

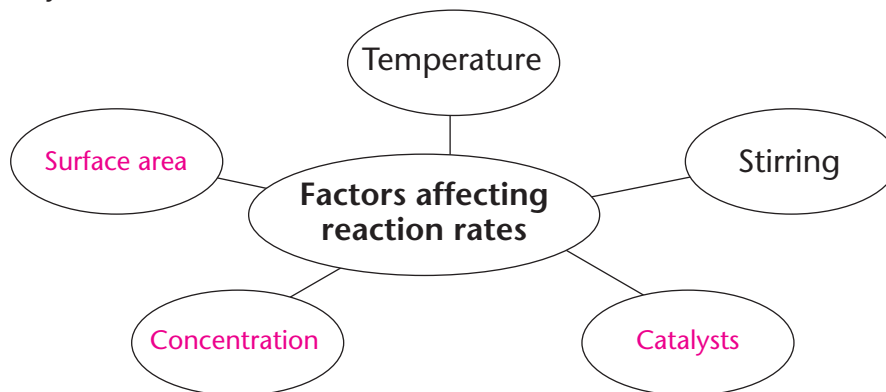
Chapter 7 Chemical Reactions

Section 7.4 Reaction Rates

(pages 212–215)

*This section discusses the factors that affect reaction rates.***Reading Strategy** (page 212)

Building Vocabulary As you read, complete the web diagram below with key terms from this section. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

**Reactions Over Time** (page 212)

- Any change that happens over time can be expressed as a(n) rate.
- A reaction rate is the rate at which reactants change into products over time.

Factors Affecting Reaction Rates (pages 213–215)

- Is the following sentence true or false? The rate of any reaction is a constant that does not change when the reaction conditions change.
false
- Generally, an increase in temperature will increase the reaction rate.
- Is the following sentence true or false? Storing milk in a refrigerator stops the reactions that would cause the milk to spoil. false
- An increase in surface area _____ the exposure of reactants to one another. Circle the correct answer.

 increases decreases

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7. Stirring the reactants in a reaction mixture will generally _____ the reaction rate. Circle the correct answer.
- decrease maintain increase
8. Is the following sentence true or false? Increasing the concentration of the reactants will generally slow down a chemical reaction.
- false
9. Is the following sentence true or false? A piece of material dipped in a concentrated dye solution will change color more quickly than in a dilute dye solution. true

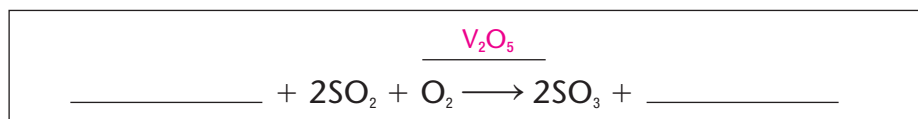
10. A catalyst is a substance that affects the rate of a reaction without being used up in the reaction.

11. Circle the letters of the sentences that correctly identify why chemists use catalysts.

- a. to speed up a reaction
 b. to enable a reaction to occur at a higher temperature
c. to enable a reaction to occur at a lower temperature

12. Is the following sentence true or false? Because a catalyst is quickly consumed in a reaction, it must be added to the reaction mixture over and over again to keep the reaction going. false

13. Fill in the blank where the catalyst V_2O_5 should go in the formula shown and write it in the correct location.



14. Circle the letter of the correct answer. In the reaction represented by the equation $2H_2O_2 \xrightarrow{Pt} 2H_2O + O_2$, which substance acts as a catalyst?

- a. H_2O_2
b. Pt
 c. H_2O

15. One way that a catalyst can lower the energy barrier of a reaction is by providing a surface on which the _____ can come together. Circle the correct answer.

catalysts reacting particles products