

# Periodic Table of the Elements

**atomic number** (top left of element box)

**atomic mass** (top right of element box)  
( ) mass of most stable isotope

**symbol** (center of element box)

**name** (bottom of element box)

red gas  
blue liquid  
black solid  
white synthetically prepared

- alkali metals
- alkaline earth metals
- transitional metals
- other metals
- nonmetals
- noble gases
- unknown chemical properties

|                      |                       |                       |                            |                      |                         |                        |                       |                         |                       |                    |                     |                      |                       |                      |                       |                      |                     |                      |                     |                       |                   |                      |                   |
|----------------------|-----------------------|-----------------------|----------------------------|----------------------|-------------------------|------------------------|-----------------------|-------------------------|-----------------------|--------------------|---------------------|----------------------|-----------------------|----------------------|-----------------------|----------------------|---------------------|----------------------|---------------------|-----------------------|-------------------|----------------------|-------------------|
| 1<br>H<br>Hydrogen   |                       |                       |                            |                      |                         |                        |                       |                         |                       |                    |                     |                      |                       |                      |                       |                      | 2<br>He<br>Helium   |                      |                     |                       |                   |                      |                   |
| 3<br>Li<br>Lithium   | 4<br>Be<br>Beryllium  |                       |                            |                      |                         |                        |                       |                         |                       |                    |                     |                      |                       |                      |                       |                      |                     | 5<br>B<br>Boron      | 6<br>C<br>Carbon    | 7<br>N<br>Nitrogen    | 8<br>O<br>Oxygen  | 9<br>F<br>Fluorine   | 10<br>Ne<br>Neon  |
| 11<br>Na<br>Sodium   | 12<br>Mg<br>Magnesium |                       |                            |                      |                         |                        |                       |                         |                       |                    |                     |                      |                       |                      |                       |                      |                     | 13<br>Al<br>Aluminum | 14<br>Si<br>Silicon | 15<br>P<br>Phosphorus | 16<br>S<br>Sulfur | 17<br>Cl<br>Chlorine | 18<br>Ar<br>Argon |
| 19<br>K<br>Potassium | 20<br>Ca<br>Calcium   | 21<br>Sc<br>Scandium  | 22<br>Ti<br>Titanium       | 23<br>V<br>Vanadium  | 24<br>Cr<br>Chromium    | 25<br>Mn<br>Manganese  | 26<br>Fe<br>Iron      | 27<br>Co<br>Cobalt      | 28<br>Ni<br>Nickel    | 29<br>Cu<br>Copper | 30<br>Zn<br>Zinc    | 31<br>Ga<br>Gallium  | 32<br>Ge<br>Germanium | 33<br>As<br>Arsenic  | 34<br>Se<br>Selenium  | 35<br>Br<br>Bromine  | 36<br>Kr<br>Krypton |                      |                     |                       |                   |                      |                   |
| 37<br>Rb<br>Rubidium | 38<br>Sr<br>Strontium | 39<br>Y<br>Yttrium    | 40<br>Zr<br>Zirconium      | 41<br>Nb<br>Niobium  | 42<br>Mo<br>Molybdenum  | 43<br>Tc<br>Technetium | 44<br>Ru<br>Ruthenium | 45<br>Rh<br>Rhodium     | 46<br>Pd<br>Palladium | 47<br>Ag<br>Silver | 48<br>Cd<br>Cadmium | 49<br>In<br>Indium   | 50<br>Sn<br>Tin       | 51<br>Sb<br>Antimony | 52<br>Te<br>Tellurium | 53<br>I<br>Iodine    | 54<br>Xe<br>Xenon   |                      |                     |                       |                   |                      |                   |
| 55<br>Cs<br>Cesium   | 56<br>Ba<br>Barium    | 57<br>La<br>Lanthanum | 72<br>Hf<br>Hafnium        | 73<br>Ta<br>Tantalum | 74<br>W<br>Tungsten     | 75<br>Re<br>Rhenium    | 76<br>Os<br>Osmium    | 77<br>Ir<br>Iridium     | 78<br>Pt<br>Platinum  | 79<br>Au<br>Gold   | 80<br>Hg<br>Mercury | 81<br>Tl<br>Thallium | 82<br>Pb<br>Lead      | 83<br>Bi<br>Bismuth  | 84<br>Po<br>Polonium  | 85<br>At<br>Astatine | 86<br>Rn<br>Radon   |                      |                     |                       |                   |                      |                   |
| 87<br>Fr<br>Francium | 88<br>Ra<br>Radium    | 89<br>Ac<br>Actinium  | 104<br>Rf<br>Rutherfordium | 105<br>Db<br>Dubnium | 106<br>Sg<br>Seaborgium | 107<br>Bh<br>Bohrium   | 108<br>Hs<br>Hassium  | 109<br>Mt<br>Meitnerium | 110<br>110            | 111<br>111         | 112<br>112          |                      | 114<br>114            |                      | 116<br>116            |                      | 118<br>118          |                      |                     |                       |                   |                      |                   |

**Lanthanide series** ▶

|                    |                          |                       |                        |                      |                      |                        |                     |                        |                     |                    |                     |                       |                      |
|--------------------|--------------------------|-----------------------|------------------------|----------------------|----------------------|------------------------|---------------------|------------------------|---------------------|--------------------|---------------------|-----------------------|----------------------|
| 58<br>Ce<br>Cerium | 59<br>Pr<br>Praseodymium | 60<br>Nd<br>Neodymium | 61<br>Pm<br>Promethium | 62<br>Sm<br>Samarium | 63<br>Eu<br>Europium | 64<br>Gd<br>Gadolinium | 65<br>Tb<br>Terbium | 66<br>Dy<br>Dysprosium | 67<br>Ho<br>Holmium | 68<br>Er<br>Erbium | 69<br>Tm<br>Thulium | 70<br>Yb<br>Ytterbium | 71<br>Lu<br>Lutetium |
|--------------------|--------------------------|-----------------------|------------------------|----------------------|----------------------|------------------------|---------------------|------------------------|---------------------|--------------------|---------------------|-----------------------|----------------------|

**Actinide series** ▶

|                     |                          |                    |                       |                       |                       |                    |                       |                         |                         |                      |                          |                       |                         |
|---------------------|--------------------------|--------------------|-----------------------|-----------------------|-----------------------|--------------------|-----------------------|-------------------------|-------------------------|----------------------|--------------------------|-----------------------|-------------------------|
| 90<br>Th<br>Thorium | 91<br>Pa<br>Protactinium | 92<br>U<br>Uranium | 93<br>Np<br>Neptunium | 94<br>Pu<br>Plutonium | 95<br>Am<br>Americium | 96<br>Cm<br>Curium | 97<br>Bk<br>Berkelium | 98<br>Cf<br>Californium | 99<br>Es<br>Einsteinium | 100<br>Fm<br>Fermium | 101<br>Md<br>Mendelevium | 102<br>No<br>Nobelium | 103<br>Lr<br>Lawrencium |
|---------------------|--------------------------|--------------------|-----------------------|-----------------------|-----------------------|--------------------|-----------------------|-------------------------|-------------------------|----------------------|--------------------------|-----------------------|-------------------------|