Solutions

solution	a homogeneous mixture of substances
alloys	a homogeneous mixture of metals with metals, or metals with nonmetals
Solution Concentration	the amount of solute in a specific amount of solvent
Solution Concentration formulas	M of solute / M of solution or V of solute / V of solution
Molarity	mol of solute / L of solution
Dilution formula	M1V1 = M2V2
Molality	mol of solute / Kg of solvent

Mixtures

mixture	two or more substances are mixed together and keep their properties
types of mixtures	homogeneous (smooth, indistinguishable) and heterogeneous (mixed)
types of heterogeneous mixtures	suspensions and colloids
separation of mixtures	distillation (homogeneous) - filtration (heterogeneous) - crystillization - chromatography - sublimation
Brownian Motion	the random motion of particles suspended in fluids (prevents precipitation)
Tyndall Effect	the scattering of light by a medium containing small suspended particles

Dissolving

Dissolving	the process in which solute molecules are surrounded by solvent particles
Heat of Dissolving	the change in energy due to solution formation
Factors affecting the rate of dissolving	increase in temp - stirring - increase of solute surface area (powdering)
solubility of a gas in a liquid increases when temp decreases	
Henry's Law	S1P2 = S2P1 (S = solubility , P = pressure)
Colligative Properties of solution (depend on solute to solution ratio)	vapor pressure lowering - osmotic pressure - boiling point elevation - freezing point depression
vapor pressure lowering	the pressure of a vapor decreases with an increase in the no. of moles
boiling point elevation	$\Delta T = k(b) \times m$ (ΔT = b.p elevation, k(b) = elevation constant, m = molality
a liquid boils when its vapor pressure equals atmospheric pressure. K(b) changes with the solvent	
freezing point depression	$\Delta T = k(f) \times m$ (ΔT = f.p depression, k(f) = depression constant, m = molality
osmotic pressure	the additional pressure caused by the movement of water to areas of Conc. Solution
osmosis	the movement of solvent through semipermeable memebranes to areas of lower concentration

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