$Si | -19.080±0.320 |
| $^{29}$Si | -21.520±0.230 |
| $^{30}$Si | -25.010±0.180 |
| $^{31}$Si | -23.070±0.160 |
| $^{32}$Si | -24.300±0.160 |
| $^{33}$Si | -20.770±0.190 |
| $^{34}$Si | -20.220±0.190 |

| Isotope | Mass Excess |
|---|---|
| $^{35}$Si | -15.150±0.220 |
| $^{36}$Si | -13.630±0.260 |
| $^{37}$Si | -8.130±0.310 |
| $^{38}$Si | -7.720±1.430 |
| $^{39}$Si | -2.330±1.970 |
| $^{40}$Si | -0.840±2.760 |
| $^{41}$Si | 4.100±3.820 |
| $^{42}$Si | 1.250±5.480 |
| $^{43}$Si | 4.620±6.990 |
| $^{25}$P | 20.360±0.860 † |
| $^{26}$P | 12.090±0.420 † |
| $^{27}$P | -0.780±0.330 |
| $^{28}$P | -6.950±0.390 |
| $^{29}$P | -16.170±0.200 |
| $^{30}$P | -19.010±0.180 |
| $^{31}$P | -23.990±0.150 |
| $^{32}$P | -23.450±0.150 |
| $^{33}$P | -25.680±0.160 |
| $^{34}$P | -23.770±0.150 |
| $^{35}$P | -24.150±0.160 |
| $^{36}$P | -19.800±0.210 |
| $^{37}$P | -18.610±0.280 |
| $^{38}$P | -14.950±0.600 |
| $^{39}$P | -13.840±0.590 |
| $^{40}$P | -9.100±0.810 |
| $^{41}$P | -8.230±1.160 |
| $^{42}$P | -6.330±1.840 |
| $^{43}$P | -5.530±2.980 |
| $^{44}$P | -2.600±3.900 |
| $^{45}$P | -3.540±5.000 |
| $^{46}$P | 0.080±6.970 |
| $^{26}$S | 26.630±1.570 ‡ |
| $^{27}$S | 18.340±0.720 ‡ |
| $^{28}$S | 3.730±0.550 |
| $^{29}$S | -4.570±0.260 |
| $^{30}$S | -14.670±0.180 |
| $^{31}$S | -18.960±0.160 |
| $^{32}$S | -25.460±0.150 |
| $^{33}$S | -26.540±0.210 |
| $^{34}$S | -30.290±0.150 |
| $^{35}$S | -29.300±0.150 |
| $^{36}$S | -30.830±0.180 |
| $^{37}$S | -27.580±0.270 |
| $^{38}$S | -26.980±0.390 |
| $^{39}$S | -23.150±0.350 |
| $^{40}$S | -22.700±0.300 |
| $^{41}$S | -18.540±0.440 |
| $^{42}$S | -19.350±0.790 |
| $^{43}$S | -15.570±1.040 |
| $^{44}$S | -15.210±1.630 |
| $^{45}$S | -12.610±2.250 |
| $^{46}$S | -12.800±3.150 |
| $^{30}$Cl | 4.650±0.270 † |
| $^{31}$Cl | -7.150±0.180 † |
| $^{32}$Cl | -13.030±0.170 |
| $^{33}$Cl | -20.980±0.200 |
| $^{34}$Cl | -23.710±0.150 |
| $^{35}$Cl | -28.960±0.140 |
| $^{36}$Cl | -29.230±0.170 |
| $^{37}$Cl | -32.040±0.200 |
| $^{38}$Cl | -29.040±0.250 |
| $^{39}$Cl | -29.960±0.200 |
| $^{40}$Cl | -26.840±0.200 |
| $^{41}$Cl | -27.070±0.220 |
| $^{42}$Cl | -23.980±0.270 |
| $^{43}$Cl | -24.220±0.350 |
| $^{44}$Cl | -20.870±0.500 |
| $^{45}$Cl | -20.930±0.830 |
| $^{46}$Cl | -17.970±1.280 |
| $^{47}$Cl | -9.490±5.710 † |

| Isotope | Mass Excess |
|---|---|
| $^{28}$Ar | 43.690±4.490 ‡ |
| $^{29}$Ar | 37.020±2.110 ‡ |
| $^{30}$Ar | 21.140±1.050 ‡ |
| $^{31}$Ar | 10.600±0.540 ‡ |
| $^{32}$Ar | -2.420±0.290 |
| $^{33}$Ar | -9.680±0.210 |
| $^{34}$Ar | -19.150±0.170 |
| $^{35}$Ar | -23.220±0.160 |
| $^{36}$Ar | -29.800±0.180 |
| $^{37}$Ar | -31.320±0.230 |
| $^{38}$Ar | -35.460±0.350 |
| $^{39}$Ar | -33.980±0.230 |
| $^{40}$Ar | -35.680±0.180 |
| $^{41}$Ar | -33.320±0.190 |
| $^{42}$Ar | -34.210±0.240 |
| $^{43}$Ar | -31.480±0.210 |
| $^{44}$Ar | -32.140±0.200 |
| $^{45}$Ar | -29.210±0.250 |
| $^{46}$Ar | -29.650±0.440 |
| $^{47}$Ar | -26.360±0.480 |
| $^{48}$Ar | -22.740±2.130 |
| $^{49}$Ar | -17.590±3.010 |
| $^{50}$Ar | -15.080±4.220 |
| $^{51}$Ar | -8.590±5.840 |
| $^{34}$K | -0.740±0.280 † |
| $^{35}$K | -11.570±0.180 † |
| $^{36}$K | -17.120±0.190 |
| $^{37}$K | -25.000±0.200 |
| $^{38}$K | -28.150±0.240 |
| $^{39}$K | -33.290±0.230 |
| $^{40}$K | -33.150±0.160 |
| $^{41}$K | -36.090±0.170 |
| $^{42}$K | -34.990±0.190 |
| $^{43}$K | -36.770±0.180 |
| $^{44}$K | -35.080±0.170 |
| $^{45}$K | -36.740±0.240 |
| $^{46}$K | -34.870±0.380 |
| $^{47}$K | -36.300±0.370 |
| $^{48}$K | -32.110±0.270 |
| $^{49}$K | -30.080±0.790 |
| $^{50}$K | -25.780±1.150 |
| $^{51}$K | -24.200±1.670 |
| $^{52}$K | -17.800±2.500 |
| $^{53}$K | -13.520±4.510 |
| $^{35}$Ca | 5.550±0.450 ‡ |
| $^{36}$Ca | -6.480±0.250 |
| $^{37}$Ca | -13.460±0.270 |
| $^{38}$Ca | -22.810±0.350 |
| $^{39}$Ca | -26.880±0.190 |
| $^{40}$Ca | -33.400±0.180 |
| $^{41}$Ca | -34.580±0.180 |
| $^{42}$Ca | -38.690±0.290 |
| $^{43}$Ca | -38.750±0.190 |
| $^{44}$Ca | -41.600±0.170 |
| $^{45}$Ca | -40.890±0.190 |
| $^{46}$Ca | -43.460±0.300 |
| $^{47}$Ca | -42.540±0.300 |
| $^{48}$Ca | -43.300±0.240 |
| $^{49}$Ca | -39.960±0.190 |
| $^{50}$Ca | -39.010±0.310 |
| $^{51}$Ca | -35.300±0.460 |
| $^{52}$Ca | -33.570±0.820 |
| $^{53}$Ca | -28.080±1.400 |
| $^{54}$Ca | -24.920±2.540 |
| $^{55}$Ca | -17.580±4.600 |
| $^{56}$Ca | -13.810±5.950 |
| $^{38}$Sc | -3.990±0.520 † |
| $^{39}$Sc | -14.850±0.310 † |
| $^{40}$Sc | -20.510±0.190 |
| $^{41}$Sc | -28.480±0.200 |

| Isotope | Mass Excess |
|---|---|
| $^{42}$Sc | -31.080±0.230 |
| $^{43}$Sc | -36.630±0.180 |
| $^{44}$Sc | -37.830±0.160 |
| $^{45}$Sc | -41.780±0.210 |
| $^{46}$Sc | -42.110±0.240 |
| $^{47}$Sc | -45.570±0.240 |
| $^{48}$Sc | -44.450±0.190 |
| $^{49}$Sc | -45.950±0.170 |
| $^{50}$Sc | -43.430±0.170 |
| $^{51}$Sc | -43.380±0.220 |
| $^{52}$Sc | -39.780±0.260 |
| $^{53}$Sc | -38.820±0.430 |
| $^{54}$Sc | -34.070±0.780 |
| $^{55}$Sc | -31.770±1.440 |
| $^{56}$Sc | -25.540±2.630 |
| $^{57}$Sc | -22.060±3.890 |
| $^{40}$Ti | -9.040±0.380 |
| $^{41}$Ti | -16.350±0.230 |
| $^{42}$Ti | -25.800±0.250 |
| $^{43}$Ti | -30.100±0.200 |
| $^{44}$Ti | -36.870±0.190 |
| $^{45}$Ti | -39.250±0.230 |
| $^{46}$Ti | -44.270±0.340 |
| $^{47}$Ti | -44.790±0.330 |
| $^{48}$Ti | -48.790±0.240 |
| $^{49}$Ti | -48.570±0.190 |
| $^{50}$Ti | -50.860±0.170 |
| $^{51}$Ti | -49.120±0.190 |
| $^{52}$Ti | -49.860±0.250 |
| $^{53}$Ti | -46.830±0.250 |
| $^{54}$Ti | -46.420±0.310 |
| $^{55}$Ti | -42.290±0.500 |
| $^{56}$Ti | -40.670±0.870 |
| $^{57}$Ti | -35.260±1.570 |
| $^{58}$Ti | -26.580±1.970 † |
| $^{42}$V | -6.670±0.380 † |
| $^{43}$V | -17.960±0.240 † |
| $^{44}$V | -23.950±0.200 |
| $^{45}$V | -32.290±0.200 |
| $^{46}$V | -36.240±0.240 |
| $^{47}$V | -42.420±0.220 |
| $^{48}$V | -43.910±0.230 |
| $^{49}$V | -48.740±0.160 |
| $^{50}$V | -49.290±0.150 |
| $^{51}$V | -52.280±0.170 |
| $^{52}$V | -51.310±0.200 |
| $^{53}$V | -52.520±0.180 |
| $^{54}$V | -50.010±0.210 |
| $^{55}$V | -50.130±0.310 |
| $^{56}$V | -46.620±0.460 |
| $^{57}$V | -45.710±0.660 |
| $^{58}$V | -39.280±0.750 |
| $^{59}$V | -36.300±1.080 |
| $^{60}$V | -25.380±2.350 † |
| $^{61}$V | -20.760±3.210 |
| $^{62}$V | -12.090±4.300 † |
| $^{63}$V | -5.590±5.740 |
| $^{44}$Cr | -12.170±0.370 |
| $^{45}$Cr | -19.820±0.320 |
| $^{46}$Cr | -29.680±0.370 |
| $^{47}$Cr | -35.190±0.320 |
| $^{48}$Cr | -42.470±0.180 |
| $^{49}$Cr | -45.120±0.180 |
| $^{50}$Cr | -50.790±0.150 |
| $^{51}$Cr | -52.090±0.200 |
| $^{52}$Cr | -55.670±0.280 |
| $^{53}$Cr | -55.320±0.170 |
| $^{54}$Cr | -57.330±0.150 |
| $^{55}$Cr | -55.220±0.170 |
| $^{56}$Cr | -55.690±0.310 |

| Isotope | Mass Excess |
|---|---|
| $^{57}$Cr | -52.570±0.500 |
| $^{58}$Cr | -52.050±0.430 |
| $^{59}$Cr | -48.220±0.440 |
| $^{60}$Cr | -46.540±0.580 |
| $^{61}$Cr | -39.400±1.180 |
| $^{62}$Cr | -36.780±1.680 |
| $^{63}$Cr | -30.900±2.330 |
| $^{64}$Cr | -24.090±3.580 |
| $^{46}$Mn | -10.860±0.510 † |
| $^{47}$Mn | -22.400±0.430 |
| $^{48}$Mn | -29.240±0.280 |
| $^{49}$Mn | -37.850±0.180 |
| $^{50}$Mn | -41.770±0.180 |
| $^{51}$Mn | -48.420±0.180 |
| $^{52}$Mn | -50.570±0.290 |
| $^{53}$Mn | -54.920±0.200 |
| $^{54}$Mn | -55.320±0.150 |
| $^{55}$Mn | -58.080±0.170 |
| $^{56}$Mn | -56.420±0.190 |
| $^{57}$Mn | -57.240±0.330 |
| $^{58}$Mn | -55.550±0.200 |
| $^{59}$Mn | -55.890±0.200 |
| $^{60}$Mn | -52.770±0.210 |
| $^{61}$Mn | -52.020±0.280 |
| $^{62}$Mn | -46.930±0.580 |
| $^{63}$Mn | -45.710±0.870 |
| $^{64}$Mn | -39.830±1.400 |
| $^{65}$Mn | -35.380±2.220 |
| $^{66}$Mn | -25.860±3.470 † |
| $^{69}$Mn | -22.280±3.970 |
| $^{48}$Fe | -16.400±0.380 |
| $^{49}$Fe | -25.000±0.240 |
| $^{50}$Fe | -35.100±0.180 |
| $^{51}$Fe | -40.360±0.200 |
| $^{52}$Fe | -48.070±0.240 |
| $^{53}$Fe | -51.120±0.180 |
| $^{54}$Fe | -56.350±0.150 |
| $^{55}$Fe | -57.560±0.160 |
| $^{56}$Fe | -61.060±0.230 |
| $^{57}$Fe | -59.860±0.230 |
| $^{58}$Fe | -62.150±0.220 |
| $^{59}$Fe | -60.550±0.160 |
| $^{60}$Fe | -61.500±0.130 |
| $^{61}$Fe | -59.020±0.130 |
| $^{62}$Fe | -58.990±0.160 |
| $^{63}$Fe | -55.150±0.300 |
| $^{64}$Fe | -54.120±0.490 |
| $^{65}$Fe | -49.420±0.820 |
| $^{66}$Fe | -46.550±1.350 |
| $^{67}$Fe | -39.360±2.160 |
| $^{68}$Fe | -32.830±3.410 |
| $^{69}$Fe | -41.760±0.620 |
| $^{70}$Fe | -37.070±1.780 |
| $^{71}$Fe | -30.970±2.410 |
| $^{72}$Fe | -26.980±3.240 |
| $^{73}$Fe | -19.530±4.320 |
| $^{50}$Co | -15.800±0.560 † |
| $^{51}$Co | -27.560±0.310 † |
| $^{52}$Co | -34.320±0.270 |
| $^{53}$Co | -43.060±0.200 |
| $^{54}$Co | -47.310±0.180 |
| $^{55}$Co | -53.560±0.180 |
| $^{56}$Co | -55.700±0.240 |
| $^{57}$Co | -60.030±0.340 |
| $^{58}$Co | -59.800±0.160 |
| $^{59}$Co | -62.330±0.160 |
| $^{60}$Co | -61.500±0.110 |
| $^{61}$Co | -63.220±0.100 |
| $^{62}$Co | -61.650±0.140 |
| $^{63}$Co | -63.000±0.210 |

| Isotope | Mass Excess |
|---|---|
| $^{64}$Co | -59.550±0.140 |
| $^{65}$Co | -59.830±0.160 |
| $^{66}$Co | -56.920±0.260 |
| $^{67}$Co | -56.530±0.450 |
| $^{68}$Co | -52.980±0.720 |
| $^{69}$Co | -52.530±0.210 |
| $^{70}$Co | -48.260±0.310 |
| $^{71}$Co | -45.550±0.810 |
| $^{72}$Co | -40.660±1.110 |
| $^{73}$Co | -38.040±1.510 |
| $^{74}$Co | -32.340±2.030 |
| $^{75}$Co | -27.080±3.380 |
| $^{51}$Ni | -9.420±0.860 ‡ |
| $^{52}$Ni | -21.990±0.430 |
| $^{53}$Ni | -30.180±0.310 |
| $^{54}$Ni | -39.940±0.190 |
| $^{55}$Ni | -45.080±0.170 |
| $^{56}$Ni | -52.080±0.170 |
| $^{57}$Ni | -54.920±0.210 |
| $^{58}$Ni | -60.090±0.200 |
| $^{59}$Ni | -60.970±0.130 |
| $^{60}$Ni | -64.220±0.120 |
| $^{61}$Ni | -64.110±0.100 |
| $^{62}$Ni | -66.410±0.140 |
| $^{63}$Ni | -65.010±0.220 |
| $^{64}$Ni | -66.760±0.130 |
| $^{65}$Ni | -64.630±0.120 |
| $^{66}$Ni | -65.550±0.110 |
| $^{67}$Ni | -63.300±0.170 |
| $^{68}$Ni | -63.570±0.280 |
| $^{69}$Ni | -60.040±0.130 |
| $^{70}$Ni | -59.710±0.140 |
| $^{71}$Ni | -56.170±0.170 |
| $^{72}$Ni | -54.620±0.370 |
| $^{73}$Ni | -50.540±0.530 |
| $^{74}$Ni | -48.890±0.730 |
| $^{75}$Ni | -43.450±1.210 |
| $^{76}$Ni | -39.750±2.020 |
| $^{77}$Ni | -32.130±3.330 |
| $^{78}$Ni | -28.200±4.170 |
| $^{80}$Ni | -27.590±2.320 |
| $^{81}$Ni | -21.560±2.980 |
| $^{84}$Ni | -2.750±5.930 |
| $^{54}$Cu | -21.580±0.520 † |
| $^{55}$Cu | -32.470±0.230 † |
| $^{56}$Cu | -38.620±0.240 |
| $^{57}$Cu | -46.440±0.280 |
| $^{58}$Cu | -51.140±0.260 |
| $^{59}$Cu | -56.370±0.160 |
| $^{60}$Cu | -57.960±0.110 |
| $^{61}$Cu | -61.920±0.120 |
| $^{62}$Cu | -62.660±0.110 |
| $^{63}$Cu | -66.030±0.230 |
| $^{64}$Cu | -65.130±0.140 |
| $^{65}$Cu | -67.030±0.100 |
| $^{66}$Cu | -65.580±0.130 |
| $^{67}$Cu | -67.120±0.120 |
| $^{68}$Cu | -65.500±0.180 |
| $^{69}$Cu | -65.130±0.100 |
| $^{70}$Cu | -62.920±0.090 |
| $^{71}$Cu | -63.120±0.100 |
| $^{72}$Cu | -60.190±0.110 |
| $^{73}$Cu | -59.460±0.180 |
| $^{74}$Cu | -56.080±0.260 |
| $^{75}$Cu | -54.740±0.430 |
| $^{76}$Cu | -50.200±0.730 |
| $^{77}$Cu | -47.630±1.220 |
| $^{78}$Cu | -41.530±2.020 |
| $^{79}$Cu | -37.900±2.840 |
| $^{80}$Cu | -38.080±1.060 |
| $^{81}$Cu | -35.180±1.510 |
| $^{82}$Cu | -29.830±2.020 |
| $^{83}$Cu | -19.680±3.050 † |
| $^{84}$Cu | -16.700±3.480 |

| Isotope | Mass Excess |
|---|---|
| $^{85}$Cu | -13.140±4.300 |
| $^{86}$Cu | -7.340±5.250 |
| $^{87}$Cu | -4.430±6.370 |
| $^{55}$Zn | -14.800±0.960 ‡ |
| $^{56}$Zn | -26.890±0.350 |
| $^{57}$Zn | -34.110±0.370 |
| $^{58}$Zn | -42.990±0.320 |
| $^{59}$Zn | -47.600±0.180 |
| $^{60}$Zn | -54.010±0.130 |
| $^{61}$Zn | -56.550±0.120 |
| $^{62}$Zn | -61.300±0.130 |
| $^{63}$Zn | -62.530±0.190 |
| $^{64}$Zn | -66.400±0.110 |
| $^{65}$Zn | -66.520±0.100 |
| $^{66}$Zn | -69.010±0.100 |
| $^{67}$Zn | -68.180±0.150 |
| $^{68}$Zn | -70.340±0.160 |
| $^{69}$Zn | -67.930±0.110 |
| $^{70}$Zn | -69.330±0.100 |
| $^{71}$Zn | -67.620±0.090 |
| $^{72}$Zn | -68.320±0.090 |
| $^{73}$Zn | -65.920±0.090 |
| $^{74}$Zn | -65.810±0.120 |
| $^{75}$Zn | -62.800±0.160 |
| $^{76}$Zn | -62.060±0.250 |
| $^{77}$Zn | -58.230±0.430 |
| $^{78}$Zn | -56.500±0.740 |
| $^{79}$Zn | -51.500±1.230 |
| $^{80}$Zn | -52.050±0.420 |
| $^{81}$Zn | -47.340±0.620 |
| $^{82}$Zn | -45.040±0.920 |
| $^{83}$Zn | -40.110±1.300 |
| $^{84}$Zn | -35.010±1.850 |
| $^{85}$Zn | -29.150±2.400 |
| $^{86}$Zn | -25.830±3.040 |
| $^{87}$Zn | -20.130±3.780 |
| $^{88}$Zn | -17.110±4.650 |
| $^{58}$Ga | -38.200±5.240 |
| $^{59}$Ga | -40.740±2.500 |
| $^{60}$Ga | -42.970±1.200 |
| $^{61}$Ga | -48.830±0.570 |
| $^{62}$Ga | -51.580±0.280 |
| $^{63}$Ga | -56.820±0.190 |
| $^{64}$Ga | -58.640±0.140 |
| $^{65}$Ga | -62.960±0.120 |
| $^{66}$Ga | -63.810±0.120 |
| $^{67}$Ga | -66.960±0.160 |
| $^{68}$Ga | -66.780±0.220 |
| $^{69}$Ga | -68.620±0.090 |
| $^{70}$Ga | -68.060±0.090 |
| $^{71}$Ga | -70.000±0.070 |
| $^{72}$Ga | -68.850±0.070 |
| $^{73}$Ga | -70.110±0.080 |
| $^{74}$Ga | -68.410±0.110 |
| $^{75}$Ga | -68.690±0.090 |
| $^{76}$Ga | -66.350±0.100 |
| $^{77}$Ga | -66.360±0.130 |
| $^{78}$Ga | -63.430±0.170 |
| $^{79}$Ga | -62.830±0.240 |
| $^{80}$Ga | -58.810±0.270 |
| $^{81}$Ga | -57.450±0.210 |
| $^{82}$Ga | -52.910±0.360 |
| $^{83}$Ga | -50.620±0.590 |
| $^{84}$Ga | -43.610±0.910 |
| $^{85}$Ga | -41.920±1.180 |
| $^{86}$Ga | -35.880±1.590 |
| $^{87}$Ga | -32.200±2.060 |
| $^{88}$Ga | -27.950±2.610 |
| $^{89}$Ga | -24.490±4.870 |
| $^{90}$Ga | -17.570±6.110 |
| $^{60}$Ge | -37.170±3.790 |
| $^{61}$Ge | -38.940±1.860 |
| $^{62}$Ge | -45.060±0.930 |
| $^{63}$Ge | -48.510±0.470 |

