

CHAPTER OVERVIEW

14: Ionic Equilibria in Aqueous Solutions

Many reactions in aqueous solutions involve weak acids or bases or slightly soluble substances, and in such cases one or more equilibria are achieved in solution. Furthermore, the equilibrium state is usually reached almost instantaneously, and so we can use the equilibrium law to calculate the concentrations and amounts of substance of different species in solution. Such information enables us to understand, predict, and control what will happen in solution, and it has numerous practical applications. Equilibrium constants may be used to obtain information about reactions in solution, and in many cases the results of equilibrium calculations will be applied to practical problems.

Topic hierarchy

- 14.1: Prelude to Ionization of Water
- 14.2: Ionization of Water
- 14.3: pH and pOH
- 14.4: The pH of Solutions of Weak Acids
- 14.5: The pH of Solutions of Weak Bases
- 14.6: Polyprotic Acids and Bases
- 14.7: Conjugate Acid-Base Pairs and pH
 - 14.7.1: Foods- From Cleaning and Disinfection to Microbial Nutrition and Protein Modification
- 14.8: Buffer Solutions
 - 14.8.1: Foods- Food Additives
 - 14.8.2: Foods- Production of Food Ingredients
 - 14.8.3: Foods- The Effect of Polyols
- 14.9: Indicators
- 14.10: Titration Curves
 - 14.10.1: Foods- Acid Value and the Quality of Fats and Oils
- 14.11: The Solubility Product
- 14.12: The Common-Ion Effect
 - 14.12.1: Foods- Calcium Tartrate and Treatment of Wine Waster-Waters
- 14.13: The Solubilities of Salts of Weak Acids

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