



Periodic table: ~ 100 elements.

Building blocks of atoms: fundamental particles.

particle	charge	mass
electron	$q_e = -e$	$m_e = 9.109 \times 10^{-31} \text{ kg}$
proton	$q_p = +e$	$m_p = 1.673 \times 10^{-27} \text{ kg}$
neutron	$q_n = 0$	$m_n = 1.675 \times 10^{-27} \text{ kg}$

- SI unit of charge: 1C (Coulomb).
- Elementary charge: $e = 1.602 \times 10^{-19} \text{ C}$.
- Atomic nuclei (protons, neutron) have a radius of $\sim 1 \text{ fm} = 10^{-15} \text{ m}$.
- Atomic electron shells have a radius of $\sim 1 \text{ \AA} = 10^{-10} \text{ m}$.
- Atoms are electrically neutral (equal numbers of electrons and protons).
- Ions: atoms with one or several electrons added or removed.
- Isotopes: atoms differing in the number of neutrons.
- Positively (negatively) charged objects have a deficiency (surplus) of electrons.