

MOLE CONCEPT AND STOICHIOMETRY

GLOSSARY:

- **Absolute Zero:** The temperature at which the volume of a gas would theoretically be reduced to zero.
- **Atom:** The smallest particle of an element that can take part in a chemical reaction.
- **Atomic Mass Unit (amu):** One twelfth ($\frac{1}{12}$) of actual mass of the most common isotope of carbon (${}^{12}_6\text{C}$).
- **Atomicity:** The number of atoms present in one molecule of an element.
- **Avogadro's Law:** Under the same conditions of temperature and pressure, equal volumes of all gases contain the same number of molecules.
- **Avogadro's number:** The number of elementary units contained in a mole of a substance.
- **Boyle's Law:** When the temperature remains constant, the volume of a given mass of dry gas is inversely proportional to its pressure.

- **Charle's Law:** When the pressure remains constant, the volume of a given mass of gas is directly proportional to the absolute temperature.
- **Chemical equation:** The reaction involving the participation of chemical substances with symbols and formula.
- **Diatomic:** Elements containing 2 atoms in their molecules.
- **Diffusion:** The intermingling of molecules of different substances.
- **Empirical Formula:** The simplest formula of a compound that gives the simple whole number ration of the various elements present in one molecule of the compound.
- **Gas Equation:** It is the equation that gives the simultaneous effect of the changes of temperature and pressure on the volume of a given mass of gas.
- **Gay Lussac's Law:** Under the constant temperature and pressure, gases react in volumes that bear a simple whole number ratio to one another and to the volumes of the products.
- **Gram atomic mass:** The atomic mass of an element expressed in grams.
- **Gram Atomic Weight:** The atomic weight of an element expressed in grams.

- **Gram Molecular Volume:** The volume occupied by one gram molecular weight of a gas at STP.
- **Gram Molecular Weight:** It is the weight in grams of a substance, which is equal to its molecular weight.
- **Mole:** The amount of the substance, containing same number of units as the number of atoms in 12 g of carbon C¹²-isotope.
- **Molecular Formula:** A chemical formula that gives the actual or exact number of atoms of the various elements in one molecule of a compound.
- **Molecular Weight:** The ratio of the weight of one molecule of a substance to the weight of one atom of hydrogen.
- **Molecule:** The smallest particle of matter that exists in the Free State.
- **Monoatomic:** Elements containing 1 atom in their molecules.
- **Percent Composition of Compounds:** The percentage by weight of each element present in the compound.
- **Polyatomic:** Elements containing more than 2 atoms in their molecules.
- **Standard Temperature and Pressure:** A temperature of 0° C or 273 K and a pressure of 760 mm of Hg or 1 atmospheric pressure.

- **Vapour Density:** The ratio of the mass of a certain volume of a gas to the mass of the same volume of hydrogen under the same conditions of temperature and pressure.
- **Vapour density:** The ratio of the mass of a certain volume of a gas or vapour to the mass of the same volume of hydrogen, under the same conditions of temperature and pressure.