

**Section 16.2 Factors Affecting Reaction Rates**

In your textbook, read about the factors that affect reaction rates (reactivity, concentration, surface, area, temperature, and catalysts).

In the space at the left, write *true* if the statement is true; if the statement is false, change the italicized word to make it true.

- \_\_\_\_\_ 1. *Decreasing* the concentration of reactants increases the collision frequency between reacting particles.
- \_\_\_\_\_ 2. A *heterogeneous* catalyst exists in a different physical state than the reaction it catalyzes.
- \_\_\_\_\_ 3. Increasing the *concentration* of a substance increases the kinetic energy of the particles that make up the substance.
- \_\_\_\_\_ 4. Catalysts increase the rates of chemical reactions by *raising* the activation energy of the reactions.
- \_\_\_\_\_ 5. *Increasing* the surface area of a reactant increases the rate of the reaction.
- \_\_\_\_\_ 6. Raising the temperature of a reaction increases the rate of the reaction by increasing the *energy* of the collisions between reacting particles.

Answer the following questions.

7. A chemist heated a sample of steel wool in a burner flame exposed to oxygen in the air. He also heated a sample of steel wool in a container of nearly 100% oxygen. The steel-wool sample in the container reacted faster than the other sample. Explain why.
- \_\_\_\_\_
- \_\_\_\_\_
8. Would the chemist have observed the same results if he used a block of steel instead of steel wool? Explain your answer.
- \_\_\_\_\_
- \_\_\_\_\_
9. How would the reaction have differed if the steel wool was not heated?
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