| Isotope | Mass Excess |
|---|---|
| $^{64}$Ge | -54.280±0.300 |
| $^{65}$Ge | -56.660±0.130 |
| $^{66}$Ge | -61.780±0.110 |
| $^{67}$Ge | -63.400±0.110 |
| $^{68}$Ge | -67.270±0.140 |
| $^{69}$Ge | -66.960±0.120 |
| $^{70}$Ge | -70.100±0.090 |
| $^{71}$Ge | -70.070±0.080 |
| $^{72}$Ge | -72.510±0.070 |
| $^{73}$Ge | -71.840±0.100 |
| $^{74}$Ge | -73.490±0.130 |
| $^{75}$Ge | -72.190±0.080 |
| $^{76}$Ge | -73.100±0.080 |
| $^{77}$Ge | -71.260±0.090 |
| $^{78}$Ge | -71.750±0.120 |
| $^{79}$Ge | -69.340±0.150 |
| $^{80}$Ge | -69.710±0.250 |
| $^{81}$Ge | -66.130±0.190 |
| $^{82}$Ge | -65.080±0.150 |
| $^{83}$Ge | -60.940±0.280 |
| $^{84}$Ge | -57.760±0.510 |
| $^{85}$Ge | -53.340±0.590 |
| $^{86}$Ge | -51.610±0.760 |
| $^{87}$Ge | -45.670±1.090 |
| $^{88}$Ge | -43.370±1.390 |
| $^{89}$Ge | -38.150±2.200 |
| $^{90}$Ge | -33.690±2.800 |
| $^{91}$Ge | -27.650±3.960 |
| $^{92}$Ge | -23.930±5.580 |
| $^{61}$As | -30.640±5.650 |
| $^{62}$As | -31.310±2.830 † |
| $^{63}$As | -37.600±1.490 † |
| $^{64}$As | -41.590±0.940 |
| $^{65}$As | -47.920±0.590 |
| $^{66}$As | -50.590±0.180 |
| $^{67}$As | -56.550±0.180 |
| $^{68}$As | -58.950±0.190 |
| $^{69}$As | -63.080±0.150 |
| $^{70}$As | -64.360±0.110 |
| $^{71}$As | -68.000±0.080 |
| $^{72}$As | -68.500±0.070 |
| $^{73}$As | -71.470±0.080 |
| $^{74}$As | -71.390±0.120 |
| $^{75}$As | -73.450±0.100 |
| $^{76}$As | -72.550±0.080 |
| $^{77}$As | -73.960±0.080 |
| $^{78}$As | -72.610±0.090 |
| $^{79}$As | -73.580±0.120 |
| $^{80}$As | -72.710±0.190 |
| $^{81}$As | -72.780±0.150 |
| $^{82}$As | -69.950±0.130 |
| $^{83}$As | -69.470±0.150 |
| $^{84}$As | -65.290±0.210 |
| $^{85}$As | -63.960±0.270 |
| $^{86}$As | -60.020±0.350 |
| $^{87}$As | -58.570±0.480 |
| $^{88}$As | -53.990±0.670 |
| $^{89}$As | -50.760±0.930 |
| $^{90}$As | -44.890±1.270 |
| $^{91}$As | -41.340±1.790 |
| $^{92}$As | -35.230±2.560 |
| $^{93}$As | -31.430±3.630 |
| $^{94}$As | -27.420±5.110 |
| $^{95}$As | -23.440±6.620 |
| $^{63}$Se | -26.470±4.260 |
| $^{64}$Se | -33.240±2.780 |
| $^{65}$Se | -37.190±1.810 |
| $^{66}$Se | -43.770±1.180 |
| $^{67}$Se | -46.140±0.300 |
| $^{68}$Se | -52.970±0.300 |
| $^{69}$Se | -56.460±0.260 |
| $^{70}$Se | -61.690±0.160 |
| $^{71}$Se | -63.600±0.110 |
| $^{72}$Se | -67.780±0.080 |

| Isotope | Mass Excess |
|---|---|
| $^{73}$Se | -68.800±0.080 |
| $^{74}$Se | -72.240±0.080 |
| $^{75}$Se | -72.580±0.070 |
| $^{76}$Se | -75.160±0.070 |
| $^{77}$Se | -74.730±0.070 |
| $^{78}$Se | -76.600±0.090 |
| $^{79}$Se | -75.730±0.100 |
| $^{80}$Se | -77.850±0.270 |
| $^{81}$Se | -76.540±0.200 |
| $^{82}$Se | -77.400±0.160 |
| $^{83}$Se | -75.350±0.150 |
| $^{84}$Se | -75.540±0.180 |
| $^{85}$Se | -72.580±0.170 |
| $^{86}$Se | -71.880±0.200 |
| $^{87}$Se | -68.490±0.280 |
| $^{88}$Se | -67.490±0.400 |
| $^{89}$Se | -59.970±0.480 |
| $^{90}$Se | -58.180±0.420 |
| $^{91}$Se | -52.540±0.500 |
| $^{92}$Se | -49.170±0.660 |
| $^{93}$Se | -43.270±0.890 |
| $^{94}$Se | -41.410±1.280 |
| $^{95}$Se | -35.800±2.520 |
| $^{96}$Se | -32.030±3.300 |
| $^{97}$Se | -25.780±4.280 |
| $^{98}$Se | -21.770±5.520 |
| $^{65}$Br | -27.390±5.150 |
| $^{66}$Br | -30.410±3.390 |
| $^{67}$Br | -36.670±2.240 |
| $^{68}$Br | -37.620±0.510 † |
| $^{69}$Br | -49.290±1.010 |
| $^{70}$Br | -51.890±0.450 |
| $^{71}$Br | -57.210±0.200 |
| $^{72}$Br | -59.490±0.110 |
| $^{73}$Br | -64.110±0.090 |
| $^{74}$Br | -65.630±0.100 |
| $^{75}$Br | -69.490±0.090 |
| $^{76}$Br | -70.300±0.080 |
| $^{77}$Br | -73.380±0.080 |
| $^{78}$Br | -73.450±0.090 |
| $^{79}$Br | -75.790±0.110 |
| $^{80}$Br | -76.560±0.170 |
| $^{81}$Br | -78.330±0.160 |
| $^{82}$Br | -77.500±0.130 |
| $^{83}$Br | -78.770±0.140 |
| $^{84}$Br | -77.040±0.160 |
| $^{85}$Br | -78.060±0.120 |
| $^{86}$Br | -75.360±0.130 |
| $^{87}$Br | -74.830±0.180 |
| $^{88}$Br | -71.510±0.280 |
| $^{89}$Br | -68.410±0.350 |
| $^{90}$Br | -64.500±0.290 |
| $^{91}$Br | -62.810±0.260 |
| $^{92}$Br | -57.440±0.300 |
| $^{93}$Br | -54.290±0.400 |
| $^{94}$Br | -49.830±0.600 |
| $^{95}$Br | -46.920±0.710 |
| $^{96}$Br | -41.420±1.240 |
| $^{97}$Br | -37.860±1.660 |
| $^{98}$Br | -31.810±2.190 |
| $^{99}$Br | -27.880±3.310 |
| $^{67}$Kr | -28.570±6.230 |
| $^{68}$Kr | -33.350±4.150 |
| $^{69}$Kr | -39.970±2.180 |
| $^{70}$Kr | -46.290±1.600 |
| $^{71}$Kr | -49.000±0.710 |
| $^{72}$Kr | -54.670±0.320 |
| $^{73}$Kr | -57.410±0.150 |
| $^{74}$Kr | -62.550±0.100 |
| $^{75}$Kr | -64.470±0.090 |
| $^{76}$Kr | -68.800±0.090 |
| $^{77}$Kr | -70.130±0.080 |
| $^{78}$Kr | -73.690±0.090 |
| $^{79}$Kr | -74.260±0.090 |

| Isotope | Mass Excess |
|---|---|
| $^{80}$Kr | -78.180±0.220 |
| $^{81}$Kr | -78.310±0.130 |
| $^{82}$Kr | -80.700±0.120 |
| $^{83}$Kr | -80.370±0.140 |
| $^{84}$Kr | -82.160±0.190 |
| $^{85}$Kr | -81.220±0.140 |
| $^{86}$Kr | -82.660±0.120 |
| $^{87}$Kr | -80.320±0.130 |
| $^{88}$Kr | -80.120±0.230 |
| $^{89}$Kr | -75.880±0.280 |
| $^{90}$Kr | -74.810±0.230 |
| $^{91}$Kr | -71.050±0.180 |
| $^{92}$Kr | -69.470±0.170 |
| $^{93}$Kr | -64.410±0.210 |
| $^{94}$Kr | -62.340±0.340 |
| $^{95}$Kr | -57.330±0.360 |
| $^{96}$Kr | -54.480±0.390 |
| $^{97}$Kr | -49.050±0.600 |
| $^{98}$Kr | -45.740±0.850 |
| $^{99}$Kr | -39.780±1.270 |
| $^{100}$Kr | -33.080±4.500 |
| $^{69}$Rb | -30.100±4.690 |
| $^{70}$Rb | -33.800±3.410 |
| $^{71}$Rb | -40.210±2.490 |
| $^{72}$Rb | -42.800±1.130 |
| $^{73}$Rb | -48.730±0.510 |
| $^{74}$Rb | -51.970±0.250 |
| $^{75}$Rb | -57.480±0.160 |
| $^{76}$Rb | -59.890±0.120 |
| $^{77}$Rb | -64.670±0.110 |
| $^{78}$Rb | -66.550±0.120 |
| $^{79}$Rb | -70.600±0.120 |
| $^{80}$Rb | -71.960±0.260 |
| $^{81}$Rb | -75.830±0.160 |
| $^{82}$Rb | -76.710±0.120 |
| $^{83}$Rb | -79.790±0.120 |
| $^{84}$Rb | -79.940±0.140 |
| $^{85}$Rb | -82.460±0.130 |
| $^{86}$Rb | -82.180±0.120 |
| $^{87}$Rb | -84.170±0.170 |
| $^{88}$Rb | -82.240±0.180 |
| $^{89}$Rb | -81.870±0.190 |
| $^{90}$Rb | -78.980±0.160 |
| $^{91}$Rb | -78.180±0.140 |
| $^{92}$Rb | -74.650±0.130 |
| $^{93}$Rb | -73.250±0.160 |
| $^{94}$Rb | -68.940±0.150 |
| $^{95}$Rb | -66.770±0.170 |
| $^{96}$Rb | -61.950±0.190 |
| $^{97}$Rb | -59.240±0.200 |
| $^{98}$Rb | -53.940±0.280 |
| $^{99}$Rb | -50.740±0.440 |
| $^{100}$Rb | -46.130±1.900 |
| $^{101}$Rb | -42.900±2.450 |
| $^{102}$Rb | -36.250±3.660 |
| $^{72}$Sr | -36.790±3.840 |
| $^{73}$Sr | -38.870±1.760 |
| $^{74}$Sr | -44.990±0.810 |
| $^{75}$Sr | -48.570±0.520 |
| $^{76}$Sr | -54.460±0.330 |
| $^{77}$Sr | -57.300±0.210 |
| $^{78}$Sr | -62.410±0.160 |
| $^{79}$Sr | -64.820±0.160 |
| $^{80}$Sr | -69.120±0.260 |
| $^{81}$Sr | -71.170±0.170 |
| $^{82}$Sr | -75.550±0.140 |
| $^{83}$Sr | -77.050±0.150 |
| $^{84}$Sr | -80.760±0.160 |
| $^{85}$Sr | -81.590±0.140 |
| $^{86}$Sr | -84.680±0.140 |
| $^{87}$Sr | -85.000±0.190 |
| $^{88}$Sr | -87.560±0.280 |
| $^{89}$Sr | -86.400±0.300 |
| $^{90}$Sr | -86.570±0.220 |

| Isotope | Mass Excess |
|---|---|
| $^{91}$Sr | -83.950±0.170 |
| $^{92}$Sr | -83.400±0.150 |
| $^{93}$Sr | -80.110±0.160 |
| $^{94}$Sr | -78.910±0.190 |
| $^{95}$Sr | -74.930±0.170 |
| $^{96}$Sr | -73.000±0.170 |
| $^{97}$Sr | -68.390±0.180 |
| $^{98}$Sr | -65.850±0.210 |
| $^{99}$Sr | -60.710±0.270 |
| $^{100}$Sr | -60.080±0.790 |
| $^{101}$Sr | -55.400±1.030 |
| $^{102}$Sr | -52.560±1.570 |
| $^{103}$Sr | -46.870±2.360 |
| $^{104}$Sr | -42.880±3.510 |
| $^{105}$Sr | -36.730±4.270 |
| $^{74}$Y | -32.060±2.710 |
| $^{75}$Y | -38.480±1.730 |
| $^{76}$Y | -42.180±1.110 |
| $^{77}$Y | -48.310±0.710 |
| $^{78}$Y | -51.500±0.460 |
| $^{79}$Y | -56.750±0.230 |
| $^{80}$Y | -60.680±0.280 |
| $^{81}$Y | -65.470±0.190 |
| $^{82}$Y | -67.750±0.140 |
| $^{83}$Y | -72.430±0.160 |
| $^{84}$Y | -73.730±0.170 |
| $^{85}$Y | -78.310±0.140 |
| $^{86}$Y | -79.390±0.120 |
| $^{87}$Y | -82.720±0.130 |
| $^{88}$Y | -83.280±0.180 |
| $^{89}$Y | -86.420±0.190 |
| $^{90}$Y | -86.090±0.200 |
| $^{91}$Y | -86.760±0.140 |
| $^{92}$Y | -84.640±0.120 |
| $^{93}$Y | -84.580±0.140 |
| $^{94}$Y | -81.750±0.150 |
| $^{95}$Y | -81.130±0.140 |
| $^{96}$Y | -77.670±0.130 |
| $^{97}$Y | -76.210±0.150 |
| $^{98}$Y | -72.070±0.210 |
| $^{99}$Y | -69.960±0.310 |
| $^{100}$Y | -67.030±0.280 |
| $^{101}$Y | -65.340±0.430 |
| $^{102}$Y | -61.080±0.660 |
| $^{103}$Y | -58.790±1.010 |
| $^{104}$Y | -53.810±1.520 |
| $^{105}$Y | -50.640±2.270 |
| $^{106}$Y | -44.950±3.030 |
| $^{107}$Y | -41.010±4.020 |
| $^{76}$Zr | -35.400±3.570 |
| $^{77}$Zr | -38.640±2.300 |
| $^{78}$Zr | -44.660±1.490 |
| $^{79}$Zr | -47.980±0.970 |
| $^{80}$Zr | -56.170±0.580 |
| $^{81}$Zr | -58.920±0.360 |
| $^{82}$Zr | -64.080±0.250 |
| $^{83}$Zr | -66.480±0.220 |
| $^{84}$Zr | -70.400±0.330 |
| $^{85}$Zr | -73.030±0.200 |
| $^{86}$Zr | -78.010±0.150 |
| $^{87}$Zr | -79.300±0.180 |
| $^{88}$Zr | -82.900±0.250 |
| $^{89}$Zr | -84.640±0.230 |
| $^{90}$Zr | -87.540±0.150 |
| $^{91}$Zr | -87.570±0.150 |
| $^{92}$Zr | -88.700±0.130 |
| $^{93}$Zr | -87.100±0.150 |
| $^{94}$Zr | -87.520±0.200 |
| $^{95}$Zr | -85.300±0.150 |
| $^{96}$Zr | -85.020±0.130 |
| $^{97}$Zr | -82.090±0.140 |
| $^{98}$Zr | -81.130±0.190 |
| $^{99}$Zr | -77.470±0.280 |
| $^{100}$Zr | -76.640±0.170 |

| Isotope | Mass Excess |
|---|---|
| $^{101}$Zr | -73.290±0.110 |
| $^{102}$Zr | -72.060±0.130 |
| $^{103}$Zr | -68.370±0.190 |
| $^{104}$Zr | -66.790±0.280 |
| $^{105}$Zr | -62.790±0.420 |
| $^{106}$Zr | -59.920±1.070 |
| $^{107}$Zr | -55.150±1.440 |
| $^{108}$Zr | -52.310±1.930 |
| $^{109}$Zr | -46.890±2.570 |
| $^{110}$Zr | -41.910±4.180 |
| $^{77}$Nb | -28.250±4.810 |
| $^{78}$Nb | -31.430±3.110 |
| $^{79}$Nb | -37.590±2.030 |
| $^{80}$Nb | -46.010±1.220 |
| $^{81}$Nb | -51.520±0.840 |
| $^{82}$Nb | -54.490±0.580 |
| $^{83}$Nb | -59.950±0.430 |
| $^{84}$Nb | -60.840±0.440 |
| $^{85}$Nb | -66.500±0.320 |
| $^{86}$Nb | -69.530±0.220 |
| $^{87}$Nb | -74.910±0.210 |
| $^{88}$Nb | -76.320±0.310 |
| $^{89}$Nb | -81.170±0.280 |
| $^{90}$Nb | -82.400±0.190 |
| $^{91}$Nb | -85.630±0.130 |
| $^{92}$Nb | -86.010±0.130 |
| $^{93}$Nb | -87.580±0.140 |
| $^{94}$Nb | -86.500±0.210 |
| $^{95}$Nb | -87.530±0.160 |
| $^{96}$Nb | -85.720±0.130 |
| $^{97}$Nb | -85.820±0.140 |
| $^{98}$Nb | -83.440±0.150 |
| $^{99}$Nb | -83.030±0.220 |
| $^{100}$Nb | -79.450±0.130 |
| $^{101}$Nb | -79.190±0.100 |
| $^{102}$Nb | -76.330±0.090 |
| $^{103}$Nb | -75.410±0.090 |
| $^{104}$Nb | -72.060±0.120 |
| $^{105}$Nb | -70.860±0.160 |
| $^{106}$Nb | -67.220±0.220 |
| $^{107}$Nb | -65.260±0.500 |
| $^{108}$Nb | -61.050±0.690 |
| $^{109}$Nb | -58.860±0.930 |
| $^{110}$Nb | -53.800±1.540 |
| $^{111}$Nb | -47.970±2.840 |
| $^{112}$Nb | -43.920±3.480 |
| $^{113}$Nb | -37.780±5.270 |
| $^{114}$Nb | -32.260±6.540 |
| $^{115}$Nb | -34.370±6.380 |
| $^{79}$Mo | -26.510±4.170 |
| $^{82}$Mo | -42.350±2.290 † |
| $^{83}$Mo | -49.020±1.330 |
| $^{84}$Mo | -56.450±0.840 |
| $^{85}$Mo | -59.470±0.540 |
| $^{86}$Mo | -65.170±0.370 |
| $^{87}$Mo | -68.420±0.300 |
| $^{88}$Mo | -74.100±0.330 |
| $^{89}$Mo | -76.590±0.330 |
| $^{90}$Mo | -80.770±0.230 |
| $^{91}$Mo | -82.190±0.170 |
| $^{92}$Mo | -85.660±0.140 |
| $^{93}$Mo | -86.320±0.150 |
| $^{94}$Mo | -88.200±0.160 |
| $^{95}$Mo | -87.750±0.140 |
| $^{96}$Mo | -89.180±0.130 |
| $^{97}$Mo | -87.770±0.140 |
| $^{98}$Mo | -88.250±0.190 |
| $^{99}$Mo | -86.380±0.180 |
| $^{100}$Mo | -85.840±0.120 |
| $^{101}$Mo | -83.600±0.100 |
| $^{102}$Mo | -83.540±0.080 |
| $^{103}$Mo | -80.990±0.080 |
| $^{104}$Mo | -80.350±0.080 |
| $^{105}$Mo | -77.290±0.110 |

