

## 18

## REACTION RATES AND EQUILIBRIUM

## SECTION 18.1 RATES OF REACTION (pages 541–543)

This section explains what is meant by the rate of a chemical reaction. It also uses collision theory to derive from the rate of a chemical reaction an equation for the reaction conditions.

## ► Collision Theory (pages 541–543)

1. How can rates of chemical change expressed?

Rates of chemical change are usually expressed in dimensions of moles/liters/second per unit time.

2. Look at Figure 18.1 on page 541. In a typical reaction, as time passes, the amount of reactants decreases and the amount of products increases.

3. What does collision theory say about the reaction of atoms, ions, or molecules resulting in ionic products when they collide?

Collision theory states that the molecules must have enough kinetic energy when they collide to form products.

4. Look at the Space below. One shows a collision that results in the formation of product. Label it effective collision. Label the other collision's distribution collision.



ineffective collision

effective collision

5. In the following sentence, true or false? Particles lacking the necessary kinetic energy to react become apart unchanged when they collide. True

6. Look at Figure 18.3 on page 543. Which arrangement of atoms models the least amount of energy?

- a. reactants  
b. activated complex  
c. products

# Chapter 18 Reaction Rates And Equilibrium 457 Answer Key

**IM Harris**



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