

Name _____

Hot or Cold? How Temperature Affects the Speed of Chemical Reactions

Short Answer Key

1. An example of temperature affecting a chemical reaction in daily life is the browning of bread when toasted. Increased temperature speeds up the Maillard reaction, resulting in a browned, flavorful crust.
2. In car engines, increasing the temperature of the combustion process speeds up the chemical reactions between fuel and oxygen, leading to better engine performance and efficiency.
3. Rising global temperatures can impact the rate of chemical reactions in the atmosphere, leading to increased ozone depletion and altered precipitation patterns. In ocean chemistry, higher temperatures can affect the solubility of gases like carbon dioxide, influencing ocean acidity and marine ecosystems.
4. An exothermic reaction releases heat to its surroundings. An example is the combustion of gasoline in car engines, where the heat generated powers the engine.
5. Safety measures are essential when working with temperature-sensitive reactions because unexpected results can lead to accidents or equipment damage. Proper protective gear, equipment, and a controlled environment are crucial.