| Isotope | Mass Excess |
|---|---|
| $^{106}$Mo | -76.440±0.120 |
| $^{107}$Mo | -73.140±0.140 |
| $^{108}$Mo | -71.730±0.250 |
| $^{109}$Mo | -67.920±0.340 |
| $^{110}$Mo | -66.070±0.560 |
| $^{111}$Mo | -58.330±1.510 |
| $^{112}$Mo | -56.910±1.900 |
| $^{113}$Mo | -52.780±2.420 |
| $^{114}$Mo | -49.300±3.320 |
| $^{115}$Mo | -46.020±3.860 |
| $^{116}$Mo | -43.830±4.740 |
| $^{117}$Mo | -39.430±5.790 |
| $^{120}$Mo | -12.180±5.030 |
| $^{121}$Mo | -2.910±6.240 |
| $^{84}$Tc | -45.070±1.560 |
| $^{85}$Tc | -51.520±1.190 |
| $^{86}$Tc | -54.310±0.820 |
| $^{87}$Tc | -59.910±0.640 |
| $^{88}$Tc | -63.150±0.540 |
| $^{89}$Tc | -72.730±1.080 |
| $^{90}$Tc | -74.130±0.530 |
| $^{91}$Tc | -78.050±0.270 |
| $^{92}$Tc | -79.430±0.180 |
| $^{93}$Tc | -82.990±0.180 |
| $^{94}$Tc | -83.830±0.200 |
| $^{95}$Tc | -86.350±0.160 |
| $^{96}$Tc | -86.150±0.150 |
| $^{97}$Tc | -87.890±0.160 |
| $^{98}$Tc | -86.840±0.210 |
| $^{99}$Tc | -87.670±0.280 |
| $^{100}$Tc | -86.080±0.090 |
| $^{101}$Tc | -86.700±0.090 |
| $^{102}$Tc | -84.790±0.080 |
| $^{103}$Tc | -85.010±0.070 |
| $^{104}$Tc | -82.760±0.080 |
| $^{105}$Tc | -82.440±0.070 |
| $^{106}$Tc | -79.760±0.080 |
| $^{107}$Tc | -79.170±0.100 |
| $^{108}$Tc | -76.180±0.110 |
| $^{109}$Tc | -75.160±0.150 |
| $^{110}$Tc | -71.720±0.220 |
| $^{111}$Tc | -67.310±0.730 |
| $^{112}$Tc | -63.830±0.950 |
| $^{113}$Tc | -62.380±1.250 |
| $^{114}$Tc | -58.590±1.640 |
| $^{115}$Tc | -56.300±2.210 |
| $^{116}$Tc | -52.320±2.780 |
| $^{117}$Tc | -50.390±3.460 |
| $^{118}$Tc | -46.240±4.280 |
| $^{119}$Tc | -44.140±5.260 |
| $^{120}$Tc | -31.250±2.350 † |
| $^{121}$Tc | -25.620±2.940 ‡ |
| $^{122}$Tc | -18.170±4.100 |
| $^{123}$Tc | -20.710±6.020 |
| $^{84}$Ru | -39.310±2.780 |
| $^{85}$Ru | -42.880±2.150 |
| $^{86}$Ru | -49.260±1.660 |
| $^{87}$Ru | -51.670±1.170 |
| $^{88}$Ru | -57.080±0.990 |
| $^{89}$Ru | -64.160±2.280 |
| $^{90}$Ru | -70.270±1.660 |
| $^{91}$Ru | -71.610±0.790 |
| $^{92}$Ru | -75.670±0.380 |
| $^{93}$Ru | -77.340±0.210 |
| $^{94}$Ru | -81.640±0.150 |
| $^{95}$Ru | -82.970±0.170 |
| $^{96}$Ru | -85.940±0.140 |
| $^{97}$Ru | -86.260±0.140 |
| $^{98}$Ru | -88.570±0.150 |
| $^{99}$Ru | -88.110±0.190 |
| $^{100}$Ru | -89.170±0.100 |
| $^{101}$Ru | -88.130±0.090 |
| $^{102}$Ru | -89.130±0.080 |
| $^{103}$Ru | -87.580±0.080 |

| Isotope | Mass Excess |
|---|---|
| $^{104}$Ru | -88.110±0.080 |
| $^{105}$Ru | -86.160±0.100 |
| $^{106}$Ru | -86.220±0.100 |
| $^{107}$Ru | -83.840±0.100 |
| $^{108}$Ru | -83.530±0.110 |
| $^{109}$Ru | -80.810±0.130 |
| $^{110}$Ru | -80.110±0.150 |
| $^{111}$Ru | -75.590±0.400 |
| $^{112}$Ru | -74.270±0.400 |
| $^{113}$Ru | -71.110±0.540 |
| $^{114}$Ru | -69.940±0.720 |
| $^{115}$Ru | -66.010±0.980 |
| $^{116}$Ru | -64.250±1.370 |
| $^{117}$Ru | -60.480±1.770 |
| $^{118}$Ru | -58.730±2.250 |
| $^{119}$Ru | -54.680±2.960 |
| $^{120}$Ru | -50.530±1.090 |
| $^{121}$Ru | -43.760±1.370 |
| $^{122}$Ru | -39.820±1.920 |
| $^{123}$Ru | -33.320±2.700 |
| $^{124}$Ru | -31.430±3.830 |
| $^{125}$Ru | -21.420±4.550 † |
| $^{126}$Ru | -15.200±5.840 ‡ |
| $^{84}$Rh | -30.260±4.850 |
| $^{85}$Rh | -35.360±3.770 |
| $^{86}$Rh | -38.610±2.940 |
| $^{87}$Rh | -44.810±2.290 |
| $^{88}$Rh | -46.640±1.610 |
| $^{89}$Rh | -56.150±4.850 |
| $^{90}$Rh | -59.530±3.560 |
| $^{91}$Rh | -65.420±2.610 |
| $^{92}$Rh | -66.490±1.270 |
| $^{93}$Rh | -70.550±0.630 |
| $^{94}$Rh | -73.160±0.380 |
| $^{95}$Rh | -77.590±0.210 |
| $^{96}$Rh | -79.220±0.180 |
| $^{97}$Rh | -82.530±0.160 |
| $^{98}$Rh | -83.340±0.190 |
| $^{99}$Rh | -86.190±0.240 |
| $^{100}$Rh | -85.660±0.090 |
| $^{101}$Rh | -87.700±0.080 |
| $^{102}$Rh | -87.080±0.070 |
| $^{103}$Rh | -88.450±0.070 |
| $^{104}$Rh | -87.250±0.070 |
| $^{105}$Rh | -88.090±0.070 |
| $^{106}$Rh | -86.560±0.080 |
| $^{107}$Rh | -86.920±0.070 |
| $^{108}$Rh | -84.850±0.080 |
| $^{109}$Rh | -84.830±0.100 |
| $^{110}$Rh | -82.460±0.130 |
| $^{111}$Rh | -81.890±0.320 |
| $^{112}$Rh | -79.020±0.260 |
| $^{113}$Rh | -78.110±0.230 |
| $^{114}$Rh | -75.280±0.340 |
| $^{115}$Rh | -74.140±0.480 |
| $^{116}$Rh | -70.690±0.590 |
| $^{117}$Rh | -69.240±0.820 |
| $^{118}$Rh | -65.710±1.130 |
| $^{119}$Rh | -64.110±1.500 |
| $^{120}$Rh | -61.850±0.510 |
| $^{121}$Rh | -58.990±0.650 |
| $^{122}$Rh | -53.810±0.890 |
| $^{123}$Rh | -50.450±1.250 |
| $^{124}$Rh | -44.660±1.770 |
| $^{125}$Rh | -41.650±2.490 |
| $^{126}$Rh | -34.840±3.230 |
| $^{127}$Rh | -29.610±4.160 |
| $^{128}$Rh | -21.760±5.330 |
| $^{129}$Rh | -15.280±6.810 |
| $^{85}$Pd | -30.650±6.640 |
| $^{86}$Pd | -34.830±5.150 |
| $^{87}$Pd | -37.480±4.010 |
| $^{88}$Pd | -43.300±3.140 |
| $^{91}$Pd | -57.860±5.500 |

| Isotope | Mass Excess |
|---|---|
| $^{92}$Pd | -63.290±4.070 |
| $^{93}$Pd | -63.780±2.020 |
| $^{94}$Pd | -68.720±1.040 |
| $^{95}$Pd | -71.110±0.660 |
| $^{96}$Pd | -75.620±0.410 |
| $^{97}$Pd | -77.430±0.300 |
| $^{98}$Pd | -80.930±0.220 |
| $^{99}$Pd | -82.130±0.280 |
| $^{100}$Pd | -84.980±0.120 |
| $^{101}$Pd | -85.410±0.090 |
| $^{102}$Pd | -87.840±0.080 |
| $^{103}$Pd | -87.650±0.070 |
| $^{104}$Pd | -89.420±0.090 |
| $^{105}$Pd | -88.570±0.110 |
| $^{106}$Pd | -89.800±0.070 |
| $^{107}$Pd | -88.580±0.070 |
| $^{108}$Pd | -89.260±0.070 |
| $^{109}$Pd | -87.470±0.090 |
| $^{110}$Pd | -87.670±0.120 |
| $^{111}$Pd | -86.100±0.180 |
| $^{112}$Pd | -86.110±0.160 |
| $^{113}$Pd | -83.680±0.150 |
| $^{114}$Pd | -83.180±0.140 |
| $^{115}$Pd | -80.520±0.190 |
| $^{116}$Pd | -79.750±0.230 |
| $^{117}$Pd | -76.650±0.300 |
| $^{118}$Pd | -75.520±0.460 |
| $^{119}$Pd | -72.190±0.670 |
| $^{120}$Pd | -71.750±0.250 |
| $^{121}$Pd | -69.100±0.250 |
| $^{122}$Pd | -66.770±0.280 |
| $^{123}$Pd | -62.220±0.350 |
| $^{124}$Pd | -59.620±0.470 |
| $^{125}$Pd | -55.730±0.670 |
| $^{126}$Pd | -53.000±1.270 |
| $^{127}$Pd | -47.230±1.650 |
| $^{128}$Pd | -43.200±2.150 |
| $^{129}$Pd | -36.750±2.780 |
| $^{130}$Pd | -31.490±4.200 |
| $^{93}$Ag | -59.300±6.260 |
| $^{94}$Ag | -60.330±3.180 |
| $^{95}$Ag | -64.700±2.090 |
| $^{96}$Ag | -66.810±1.370 |
| $^{97}$Ag | -71.210±0.890 |
| $^{98}$Ag | -73.070±0.620 |
| $^{99}$Ag | -76.570±0.310 |
| $^{100}$Ag | -77.630±0.150 |
| $^{101}$Ag | -81.210±0.110 |
| $^{102}$Ag | -82.110±0.080 |
| $^{103}$Ag | -84.970±0.080 |
| $^{104}$Ag | -85.230±0.080 |
| $^{105}$Ag | -87.490±0.120 |
| $^{106}$Ag | -87.060±0.090 |
| $^{107}$Ag | -88.630±0.070 |
| $^{108}$Ag | -87.740±0.070 |
| $^{109}$Ag | -88.790±0.080 |
| $^{110}$Ag | -87.360±0.110 |
| $^{111}$Ag | -88.340±0.210 |
| $^{112}$Ag | -86.820±0.140 |
| $^{113}$Ag | -87.240±0.110 |
| $^{114}$Ag | -85.240±0.120 |
| $^{115}$Ag | -85.160±0.140 |
| $^{116}$Ag | -82.790±0.120 |
| $^{117}$Ag | -82.370±0.120 |
| $^{118}$Ag | -79.630±0.160 |
| $^{119}$Ag | -78.840±0.260 |
| $^{120}$Ag | -75.640±0.170 |
| $^{121}$Ag | -75.580±0.150 |
| $^{122}$Ag | -73.270±0.160 |
| $^{123}$Ag | -71.310±0.170 |
| $^{124}$Ag | -67.170±0.230 |
| $^{125}$Ag | -65.780±0.330 |
| $^{126}$Ag | -62.260±0.380 |
| $^{127}$Ag | -60.370±0.640 |
| $^{128}$Ag | -55.350±0.860 |

| Isotope | Mass Excess |
|---|---|
| $^{129}$Ag | -52.150±1.140 |
| $^{130}$Ag | -46.820±1.700 |
| $^{95}$Cd | -60.560±6.340 |
| $^{96}$Cd | -63.900±4.220 |
| $^{97}$Cd | -65.360±2.810 |
| $^{98}$Cd | -69.380±1.890 |
| $^{99}$Cd | -71.060±1.300 |
| $^{100}$Cd | -72.840±0.220 |
| $^{101}$Cd | -74.970±0.150 |
| $^{102}$Cd | -79.000±0.110 |
| $^{103}$Cd | -80.360±0.090 |
| $^{104}$Cd | -83.640±0.090 |
| $^{105}$Cd | -84.290±0.100 |
| $^{106}$Cd | -86.950±0.080 |
| $^{107}$Cd | -87.000±0.070 |
| $^{108}$Cd | -88.970±0.070 |
| $^{109}$Cd | -88.450±0.090 |
| $^{110}$Cd | -89.880±0.090 |
| $^{111}$Cd | -89.530±0.150 |
| $^{112}$Cd | -90.480±0.130 |
| $^{113}$Cd | -89.340±0.090 |
| $^{114}$Cd | -90.130±0.090 |
| $^{115}$Cd | -88.510±0.120 |
| $^{116}$Cd | -88.650±0.110 |
| $^{117}$Cd | -86.580±0.100 |
| $^{118}$Cd | -86.460±0.140 |
| $^{119}$Cd | -84.010±0.200 |
| $^{120}$Cd | -83.130±0.140 |
| $^{121}$Cd | -80.990±0.110 |
| $^{122}$Cd | -80.980±0.100 |
| $^{123}$Cd | -78.830±0.110 |
| $^{124}$Cd | -77.190±0.120 |
| $^{125}$Cd | -73.910±0.190 |
| $^{126}$Cd | -72.970±0.200 |
| $^{127}$Cd | -69.800±0.220 |
| $^{128}$Cd | -68.430±0.320 |
| $^{129}$Cd | -64.000±0.450 |
| $^{130}$Cd | -61.790±0.670 |
| $^{131}$Cd | -59.760±1.250 |
| $^{132}$Cd | -56.160±1.710 |
| $^{135}$Cd | -34.600±3.990 |
| $^{136}$Cd | -28.500±5.080 |
| $^{137}$Cd | -19.890±6.480 † |
| $^{97}$In | -59.110±5.770 |
| $^{98}$In | -60.410±3.890 |
| $^{99}$In | -64.450±2.640 |
| $^{100}$In | -63.230±1.430 † |
| $^{101}$In | -67.640±0.760 |
| $^{102}$In | -69.780±0.400 |
| $^{103}$In | -74.040±0.220 |
| $^{104}$In | -75.740±0.130 |
| $^{105}$In | -79.410±0.100 |
| $^{106}$In | -80.490±0.090 |
| $^{107}$In | -83.520±0.090 |
| $^{108}$In | -83.990±0.090 |
| $^{109}$In | -86.370±0.100 |
| $^{110}$In | -86.250±0.110 |
| $^{111}$In | -88.500±0.160 |
| $^{112}$In | -88.070±0.100 |
| $^{113}$In | -89.500±0.090 |
| $^{114}$In | -88.720±0.100 |
| $^{115}$In | -89.890±0.130 |
| $^{116}$In | -88.550±0.100 |
| $^{117}$In | -89.110±0.100 |
| $^{118}$In | -87.350±0.110 |
| $^{119}$In | -87.540±0.180 |
| $^{120}$In | -85.620±0.100 |
| $^{121}$In | -85.690±0.080 |
| $^{122}$In | -83.650±0.080 |
| $^{123}$In | -83.720±0.080 |
| $^{124}$In | -81.690±0.090 |
| $^{125}$In | -80.680±0.090 |
| $^{126}$In | -77.990±0.100 |
| $^{127}$In | -77.270±0.100 |

| Isotope | Mass Excess |
|---|---|
| $^{128}$In | -74.390±0.110 |
| $^{129}$In | -73.390±0.150 |
| $^{130}$In | -69.860±0.240 |
| $^{131}$In | -69.350±0.490 |
| $^{132}$In | -64.810±0.750 |
| $^{133}$In | -61.480±1.060 |
| $^{134}$In | -51.510±2.130 † |
| $^{135}$In | -49.110±2.120 |
| $^{136}$In | -42.100±2.770 |
| $^{137}$In | -36.590±3.570 |
| $^{138}$In | -28.620±4.600 |
| $^{99}$Sn | -57.760±5.320 |
| $^{100}$Sn | -56.260±2.860 † |
| $^{101}$Sn | -59.210±2.170 |
| $^{102}$Sn | -63.630±1.170 |
| $^{103}$Sn | -66.000±0.630 |
| $^{104}$Sn | -70.590±0.330 |
| $^{105}$Sn | -72.690±0.180 |
| $^{106}$Sn | -76.760±0.130 |
| $^{107}$Sn | -78.220±0.090 |
| $^{108}$Sn | -81.670±0.090 |
| $^{109}$Sn | -82.560±0.090 |
| $^{110}$Sn | -85.330±0.090 |
| $^{111}$Sn | -85.350±0.170 |
| $^{112}$Sn | -87.870±0.110 |
| $^{113}$Sn | -87.900±0.080 |
| $^{114}$Sn | -89.780±0.090 |
| $^{115}$Sn | -89.330±0.110 |
| $^{116}$Sn | -90.810±0.100 |
| $^{117}$Sn | -89.880±0.090 |
| $^{118}$Sn | -90.840±0.120 |
| $^{119}$Sn | -89.350±0.140 |
| $^{120}$Sn | -91.070±0.170 |
| $^{121}$Sn | -89.330±0.120 |
| $^{122}$Sn | -89.600±0.090 |
| $^{123}$Sn | -87.730±0.080 |
| $^{124}$Sn | -87.910±0.090 |
| $^{125}$Sn | -86.000±0.100 |
| $^{126}$Sn | -85.730±0.100 |
| $^{127}$Sn | -83.290±0.090 |
| $^{128}$Sn | -82.800±0.100 |
| $^{129}$Sn | -80.180±0.110 |
| $^{130}$Sn | -79.460±0.140 |
| $^{131}$Sn | -76.640±0.370 |
| $^{132}$Sn | -74.820±0.300 |
| $^{133}$Sn | -70.510±0.410 |
| $^{134}$Sn | -67.730±0.640 |
| $^{135}$Sn | -60.930±1.040 |
| $^{136}$Sn | -56.920±1.400 |
| $^{137}$Sn | -50.460±1.870 |
| $^{138}$Sn | -45.520±2.470 |
| $^{139}$Sn | -38.140±3.230 |
| $^{140}$Sn | -34.450±3.910 |
| $^{141}$Sn | -27.150±4.890 |
| $^{142}$Sn | -21.380±6.750 |
| $^{101}$Sb | -49.700±4.270 ‡ |
| $^{102}$Sb | -52.680±3.250 |
| $^{103}$Sb | -56.890±1.780 |
| $^{104}$Sb | -59.390±0.970 |
| $^{105}$Sb | -64.280±0.520 |
| $^{106}$Sb | -66.800±0.350 |
| $^{107}$Sb | -71.240±0.240 |
| $^{108}$Sb | -73.040±0.110 |
| $^{109}$Sb | -76.910±0.110 |
| $^{110}$Sb | -78.250±0.120 |
| $^{111}$Sb | -80.390±0.220 |
| $^{112}$Sb | -81.370±0.150 |
| $^{113}$Sb | -84.280±0.120 |
| $^{114}$Sb | -84.730±0.110 |
| $^{115}$Sb | -87.040±0.120 |
| $^{116}$Sb | -86.960±0.100 |
| $^{117}$Sb | -88.800±0.100 |
| $^{118}$Sb | -88.260±0.130 |
| $^{119}$Sb | -89.600±0.190 |

| Isotope | Mass Excess |
|---|---|
| $^{120}$Sb | -88.050±0.110 |
| $^{121}$Sb | -89.970±0.110 |
| $^{122}$Sb | -88.510±0.080 |
| $^{123}$Sb | -89.010±0.070 |
| $^{124}$Sb | -87.330±0.070 |
| $^{125}$Sb | -87.700±0.080 |
| $^{126}$Sb | -86.600±0.070 |
| $^{127}$Sb | -86.640±0.070 |
| $^{128}$Sb | -84.520±0.070 |
| $^{129}$Sb | -84.350±0.100 |
| $^{130}$Sb | -82.100±0.150 |
| $^{131}$Sb | -82.530±0.370 |
| $^{132}$Sb | -79.140±0.250 |
| $^{133}$Sb | -77.620±0.230 |
| $^{134}$Sb | -73.610±0.320 |
| $^{135}$Sb | -70.030±0.510 |
| $^{136}$Sb | -65.080±0.570 |
| $^{137}$Sb | -61.360±0.820 |
| $^{138}$Sb | -55.210±1.140 |
| $^{139}$Sb | -51.020±1.560 |
| $^{140}$Sb | -45.160±1.820 |
| $^{141}$Sb | -40.450±2.300 |
| $^{142}$Sb | -33.680±3.210 |
| $^{143}$Sb | -28.430±4.460 |
| $^{144}$Sb | -24.560±6.050 |
| $^{103}$Te | -48.450±4.800 |
| $^{104}$Te | -52.110±2.660 |
| $^{105}$Te | -54.580±1.460 |
| $^{106}$Te | -59.850±1.000 |
| $^{107}$Te | -62.650±0.690 |
| $^{108}$Te | -67.410±0.470 |
| $^{109}$Te | -69.410±0.170 |
| $^{110}$Te | -73.670±0.150 |
| $^{111}$Te | -73.710±0.210 |
| $^{112}$Te | -77.500±0.160 |
| $^{113}$Te | -78.830±0.140 |
| $^{114}$Te | -82.100±0.140 |
| $^{115}$Te | -82.780±0.130 |
| $^{116}$Te | -85.560±0.110 |
| $^{117}$Te | -85.790±0.090 |
| $^{118}$Te | -87.950±0.100 |
| $^{119}$Te | -87.750±0.130 |
| $^{120}$Te | -88.720±0.130 |
| $^{121}$Te | -88.530±0.090 |
| $^{122}$Te | -90.480±0.090 |
| $^{123}$Te | -89.360±0.070 |
| $^{124}$Te | -90.120±0.080 |
| $^{125}$Te | -88.640±0.110 |
| $^{126}$Te | -89.700±0.080 |
| $^{127}$Te | -88.690±0.070 |
| $^{128}$Te | -89.060±0.070 |
| $^{129}$Te | -87.220±0.090 |
| $^{130}$Te | -87.290±0.130 |
| $^{131}$Te | -86.490±0.340 |
| $^{132}$Te | -85.900±0.240 |
| $^{133}$Te | -82.900±0.200 |
| $^{134}$Te | -81.660±0.240 |
| $^{135}$Te | -77.220±0.350 |
| $^{136}$Te | -75.020±0.330 |
| $^{137}$Te | -70.460±0.330 |
| $^{138}$Te | -66.990±0.570 |
| $^{139}$Te | -61.560±0.720 |
| $^{140}$Te | -57.880±0.820 |
| $^{141}$Te | -52.030±1.070 |
| $^{142}$Te | -47.840±1.480 |
| $^{143}$Te | -41.410±2.090 |
| $^{144}$Te | -36.550±2.930 |
| $^{145}$Te | -30.750±4.020 |
| $^{146}$Te | -25.430±5.190 |
| $^{147}$Te | -17.820±6.680 |
| $^{105}$I | -44.990±3.930 |
| $^{106}$I | -47.850±2.710 |
| $^{107}$I | -53.050±1.870 |
| $^{108}$I | -55.960±1.290 |

