Acids, Bases, And Salts

Objectives

Understand the properties and behavior of acids and bases

Learn about the different methods used to measure acidity and basicity

Explore the chemical reactions and applications of acids, bases, and salts

Terms

Acid: a substance that donates hydrogen ions (H+) when dissolved in water

Base: a substance that accepts hydrogen ions (H+) when dissolved in water

Salt: a neutral compound that is formed by the chemical reaction between an acid and a base

pH: a measure of acidity or basicity on a scale of 0-14, where 7 is neutral, less than 7 is acidic and greater than 7 is basic

Acids and bases are important classes of compounds that play a fundamental role in many chemical reactions and processes. Acids are defined as substances that donate hydrogen ions (H+) when dissolved in water, while bases are defined as substances that accept hydrogen ions when dissolved in water.

The acidity or basicity of a substance can be measured using the pH scale, which ranges from 0 to 14. A pH of 7 is neutral, a pH less than 7 is acidic, and a pH greater than 7 is basic. Common examples of acids include hydrochloric acid (HCl), sulfuric acid (H2SO4), and acetic acid (CH3COOH). Common examples of bases include sodium hydroxide (NaOH), calcium hydroxide (Ca(OH)2), and ammonia (NH3).

Acids and bases can react to form a neutral compound called a salt. This reaction is known as a neutralization reaction. For example, hydrochloric acid (HCl) and sodium hydroxide (NaOH) react to form salt and water: HCl + NaOH → NaCl + H2O

Acids and bases have a wide range of applications in industry and everyday life. Acids are used in the production of fertilizers, cleaning agents, and food and drink products, while bases are used in cleaning agents, personal

care products, and medicine. Salts are used in a variety of applications, including food preservation, water treatment, and the production of fertilizers and other chemicals.

Questions

What are acids and bases, and how do they differ from each other?

How is the acidity or basicity of a substance measured using the pH scale?

What is a salt and how is it formed?

What are some common examples of acids, bases, and salts?

What are some common applications of acids, bases, and salts in industry and everyday life?