

CH 222 Chapter Eleven Study Guide

- Define the terms solution, solvent, solute, colligative properties, miscible and immiscible.
- Be able to use molarity, molality, weight percent, mole fraction and parts per million (ppm) interchangeably.
- Understand the difference between saturated, unsaturated and supersaturated solutions.
- Be able to use Henry's Law and Raoult's Law.
- Be able to use colligative properties to find the molar mass (molecular weight) of a solute. Also be able to use colligative properties to find the elevation in boiling point or depression of freezing point. Be able to describe these phenomena using the models discussed in class.
- Know how to use the van't Hoff *i* factor in regards to colligative properties.
- Give a molecular-level explanation for osmosis.
- Be able to use osmotic pressure to determine concentrations and/or molecular weights of solutes.
- Be aware of the many enthalpy terms: lattice energy, energy of hydration, enthalpy of solution, energy of formation, etc.
- Know the effect of pressure and temperature on solubility. Pay special attention to Le Chatelier's Principle - this is an important concept.
- Recognize the differences between a homogeneous solution, a suspension and a colloid (or colloidal dispersion).
- Be familiar with the concepts of colloid and surfactant. Be able to characterize hydrophilic and hydrophobic substances.
- Be able to solve and understand the assigned problems in problem set #5.