

STATE OF MATTER

10. Van der Waals Equation : $\left[P + \frac{n^2}{V} (V - nb) \right] = nRT$

12 Combined Gas Equation : $\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$ (at constant n)

13. Dalton's law of partial pressures : $P_{\text{total}} = P_1 + P_2 + \dots + P_n$

(4) Ideal gas equation : $PV = nRT$

$M = d RT$

(SI) Charles Law : $\frac{V_1}{T_1} = \frac{V_2}{T_2}$ (at constant P and n)

(E). Avogadro's Law : $V = kn$ (at constant P and T)

(4) Partial Pressure in Terms of Mole Fraction : $P_i = P \cdot x_i$

11. Boyle's Law : $PV = \text{constant}$ (at constant T and n)

(D), Compressibility factor Z : $Z = \frac{PV}{nRT}$ (for 1 mole of Gas)