| Isotope | Mass Excess |
|---|---|
| $^{109}$I | -60.920±0.900 |
| $^{110}$I | -62.940±0.290 |
| $^{111}$I | -64.950±0.370 † |
| $^{112}$I | -67.360±0.220 |
| $^{113}$I | -71.600±0.140 |
| $^{114}$I | -73.240±0.210 |
| $^{115}$I | -76.530±0.270 |
| $^{116}$I | -77.890±0.160 |
| $^{117}$I | -81.100±0.110 |
| $^{118}$I | -81.630±0.130 |
| $^{119}$I | -84.100±0.180 |
| $^{120}$I | -84.180±0.150 |
| $^{121}$I | -86.310±0.110 |
| $^{122}$I | -86.280±0.080 |
| $^{123}$I | -88.330±0.080 |
| $^{124}$I | -87.650±0.080 |
| $^{125}$I | -88.780±0.120 |
| $^{126}$I | -87.890±0.090 |
| $^{127}$I | -89.050±0.070 |
| $^{128}$I | -88.150±0.070 |
| $^{129}$I | -88.910±0.070 |
| $^{130}$I | -87.410±0.100 |
| $^{131}$I | -88.570±0.250 |
| $^{132}$I | -86.740±0.200 |
| $^{133}$I | -86.540±0.180 |
| $^{134}$I | -83.930±0.210 |
| $^{135}$I | -82.650±0.200 |
| $^{136}$I | -79.180±0.190 |
| $^{137}$I | -77.330±0.200 |
| $^{138}$I | -73.130±0.260 |
| $^{139}$I | -70.350±0.360 |
| $^{140}$I | -64.330±0.360 |
| $^{141}$I | -61.430±0.380 |
| $^{142}$I | -56.040±0.410 |
| $^{143}$I | -52.350±0.540 |
| $^{144}$I | -46.490±0.740 |
| $^{145}$I | -43.350±1.010 |
| $^{146}$I | -36.590±2.030 |
| $^{147}$I | -31.940±2.650 |
| $^{148}$I | -25.080±3.450 |
| $^{149}$I | -19.770±4.460 |
| $^{150}$I | -11.290±6.730 † |
| $^{107}$Xe | -44.130±4.880 |
| $^{108}$Xe | -48.810±3.400 |
| $^{109}$Xe | -51.510±2.370 |
| $^{110}$Xe | -56.460±1.660 |
| $^{112}$Xe | -59.670±0.410 |
| $^{113}$Xe | -62.460±0.270 |
| $^{114}$Xe | -67.110±0.200 |
| $^{115}$Xe | -68.490±0.330 |
| $^{116}$Xe | -72.660±0.240 |
| $^{117}$Xe | -74.400±0.160 |
| $^{118}$Xe | -78.000±0.150 |
| $^{119}$Xe | -78.760±0.210 |
| $^{120}$Xe | -82.110±0.190 |
| $^{121}$Xe | -82.680±0.130 |
| $^{122}$Xe | -85.140±0.090 |
| $^{123}$Xe | -85.370±0.080 |
| $^{124}$Xe | -87.590±0.090 |
| $^{125}$Xe | -87.410±0.080 |
| $^{126}$Xe | -89.000±0.080 |
| $^{127}$Xe | -88.390±0.070 |
| $^{128}$Xe | -89.740±0.070 |
| $^{129}$Xe | -88.990±0.090 |
| $^{130}$Xe | -90.210±0.090 |
| $^{131}$Xe | -88.630±0.390 |
| $^{132}$Xe | -89.670±0.270 |
| $^{133}$Xe | -88.260±0.210 |
| $^{134}$Xe | -88.450±0.210 |
| $^{135}$Xe | -86.240±0.240 |
| $^{136}$Xe | -85.510±0.220 |
| $^{137}$Xe | -82.410±0.220 |
| $^{138}$Xe | -80.910±0.270 |
| $^{139}$Xe | -77.080±0.360 |
| $^{140}$Xe | -72.860±0.290 |

| Isotope | Mass Excess |
|---|---|
| $^{141}$Xe | -68.720±0.230 |
| $^{142}$Xe | -66.170±0.230 |
| $^{143}$Xe | -61.140±0.230 |
| $^{144}$Xe | -57.830±0.300 |
| $^{145}$Xe | -53.160±0.410 |
| $^{146}$Xe | -49.360±0.530 |
| $^{147}$Xe | -43.180±1.010 |
| $^{148}$Xe | -39.050±1.340 |
| $^{149}$Xe | -32.750±1.770 |
| $^{150}$Xe | -27.470±2.720 |
| $^{109}$Cs | -41.140±4.500 † |
| $^{110}$Cs | -43.850±3.150 † |
| $^{114}$Cs | -53.410±0.740 † |
| $^{115}$Cs | -59.050±0.410 † |
| $^{116}$Cs | -61.560±0.230 |
| $^{117}$Cs | -66.010±0.160 |
| $^{118}$Cs | -68.100±0.160 |
| $^{119}$Cs | -72.050±0.230 |
| $^{120}$Cs | -73.800±0.260 |
| $^{121}$Cs | -77.160±0.150 |
| $^{122}$Cs | -78.150±0.110 |
| $^{123}$Cs | -80.980±0.100 |
| $^{124}$Cs | -81.530±0.100 |
| $^{125}$Cs | -84.010±0.120 |
| $^{126}$Cs | -84.200±0.090 |
| $^{127}$Cs | -86.200±0.080 |
| $^{128}$Cs | -85.940±0.090 |
| $^{129}$Cs | -87.570±0.100 |
| $^{130}$Cs | -87.050±0.140 |
| $^{131}$Cs | -88.270±0.260 |
| $^{132}$Cs | -87.490±0.250 |
| $^{133}$Cs | -88.720±0.190 |
| $^{134}$Cs | -87.490±0.190 |
| $^{135}$Cs | -87.830±0.200 |
| $^{136}$Cs | -85.950±0.180 |
| $^{137}$Cs | -85.340±0.160 |
| $^{138}$Cs | -82.360±0.200 |
| $^{139}$Cs | -80.970±0.300 |
| $^{140}$Cs | -76.320±0.260 |
| $^{141}$Cs | -74.590±0.200 |
| $^{142}$Cs | -70.670±0.160 |
| $^{143}$Cs | -68.400±0.170 |
| $^{144}$Cs | -63.670±0.180 |
| $^{145}$Cs | -61.190±0.260 |
| $^{146}$Cs | -56.160±0.260 |
| $^{147}$Cs | -52.710±0.290 |
| $^{148}$Cs | -46.970±0.510 |
| $^{149}$Cs | -43.270±0.690 |
| $^{150}$Cs | -37.020±1.070 |
| $^{115}$Ba | -46.990±0.860 ‡ |
| $^{116}$Ba | -52.730±0.610 |
| $^{117}$Ba | -55.480±0.400 |
| $^{118}$Ba | -60.200±0.330 |
| $^{119}$Ba | -62.590±0.300 |
| $^{120}$Ba | -67.820±0.720 |
| $^{121}$Ba | -69.710±0.480 |
| $^{122}$Ba | -73.530±0.280 |
| $^{123}$Ba | -74.950±0.210 |
| $^{124}$Ba | -78.150±0.170 |
| $^{125}$Ba | -79.340±0.150 |
| $^{126}$Ba | -81.930±0.110 |
| $^{127}$Ba | -82.590±0.100 |
| $^{128}$Ba | -84.990±0.100 |
| $^{129}$Ba | -85.080±0.110 |
| $^{130}$Ba | -87.000±0.110 |
| $^{131}$Ba | -86.460±0.350 |
| $^{132}$Ba | -88.330±0.210 |
| $^{133}$Ba | -87.850±0.190 |
| $^{134}$Ba | -89.280±0.190 |
| $^{135}$Ba | -88.240±0.270 |
| $^{136}$Ba | -88.850±0.200 |
| $^{137}$Ba | -87.190±0.180 |
| $^{138}$Ba | -86.720±0.200 |
| $^{139}$Ba | -83.850±0.320 |

| Isotope | Mass Excess |
|---|---|
| $^{140}$Ba | -82.670±0.190 |
| $^{141}$Ba | -79.410±0.160 |
| $^{142}$Ba | -77.860±0.140 |
| $^{143}$Ba | -74.130±0.130 |
| $^{144}$Ba | -72.070±0.160 |
| $^{145}$Ba | -67.870±0.140 |
| $^{146}$Ba | -65.290±0.150 |
| $^{147}$Ba | -60.510±0.180 |
| $^{148}$Ba | -57.350±0.230 |
| $^{149}$Ba | -51.950±0.350 |
| $^{150}$Ba | -48.290±0.490 |
| $^{151}$Ba | -44.810±3.780 |
| $^{152}$Ba | -41.490±4.550 |
| $^{119}$La | -51.480±0.570 † |
| $^{120}$La | -56.420±1.620 |
| $^{121}$La | -60.750±1.180 |
| $^{122}$La | -62.850±0.830 |
| $^{123}$La | -67.170±0.500 |
| $^{124}$La | -69.090±0.380 |
| $^{125}$La | -73.420±0.340 |
| $^{126}$La | -74.280±0.230 |
| $^{127}$La | -77.080±0.160 |
| $^{128}$La | -78.300±0.180 |
| $^{129}$La | -81.190±0.190 |
| $^{130}$La | -81.700±0.210 |
| $^{131}$La | -83.010±0.410 |
| $^{132}$La | -83.590±0.280 |
| $^{133}$La | -85.810±0.200 |
| $^{134}$La | -85.640±0.200 |
| $^{135}$La | -87.340±0.220 |
| $^{136}$La | -86.540±0.190 |
| $^{137}$La | -87.410±0.180 |
| $^{138}$La | -85.990±0.230 |
| $^{139}$La | -85.680±0.260 |
| $^{140}$La | -84.120±0.300 |
| $^{141}$La | -83.220±0.220 |
| $^{142}$La | -80.150±0.180 |
| $^{143}$La | -78.770±0.150 |
| $^{144}$La | -75.230±0.160 |
| $^{145}$La | -73.370±0.190 |
| $^{146}$La | -69.350±0.190 |
| $^{147}$La | -66.980±0.200 |
| $^{148}$La | -62.450±0.240 |
| $^{149}$La | -59.530±0.300 |
| $^{150}$La | -54.420±0.410 |
| $^{151}$La | -54.160±2.090 |
| $^{152}$La | -49.710±2.550 |
| $^{153}$La | -46.680±3.310 |
| $^{154}$La | -41.480±4.280 |
| $^{115}$Ce | -18.160±3.140 |
| $^{120}$Ce | -47.860±3.400 |
| $^{121}$Ce | -50.500±2.530 |
| $^{122}$Ce | -55.070±1.870 |
| $^{123}$Ce | -57.410±1.370 |
| $^{124}$Ce | -62.200±0.810 |
| $^{125}$Ce | -65.740±0.630 |
| $^{126}$Ce | -69.230±0.470 |
| $^{127}$Ce | -70.440±0.340 |
| $^{128}$Ce | -73.510±0.250 |
| $^{129}$Ce | -75.330±0.280 |
| $^{130}$Ce | -78.780±0.310 |
| $^{131}$Ce | -77.500±0.510 |
| $^{132}$Ce | -81.020±0.340 |
| $^{133}$Ce | -82.050±0.270 |
| $^{134}$Ce | -84.640±0.250 |
| $^{135}$Ce | -84.830±0.280 |
| $^{136}$Ce | -86.720±0.240 |
| $^{137}$Ce | -86.250±0.230 |
| $^{138}$Ce | -87.400±0.270 |
| $^{139}$Ce | -86.260±0.360 |
| $^{140}$Ce | -86.750±0.180 |
| $^{141}$Ce | -85.030±0.200 |
| $^{142}$Ce | -84.460±0.150 |
| $^{143}$Ce | -81.700±0.130 |

| Isotope | Mass Excess |
|---|---|
| $^{144}$Ce | -80.660±0.150 |
| $^{145}$Ce | -77.470±0.150 |
| $^{146}$Ce | -75.930±0.140 |
| $^{147}$Ce | -72.290±0.130 |
| $^{148}$Ce | -70.310±0.150 |
| $^{149}$Ce | -66.190±0.210 |
| $^{150}$Ce | -63.720±0.290 |
| $^{151}$Ce | -61.530±1.060 |
| $^{152}$Ce | -59.490±1.400 |
| $^{153}$Ce | -55.330±1.840 |
| $^{154}$Ce | -52.770±2.400 |
| $^{155}$Ce | -48.060±3.120 |
| $^{156}$Ce | -45.050±3.840 |
| $^{157}$Ce | -39.880±4.710 |
| $^{115}$Pr | -2.320±5.990 |
| $^{116}$Pr | -7.250±4.560 † |
| $^{121}$Pr | -39.020±5.310 † |
| $^{122}$Pr | -41.860±3.960 † |
| $^{123}$Pr | -46.640±2.960 † |
| $^{124}$Pr | -49.200±2.190 † |
| $^{125}$Pr | -55.940±1.270 |
| $^{126}$Pr | -58.130±0.920 † |
| $^{127}$Pr | -62.060±0.680 |
| $^{128}$Pr | -63.660±0.500 |
| $^{129}$Pr | -67.070±0.370 |
| $^{130}$Pr | -69.510±0.390 |
| $^{131}$Pr | -72.220±1.000 |
| $^{132}$Pr | -73.650±0.640 |
| $^{133}$Pr | -77.390±0.420 |
| $^{134}$Pr | -78.600±0.330 |
| $^{135}$Pr | -81.010±0.260 |
| $^{136}$Pr | -81.510±0.230 |
| $^{137}$Pr | -83.500±0.210 |
| $^{138}$Pr | -83.100±0.230 |
| $^{139}$Pr | -84.290±0.290 |
| $^{140}$Pr | -84.230±0.230 |
| $^{141}$Pr | -84.990±0.150 |
| $^{142}$Pr | -83.510±0.150 |
| $^{143}$Pr | -83.260±0.130 |
| $^{144}$Pr | -80.830±0.160 |
| $^{145}$Pr | -80.090±0.200 |
| $^{146}$Pr | -77.250±0.150 |
| $^{147}$Pr | -76.000±0.130 |
| $^{148}$Pr | -72.720±0.140 |
| $^{149}$Pr | -71.090±0.190 |
| $^{150}$Pr | -67.330±0.280 |
| $^{151}$Pr | -67.360±0.250 |
| $^{152}$Pr | -63.910±0.540 |
| $^{153}$Pr | -62.300±0.730 |
| $^{154}$Pr | -58.620±0.970 |
| $^{155}$Pr | -56.610±1.290 |
| $^{156}$Pr | -52.170±1.980 |
| $^{157}$Pr | -49.680±2.450 |
| $^{158}$Pr | -45.110±3.020 |
| $^{159}$Pr | -41.740±4.050 |
| $^{123}$Nd | -42.240±6.330 |
| $^{124}$Nd | -43.600±4.690 |
| $^{125}$Nd | -44.490±3.490 |
| $^{126}$Nd | -49.290±2.380 |
| $^{127}$Nd | -51.800±1.640 |
| $^{128}$Nd | -56.090±1.150 |
| $^{129}$Nd | -58.060±0.810 |
| $^{130}$Nd | -61.810±0.590 |
| $^{131}$Nd | -65.390±2.030 |
| $^{132}$Nd | -69.550±1.460 |
| $^{133}$Nd | -71.300±1.010 |
| $^{134}$Nd | -75.310±0.690 |
| $^{135}$Nd | -76.120±0.560 |
| $^{136}$Nd | -79.100±0.320 |
| $^{137}$Nd | -79.790±0.230 |
| $^{138}$Nd | -81.920±0.280 |
| $^{139}$Nd | -81.610±0.380 |
| $^{140}$Nd | -84.430±0.280 |
| $^{141}$Nd | -83.750±0.190 |

| Isotope | Mass Excess |
|---|---|
| $^{142}$Nd | -84.730±0.130 |
| $^{143}$Nd | -83.480±0.130 |
| $^{144}$Nd | -83.550±0.150 |
| $^{145}$Nd | -81.440±0.200 |
| $^{146}$Nd | -81.040±0.160 |
| $^{147}$Nd | -78.450±0.130 |
| $^{148}$Nd | -77.450±0.140 |
| $^{149}$Nd | -74.520±0.150 |
| $^{150}$Nd | -73.220±0.220 |
| $^{151}$Nd | -71.220±0.130 |
| $^{152}$Nd | -70.330±0.140 |
| $^{153}$Nd | -67.310±0.270 |
| $^{154}$Nd | -66.030±0.380 |
| $^{155}$Nd | -62.740±0.510 |
| $^{156}$Nd | -60.990±0.800 |
| $^{157}$Nd | -57.080±1.250 |
| $^{158}$Nd | -55.010±1.560 |
| $^{159}$Nd | -50.710±2.120 |
| $^{160}$Nd | -45.690±2.950 |
| $^{161}$Nd | -41.100±3.580 |
| $^{162}$Nd | -38.350±4.700 |
| $^{125}$Pm | -34.050±6.090 † |
| $^{126}$Pm | -36.080±4.840 † |
| $^{128}$Pm | -44.220±2.340 † |
| $^{129}$Pm | -48.960±1.680 |
| $^{130}$Pm | -51.360±1.230 |
| $^{131}$Pm | -56.550±3.790 |
| $^{132}$Pm | -59.630±2.890 |
| $^{133}$Pm | -64.220±2.160 |
| $^{134}$Pm | -66.360±1.570 |
| $^{135}$Pm | -69.820±1.010 |
| $^{136}$Pm | -71.460±0.680 |
| $^{137}$Pm | -74.720±0.420 |
| $^{138}$Pm | -75.670±0.310 |
| $^{139}$Pm | -77.990±0.410 |
| $^{140}$Pm | -79.430±0.280 |
| $^{141}$Pm | -81.260±0.190 |
| $^{142}$Pm | -80.840±0.140 |
| $^{143}$Pm | -82.060±0.120 |
| $^{144}$Pm | -81.060±0.130 |
| $^{145}$Pm | -81.450±0.140 |
| $^{146}$Pm | -79.710±0.140 |
| $^{147}$Pm | -79.570±0.130 |
| $^{148}$Pm | -77.230±0.140 |
| $^{149}$Pm | -76.490±0.190 |
| $^{150}$Pm | -73.910±0.180 |
| $^{151}$Pm | -73.680±0.100 |
| $^{152}$Pm | -71.390±0.090 |
| $^{153}$Pm | -70.800±0.080 |
| $^{154}$Pm | -68.120±0.140 |
| $^{155}$Pm | -67.140±0.190 |
| $^{156}$Pm | -64.140±0.310 |
| $^{157}$Pm | -62.760±0.500 |
| $^{158}$Pm | -59.280±0.780 |
| $^{159}$Pm | -57.490±1.080 |
| $^{160}$Pm | -51.570±1.470 |
| $^{161}$Pm | -49.230±1.950 |
| $^{162}$Pm | -44.940±2.580 |
| $^{163}$Pm | -42.370±3.390 |
| $^{164}$Pm | -37.960±4.430 |
| $^{127}$Sm | -29.190±6.630 ‡ |
| $^{128}$Sm | -34.700±4.590 ‡ |
| $^{129}$Sm | -38.080±3.240 |
| $^{130}$Sm | -43.270±2.350 |
| $^{133}$Sm | -51.140±4.510 † |
| $^{134}$Sm | -58.050±3.270 |
| $^{135}$Sm | -61.600±2.400 |
| $^{136}$Sm | -66.110±1.650 |
| $^{137}$Sm | -68.160±1.110 |
| $^{138}$Sm | -71.760±0.740 |
| $^{139}$Sm | -73.010±0.550 |
| $^{140}$Sm | -77.130±0.330 |
| $^{141}$Sm | -77.540±0.240 |
| $^{142}$Sm | -79.600±0.190 |

| Isotope | Mass Excess |
|---|---|
| $^{143}$Sm | -79.420±0.170 |
| $^{144}$Sm | -80.870±0.170 |
| $^{145}$Sm | -80.100±0.190 |
| $^{146}$Sm | -80.860±0.160 |
| $^{147}$Sm | -79.380±0.150 |
| $^{148}$Sm | -79.500±0.160 |
| $^{149}$Sm | -77.420±0.200 |
| $^{150}$Sm | -76.930±0.270 |
| $^{151}$Sm | -74.980±0.110 |
| $^{152}$Sm | -74.950±0.090 |
| $^{153}$Sm | -72.900±0.090 |
| $^{154}$Sm | -72.560±0.080 |
| $^{155}$Sm | -70.180±0.100 |
| $^{156}$Sm | -69.480±0.120 |
| $^{157}$Sm | -66.760±0.190 |
| $^{158}$Sm | -65.700±0.300 |
| $^{159}$Sm | -62.580±0.490 |
| $^{160}$Sm | -59.700±0.280 |
| $^{161}$Sm | -56.010±0.720 |
| $^{162}$Sm | -53.920±0.970 |
| $^{163}$Sm | -49.810±1.300 |
| $^{164}$Sm | -47.330±1.720 |
| $^{165}$Sm | -42.890±2.270 |
| $^{166}$Sm | -40.620±3.590 |
| $^{167}$Sm | -36.060±4.440 |
| $^{135}$Eu | -52.740±4.310 |
| $^{136}$Eu | -55.580±3.360 |
| $^{137}$Eu | -60.290±2.380 |
| $^{138}$Eu | -62.480±1.690 |
| $^{139}$Eu | -66.170±1.190 |
| $^{140}$Eu | -68.090±0.530 |
| $^{141}$Eu | -71.720±0.350 |
| $^{142}$Eu | -72.510±0.210 |
| $^{143}$Eu | -74.940±0.170 |
| $^{144}$Eu | -75.150±0.160 |
| $^{145}$Eu | -77.210±0.140 |
| $^{146}$Eu | -76.720±0.160 |
| $^{147}$Eu | -77.890±0.130 |
| $^{148}$Eu | -76.830±0.130 |
| $^{149}$Eu | -77.360±0.150 |
| $^{150}$Eu | -75.690±0.180 |
| $^{151}$Eu | -74.850±0.100 |
| $^{152}$Eu | -73.450±0.080 |
| $^{153}$Eu | -73.670±0.070 |
| $^{154}$Eu | -71.890±0.080 |
| $^{155}$Eu | -71.840±0.100 |
| $^{156}$Eu | -69.760±0.080 |
| $^{157}$Eu | -69.360±0.080 |
| $^{158}$Eu | -66.960±0.100 |
| $^{159}$Eu | -66.260±0.130 |
| $^{160}$Eu | -62.970±0.090 |
| $^{161}$Eu | -61.500±0.140 |
| $^{162}$Eu | -58.070±0.350 |
| $^{163}$Eu | -56.310±0.480 |
| $^{164}$Eu | -52.540±0.640 |
| $^{165}$Eu | -50.380±0.860 |
| $^{166}$Eu | -46.230±1.400 |
| $^{167}$Eu | -43.910±2.230 |
| $^{168}$Eu | -39.530±2.770 |
| $^{169}$Eu | -36.800±3.430 |
| $^{170}$Eu | -32.410±4.680 |
| $^{171}$Eu | -22.940±3.750 † |
| $^{172}$Eu | -16.850±4.420 |
| $^{136}$Gd | -47.930±5.820 |
| $^{137}$Gd | -51.080±4.610 |
| $^{138}$Gd | -56.050±3.330 |
| $^{139}$Gd | -58.430±2.450 |
| $^{140}$Gd | -61.590±1.270 |
| $^{141}$Gd | -63.880±0.870 |
| $^{142}$Gd | -67.780±0.570 |
| $^{143}$Gd | -68.920±0.300 |
| $^{144}$Gd | -71.720±0.260 |
| $^{145}$Gd | -72.770±0.230 |
| $^{146}$Gd | -74.880±0.150 |

