

Useful information:

Average Atomic Mass = (mass a) (fraction a) + (mass b) (fraction b) + ...

$$n = \frac{m}{M}$$

$$n = \frac{N}{N_A}$$

$$\% \text{ composition} = \frac{\text{mass of element}}{\text{mass of compound}} \times 100$$

$$\% \text{ yield} = \frac{\text{actual yield}}{\text{theoretical yield}} \times 100$$

$$C = \frac{n}{V}$$

$$C_1 V_1 = C_2 V_2$$

$$\text{ppm} = \frac{\text{mass of solute}}{\text{mass of solution}} \times 10^6$$

$$\text{ppb} = \frac{\text{mass of solute}}{\text{mass of solution}} \times 10^9$$

$$\frac{m}{m} \% = \frac{\text{mass of solute}}{\text{mass of solution}} \times 100$$

$$\frac{V}{V} \% = \frac{\text{volume of solute}}{\text{volume of solution}} \times 100$$

$$\frac{m}{V} \% = \frac{\text{mass of solute}}{\text{volume of solution}} \times 100$$

$$\text{pH} = -\log [\text{H}^+] \text{ or } [\text{H}_3\text{O}^+]$$

$$R = 8.31 \frac{\text{kPa} \cdot \text{L}}{\text{mol} \cdot \text{K}}$$

$$R = 0.0821 \frac{\text{atm} \cdot \text{L}}{\text{mol} \cdot \text{K}}$$

$$1 \text{ atm} = 101.3 \text{ kPa} = 760 \text{ mm Hg} = 760 \text{ torr} = 14.7 \text{ psi}$$

$$\text{STP} = 101.3 \text{ kPa and } 273\text{K}$$

$$\text{SATP} = 100 \text{ kPa and } 25^\circ\text{C}$$

$$T_K = T_{oC} + 273$$

$$D = \frac{m}{V}$$

$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$$

$$PV = nRT$$

$$v = \frac{V}{n}$$

$$\frac{n_1}{V_1} = \frac{n_2}{V_2}$$

$$P_{\text{total}} = P_1 + P_2 + \dots$$