

IUPAC Periodic Table of the Elements

| | | | | | | | | | | | | | | | | | | |
|--|---|--|---|---|--|---|--|--|--|--|--|---|---|---|---|---|---|--|
| 1 | | | | | | | | | | | | | 18 | | | | | |
| 1 H hydrogen 1.0080 ± 0.0002 | 2 | | | | | | | | | | | 2 He helium 4.0026 ± 0.0001 | | | | | | |
| 3 Li lithium 6.94 ± 0.06 | 4 Be beryllium 9.0122 ± 0.0001 | Key: atomic number Symbol name abridged standard atomic weight | | | | | | | | | | | 5 B boron 10.81 ± 0.02 | 6 C carbon 12.011 ± 0.002 | 7 N nitrogen 14.007 ± 0.001 | 8 O oxygen 15.999 ± 0.001 | 9 F fluorine 18.998 ± 0.001 | 10 Ne neon 20.180 ± 0.001 |
| 11 Na sodium 22.990 ± 0.001 | 12 Mg magnesium 24.305 ± 0.002 | 3 | | | | | | | | | | | 13 Al aluminium 26.982 ± 0.001 | 14 Si silicon 28.085 ± 0.001 | 15 P phosphorus 30.974 ± 0.001 | 16 S sulfur 32.06 ± 0.02 | 17 Cl chlorine 35.45 ± 0.01 | 18 Ar argon 39.95 ± 0.16 |
| 19 K potassium 39.098 ± 0.001 | 20 Ca calcium 40.078 ± 0.004 | 21 Sc scandium 44.956 ± 0.001 | 22 Ti titanium 47.867 ± 0.001 | 23 V vanadium 50.942 ± 0.001 | 24 Cr chromium 51.996 ± 0.001 | 25 Mn manganese 54.938 ± 0.001 | 26 Fe iron 55.845 ± 0.002 | 27 Co cobalt 58.933 ± 0.001 | 28 Ni nickel 58.693 ± 0.001 | 29 Cu copper 63.546 ± 0.003 | 30 Zn zinc 65.38 ± 0.02 | 31 Ga gallium 69.723 ± 0.001 | 32 Ge germanium 72.630 ± 0.008 | 33 As arsenic 74.922 ± 0.001 | 34 Se selenium 78.971 ± 0.008 | 35 Br bromine 79.904 ± 0.003 | 36 Kr krypton 83.798 ± 0.002 | |
| 37 Rb rubidium 85.468 ± 0.001 | 38 Sr strontium 87.62 ± 0.01 | 39 Y yttrium 88.906 ± 0.001 | 40 Zr zirconium 91.224 ± 0.002 | 41 Nb niobium 92.906 ± 0.001 | 42 Mo molybdenum 95.95 ± 0.01 | 43 Tc technetium [97] | 44 Ru ruthenium 101.07 ± 0.02 | 45 Rh rhodium 102.91 ± 0.01 | 46 Pd palladium 106.42 ± 0.01 | 47 Ag silver 107.87 ± 0.01 | 48 Cd cadmium 112.41 ± 0.01 | 49 In indium 114.82 ± 0.01 | 50 Sn tin 118.71 ± 0.01 | 51 Sb antimony 121.76 ± 0.01 | 52 Te tellurium 127.60 ± 0.03 | 53 I iodine 126.90 ± 0.01 | 54 Xe xenon 131.29 ± 0.01 | |
| 55 Cs caesium 132.91 ± 0.01 | 56 Ba barium 137.33 ± 0.01 | 57-71 lanthanoids | 72 Hf hafnium 178.49 ± 0.01 | 73 Ta tantalum 180.95 ± 0.01 | 74 W tungsten 183.84 ± 0.01 | 75 Re rhenium 186.21 ± 0.01 | 76 Os osmium 190.23 ± 0.03 | 77 Ir iridium 192.22 ± 0.01 | 78 Pt platinum 195.08 ± 0.02 | 79 Au gold 196.97 ± 0.01 | 80 Hg mercury 200.59 ± 0.01 | 81 Tl thallium 204.38 ± 0.01 | 82 Pb lead 207.2 ± 1.1 | 83 Bi bismuth 208.98 ± 0.01 | 84 Po polonium [209] | 85 At astatine [210] | 86 Rn radon [222] | |
| 87 Fr francium [223] | 88 Ra radium [226] | 89-103 actinoids | 104 Rf rutherfordium [267] | 105 Db dubnium [268] | 106 Sg seaborgium [269] | 107 Bh bohrium [270] | 108 Hs hassium [269] | 109 Mt meitnerium [277] | 110 Ds darmstadtium [281] | 111 Rg roentgenium [282] | 112 Cn copernicium [285] | 113 Nh nihonium [286] | 114 Fl flerovium [290] | 115 Mc moscovium [290] | 116 Lv livermorium [293] | 117 Ts tennessine [294] | 118 Og oganeson [294] | |



INTERNATIONAL UNION OF
PURE AND APPLIED CHEMISTRY

| | | | | | | | | | | | | | | |
|--|--|---|--|--|---|---|---|--|---|--|---|--|--|---|
| 57 La lanthanum 138.91 ± 0.01 | 58 Ce cerium 140.12 ± 0.01 | 59 Pr praseodymium 140.91 ± 0.01 | 60 Nd neodymium 144.24 ± 0.01 | 61 Pm promethium [145] | 62 Sm samarium 150.36 ± 0.02 | 63 Eu europium 151.96 ± 0.01 | 64 Gd gadolinium 157.25 ± 0.03 | 65 Tb terbium 158.93 ± 0.01 | 66 Dy dysprosium 162.50 ± 0.01 | 67 Ho holmium 164.93 ± 0.01 | 68 Er erbium 167.26 ± 0.01 | 69 Tm thulium 168.93 ± 0.01 | 70 Yb ytterbium 173.05 ± 0.02 | 71 Lu lutetium 174.97 ± 0.01 |
| 89 Ac actinium [227] | 90 Th thorium 232.04 ± 0.01 | 91 Pa protactinium 231.04 ± 0.01 | 92 U uranium 238.03 ± 0.01 | 93 Np neptunium [237] | 94 Pu plutonium [244] | 95 Am americium [243] | 96 Cm curium [247] | 97 Bk berkelium [247] | 98 Cf californium [251] | 99 Es einsteinium [252] | 100 Fm fermium [257] | 101 Md mendelevium [258] | 102 No nobelium [259] | 103 Lr lawrencium [262] |

For notes and updates to this table, see www.iupac.org. This version is dated 4 May 2022.
Copyright © 2022 IUPAC, the International Union of Pure and Applied Chemistry.