| Isotope | Mass Excess |
|---|---|
| $^{147}$Gd | -74.710±0.160 |
| $^{148}$Gd | -76.280±0.140 |
| $^{149}$Gd | -75.620±0.190 |
| $^{150}$Gd | -76.550±0.250 |
| $^{151}$Gd | -73.540±0.130 |
| $^{152}$Gd | -74.420±0.090 |
| $^{153}$Gd | -73.270±0.070 |
| $^{154}$Gd | -73.690±0.080 |
| $^{155}$Gd | -72.120±0.100 |
| $^{156}$Gd | -72.370±0.080 |
| $^{157}$Gd | -70.580±0.080 |
| $^{158}$Gd | -70.420±0.090 |
| $^{159}$Gd | -68.280±0.120 |
| $^{160}$Gd | -68.000±0.060 |
| $^{161}$Gd | -65.370±0.060 |
| $^{162}$Gd | -64.310±0.070 |
| $^{163}$Gd | -61.220±0.160 |
| $^{164}$Gd | -59.820±0.230 |
| $^{165}$Gd | -56.430±0.320 |
| $^{166}$Gd | -54.540±0.530 |
| $^{167}$Gd | -50.690±0.860 |
| $^{168}$Gd | -48.540±1.390 |
| $^{169}$Gd | -44.440±1.730 |
| $^{170}$Gd | -41.970±2.380 |
| $^{171}$Gd | -33.870±2.260 † |
| $^{172}$Gd | -30.390±2.680 |
| $^{173}$Gd | -24.590±3.340 |
| $^{174}$Gd | -20.200±4.140 |
| $^{175}$Gd | -14.160±4.770 |
| $^{138}$Tb | -44.050±6.220 |
| $^{139}$Tb | -49.370±4.520 |
| $^{140}$Tb | -49.930±2.950 † |
| $^{141}$Tb | -54.750±2.120 |
| $^{142}$Tb | -57.300±1.500 |
| $^{143}$Tb | -61.460±1.040 |
| $^{144}$Tb | -62.930±0.500 |
| $^{145}$Tb | -66.780±0.370 |
| $^{146}$Tb | -67.670±0.250 |
| $^{147}$Tb | -70.090±0.170 |
| $^{148}$Tb | -70.240±0.180 |
| $^{149}$Tb | -72.210±0.200 |
| $^{150}$Tb | -71.980±0.270 |
| $^{151}$Tb | -71.280±0.100 |
| $^{152}$Tb | -70.600±0.080 |
| $^{153}$Tb | -71.670±0.070 |
| $^{154}$Tb | -70.730±0.070 |
| $^{155}$Tb | -71.370±0.080 |
| $^{156}$Tb | -70.110±0.070 |
| $^{157}$Tb | -70.570±0.070 |
| $^{158}$Tb | -69.030±0.080 |
| $^{159}$Tb | -69.080±0.090 |
| $^{160}$Tb | -67.720±0.050 |
| $^{161}$Tb | -67.500±0.050 |
| $^{162}$Tb | -65.230±0.040 |
| $^{163}$Tb | -64.540±0.040 |
| $^{164}$Tb | -61.820±0.080 |
| $^{165}$Tb | -60.770±0.110 |
| $^{166}$Tb | -57.680±0.190 |
| $^{167}$Tb | -56.160±0.320 |
| $^{168}$Tb | -52.650±0.530 |
| $^{169}$Tb | -50.770±0.860 |
| $^{170}$Tb | -46.950±1.200 |
| $^{171}$Tb | -42.590±1.270 |
| $^{172}$Tb | -37.930±1.610 |
| $^{173}$Tb | -34.740±2.020 |
| $^{174}$Tb | -29.490±2.520 |
| $^{175}$Tb | -25.670±3.140 |
| $^{176}$Tb | -19.930±3.760 |
| $^{177}$Tb | -15.610±4.490 |
| $^{141}$Dy | -44.540±5.010 |
| $^{142}$Dy | -49.530±3.630 |
| $^{143}$Dy | -52.280±2.620 |
| $^{144}$Dy | -56.660±1.860 |
| $^{145}$Dy | -59.320±0.860 |

| Isotope | Mass Excess |
|---|---|
| $^{146}$Dy | -62.790±0.540 |
| $^{147}$Dy | -63.970±0.340 |
| $^{148}$Dy | -66.700±0.230 |
| $^{149}$Dy | -67.150±0.230 |
| $^{150}$Dy | -69.500±0.290 |
| $^{151}$Dy | -67.970±0.110 |
| $^{152}$Dy | -69.520±0.090 |
| $^{153}$Dy | -69.060±0.080 |
| $^{154}$Dy | -70.330±0.080 |
| $^{155}$Dy | -69.600±0.090 |
| $^{156}$Dy | -70.530±0.080 |
| $^{157}$Dy | -69.470±0.080 |
| $^{158}$Dy | -70.140±0.090 |
| $^{159}$Dy | -68.820±0.110 |
| $^{160}$Dy | -69.760±0.060 |
| $^{161}$Dy | -68.170±0.050 |
| $^{162}$Dy | -68.220±0.050 |
| $^{163}$Dy | -66.270±0.050 |
| $^{164}$Dy | -65.910±0.050 |
| $^{165}$Dy | -63.530±0.050 |
| $^{166}$Dy | -62.780±0.070 |
| $^{167}$Dy | -60.020±0.110 |
| $^{168}$Dy | -58.840±0.190 |
| $^{169}$Dy | -55.680±0.320 |
| $^{170}$Dy | -54.110±0.530 |
| $^{171}$Dy | -49.670±0.460 |
| $^{172}$Dy | -47.240±0.760 |
| $^{173}$Dy | -43.080±0.970 |
| $^{174}$Dy | -40.430±1.230 |
| $^{175}$Dy | -35.780±1.550 |
| $^{176}$Dy | -32.230±2.150 |
| $^{177}$Dy | -27.080±2.580 |
| $^{178}$Dy | -23.390±3.100 |
| $^{179}$Dy | -17.260±3.940 |
| $^{180}$Dy | -12.900±3.740 |
| $^{181}$Dy | -7.210±4.430 |
| $^{143}$Ho | -46.020±6.580 |
| $^{144}$Ho | -47.130±4.690 |
| $^{145}$Ho | -50.730±3.350 |
| $^{146}$Ho | -52.800±2.140 |
| $^{147}$Ho | -56.480±1.350 |
| $^{148}$Ho | -57.930±0.840 |
| $^{149}$Ho | -60.920±0.530 |
| $^{150}$Ho | -61.670±0.400 |
| $^{151}$Ho | -63.200±0.100 |
| $^{152}$Ho | -63.430±0.090 |
| $^{153}$Ho | -65.210±0.090 |
| $^{154}$Ho | -64.960±0.080 |
| $^{155}$Ho | -66.450±0.080 |
| $^{156}$Ho | -66.030±0.080 |
| $^{157}$Ho | -67.170±0.080 |
| $^{158}$Ho | -66.330±0.090 |
| $^{159}$Ho | -67.220±0.100 |
| $^{160}$Ho | -66.660±0.050 |
| $^{161}$Ho | -67.430±0.050 |
| $^{162}$Ho | -66.130±0.040 |
| $^{163}$Ho | -66.500±0.040 |
| $^{164}$Ho | -64.890±0.040 |
| $^{165}$Ho | -64.880±0.050 |
| $^{166}$Ho | -62.820±0.040 |
| $^{167}$Ho | -62.400±0.040 |
| $^{168}$Ho | -60.000±0.050 |
| $^{169}$Ho | -59.170±0.070 |
| $^{170}$Ho | -56.330±0.090 |
| $^{171}$Ho | -54.460±0.180 |
| $^{172}$Ho | -51.070±0.270 |
| $^{173}$Ho | -49.150±0.450 |
| $^{174}$Ho | -45.410±0.580 |
| $^{175}$Ho | -43.230±0.750 |
| $^{176}$Ho | -38.870±1.050 |
| $^{177}$Ho | -35.910±1.470 |
| $^{178}$Ho | -31.260±1.780 |
| $^{179}$Ho | -27.850±2.280 |
| $^{180}$Ho | -21.190±2.190 |
| $^{181}$Ho | -17.710±2.610 |

| Isotope | Mass Excess |
|---|---|
| $^{182}$Ho | -12.320±3.290 |
| $^{183}$Ho | -8.530±4.140 |
| $^{184}$Ho | -2.840±4.790 |
| $^{145}$Er | -40.450±6.210 |
| $^{146}$Er | -45.220±4.860 |
| $^{147}$Er | -47.640±3.170 |
| $^{148}$Er | -51.700±2.070 |
| $^{149}$Er | -53.560±1.340 |
| $^{150}$Er | -56.980±0.870 |
| $^{151}$Er | -57.380±0.180 |
| $^{152}$Er | -59.860±0.120 |
| $^{153}$Er | -60.300±0.090 |
| $^{154}$Er | -62.310±0.100 |
| $^{155}$Er | -62.280±0.120 |
| $^{156}$Er | -64.060±0.090 |
| $^{157}$Er | -63.850±0.090 |
| $^{158}$Er | -65.190±0.100 |
| $^{159}$Er | -64.540±0.130 |
| $^{160}$Er | -65.880±0.060 |
| $^{161}$Er | -65.290±0.050 |
| $^{162}$Er | -66.340±0.040 |
| $^{163}$Er | -65.290±0.040 |
| $^{164}$Er | -65.930±0.050 |
| $^{165}$Er | -64.640±0.060 |
| $^{166}$Er | -64.930±0.040 |
| $^{167}$Er | -63.210±0.040 |
| $^{168}$Er | -63.120±0.040 |
| $^{169}$Er | -61.070±0.060 |
| $^{170}$Er | -60.620±0.070 |
| $^{171}$Er | -57.500±0.100 |
| $^{172}$Er | -56.490±0.100 |
| $^{173}$Er | -53.480±0.150 |
| $^{174}$Er | -51.970±0.260 |
| $^{175}$Er | -48.600±0.340 |
| $^{176}$Er | -46.700±0.490 |
| $^{177}$Er | -42.790±0.710 |
| $^{178}$Er | -40.330±1.000 |
| $^{179}$Er | -35.960±1.300 |
| $^{180}$Er | -31.410±1.190 |
| $^{181}$Er | -26.690±1.520 |
| $^{182}$Er | -23.510±1.940 |
| $^{183}$Er | -18.440±2.450 |
| $^{184}$Er | -14.920±3.090 |
| $^{185}$Er | -9.540±3.730 |
| $^{186}$Er | -5.700±4.490 |
| $^{147}$Tm | -37.380±6.950 † |
| $^{148}$Tm | -40.100±4.590 † |
| $^{149}$Tm | -44.520±3.050 |
| $^{150}$Tm | -46.780±2.040 |
| $^{151}$Tm | -50.380±0.520 |
| $^{152}$Tm | -51.420±0.340 |
| $^{153}$Tm | -54.150±0.220 |
| $^{154}$Tm | -54.830±0.150 |
| $^{155}$Tm | -57.130±0.120 |
| $^{156}$Tm | -57.400±0.110 |
| $^{157}$Tm | -59.390±0.100 |
| $^{158}$Tm | -59.380±0.110 |
| $^{159}$Tm | -60.940±0.130 |
| $^{160}$Tm | -60.390±0.080 |
| $^{161}$Tm | -61.990±0.060 |
| $^{162}$Tm | -61.630±0.050 |
| $^{163}$Tm | -62.920±0.040 |
| $^{164}$Tm | -62.070±0.040 |
| $^{165}$Tm | -62.920±0.060 |
| $^{166}$Tm | -61.940±0.050 |
| $^{167}$Tm | -62.550±0.040 |
| $^{168}$Tm | -61.160±0.040 |
| $^{169}$Tm | -61.350±0.050 |
| $^{170}$Tm | -59.620±0.060 |
| $^{171}$Tm | -59.110±0.100 |
| $^{172}$Tm | -56.820±0.080 |
| $^{173}$Tm | -56.110±0.080 |
| $^{174}$Tm | -53.440±0.090 |
| $^{175}$Tm | -52.300±0.150 |

| Isotope | Mass Excess |
|---|---|
| $^{176}$Tm | -49.230±0.220 |
| $^{177}$Tm | -47.690±0.320 |
| $^{178}$Tm | -44.180±0.470 |
| $^{179}$Tm | -42.150±0.670 |
| $^{180}$Tm | -36.700±0.360 |
| $^{181}$Tm | -34.180±0.670 |
| $^{182}$Tm | -29.800±0.870 |
| $^{183}$Tm | -26.930±1.110 |
| $^{184}$Tm | -22.180±1.420 |
| $^{185}$Tm | -18.950±2.050 |
| $^{186}$Tm | -13.870±2.490 |
| $^{187}$Tm | -10.320±3.000 |
| $^{188}$Tm | -4.920±3.900 |
| $^{149}$Yb | -34.050±6.530 |
| $^{150}$Yb | -38.780±4.380 |
| $^{151}$Yb | -42.040±1.650 |
| $^{152}$Yb | -45.470±1.120 |
| $^{153}$Yb | -46.800±0.750 |
| $^{154}$Yb | -49.800±0.500 |
| $^{155}$Yb | -50.740±0.330 |
| $^{156}$Yb | -53.320±0.180 |
| $^{157}$Yb | -53.860±0.110 |
| $^{158}$Yb | -56.070±0.110 |
| $^{159}$Yb | -56.290±0.130 |
| $^{160}$Yb | -57.900±0.080 |
| $^{161}$Yb | -57.870±0.070 |
| $^{162}$Yb | -59.590±0.060 |
| $^{163}$Yb | -59.380±0.050 |
| $^{164}$Yb | -60.870±0.050 |
| $^{165}$Yb | -60.190±0.040 |
| $^{166}$Yb | -61.350±0.040 |
| $^{167}$Yb | -60.580±0.040 |
| $^{168}$Yb | -61.430±0.040 |
| $^{169}$Yb | -60.320±0.050 |
| $^{170}$Yb | -60.750±0.050 |
| $^{171}$Yb | -59.280±0.090 |
| $^{172}$Yb | -59.260±0.080 |
| $^{173}$Yb | -57.280±0.070 |
| $^{174}$Yb | -56.890±0.080 |
| $^{175}$Yb | -54.590±0.090 |
| $^{176}$Yb | -53.740±0.070 |
| $^{177}$Yb | -51.040±0.090 |
| $^{178}$Yb | -49.890±0.130 |
| $^{179}$Yb | -46.820±0.190 |
| $^{180}$Yb | -43.860±0.120 |
| $^{181}$Yb | -40.150±0.200 |
| $^{182}$Yb | -37.960±0.370 |
| $^{183}$Yb | -33.920±0.490 |
| $^{184}$Yb | -31.400±0.640 |
| $^{185}$Yb | -26.940±0.930 |
| $^{186}$Yb | -24.010±1.360 |
| $^{187}$Yb | -19.250±1.650 |
| $^{188}$Yb | -15.980±2.160 |
| $^{189}$Yb | -10.870±2.820 |
| $^{190}$Yb | -9.340±4.580 |
| $^{152}$Lu | -34.370±2.300 † |
| $^{153}$Lu | -38.100±1.570 † |
| $^{154}$Lu | -39.720±1.070 |
| $^{155}$Lu | -42.940±0.720 |
| $^{156}$Lu | -44.210±0.540 |
| $^{157}$Lu | -47.070±0.290 |
| $^{158}$Lu | -47.850±0.160 |
| $^{159}$Lu | -50.290±0.120 |
| $^{160}$Lu | -50.760±0.070 |
| $^{161}$Lu | -52.900±0.070 |
| $^{162}$Lu | -53.080±0.070 |
| $^{163}$Lu | -54.970±0.070 |
| $^{164}$Lu | -54.930±0.060 |
| $^{165}$Lu | -56.590±0.060 |
| $^{166}$Lu | -56.240±0.050 |
| $^{167}$Lu | -57.570±0.050 |
| $^{168}$Lu | -56.990±0.050 |
| $^{169}$Lu | -58.060±0.050 |
| $^{170}$Lu | -57.190±0.060 |

| Isotope | Mass Excess |
|---|---|
| $^{171}$Lu | -58.010±0.120 |
| $^{172}$Lu | -56.730±0.080 |
| $^{173}$Lu | -57.020±0.060 |
| $^{174}$Lu | -55.300±0.060 |
| $^{175}$Lu | -55.200±0.090 |
| $^{176}$Lu | -53.200±0.070 |
| $^{177}$Lu | -52.720±0.070 |
| $^{178}$Lu | -50.330±0.080 |
| $^{179}$Lu | -49.520±0.110 |
| $^{180}$Lu | -45.920±0.060 |
| $^{181}$Lu | -44.500±0.070 |
| $^{182}$Lu | -41.140±0.110 |
| $^{183}$Lu | -39.300±0.210 |
| $^{184}$Lu | -35.600±0.270 |
| $^{185}$Lu | -33.380±0.410 |
| $^{186}$Lu | -29.270±0.610 |
| $^{187}$Lu | -26.660±0.890 |
| $^{188}$Lu | -22.200±1.180 |
| $^{189}$Lu | -19.250±1.560 |
| $^{190}$Lu | -15.990±2.460 |
| $^{191}$Lu | -13.230±3.000 |
| $^{192}$Lu | -8.760±3.950 |
| $^{153}$Hf | -28.060±3.170 |
| $^{154}$Hf | -32.110±2.180 |
| $^{155}$Hf | -33.900±1.490 |
| $^{156}$Hf | -37.500±1.140 |
| $^{157}$Hf | -39.040±0.860 |
| $^{158}$Hf | -42.190±0.480 |
| $^{159}$Hf | -43.230±0.270 |
| $^{160}$Hf | -45.780±0.060 |
| $^{161}$Hf | -46.670±0.060 |
| $^{162}$Hf | -49.010±0.070 |
| $^{163}$Hf | -49.370±0.070 |
| $^{164}$Hf | -51.410±0.070 |
| $^{165}$Hf | -51.570±0.070 |
| $^{166}$Hf | -53.540±0.060 |
| $^{167}$Hf | -53.360±0.060 |
| $^{168}$Hf | -54.870±0.060 |
| $^{169}$Hf | -54.510±0.060 |
| $^{170}$Hf | -55.820±0.060 |
| $^{171}$Hf | -55.620±0.120 |
| $^{172}$Hf | -56.490±0.100 |
| $^{173}$Hf | -55.440±0.080 |
| $^{174}$Hf | -55.990±0.070 |
| $^{175}$Hf | -54.500±0.060 |
| $^{176}$Hf | -54.700±0.060 |
| $^{177}$Hf | -52.980±0.060 |
| $^{178}$Hf | -52.800±0.080 |
| $^{179}$Hf | -50.680±0.090 |
| $^{180}$Hf | -49.890±0.060 |
| $^{181}$Hf | -47.280±0.050 |
| $^{182}$Hf | -46.180±0.050 |
| $^{183}$Hf | -43.160±0.060 |
| $^{184}$Hf | -41.650±0.110 |
| $^{185}$Hf | -38.250±0.170 |
| $^{186}$Hf | -36.370±0.260 |
| $^{187}$Hf | -32.580±0.390 |
| $^{188}$Hf | -30.300±0.590 |
| $^{189}$Hf | -26.170±0.780 |
| $^{190}$Hf | -24.620±1.210 |
| $^{191}$Hf | -20.690±1.610 |
| $^{192}$Hf | -18.290±2.140 |
| $^{193}$Hf | -14.080±2.820 |
| $^{194}$Hf | -11.400±3.710 |
| $^{195}$Hf | -6.870±4.620 |
| $^{156}$Ta | -25.700±2.290 † |
| $^{157}$Ta | -29.630±1.760 † |
| $^{158}$Ta | -31.480±1.340 † |
| $^{159}$Ta | -34.990±0.760 |
| $^{160}$Ta | -36.150±0.170 |
| $^{161}$Ta | -39.220±0.110 |
| $^{162}$Ta | -40.320±0.070 |
| $^{163}$Ta | -42.920±0.070 |
| $^{164}$Ta | -43.450±0.090 |

