

CHAPTER 13 LEARNING OBJECTIVES

Learning Objectives (sections 13.1-13.5)

You should be able to:

1. Describe the energy changes that occur in the solution process in terms of the solute-solute, solvent-solvent, and solute-solvent attractive forces; describe the role of disorder in the solution process.
2. Describe the effects of solute-solvent interactions and pressure and temperature on solubilities.
3. Define mass percentage, parts per million, mole fraction, molarity, molality, and calculate concentrations in any of these concentration units.
4. Convert concentration in one concentration unit into any other concentration unit.
5. Determine the concentration and molar mass of a nonvolatile nonelectrolyte from its effect on the colligative properties of a solution.
6. Explain the difference between the magnitude of changes in colligative properties caused by electrolytes as it compares to those caused by nonelectrolytes.
7. Describe the effects of solute concentration on the vapor pressure, boiling point, freezing point, and osmotic pressure of a solution, and calculate any of these properties given appropriate concentration data.
8. Understand and explain the boldface terms in the Summary and Key Terms section of Chapter 13 (page 517).