

Molarity	$M = \frac{\text{moles solute}}{\text{litres solution}}$
Normality	$N = \frac{\text{gram - equivalents solute}}{\text{litres solution}}$, Normality = Molarity × Valency
Molality	$m = \frac{\text{moles solute}}{\text{kg solvent}}$
Mass-volume ratio	$g / L = \frac{\text{grams solute}}{\text{litres solution}}$
Mole fraction of solute	$\chi_s = \frac{\text{moles solute}}{\text{moles solute} + \text{moles solvent}}$
Mass percentage	$\% = \frac{\text{mass solute}}{\text{mass solution}} \times 100$
Volume-volume percentage	$\% = \frac{\text{volume solute}}{\text{volume solution}} \times 100$
Others	$\text{moles} = \frac{\text{grams}}{\text{molar mass}}, \quad g - \text{equivalents} = \frac{\text{grams}}{\text{equivalent mass}}$ $\text{Equivalent mass} = \frac{\text{molar mass}}{\text{valency}}; \quad \text{Density} = \frac{\text{Mass}}{\text{Volume}}; \quad d = \frac{m}{v}$
Ideal gas	$P V = n R T \quad \frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$ $P V = \frac{m}{M} R T \quad P \cdot M = d R T$ <p>Where:</p> <ul style="list-style-type: none"> P = Pressure (atm) V = Gas volume (L) n = Moles of gas (mol) T = Absolute temperature (K) R = 0.082 atm L mol⁻¹ K⁻¹ Molar gas constant m = Mass of gas (g) M = Molar mass (g/mol) d = Density (g/L)
Unit conversions	<p>1 atm = 760 mmHg = 760 torr = 101 325 Pa = 101 325 N/m²</p> <p>K = °C + 273.15</p> <p>s.t.p.: Standard temperature and pressure: 100 kPa, 0°C = 273.15 K</p> <p>1 mole of ideal gas has a volume of 22.4 L at s.t.p.</p>