| Isotope | Mass Excess |
|---|---|
| $^{165}$Ta | -45.660±0.090 |
| $^{166}$Ta | -46.130±0.080 |
| $^{167}$Ta | -48.270±0.070 |
| $^{168}$Ta | -48.260±0.070 |
| $^{169}$Ta | -49.930±0.080 |
| $^{170}$Ta | -49.750±0.080 |
| $^{171}$Ta | -52.230±0.150 |
| $^{172}$Ta | -51.670±0.130 |
| $^{173}$Ta | -52.740±0.110 |
| $^{174}$Ta | -51.920±0.090 |
| $^{175}$Ta | -52.700±0.090 |
| $^{176}$Ta | -51.530±0.080 |
| $^{177}$Ta | -51.950±0.080 |
| $^{178}$Ta | -50.480±0.090 |
| $^{179}$Ta | -50.580±0.110 |
| $^{180}$Ta | -48.950±0.060 |
| $^{181}$Ta | -48.560±0.050 |
| $^{182}$Ta | -46.280±0.040 |
| $^{183}$Ta | -45.530±0.050 |
| $^{184}$Ta | -42.850±0.070 |
| $^{185}$Ta | -41.650±0.040 |
| $^{186}$Ta | -38.600±0.060 |
| $^{187}$Ta | -37.050±0.090 |
| $^{188}$Ta | -33.600±0.130 |
| $^{189}$Ta | -31.610±0.290 |
| $^{190}$Ta | -28.310±0.270 |
| $^{191}$Ta | -26.620±0.590 |
| $^{192}$Ta | -22.950±0.790 |
| $^{193}$Ta | -20.820±1.060 |
| $^{194}$Ta | -16.880±1.400 |
| $^{195}$Ta | -14.560±2.260 |
| $^{196}$Ta | -10.290±2.820 |
| $^{197}$Ta | -7.550±3.500 |
| $^{198}$Ta | -3.100±4.830 |
| $^{157}$W | -18.630±3.470 ‡ |
| $^{158}$W | -22.960±2.670 |
| $^{159}$W | -25.170±2.060 |
| $^{160}$W | -28.850±0.540 |
| $^{161}$W | -30.600±0.360 |
| $^{162}$W | -33.960±0.240 |
| $^{163}$W | -35.300±0.160 |
| $^{164}$W | -38.240±0.070 |
| $^{165}$W | -38.990±0.100 |
| $^{166}$W | -41.500±0.090 |
| $^{167}$W | -42.120±0.080 |
| $^{168}$W | -44.420±0.080 |
| $^{169}$W | -44.580±0.090 |
| $^{170}$W | -46.360±0.100 |
| $^{171}$W | -47.380±0.200 |
| $^{172}$W | -49.120±0.170 |
| $^{173}$W | -48.770±0.150 |
| $^{174}$W | -50.060±0.130 |
| $^{175}$W | -49.480±0.110 |
| $^{176}$W | -50.560±0.090 |
| $^{177}$W | -49.620±0.080 |
| $^{178}$W | -50.290±0.080 |
| $^{179}$W | -49.100±0.090 |
| $^{180}$W | -49.910±0.080 |
| $^{181}$W | -48.340±0.050 |
| $^{182}$W | -48.290±0.040 |
| $^{183}$W | -46.320±0.040 |
| $^{184}$W | -45.900±0.050 |
| $^{185}$W | -43.530±0.040 |
| $^{186}$W | -42.660±0.040 |
| $^{187}$W | -39.940±0.050 |
| $^{188}$W | -38.730±0.070 |
| $^{189}$W | -35.580±0.080 |
| $^{190}$W | -34.080±0.120 |
| $^{191}$W | -31.130±0.150 |
| $^{192}$W | -29.700±0.290 |
| $^{193}$W | -26.290±0.400 |
| $^{194}$W | -24.410±0.540 |
| $^{195}$W | -20.830±0.860 |
| $^{196}$W | -18.760±1.380 |
| $^{197}$W | -14.750±1.730 |

| Isotope | Mass Excess |
|---|---|
| $^{198}$W | -12.350±2.400 |
| $^{200}$W | 14.290±5.390 ‡ |
| $^{201}$W | 22.230±6.900 |
| $^{162}$Re | -22.420±0.750 † |
| $^{163}$Re | -26.200±0.520 † |
| $^{164}$Re | -27.890±0.350 † |
| $^{165}$Re | -31.350±0.110 |
| $^{166}$Re | -32.410±0.080 |
| $^{167}$Re | -35.120±0.070 |
| $^{168}$Re | -35.920±0.070 |
| $^{169}$Re | -38.390±0.080 |
| $^{170}$Re | -38.780±0.110 |
| $^{171}$Re | -41.520±0.260 |
| $^{172}$Re | -41.850±0.220 |
| $^{173}$Re | -43.800±0.190 |
| $^{174}$Re | -43.650±0.180 |
| $^{175}$Re | -45.130±0.180 |
| $^{176}$Re | -44.860±0.140 |
| $^{177}$Re | -46.170±0.120 |
| $^{178}$Re | -45.450±0.120 |
| $^{179}$Re | -46.340±0.130 |
| $^{180}$Re | -45.990±0.070 |
| $^{181}$Re | -46.660±0.050 |
| $^{182}$Re | -45.410±0.040 |
| $^{183}$Re | -45.670±0.040 |
| $^{184}$Re | -43.990±0.050 |
| $^{185}$Re | -43.870±0.040 |
| $^{186}$Re | -41.850±0.040 |
| $^{187}$Re | -41.310±0.040 |
| $^{188}$Re | -38.900±0.050 |
| $^{189}$Re | -37.980±0.050 |
| $^{190}$Re | -35.270±0.080 |
| $^{191}$Re | -34.400±0.070 |
| $^{192}$Re | -31.710±0.090 |
| $^{193}$Re | -30.540±0.150 |
| $^{194}$Re | -27.390±0.210 |
| $^{195}$Re | -25.870±0.330 |
| $^{196}$Re | -22.540±0.520 |
| $^{197}$Re | -20.740±0.840 |
| $^{198}$Re | -17.080±1.180 |
| $^{199}$Re | -5.230±2.350 † |
| $^{200}$Re | 0.610±3.050 ‡ |
| $^{201}$Re | 5.330±3.940 |
| $^{202}$Re | 12.220±5.060 |
| $^{203}$Re | 18.730±6.510 |
| $^{160}$Os | -1.570±4.330 |
| $^{164}$Os | -19.340±1.040 ‡ |
| $^{165}$Os | -21.530±0.720 |
| $^{166}$Os | -25.280±0.410 |
| $^{167}$Os | -26.840±0.220 |
| $^{168}$Os | -29.910±0.120 |
| $^{169}$Os | -30.990±0.070 |
| $^{170}$Os | -33.680±0.070 |
| $^{171}$Os | -34.760±0.260 |
| $^{172}$Os | -37.160±0.250 |
| $^{173}$Os | -37.670±0.230 |
| $^{174}$Os | -39.810±0.210 |
| $^{175}$Os | -39.860±0.220 |
| $^{176}$Os | -41.650±0.190 |
| $^{177}$Os | -41.560±0.160 |
| $^{178}$Os | -43.080±0.150 |
| $^{179}$Os | -42.550±0.140 |
| $^{180}$Os | -44.410±0.150 |
| $^{181}$Os | -43.730±0.110 |
| $^{182}$Os | -44.630±0.080 |
| $^{183}$Os | -43.640±0.060 |
| $^{184}$Os | -44.180±0.050 |
| $^{185}$Os | -42.820±0.040 |
| $^{186}$Os | -42.970±0.040 |
| $^{187}$Os | -41.240±0.050 |
| $^{188}$Os | -41.010±0.060 |
| $^{189}$Os | -38.900±0.060 |
| $^{190}$Os | -38.560±0.090 |
| $^{191}$Os | -36.430±0.080 |

| Isotope | Mass Excess |
|---|---|
| $^{192}$Os | -35.820±0.070 |
| $^{193}$Os | -33.390±0.070 |
| $^{194}$Os | -32.480±0.090 |
| $^{195}$Os | -29.690±0.120 |
| $^{196}$Os | -28.410±0.190 |
| $^{197}$Os | -25.350±0.310 |
| $^{198}$Os | -23.780±0.510 |
| $^{199}$Os | -16.220±0.690 |
| $^{200}$Os | -12.880±1.260 |
| $^{201}$Os | -7.850±1.650 |
| $^{202}$Os | -4.000±2.160 |
| $^{203}$Os | 2.410±2.810 |
| $^{204}$Os | 7.590±4.190 |
| $^{205}$Os | 14.630±5.140 |
| $^{206}$Os | 20.590±6.280 |
| $^{167}$Ir | -17.060±0.640 † |
| $^{168}$Ir | -18.990±0.360 † |
| $^{169}$Ir | -22.340±0.190 † |
| $^{170}$Ir | -23.660±0.100 † |
| $^{171}$Ir | -27.150±0.110 |
| $^{172}$Ir | -28.070±0.150 |
| $^{173}$Ir | -30.640±0.190 |
| $^{174}$Ir | -31.340±0.210 |
| $^{175}$Ir | -33.660±0.210 |
| $^{176}$Ir | -34.020±0.210 |
| $^{177}$Ir | -35.990±0.200 |
| $^{178}$Ir | -36.100±0.190 |
| $^{179}$Ir | -37.810±0.180 |
| $^{180}$Ir | -37.900±0.250 |
| $^{181}$Ir | -39.490±0.200 |
| $^{182}$Ir | -39.060±0.150 |
| $^{183}$Ir | -40.220±0.110 |
| $^{184}$Ir | -39.530±0.070 |
| $^{185}$Ir | -40.380±0.060 |
| $^{186}$Ir | -39.300±0.040 |
| $^{187}$Ir | -39.760±0.050 |
| $^{188}$Ir | -38.350±0.050 |
| $^{189}$Ir | -38.410±0.060 |
| $^{190}$Ir | -36.800±0.080 |
| $^{191}$Ir | -36.950±0.070 |
| $^{192}$Ir | -35.090±0.060 |
| $^{193}$Ir | -34.750±0.060 |
| $^{194}$Ir | -32.580±0.080 |
| $^{195}$Ir | -32.030±0.060 |
| $^{196}$Ir | -29.500±0.070 |
| $^{197}$Ir | -28.480±0.100 |
| $^{198}$Ir | -25.670±0.140 |
| $^{199}$Ir | -23.470±0.350 |
| $^{200}$Ir | -19.710±0.390 |
| $^{201}$Ir | -17.160±0.660 |
| $^{202}$Ir | -12.850±0.900 |
| $^{203}$Ir | -9.470±1.210 |
| $^{204}$Ir | -4.130±1.790 |
| $^{205}$Ir | 0.100±2.690 |
| $^{206}$Ir | 6.290±3.320 |
| $^{207}$Ir | 11.400±4.430 |
| $^{168}$Pt | -10.020±0.980 ‡ |
| $^{169}$Pt | -12.410±0.560 |
| $^{170}$Pt | -16.100±0.320 |
| $^{172}$Pt | -21.330±0.160 |
| $^{173}$Pt | -22.430±0.110 |
| $^{174}$Pt | -25.170±0.170 |
| $^{175}$Pt | -26.040±0.200 |
| $^{176}$Pt | -28.680±0.210 |
| $^{177}$Pt | -29.230±0.230 |
| $^{178}$Pt | -31.390±0.230 |
| $^{179}$Pt | -31.690±0.220 |
| $^{180}$Pt | -33.710±0.380 |
| $^{181}$Pt | -33.980±0.320 |
| $^{182}$Pt | -35.800±0.270 |
| $^{183}$Pt | -35.560±0.220 |
| $^{184}$Pt | -36.960±0.160 |
| $^{185}$Pt | -36.580±0.120 |
| $^{186}$Pt | -37.710±0.090 |

| Isotope | Mass Excess |
|---|---|
| $^{187}$Pt | -36.880±0.070 |
| $^{188}$Pt | -37.610±0.070 |
| $^{189}$Pt | -36.510±0.060 |
| $^{190}$Pt | -37.130±0.100 |
| $^{191}$Pt | -36.030±0.070 |
| $^{192}$Pt | -36.450±0.060 |
| $^{193}$Pt | -34.870±0.060 |
| $^{194}$Pt | -34.780±0.100 |
| $^{195}$Pt | -32.980±0.060 |
| $^{196}$Pt | -32.680±0.060 |
| $^{197}$Pt | -30.410±0.070 |
| $^{198}$Pt | -29.640±0.100 |
| $^{199}$Pt | -27.740±0.190 |
| $^{200}$Pt | -26.560±0.170 |
| $^{201}$Pt | -23.420±0.190 |
| $^{202}$Pt | -21.550±0.350 |
| $^{203}$Pt | -17.730±0.480 |
| $^{204}$Pt | -15.170±0.730 |
| $^{205}$Pt | -10.590±1.130 |
| $^{206}$Pt | -7.190±1.720 |
| $^{207}$Pt | -1.770±2.330 |
| $^{208}$Pt | -9.150±3.880 |
| $^{209}$Pt | -3.230±5.200 |
| $^{210}$Pt | 1.280±6.940 |
| $^{173}$Au | -13.360±0.340 † |
| $^{174}$Au | -14.640±0.130 † |
| $^{175}$Au | -17.480±0.140 † |
| $^{176}$Au | -18.700±0.160 † |
| $^{177}$Au | -21.530±0.180 |
| $^{178}$Au | -22.280±0.240 |
| $^{179}$Au | -24.620±0.260 |
| $^{180}$Au | -25.250±0.490 |
| $^{181}$Au | -27.510±0.440 |
| $^{182}$Au | -27.950±0.390 |
| $^{183}$Au | -29.970±0.340 |
| $^{184}$Au | -29.880±0.310 |
| $^{185}$Au | -31.590±0.250 |
| $^{186}$Au | -31.440±0.190 |
| $^{187}$Au | -32.820±0.150 |
| $^{188}$Au | -32.210±0.110 |
| $^{189}$Au | -33.250±0.080 |
| $^{190}$Au | -32.800±0.130 |
| $^{191}$Au | -33.840±0.090 |
| $^{192}$Au | -33.030±0.070 |
| $^{193}$Au | -33.720±0.060 |
| $^{194}$Au | -32.420±0.070 |
| $^{195}$Au | -32.700±0.060 |
| $^{196}$Au | -31.160±0.060 |
| $^{197}$Au | -31.130±0.060 |
| $^{198}$Au | -29.120±0.080 |
| $^{199}$Au | -29.440±0.200 |
| $^{200}$Au | -27.420±0.150 |
| $^{201}$Au | -26.760±0.120 |
| $^{202}$Au | -24.190±0.130 |
| $^{203}$Au | -22.920±0.210 |
| $^{204}$Au | -19.720±0.300 |
| $^{205}$Au | -17.790±0.460 |
| $^{206}$Au | -13.900±0.720 |
| $^{207}$Au | -11.230±1.110 |
| $^{208}$Au | -11.580±0.720 |
| $^{209}$Au | -8.490±1.770 |
| $^{210}$Au | -2.850±2.390 |
| $^{211}$Au | 1.370±3.230 |
| $^{212}$Au | 7.380±4.340 |
| $^{213}$Au | 10.000±5.860 |
| $^{174}$Hg | -6.780±0.640 |
| $^{175}$Hg | -7.990±0.280 |
| $^{176}$Hg | -11.290±0.150 |
| $^{177}$Hg | -12.700±0.110 |
| $^{178}$Hg | -15.720±0.140 |
| $^{179}$Hg | -16.670±0.230 |
| $^{180}$Hg | -20.010±0.320 |
| $^{181}$Hg | -20.560±0.390 |
| $^{182}$Hg | -22.840±0.420 |

| Isotope | Mass Excess |
|---|---|
| $^{183}$Hg | -23.360±0.410 |
| $^{184}$Hg | -25.500±0.380 |
| $^{185}$Hg | -25.730±0.360 |
| $^{186}$Hg | -27.560±0.310 |
| $^{187}$Hg | -27.590±0.260 |
| $^{188}$Hg | -29.180±0.220 |
| $^{189}$Hg | -28.870±0.170 |
| $^{190}$Hg | -30.420±0.210 |
| $^{191}$Hg | -30.290±0.120 |
| $^{192}$Hg | -31.630±0.080 |
| $^{193}$Hg | -31.110±0.070 |
| $^{194}$Hg | -32.080±0.080 |
| $^{195}$Hg | -31.150±0.070 |
| $^{196}$Hg | -31.710±0.070 |
| $^{197}$Hg | -30.440±0.070 |
| $^{198}$Hg | -30.660±0.090 |
| $^{199}$Hg | -29.610±0.140 |
| $^{200}$Hg | -29.620±0.120 |
| $^{201}$Hg | -27.980±0.100 |
| $^{202}$Hg | -27.720±0.130 |
| $^{203}$Hg | -25.600±0.180 |
| $^{204}$Hg | -24.780±0.110 |
| $^{205}$Hg | -22.060±0.110 |
| $^{206}$Hg | -20.660±0.150 |
| $^{207}$Hg | -17.350±0.230 |
| $^{208}$Hg | -16.220±0.380 |
| $^{209}$Hg | -12.000±0.380 |
| $^{210}$Hg | -9.060±0.790 |
| $^{211}$Hg | -3.690±1.090 |
| $^{212}$Hg | 0.270±1.510 |
| $^{213}$Hg | 4.530±2.110 |
| $^{214}$Hg | 8.800±3.470 |
| $^{215}$Hg | 14.990±5.750 |
| $^{219}$Hg | 38.530±4.870 |
| $^{178}$Tl | -4.530±0.280 † |
| $^{179}$Tl | -7.750±0.190 † |
| $^{181}$Tl | -12.680±0.230 † |
| $^{182}$Tl | -13.270±0.360 † |
| $^{183}$Tl | -15.630±0.430 |
| $^{184}$Tl | -16.270±0.440 |
| $^{185}$Tl | -18.740±0.420 |
| $^{186}$Tl | -19.110±0.420 |
| $^{187}$Tl | -21.130±0.380 |
| $^{188}$Tl | -21.370±0.330 |
| $^{189}$Tl | -23.260±0.280 |
| $^{190}$Tl | -23.000±0.490 |
| $^{191}$Tl | -25.170±0.360 |
| $^{192}$Tl | -25.350±0.180 |
| $^{193}$Tl | -26.980±0.100 |
| $^{194}$Tl | -26.760±0.080 |
| $^{195}$Tl | -28.100±0.070 |
| $^{196}$Tl | -27.450±0.070 |
| $^{197}$Tl | -28.280±0.080 |
| $^{198}$Tl | -27.290±0.080 |
| $^{199}$Tl | -27.980±0.190 |
| $^{200}$Tl | -26.870±0.110 |
| $^{201}$Tl | -27.230±0.090 |
| $^{202}$Tl | -25.900±0.100 |
| $^{203}$Tl | -25.980±0.140 |
| $^{204}$Tl | -24.240±0.110 |
| $^{205}$Tl | -23.880±0.110 |
| $^{206}$Tl | -21.580±0.110 |
| $^{207}$Tl | -20.620±0.180 |
| $^{208}$Tl | -16.780±0.270 |
| $^{209}$Tl | -14.600±0.240 |
| $^{210}$Tl | -10.510±0.220 |
| $^{211}$Tl | -7.700±0.340 |
| $^{212}$Tl | -2.580±0.490 |
| $^{213}$Tl | 0.170±0.750 |
| $^{214}$Tl | 5.500±1.220 |
| $^{215}$Tl | 9.590±2.030 |
| $^{216}$Tl | 15.600±3.400 |
| $^{217}$Tl | 19.650±4.350 |
| $^{218}$Tl | 26.100±6.110 |
| $^{219}$Tl | 30.230±2.350 |

| Isotope | Mass Excess |
|---|---|
| $^{220}$Tl | 35.590±2.920 |
| $^{221}$Tl | 39.670±4.070 |
| $^{222}$Tl | 45.290±4.870 |
| $^{182}$Pb | -6.870±0.160 |
| $^{183}$Pb | -7.400±0.290 |
| $^{184}$Pb | -9.740±0.420 |
| $^{185}$Pb | -10.730±0.430 |
| $^{186}$Pb | -13.330±0.430 |
| $^{187}$Pb | -13.790±0.470 |
| $^{188}$Pb | -15.930±0.450 |
| $^{189}$Pb | -16.490±0.400 |
| $^{190}$Pb | -17.520±1.130 |
| $^{191}$Pb | -18.530±0.850 |
| $^{192}$Pb | -21.010±0.640 |
| $^{193}$Pb | -21.510±0.310 |
| $^{194}$Pb | -23.440±0.170 |
| $^{195}$Pb | -23.590±0.120 |
| $^{196}$Pb | -25.210±0.090 |
| $^{197}$Pb | -24.850±0.100 |
| $^{198}$Pb | -25.950±0.120 |
| $^{199}$Pb | -24.950±0.180 |
| $^{200}$Pb | -25.830±0.120 |
| $^{201}$Pb | -24.970±0.090 |
| $^{202}$Pb | -25.610±0.090 |
| $^{203}$Pb | -24.570±0.110 |
| $^{204}$Pb | -24.950±0.100 |
| $^{205}$Pb | -23.550±0.090 |
| $^{206}$Pb | -23.580±0.130 |
| $^{207}$Pb | -21.640±0.150 |
| $^{208}$Pb | -19.880±0.180 |
| $^{209}$Pb | -16.460±0.150 |
| $^{210}$Pb | -14.350±0.140 |
| $^{211}$Pb | -10.360±0.140 |
| $^{212}$Pb | -7.650±0.180 |
| $^{213}$Pb | -3.200±0.230 |
| $^{214}$Pb | 0.070±0.390 |
| $^{215}$Pb | 5.250±0.670 |
| $^{216}$Pb | 9.180±1.160 |
| $^{217}$Pb | 15.020±2.000 |
| $^{218}$Pb | 19.360±2.880 |
| $^{219}$Pb | 23.410±1.130 |
| $^{220}$Pb | 26.720±1.420 |
| $^{221}$Pb | 31.890±1.980 |
| $^{222}$Pb | 35.680±2.750 |
| $^{223}$Pb | 41.010±3.300 |
| $^{224}$Pb | 45.100±4.230 |
| $^{183}$Bi | 0.760±0.390 † |
| $^{184}$Bi | 0.540±0.190 † |
| $^{185}$Bi | -2.220±0.270 † |
| $^{186}$Bi | -3.260±0.340 † |
| $^{187}$Bi | -5.950±0.380 † |
| $^{188}$Bi | -6.430±0.500 † |
| $^{189}$Bi | -8.890±0.480 |
| $^{190}$Bi | -7.180±2.580 † |
| $^{191}$Bi | -10.440±1.950 |
| $^{192}$Bi | -11.790±1.470 |
| $^{193}$Bi | -14.590±1.110 |
| $^{194}$Bi | -15.430±0.540 |
| $^{195}$Bi | -17.740±0.370 |
| $^{196}$Bi | -18.190±0.250 |
| $^{197}$Bi | -20.100±0.170 |
| $^{198}$Bi | -20.050±0.140 |
| $^{199}$Bi | -20.620±0.200 |
| $^{200}$Bi | -20.190±0.140 |
| $^{201}$Bi | -21.300±0.120 |
| $^{202}$Bi | -20.680±0.120 |
| $^{203}$Bi | -21.580±0.130 |
| $^{204}$Bi | -20.770±0.110 |
| $^{205}$Bi | -21.440±0.100 |
| $^{206}$Bi | -20.360±0.130 |
| $^{207}$Bi | -20.720±0.190 |
| $^{208}$Bi | -19.400±0.260 |
| $^{209}$Bi | -17.820±0.190 |
| $^{210}$Bi | -14.410±0.150 |

