

Atomic Structure

Atom - smallest particles of an element, - can take part in chemical combination and doesn't occur free in nature, - atom of Hydrogen are smallest and lightest. Eg. Na, K, Ca, H

Molecule - smallest particles of an element that can have stable and independent existence. Eg. O₂, N₂, Cl₂, P₄, S₈

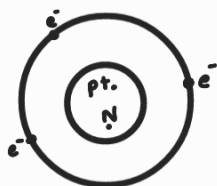
Mole - Mole is collection of 6.023×10^{23} particles. It is also called as **Avagadro's Number**.

Atomic Mass - ratio of mass of one atom of element to 1/12th part of mass of one atom of Carbon 12.

Atomic mass of an ele. = $\frac{\text{Mass of a atom of element}}{1/12 \times \text{mass of a atom of C-12}}$

Actual mass of 1 atom of element = atomic mass in amu $\times 1.66 \times 10^{-24}$ g

Molecular mass - it indicates how many times one molecule of substance is heavier in comparison to 1/12th mass of one atom of C-12



Electron - discovered by J.J. Thomson,

- the name electron was given by Stoney.

- charge on electron - Relative - 1 unit

absolute - 1.6×10^{-19} coulomb
or
 -4.8×10^{-10} e.s.u

- Mass of e - relative - 0.000543 amu absolute 9.1×10^{-28} g

- $\frac{\text{charge}}{\text{mass}}$ ($\frac{e}{m}$) ratio of e - $1.76 \times 10^8 \frac{C}{g}$