Section 17.2

Characteristics of Equilibrium

Objectives

1. To understand the law of chemical equilibrium
2. To learn to calculate values for the equilibrium constant
3. To understand how the presence of solids or liquids affects the equilibrium expression

Characteristics of Equilibrium

A. The Equilibrium Constant: An Introduction

- Law of chemical equilibrium
  - For a reaction of the type

    $aA + bB \rightleftharpoons cC + dD$
  - Equilibrium expression

$$K = \frac{[C]^c[D]^d}{[A]^a[B]^b}$$

- Each set of equilibrium concentrations is called an equilibrium position.

Characteristics of Equilibrium

B. Heterogeneous Equilibria

- Heterogeneous equilibria – an equilibrium system where the products and reactants are not all in the same state

The position of a heterogeneous equilibrium does not depend on the amounts of pure solids or liquids present.

The concentrations of pure solids or pure liquids involved in a chemical reaction are not included in the equilibrium expression for the reaction.