| Isotope | Mass Excess |
|---|---|
| $^{211}$Bi | -12.340±0.140 |
| $^{212}$Bi | -8.410±0.160 |
| $^{213}$Bi | -5.780±0.180 |
| $^{214}$Bi | -1.330±0.190 |
| $^{215}$Bi | 1.830±0.240 |
| $^{216}$Bi | 6.890±0.390 |
| $^{217}$Bi | 10.690±0.680 |
| $^{218}$Bi | 16.380±1.190 |
| $^{219}$Bi | 17.970±0.480 |
| $^{220}$Bi | 22.480±0.680 |
| $^{221}$Bi | 25.600±0.950 |
| $^{222}$Bi | 30.450±1.330 |
| $^{223}$Bi | 33.930±1.860 |
| $^{224}$Bi | 39.060±2.390 |
| $^{225}$Bi | 42.830±3.080 |
| $^{226}$Bi | 48.320±3.940 |
| $^{184}$Po | 7.170±0.880 |
| $^{185}$Po | 6.310±0.480 |
| $^{186}$Po | 3.650±0.230 |
| $^{187}$Po | 2.640±0.190 |
| $^{188}$Po | -0.070±0.260 |
| $^{189}$Po | -0.850±0.360 |
| $^{191}$Po | -0.760±4.420 ‡ |
| $^{192}$Po | -4.390±3.350 |
| $^{193}$Po | -6.090±2.530 |
| $^{194}$Po | -9.230±1.920 |
| $^{195}$Po | -10.440±1.310 |
| $^{196}$Po | -13.080±0.900 |
| $^{197}$Po | -13.850±0.610 |
| $^{198}$Po | -16.060±0.420 |
| $^{199}$Po | -16.030±0.280 |
| $^{200}$Po | -17.130±0.160 |
| $^{201}$Po | -16.780±0.130 |
| $^{202}$Po | -17.980±0.120 |
| $^{203}$Po | -17.360±0.120 |
| $^{204}$Po | -18.460±0.120 |
| $^{205}$Po | -17.800±0.100 |
| $^{206}$Po | -18.630±0.110 |
| $^{207}$Po | -17.740±0.130 |
| $^{208}$Po | -18.210±0.170 |
| $^{209}$Po | -16.690±0.180 |
| $^{210}$Po | -15.430±0.130 |
| $^{211}$Po | -12.380±0.120 |
| $^{212}$Po | -10.680±0.130 |
| $^{213}$Po | -7.150±0.160 |
| $^{214}$Po | -4.860±0.140 |
| $^{215}$Po | -0.840±0.140 |
| $^{216}$Po | 1.870±0.170 |
| $^{217}$Po | 6.450±0.230 |
| $^{218}$Po | 9.770±0.330 |
| $^{219}$Po | 13.590±0.150 |
| $^{220}$Po | 16.250±0.200 |
| $^{221}$Po | 20.450±0.280 |
| $^{222}$Po | 23.250±0.380 |
| $^{223}$Po | 27.770±0.520 |
| $^{224}$Po | 31.080±1.000 |
| $^{225}$Po | 35.880±1.290 |
| $^{226}$Po | 39.310±1.660 |
| $^{227}$Po | 44.630±2.500 |
| $^{228}$Po | 47.970±2.730 |
| $^{229}$Po | 52.780±3.370 |
| $^{230}$Po | 55.940±4.620 |
| $^{193}$At | 4.010±4.440 † |
| $^{194}$At | 1.960±3.370 † |
| $^{195}$At | -1.550±2.750 † |
| $^{196}$At | -3.100±1.890 † |
| $^{197}$At | -6.060±1.300 |
| $^{198}$At | -7.140±0.900 |
| $^{199}$At | -10.850±0.580 |
| $^{200}$At | -10.340±0.360 |
| $^{201}$At | -11.490±0.210 |
| $^{202}$At | -11.230±0.200 |
| $^{203}$At | -12.290±0.200 |
| $^{204}$At | -11.910±0.130 |

| Isotope | Mass Excess |
|---|---|
| $^{205}$At | -13.120±0.120 |
| $^{206}$At | -12.590±0.120 |
| $^{207}$At | -13.550±0.180 |
| $^{208}$At | -12.660±0.210 |
| $^{209}$At | -13.310±0.130 |
| $^{210}$At | -11.980±0.130 |
| $^{211}$At | -11.010±0.120 |
| $^{212}$At | -8.270±0.150 |
| $^{213}$At | -6.920±0.200 |
| $^{214}$At | -3.770±0.140 |
| $^{215}$At | -1.780±0.120 |
| $^{216}$At | 1.830±0.130 |
| $^{217}$At | 4.130±0.180 |
| $^{218}$At | 8.260±0.260 |
| $^{219}$At | 10.680±0.100 |
| $^{220}$At | 14.410±0.090 |
| $^{221}$At | 16.760±0.100 |
| $^{222}$At | 20.660±0.140 |
| $^{223}$At | 23.170±0.190 |
| $^{224}$At | 27.510±0.300 |
| $^{225}$At | 30.490±0.540 |
| $^{226}$At | 34.980±0.710 |
| $^{227}$At | 38.240±1.060 |
| $^{228}$At | 43.300±1.350 |
| $^{229}$At | 46.300±1.680 |
| $^{230}$At | 50.860±2.310 |
| $^{231}$At | 53.930±3.170 |
| $^{232}$At | 58.760±3.770 |
| $^{233}$At | 62.060±4.790 |
| $^{195}$Rn | 8.920±4.780 ‡ |
| $^{196}$Rn | 5.080±3.900 |
| $^{197}$Rn | 3.170±2.690 |
| $^{198}$Rn | -0.120±1.870 |
| $^{199}$Rn | -5.150±1.200 |
| $^{200}$Rn | -6.280±0.830 |
| $^{201}$Rn | -5.820±0.550 |
| $^{202}$Rn | -7.010±0.350 |
| $^{203}$Rn | -6.560±0.290 |
| $^{204}$Rn | -7.860±0.200 |
| $^{205}$Rn | -7.550±0.140 |
| $^{206}$Rn | -8.850±0.150 |
| $^{207}$Rn | -8.440±0.200 |
| $^{208}$Rn | -9.520±0.300 |
| $^{209}$Rn | -8.990±0.200 |
| $^{210}$Rn | -9.740±0.130 |
| $^{211}$Rn | -8.560±0.120 |
| $^{212}$Rn | -7.800±0.140 |
| $^{213}$Rn | -5.320±0.190 |
| $^{214}$Rn | -4.400±0.140 |
| $^{215}$Rn | -1.500±0.120 |
| $^{216}$Rn | 0.240±0.130 |
| $^{217}$Rn | 3.500±0.140 |
| $^{218}$Rn | 5.410±0.210 |
| $^{219}$Rn | 9.110±0.070 |
| $^{220}$Rn | 10.830±0.060 |
| $^{221}$Rn | 14.270±0.060 |
| $^{222}$Rn | 16.340±0.060 |
| $^{223}$Rn | 19.960±0.090 |
| $^{224}$Rn | 22.290±0.110 |
| $^{225}$Rn | 26.340±0.170 |
| $^{226}$Rn | 29.020±0.290 |
| $^{227}$Rn | 33.340±0.440 |
| $^{228}$Rn | 36.550±0.600 |
| $^{229}$Rn | 40.740±0.830 |
| $^{230}$Rn | 43.500±1.150 |
| $^{231}$Rn | 47.880±1.580 |
| $^{232}$Rn | 50.810±2.170 |
| $^{233}$Rn | 55.390±2.770 |
| $^{234}$Rn | 58.530±3.520 |
| $^{235}$Rn | 63.250±4.470 |
| $^{199}$Fr | 4.390±4.690 |
| $^{200}$Fr | 3.450±2.990 † |
| $^{201}$Fr | 1.460±1.920 † |
| $^{202}$Fr | 1.430±1.230 |

| Isotope | Mass Excess |
|---|---|
| $^{203}$Fr | -0.080±0.780 |
| $^{204}$Fr | 0.150±0.450 |
| $^{205}$Fr | -1.250±0.260 |
| $^{206}$Fr | -1.030±0.180 |
| $^{207}$Fr | -2.420±0.210 |
| $^{208}$Fr | -2.810±0.310 |
| $^{209}$Fr | -4.120±0.210 |
| $^{210}$Fr | -3.590±0.150 |
| $^{211}$Fr | -4.400±0.120 |
| $^{212}$Fr | -3.310±0.130 |
| $^{213}$Fr | -2.710±0.140 |
| $^{214}$Fr | -0.710±0.130 |
| $^{215}$Fr | 0.050±0.110 |
| $^{216}$Fr | 2.760±0.120 |
| $^{217}$Fr | 4.270±0.180 |
| $^{218}$Fr | 7.220±0.170 |
| $^{219}$Fr | 8.820±0.080 |
| $^{220}$Fr | 11.670±0.070 |
| $^{221}$Fr | 13.120±0.060 |
| $^{222}$Fr | 16.290±0.060 |
| $^{223}$Fr | 18.070±0.060 |
| $^{224}$Fr | 21.510±0.060 |
| $^{225}$Fr | 23.570±0.070 |
| $^{226}$Fr | 27.330±0.090 |
| $^{227}$Fr | 29.730±0.160 |
| $^{228}$Fr | 34.020±0.120 |
| $^{229}$Fr | 36.290±0.240 |
| $^{230}$Fr | 40.270±0.340 |
| $^{231}$Fr | 42.850±0.470 |
| $^{232}$Fr | 47.070±0.650 |
| $^{233}$Fr | 49.760±1.200 |
| $^{234}$Fr | 54.180±1.540 |
| $^{235}$Fr | 57.190±1.960 |
| $^{236}$Fr | 61.670±2.880 |
| $^{237}$Fr | 62.380±3.100 |
| $^{238}$Fr | 66.560±3.780 |
| $^{200}$Ra | 11.020±6.910 |
| $^{201}$Ra | 9.360±4.410 |
| $^{202}$Ra | 7.010±2.860 |
| $^{203}$Ra | 6.370±1.710 |
| $^{204}$Ra | 5.200±1.250 |
| $^{205}$Ra | 5.470±0.780 |
| $^{206}$Ra | 4.130±0.510 |
| $^{207}$Ra | 4.390±0.360 |
| $^{208}$Ra | 0.550±0.340 |
| $^{209}$Ra | 0.810±0.250 |
| $^{210}$Ra | -0.380±0.200 |
| $^{211}$Ra | 0.210±0.180 |
| $^{212}$Ra | -0.570±0.180 |
| $^{213}$Ra | 0.500±0.190 |
| $^{214}$Ra | 0.570±0.150 |
| $^{215}$Ra | 2.510±0.140 |
| $^{216}$Ra | 3.180±0.150 |
| $^{217}$Ra | 5.750±0.190 |
| $^{218}$Ra | 7.100±0.260 |
| $^{219}$Ra | 9.500±0.060 |
| $^{220}$Ra | 10.480±0.060 |
| $^{221}$Ra | 13.040±0.050 |
| $^{222}$Ra | 14.220±0.050 |
| $^{223}$Ra | 17.110±0.050 |
| $^{224}$Ra | 18.710±0.050 |
| $^{225}$Ra | 21.870±0.050 |
| $^{226}$Ra | 23.650±0.080 |
| $^{227}$Ra | 27.120±0.120 |
| $^{228}$Ra | 29.420±0.070 |
| $^{229}$Ra | 32.910±0.070 |
| $^{230}$Ra | 34.980±0.110 |
| $^{231}$Ra | 38.740±0.150 |
| $^{232}$Ra | 41.110±0.220 |
| $^{233}$Ra | 45.080±0.370 |
| $^{234}$Ra | 47.620±0.670 |
| $^{235}$Ra | 51.850±0.860 |
| $^{236}$Ra | 54.620±1.270 |
| $^{237}$Ra | 57.860±1.590 |
| $^{238}$Ra | 60.550±1.960 |

| Isotope | Mass Excess |
|---|---|
| $^{239}$Ra | 64.530±2.640 |
| $^{240}$Ra | 66.880±3.540 |
| $^{241}$Ra | 71.120±4.190 |
| $^{202}$Ac | 17.750±6.470 † |
| $^{203}$Ac | 12.870±3.340 |
| $^{204}$Ac | 13.520±2.570 |
| $^{205}$Ac | 12.430±1.950 |
| $^{206}$Ac | 12.710±1.260 |
| $^{207}$Ac | 11.420±0.880 † |
| $^{208}$Ac | 11.930±0.630 † |
| $^{209}$Ac | 8.460±0.410 † |
| $^{210}$Ac | 8.540±0.220 † |
| $^{211}$Ac | 7.120±0.170 † |
| $^{212}$Ac | 7.420±0.150 |
| $^{213}$Ac | 5.870±0.140 |
| $^{214}$Ac | 6.540±0.160 |
| $^{215}$Ac | 6.250±0.120 |
| $^{216}$Ac | 7.770±0.120 |
| $^{217}$Ac | 7.980±0.130 |
| $^{218}$Ac | 10.060±0.170 |
| $^{219}$Ac | 11.480±0.090 |
| $^{220}$Ac | 13.560±0.060 |
| $^{221}$Ac | 14.270±0.050 |
| $^{222}$Ac | 16.560±0.050 |
| $^{223}$Ac | 17.470±0.090 |
| $^{224}$Ac | 20.170±0.060 |
| $^{225}$Ac | 21.490±0.050 |
| $^{226}$Ac | 24.380±0.070 |
| $^{227}$Ac | 25.890±0.100 |
| $^{228}$Ac | 29.050±0.050 |
| $^{229}$Ac | 30.630±0.050 |
| $^{230}$Ac | 33.870±0.040 |
| $^{231}$Ac | 35.720±0.050 |
| $^{232}$Ac | 39.240±0.080 |
| $^{233}$Ac | 41.360±0.120 |
| $^{234}$Ac | 45.120±0.210 |
| $^{235}$Ac | 47.470±0.370 |
| $^{236}$Ac | 51.460±0.550 |
| $^{237}$Ac | 53.710±0.740 |
| $^{238}$Ac | 57.690±1.000 |
| $^{239}$Ac | 60.180±1.360 |
| $^{240}$Ac | 64.150±1.840 |
| $^{241}$Ac | 66.580±2.470 |
| $^{242}$Ac | 70.600±3.110 |
| $^{243}$Ac | 73.090±3.910 |
| $^{244}$Ac | 76.990±4.900 |
| $^{203}$Th | 19.530±6.270 |
| $^{204}$Th | 18.710±4.930 |
| $^{205}$Th | 19.410±3.850 |
| $^{206}$Th | 18.370±2.980 |
| $^{207}$Th | 18.650±1.920 |
| $^{209}$Th | 18.440±1.160 |
| $^{210}$Th | 14.930±0.790 |
| $^{211}$Th | 14.910±0.400 |
| $^{212}$Th | 13.330±0.320 |
| $^{213}$Th | 12.540±0.290 |
| $^{214}$Th | 10.990±0.170 |
| $^{215}$Th | 11.430±0.160 |
| $^{216}$Th | 10.840±0.140 |
| $^{217}$Th | 12.000±0.180 |
| $^{218}$Th | 11.820±0.220 |
| $^{219}$Th | 14.730±0.110 |
| $^{220}$Th | 14.810±0.080 |
| $^{221}$Th | 16.630±0.060 |
| $^{222}$Th | 17.060±0.050 |
| $^{223}$Th | 19.090±0.090 |
| $^{224}$Th | 19.810±0.060 |
| $^{225}$Th | 22.250±0.050 |
| $^{226}$Th | 23.310±0.060 |
| $^{227}$Th | 25.930±0.070 |
| $^{228}$Th | 26.850±0.070 |
| $^{229}$Th | 29.550±0.060 |
| $^{230}$Th | 30.870±0.050 |
| $^{231}$Th | 33.870±0.050 |

| Isotope | Mass Excess |
|---|---|
| $^{232}$Th | 35.480±0.050 |
| $^{233}$Th | 38.750±0.050 |
| $^{234}$Th | 40.640±0.070 |
| $^{235}$Th | 44.170±0.110 |
| $^{236}$Th | 46.310±0.210 |
| $^{237}$Th | 50.440±0.120 |
| $^{238}$Th | 52.590±0.320 |
| $^{239}$Th | 56.510±0.440 |
| $^{240}$Th | 59.000±0.600 |
| $^{241}$Th | 63.030±0.810 |
| $^{242}$Th | 65.260±1.420 |
| $^{243}$Th | 69.350±1.800 |
| $^{244}$Th | 71.950±2.260 |
| $^{245}$Th | 75.660±3.240 |
| $^{206}$Pa | 27.320±5.750 † |
| $^{207}$Pa | 26.310±4.500 † |
| $^{212}$Pa | 23.000±0.730 † |
| $^{213}$Pa | 20.060±0.520 |
| $^{214}$Pa | 19.640±0.350 |
| $^{215}$Pa | 17.970±0.230 |
| $^{216}$Pa | 18.240±0.210 |
| $^{217}$Pa | 17.410±0.210 |
| $^{218}$Pa | 18.280±0.270 |
| $^{219}$Pa | 19.320±0.670 † |
| $^{220}$Pa | 20.480±0.400 |
| $^{221}$Pa | 20.280±0.240 |
| $^{222}$Pa | 21.820±0.140 |
| $^{223}$Pa | 21.980±0.090 |
| $^{224}$Pa | 23.810±0.060 |
| $^{225}$Pa | 24.260±0.060 |
| $^{226}$Pa | 26.430±0.070 |
| $^{227}$Pa | 27.220±0.080 |
| $^{228}$Pa | 28.920±0.050 |
| $^{229}$Pa | 29.680±0.050 |
| $^{230}$Pa | 32.120±0.040 |
| $^{231}$Pa | 33.190±0.040 |
| $^{232}$Pa | 35.940±0.040 |
| $^{233}$Pa | 37.300±0.040 |
| $^{234}$Pa | 40.330±0.040 |
| $^{235}$Pa | 41.990±0.060 |
| $^{236}$Pa | 45.300±0.100 |
| $^{237}$Pa | 47.530±0.070 |
| $^{238}$Pa | 51.110±0.070 |
| $^{239}$Pa | 53.220±0.140 |
| $^{240}$Pa | 57.000±0.200 |
| $^{241}$Pa | 59.380±0.280 |
| $^{242}$Pa | 63.210±0.470 |
| $^{243}$Pa | 65.500±0.820 |
| $^{244}$Pa | 69.540±1.050 |
| $^{245}$Pa | 71.950±1.500 |
| $^{246}$Pa | 78.540±3.260 |
| $^{247}$Pa | 81.620±3.950 |
| $^{210}$U | 34.780±5.290 |
| $^{211}$U | 32.870±3.890 |
| $^{212}$U | 29.520±2.850 ‡ |
| $^{213}$U | 27.870±1.300 |
| $^{214}$U | 25.650±0.880 |
| $^{215}$U | 25.250±0.590 |
| $^{216}$U | 23.540±0.410 |
| $^{217}$U | 23.710±0.350 |
| $^{218}$U | 22.720±0.360 |
| $^{219}$U | 24.870±1.360 |
| $^{220}$U | 24.160±1.070 |
| $^{221}$U | 25.040±0.650 |
| $^{222}$U | 24.560±0.390 |
| $^{223}$U | 25.810±0.240 |
| $^{224}$U | 25.790±0.170 |
| $^{225}$U | 27.340±0.090 |
| $^{226}$U | 27.530±0.070 |
| $^{227}$U | 29.430±0.080 |
| $^{228}$U | 29.150±0.070 |
| $^{229}$U | 31.030±0.050 |
| $^{230}$U | 31.540±0.040 |
| $^{231}$U | 33.710±0.050 |

| Isotope | Mass Excess |
|---|---|
| $^{232}$U | 34.520±0.070 |
| $^{233}$U | 37.020±0.050 |
| $^{234}$U | 38.140±0.040 |
| $^{235}$U | 40.920±0.050 |
| $^{236}$U | 42.330±0.080 |
| $^{237}$U | 45.560±0.050 |
| $^{238}$U | 47.350±0.040 |
| $^{239}$U | 50.750±0.040 |
| $^{240}$U | 52.720±0.060 |
| $^{241}$U | 56.320±0.090 |
| $^{242}$U | 58.510±0.160 |
| $^{243}$U | 62.230±0.270 |
| $^{244}$U | 64.480±0.470 |
| $^{245}$U | 68.320±0.690 |
| $^{246}$U | 72.400±1.610 |
| $^{247}$U | 76.680±2.130 |
| $^{248}$U | 79.560±2.810 |
| $^{249}$U | 83.970±3.700 |
| $^{250}$U | 86.970±4.860 |
| $^{213}$Np | 35.360±5.210 |
| $^{214}$Np | 34.770±3.440 |
| $^{215}$Np | 32.720±2.270 |
| $^{216}$Np | 32.410±1.500 |
| $^{217}$Np | 30.730±1.000 |
| $^{218}$Np | 30.880±0.720 |
| $^{219}$Np | 31.770±2.700 † |
| $^{220}$Np | 32.130±2.140 |
| $^{221}$Np | 31.120±1.690 |
| $^{222}$Np | 31.700±1.030 |
| $^{223}$Np | 30.930±0.630 |
| $^{224}$Np | 32.000±0.460 |
| $^{225}$Np | 31.700±0.340 |
| $^{226}$Np | 32.970±0.150 |
| $^{227}$Np | 32.890±0.120 |
| $^{228}$Np | 33.730±0.120 |
| $^{229}$Np | 33.630±0.080 |
| $^{230}$Np | 35.230±0.060 |
| $^{231}$Np | 35.470±0.040 |
| $^{232}$Np | 37.380±0.080 |
| $^{233}$Np | 37.940±0.050 |
| $^{234}$Np | 40.170±0.040 |
| $^{235}$Np | 41.050±0.050 |
| $^{236}$Np | 43.560±0.060 |
| $^{237}$Np | 44.720±0.060 |
| $^{238}$Np | 47.640±0.050 |
| $^{239}$Np | 49.200±0.040 |
| $^{240}$Np | 52.380±0.040 |
| $^{241}$Np | 54.170±0.040 |
| $^{242}$Np | 57.570±0.050 |
| $^{243}$Np | 59.570±0.080 |
| $^{244}$Np | 63.140±0.150 |
| $^{245}$Np | 65.280±0.270 |
| $^{246}$Np | 70.180±0.320 |
| $^{247}$Np | 72.660±0.770 |
| $^{248}$Np | 76.810±1.030 |
| $^{249}$Np | 79.560±1.370 |
| $^{250}$Np | 83.840±1.810 |
| $^{251}$Np | 86.640±2.940 |
| $^{252}$Np | 91.080±3.650 |
| $^{253}$Np | 94.130±4.520 |
| $^{215}$Pu | 41.620±5.120 |
| $^{216}$Pu | 39.370±3.420 |
| $^{217}$Pu | 38.800±2.300 |
| $^{218}$Pu | 36.810±1.560 |
| $^{220}$Pu | 38.360±4.200 ‡ |
| $^{221}$Pu | 38.410±3.330 |
| $^{222}$Pu | 37.110±2.640 |
| $^{223}$Pu | 37.360±1.610 |
| $^{224}$Pu | 36.410±1.200 |
| $^{225}$Pu | 37.200±0.890 |
| $^{226}$Pu | 36.620±0.660 |
| $^{227}$Pu | 37.610±0.280 |
| $^{228}$Pu | 36.430±0.760 |
| $^{229}$Pu | 37.450±0.470 |

