

Objectives Ch 15 Solutions

1. Describe the properties of solutions.
2. Describe four different types of solutions and give two examples of each.
3. Write an equation for calculating molarity of a solution. Use the equation to calculate the molarity of a solution prepared by dissolving 88.0 g of BaCl_2 in enough water to give 500 mL of solution.
4. Write an equation for calculating molality of a solution. Use the equation to calculate the molality of a solution containing 230 g of bromine (Br_2) in 600 g of carbon tetrachloride (CCl_4).
5. Write an equation for calculating mole fraction of the components of a solution. Use the equation to calculate the mole fraction of each metal in a ring which contains 4.45 g of gold, 1.21 g of silver, and 2.68 g of copper.
6. Explain what the statement, "Like dissolves like" means.
7. Describe how temperature and pressure affect the solubility of various solutes in liquid solutions.
8. Describe three factors that affect the rate of dissolving and explain their effects.
9. List four colligative properties of liquid solutions and describe the general trend as concentration of solute varies for each.
10. Write an equation for boiling point elevation of a solution. What is the boiling point elevation of a solution containing 100.0 g of ethylene glycol ($\text{C}_2\text{H}_6\text{O}_2$) in 2200.0 g of water? K_b for water is $0.52 \text{ }^\circ\text{C}/m$.
11. Write an equation for freezing point depression of a solution. What is the freezing point depression of a solution containing 125 g of ethylene glycol ($\text{C}_2\text{H}_6\text{O}_2$) in 1200.0 g of water? K_f for water is $1.86 \text{ }^\circ\text{C}/m$.
12. Define these terms:

Aqueous	Solvent	Solute	soluble	insoluble
saturated	unsaturated	supersaturated	colligative property	