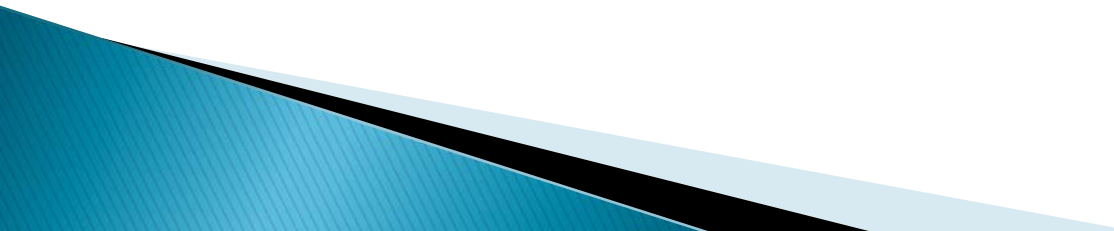


Water and Solutions

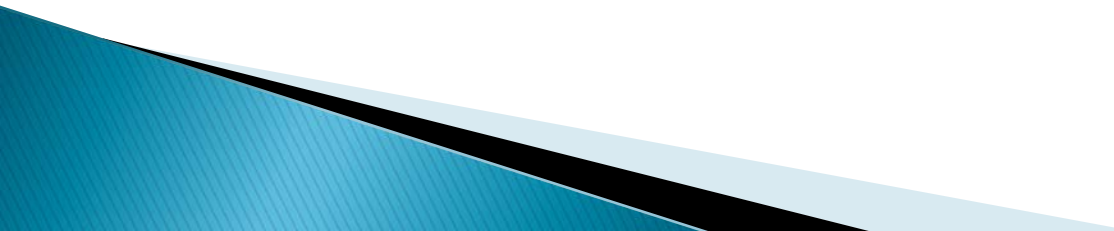
Section 3-2

Properties of Water

Key Idea: Most of the unique properties of **water** result because **water** molecules form hydrogen bonds with each other.

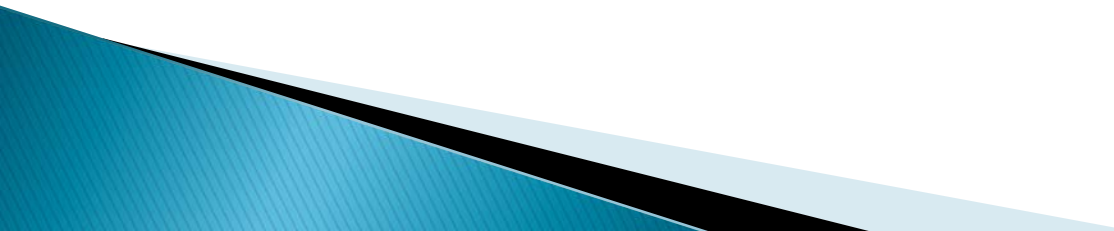
- ▶ **Cohesion** is the attraction of particles of the same substance, such as water.
 - ▶ **Adhesion** is the attraction between particles of different substances .
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Properties of Water

- ▶ **Water can absorb a large amount of heat without changing temperature.**
 - ▶ **This property can help organisms maintain a constant internal temperature.**
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Solutions

Key Idea: In solutions, some substances change the balance of **these ions**.

- ▶ A **solution** is a mixture in which ions or molecules of one or more substances are evenly distributed in another substance.
 - ▶ An **acid** is a compound that forms extra hydronium ions when dissolved in water.
 - ▶ A **base** is a compound that forms extra hydroxide ions when dissolved in water.
 - ▶ **pH** is a measure of how acidic or basic a solution is.
 - ▶ A **buffer** is a substance that reacts to prevent pH changes in a solution.
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Acids and Bases

- ▶ **When acids and bases are mixed, the extra hydronium and hydroxide ions react to form water.**

pH and Buffers

- ▶ Each one-point increase in pH represents a 10-fold decrease in hydronium ion concentration.
 - ▶ Pure water has a pH of 7. Acidic solutions have a pH below 7, and basic solutions have a pH above 7.
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