| Isotope | Mass Excess |
|---|---|
| $^{230}$Pu | 37.110±0.290 |
| $^{231}$Pu | 38.450±0.180 |
| $^{232}$Pu | 38.430±0.110 |
| $^{233}$Pu | 40.090±0.060 |
| $^{234}$Pu | 40.390±0.050 |
| $^{235}$Pu | 42.370±0.050 |
| $^{236}$Pu | 42.990±0.060 |
| $^{237}$Pu | 44.910±0.050 |
| $^{238}$Pu | 46.000±0.040 |
| $^{239}$Pu | 48.690±0.040 |
| $^{240}$Pu | 50.030±0.040 |
| $^{241}$Pu | 53.030±0.050 |
| $^{242}$Pu | 54.620±0.040 |
| $^{243}$Pu | 57.820±0.040 |
| $^{244}$Pu | 59.680±0.060 |
| $^{245}$Pu | 63.140±0.090 |
| $^{246}$Pu | 65.740±0.120 |
| $^{247}$Pu | 69.490±0.170 |
| $^{248}$Pu | 71.840±0.370 |
| $^{249}$Pu | 75.830±0.500 |
| $^{250}$Pu | 78.450±0.670 |
| $^{251}$Pu | 82.520±1.090 |
| $^{252}$Pu | 85.200±1.780 |
| $^{253}$Pu | 89.520±2.220 |
| $^{254}$Pu | 92.380±3.080 |
| $^{223}$Am | 45.230±4.100 † |
| $^{224}$Am | 45.300±3.050 † |
| $^{225}$Am | 44.030±2.270 † |
| $^{226}$Am | 44.520±1.690 † |
| $^{227}$Am | 43.660±1.260 |
| $^{228}$Am | 43.410±1.500 |
| $^{229}$Am | 42.480±1.200 |
| $^{230}$Am | 43.240±0.740 |
| $^{231}$Am | 42.630±0.460 |
| $^{232}$Am | 43.710±0.290 |
| $^{233}$Am | 43.440±0.210 |
| $^{234}$Am | 44.830±0.100 |
| $^{235}$Am | 44.880±0.070 |
| $^{236}$Am | 46.590±0.070 |
| $^{237}$Am | 46.230±0.070 |
| $^{238}$Am | 48.450±0.050 |
| $^{239}$Am | 49.300±0.040 |
| $^{240}$Am | 51.720±0.040 |
| $^{241}$Am | 52.800±0.070 |
| $^{242}$Am | 55.590±0.040 |
| $^{243}$Am | 56.990±0.040 |
| $^{244}$Am | 59.970±0.050 |
| $^{245}$Am | 61.600±0.070 |
| $^{246}$Am | 65.090±0.080 |
| $^{247}$Am | 67.110±0.080 |
| $^{248}$Am | 70.690±0.090 |
| $^{249}$Am | 72.890±0.180 |
| $^{250}$Am | 76.700±0.250 |
| $^{251}$Am | 79.110±0.400 |
| $^{252}$Am | 83.050±0.660 |
| $^{253}$Am | 85.600±1.080 |
| $^{254}$Am | 89.710±1.500 |
| $^{225}$Cm | 51.990±4.150 ‡ |
| $^{226}$Cm | 50.430±3.100 |
| $^{227}$Cm | 50.620±2.320 |
| $^{228}$Cm | 48.530±2.930 |
| $^{229}$Cm | 48.700±2.330 |
| $^{230}$Cm | 47.510±1.860 |
| $^{231}$Cm | 48.040±1.160 |
| $^{232}$Cm | 47.170±0.730 |
| $^{233}$Cm | 47.990±0.550 |
| $^{234}$Cm | 47.470±0.410 |
| $^{235}$Cm | 48.610±0.190 |
| $^{236}$Cm | 48.390±0.120 |
| $^{237}$Cm | 48.900±0.110 |
| $^{238}$Cm | 49.140±0.080 |
| $^{239}$Cm | 51.070±0.060 |
| $^{240}$Cm | 51.660±0.040 |
| $^{241}$Cm | 53.820±0.060 |

| Isotope | Mass Excess |
|---|---|
| $^{242}$Cm | 54.700±0.040 |
| $^{243}$Cm | 57.220±0.040 |
| $^{244}$Cm | 58.400±0.040 |
| $^{245}$Cm | 61.120±0.050 |
| $^{246}$Cm | 62.570±0.080 |
| $^{247}$Cm | 65.720±0.070 |
| $^{248}$Cm | 67.520±0.060 |
| $^{249}$Cm | 70.910±0.070 |
| $^{250}$Cm | 72.930±0.100 |
| $^{251}$Cm | 76.520±0.150 |
| $^{252}$Cm | 78.760±0.240 |
| $^{253}$Cm | 82.540±0.400 |
| $^{254}$Cm | 84.950±0.650 |
| $^{255}$Cm | 89.090±2.860 |
| $^{256}$Cm | 91.560±3.540 |
| $^{257}$Cm | 95.070±4.900 |
| $^{229}$Bk | 56.070±4.510 † |
| $^{230}$Bk | 56.000±3.610 † |
| $^{231}$Bk | 54.570±2.880 |
| $^{232}$Bk | 54.870±1.800 |
| $^{233}$Bk | 53.750±1.350 |
| $^{234}$Bk | 54.320±1.020 |
| $^{235}$Bk | 53.530±0.760 |
| $^{236}$Bk | 54.430±0.340 |
| $^{237}$Bk | 52.750±0.440 |
| $^{238}$Bk | 54.090±0.260 |
| $^{239}$Bk | 54.080±0.160 |
| $^{240}$Bk | 55.740±0.100 |
| $^{241}$Bk | 56.070±0.070 |
| $^{242}$Bk | 58.020±0.050 |
| $^{243}$Bk | 58.630±0.040 |
| $^{244}$Bk | 60.890±0.050 |
| $^{245}$Bk | 61.820±0.060 |
| $^{246}$Bk | 64.040±0.080 |
| $^{247}$Bk | 65.370±0.060 |
| $^{248}$Bk | 68.300±0.050 |
| $^{249}$Bk | 69.900±0.060 |
| $^{250}$Bk | 73.100±0.100 |
| $^{251}$Bk | 74.910±0.060 |
| $^{252}$Bk | 78.330±0.080 |
| $^{253}$Bk | 80.400±0.110 |
| $^{254}$Bk | 84.030±0.160 |
| $^{255}$Bk | 86.670±1.410 |
| $^{256}$Bk | 90.470±1.760 |
| $^{257}$Bk | 92.720±2.440 |
| $^{258}$Bk | 96.340±3.370 |
| $^{259}$Bk | 98.850±4.020 |
| $^{232}$Cf | 60.570±4.430 |
| $^{233}$Cf | 60.610±3.330 |
| $^{234}$Cf | 59.280±2.500 |
| $^{235}$Cf | 59.610±1.880 |
| $^{236}$Cf | 58.590±1.420 |
| $^{237}$Cf | 57.640±0.910 |
| $^{238}$Cf | 57.130±0.720 |
| $^{239}$Cf | 58.210±0.420 |
| $^{240}$Cf | 57.940±0.260 |
| $^{241}$Cf | 59.330±0.160 |
| $^{242}$Cf | 59.450±0.110 |
| $^{243}$Cf | 61.140±0.060 |
| $^{244}$Cf | 61.490±0.050 |
| $^{245}$Cf | 63.500±0.060 |
| $^{246}$Cf | 63.650±0.100 |
| $^{247}$Cf | 66.100±0.070 |
| $^{248}$Cf | 67.210±0.060 |
| $^{249}$Cf | 69.880±0.070 |
| $^{250}$Cf | 71.260±0.100 |
| $^{251}$Cf | 74.250±0.060 |
| $^{252}$Cf | 75.890±0.050 |
| $^{253}$Cf | 79.090±0.070 |
| $^{254}$Cf | 80.990±0.100 |
| $^{255}$Cf | 84.890±0.620 |
| $^{256}$Cf | 86.970±0.870 |
| $^{257}$Cf | 90.550±1.210 |
| $^{258}$Cf | 92.720±1.680 |

| Isotope | Mass Excess |
|---|---|
| $^{259}$Cf | 96.330±2.320 |
| $^{260}$Cf | 98.620±2.970 |
| $^{261}$Cf | 102.350±3.790 |
| $^{262}$Cf | 104.600±4.830 |
| $^{234}$Es | 68.420±4.510 † |
| $^{235}$Es | 66.850±3.400 † |
| $^{236}$Es | 66.940±2.570 † |
| $^{237}$Es | 63.720±1.870 |
| $^{238}$Es | 64.280±1.470 |
| $^{239}$Es | 63.520±1.160 |
| $^{240}$Es | 64.370±0.690 |
| $^{241}$Es | 63.830±0.410 |
| $^{242}$Es | 65.010±0.300 |
| $^{243}$Es | 64.870±0.220 |
| $^{244}$Es | 66.290±0.110 |
| $^{245}$Es | 66.370±0.090 |
| $^{246}$Es | 67.510±0.150 |
| $^{247}$Es | 68.040±0.100 |
| $^{248}$Es | 70.210±0.070 |
| $^{249}$Es | 71.070±0.050 |
| $^{250}$Es | 73.440±0.060 |
| $^{251}$Es | 74.610±0.060 |
| $^{252}$Es | 77.370±0.050 |
| $^{253}$Es | 78.790±0.060 |
| $^{254}$Es | 81.760±0.070 |
| $^{255}$Es | 84.090±0.080 |
| $^{256}$Es | 87.260±0.240 |
| $^{257}$Es | 89.220±0.330 |
| $^{258}$Es | 92.710±0.470 |
| $^{259}$Es | 94.870±0.660 |
| $^{260}$Es | 98.260±1.290 |
| $^{261}$Es | 100.540±1.650 |
| $^{262}$Es | 104.300±2.120 |
| $^{263}$Es | 106.340±3.140 |
| $^{236}$Fm | 73.400±4.590 |
| $^{237}$Fm | 70.850±3.790 |
| $^{238}$Fm | 69.550±2.990 |
| $^{239}$Fm | 69.900±2.360 |
| $^{240}$Fm | 68.910±1.860 |
| $^{241}$Fm | 69.560±1.100 |
| $^{242}$Fm | 68.820±0.810 |
| $^{243}$Fm | 69.740±0.600 |
| $^{244}$Fm | 69.340±0.440 |
| $^{245}$Fm | 70.520±0.190 |
| $^{246}$Fm | 70.080±0.180 |
| $^{247}$Fm | 71.490±0.110 |
| $^{248}$Fm | 71.660±0.080 |
| $^{249}$Fm | 73.500±0.070 |
| $^{250}$Fm | 74.070±0.070 |
| $^{251}$Fm | 76.220±0.060 |
| $^{252}$Fm | 77.100±0.060 |
| $^{253}$Fm | 79.590±0.060 |
| $^{254}$Fm | 80.780±0.080 |
| $^{255}$Fm | 83.950±0.070 |
| $^{256}$Fm | 85.490±0.050 |
| $^{257}$Fm | 88.540±0.090 |
| $^{258}$Fm | 90.310±0.130 |
| $^{259}$Fm | 93.620±0.190 |
| $^{260}$Fm | 95.560±0.370 |
| $^{261}$Fm | 98.940±0.710 |
| $^{262}$Fm | 101.100±0.920 |
| $^{263}$Fm | 104.650±1.380 |
| $^{264}$Fm | 106.740±2.050 |
| $^{239}$Md | 77.170±4.770 † |
| $^{240}$Md | 77.370±3.770 † |
| $^{241}$Md | 76.200±2.970 † |
| $^{242}$Md | 76.640±2.190 |
| $^{243}$Md | 75.720±1.620 |
| $^{244}$Md | 76.410±1.190 |
| $^{245}$Md | 75.780±0.880 |
| $^{246}$Md | 76.660±0.440 |
| $^{247}$Md | 76.240±0.320 |
| $^{248}$Md | 77.270±0.170 |
| $^{249}$Md | 77.110±0.120 |

| Isotope | Mass Excess |
|---|---|
| $^{250}$Md | 78.650±0.090 |
| $^{251}$Md | 79.000±0.070 |
| $^{252}$Md | 80.860±0.070 |
| $^{253}$Md | 81.460±0.070 |
| $^{254}$Md | 83.710±0.070 |
| $^{255}$Md | 84.950±0.050 |
| $^{256}$Md | 87.560±0.040 |
| $^{257}$Md | 88.860±0.040 |
| $^{258}$Md | 91.720±0.050 |
| $^{259}$Md | 93.280±0.070 |
| $^{260}$Md | 96.370±0.110 |
| $^{261}$Md | 98.140±0.210 |
| $^{262}$Md | 101.390±0.400 |
| $^{263}$Md | 103.340±0.600 |
| $^{264}$Md | 106.780±0.900 |
| $^{265}$Md | 108.810±1.340 |
| $^{241}$No | 83.840±4.900 |
| $^{242}$No | 82.450±4.100 |
| $^{243}$No | 82.710±3.030 |
| $^{244}$No | 81.570±2.240 |
| $^{245}$No | 82.030±1.660 |
| $^{246}$No | 81.950±1.080 |
| $^{247}$No | 82.390±0.810 |
| $^{248}$No | 81.600±0.610 |
| $^{249}$No | 82.230±0.290 |
| $^{250}$No | 81.690±0.190 |
| $^{251}$No | 83.020±0.140 |
| $^{252}$No | 83.070±0.110 |
| $^{253}$No | 84.590±0.110 |
| $^{254}$No | 84.900±0.100 |
| $^{255}$No | 86.910±0.070 |
| $^{256}$No | 87.760±0.050 |
| $^{257}$No | 90.170±0.040 |
| $^{258}$No | 91.270±0.040 |
| $^{259}$No | 93.920±0.050 |
| $^{260}$No | 95.270±0.060 |
| $^{261}$No | 98.160±0.080 |
| $^{262}$No | 99.740±0.130 |
| $^{263}$No | 102.830±0.230 |
| $^{264}$No | 104.620±0.340 |
| $^{265}$No | 107.920±0.510 |
| $^{266}$No | 109.870±0.750 |
| $^{267}$No | 113.280±1.120 |
| $^{244}$Lr | 90.720±4.160 † |
| $^{245}$Lr | 89.400±3.080 † |
| $^{248}$Lr | 90.390±1.500 † |
| $^{249}$Lr | 89.190±1.130 † |
| $^{250}$Lr | 89.330±0.530 |
| $^{251}$Lr | 88.580±0.370 |
| $^{252}$Lr | 89.540±0.260 |
| $^{253}$Lr | 89.260±0.190 |
| $^{254}$Lr | 90.380±0.180 |
| $^{255}$Lr | 89.950±0.070 |
| $^{256}$Lr | 91.890±0.050 |
| $^{257}$Lr | 92.540±0.040 |
| $^{258}$Lr | 94.730±0.040 |
| $^{259}$Lr | 95.620±0.060 |
| $^{260}$Lr | 98.050±0.050 |
| $^{261}$Lr | 99.200±0.070 |
| $^{262}$Lr | 101.900±0.100 |
| $^{263}$Lr | 103.310±0.140 |
| $^{264}$Lr | 106.180±0.120 |
| $^{265}$Lr | 107.810±0.150 |
| $^{266}$Lr | 110.980±0.190 |
| $^{267}$Lr | 112.840±0.250 |
| $^{250}$Rf | 96.120±2.070 |
| $^{251}$Rf | 96.050±1.410 |
| $^{252}$Rf | 94.840±0.960 |
| $^{253}$Rf | 95.370±0.660 |
| $^{254}$Rf | 94.710±0.450 |
| $^{255}$Rf | 93.960±0.090 |
| $^{256}$Rf | 94.130±0.070 |
| $^{257}$Rf | 95.860±0.050 |
| $^{258}$Rf | 96.340±0.060 |

| Isotope | Mass Excess |
|---|---|
| $^{259}$Rf | 98.310±0.090 |
| $^{260}$Rf | 98.990±0.060 |
| $^{261}$Rf | 101.210±0.060 |
| $^{262}$Rf | 102.150±0.080 |
| $^{263}$Rf | 104.610±0.120 |
| $^{264}$Rf | 105.810±0.120 |
| $^{265}$Rf | 108.520±0.120 |
| $^{266}$Rf | 109.950±0.150 |
| $^{267}$Rf | 112.900±0.180 |
| $^{253}$Ha | 102.810±1.430 † |
| $^{254}$Ha | 102.950±0.980 † |
| $^{255}$Ha | 98.790±0.220 |
| $^{256}$Ha | 100.140±0.150 |
| $^{257}$Ha | 100.150±0.100 |
| $^{258}$Ha | 101.700±0.070 |
| $^{259}$Ha | 102.070±0.080 |
| $^{260}$Ha | 103.820±0.060 |
| $^{261}$Ha | 104.270±0.060 |
| $^{262}$Ha | 106.280±0.060 |
| $^{263}$Ha | 107.040±0.090 |
| $^{264}$Ha | 109.290±0.100 |
| $^{265}$Ha | 110.250±0.110 |
| $^{266}$Ha | 112.750±0.130 |
| $^{267}$Ha | 113.980±0.150 |
| $^{254}$Sg | 110.030±2.090 ‡ |
| $^{255}$Sg | 103.670±0.960 |
| $^{256}$Sg | 103.630±0.630 |
| $^{257}$Sg | 105.000±0.410 |
| $^{258}$Sg | 104.950±0.270 |
| $^{259}$Sg | 106.400±0.180 |
| $^{260}$Sg | 106.560±0.100 |
| $^{261}$Sg | 108.200±0.060 |
| $^{262}$Sg | 108.500±0.060 |
| $^{263}$Sg | 110.340±0.070 |
| $^{264}$Sg | 110.880±0.080 |
| $^{265}$Sg | 112.950±0.100 |
| $^{266}$Sg | 113.720±0.110 |
| $^{267}$Sg | 116.030±0.130 |
| $^{255}$Ns | 109.630±1.800 |
| $^{256}$Ns | 110.660±1.450 |
| $^{257}$Ns | 110.630±0.950 |
| $^{258}$Ns | 111.940±0.630 |
| $^{259}$Ns | 111.790±0.420 |
| $^{260}$Ns | 113.020±0.310 |
| $^{261}$Ns | 113.070±0.170 |
| $^{262}$Ns | 114.560±0.110 |
| $^{263}$Ns | 114.680±0.090 |
| $^{264}$Ns | 116.300±0.080 |
| $^{265}$Ns | 116.670±0.100 |
| $^{266}$Ns | 118.530±0.120 |
| $^{267}$Ns | 119.100±0.140 |
| $^{255}$Hs | 115.660±3.350 |
| $^{256}$Hs | 115.280±2.700 |
| $^{257}$Hs | 116.330±2.180 |
| $^{258}$Hs | 116.430±1.420 |
| $^{259}$Hs | 117.750±0.940 |
| $^{260}$Hs | 117.380±0.720 |
| $^{261}$Hs | 118.500±0.550 |
| $^{262}$Hs | 118.520±0.290 |
| $^{263}$Hs | 119.890±0.180 |
| $^{264}$Hs | 119.800±0.140 |
| $^{265}$Hs | 121.240±0.110 |
| $^{266}$Hs | 121.480±0.120 |
| $^{267}$Hs | 123.150±0.150 |
| $^{257}$Mt | 122.260±4.050 |
| $^{258}$Mt | 123.420±3.270 |
| $^{259}$Mt | 123.790±2.120 † |
| $^{260}$Mt | 124.890±1.620 |
| $^{261}$Mt | 124.540±1.240 |
| $^{262}$Mt | 125.620±0.950 |
| $^{263}$Mt | 125.720±0.500 |
| $^{264}$Mt | 126.870±0.360 |
| $^{265}$Mt | 126.670±0.260 |

| Isotope | Mass Excess |
|---|---|
| $^{266}$Mt | 127.970±0.190 |
| $^{267}$Mt | 128.140±0.160 |
| $^{259}$110 | 128.850±4.900 |
| $^{260}$110 | 129.010±3.720 |
| $^{261}$110 | 130.380±2.840 |
| $^{262}$110 | 130.190±2.170 |
| $^{263}$110 | 131.350±1.660 |
| $^{264}$110 | 131.230±1.160 |
| $^{265}$110 | 132.460±0.810 |
| $^{266}$110 | 132.260±0.570 |
| $^{267}$110 | 133.500±0.410 |
| $^{261}$111 | 136.610±4.980 † |
| $^{262}$111 | 138.140±3.790 † |
| $^{263}$111 | 138.030±2.900 † |
| $^{264}$111 | 138.970±2.380 † |
| $^{265}$111 | 138.930±1.660 † |
| $^{266}$111 | 140.160±1.170 † |
| $^{267}$111 | 139.900±0.830 † |
| $^{264}$112 | 144.190±4.150 |
| $^{265}$112 | 145.210±3.410 |
| $^{266}$112 | 145.360±2.380 |
| $^{267}$112 | 146.660±1.680 |
| $^{266}$113 | 152.760±4.880 † |
| $^{267}$113 | 153.250±3.390 † |