Formulas

Chemistry Reference Sheet

Ideal Gas Law: PV = nRT

Calorimetric Formulas -

Combined Gas Law: $\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$

No Phase Change: $Q = m(\Delta T)C_p$

Pressure Formula: $P = \frac{F}{A}$

Latent Heat of Fusion: $Q = m\Delta H_{\text{fus}}$

Mass-Energy Formula: $E = mc^2$

Latent Heat of Vaporization: $Q = m\Delta H_{\text{vap}}$

Constants

Volume of Ideal Gas at STP: $22.4 \frac{L}{mol}$

Speed of Light in a Vacuum: $c = 3.00 \times 10^8 \frac{\text{m}}{\text{s}}$

Specific Heat of Water: $C_p(H_2O) = 1.00 \frac{\text{cal}}{(\text{g °C})} = 4.18 \frac{\text{J}}{(\text{g °C})}$

Latent Heat of Fusion of Water: $\Delta H_{\text{fus}}(\text{H}_2\text{O}) = 80 \frac{\text{cal}}{\text{g}} = 334 \frac{\text{J}}{\text{g}}$

Latent Heat of Vaporization of Water: $\Delta H_{\text{vap}}(\text{H}_2\text{O}) = 540 \frac{\text{cal}}{\text{g}} = 2260 \frac{\text{J}}{\text{g}}$

Unit Conversions

Calorie-Joule Conversion: 1 cal = 4.184 J

Absolute Temperature Conversion: $K = {}^{\circ}C + 273$

Pressure Conversions: 1 atm = 760 mm Hg = 760 Torr = 101.325 kPa = 14.7 $\frac{\text{lbs.}}{\text{in.}^2}$ = 29.92 in. Hg