Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#11

Controlling Chemical Reactions Lab

A chemical reaction occurs when two or more substances combine to create one or more new substances. Generally, chemical reactions cannot be undone. Chemical reactions have rates. A rate is the amount of time it takes for the reaction to occur. If the reaction occurs faster, the rate is faster, if the reaction occurs slowly, the rate is slow.

The rate of a chemical reaction can be influenced to be faster or slower. Which of the following do you think might speed up the reaction rate of a reaction between Alka Seltzer tablets and water? You may choose more than one: Higher temperature, lower temperature, chopping the Alka seltzer into small pieces, leaving the Alka seltzer in one piece, a high amount of reactants, a low amount of reactants.

Choose the factors that you believe will increase the rate of reaction and explain why you think they will do that.

We will only investigate the effect of temperature on reaction rate in class today.

Procedure

1. Fill one beaker with 100mL of cold water.
2. Use the thermometer to record the temperature of the water.
3. Unwrap the tablet and place it into the cup. Start the stopwatch.
4. When the tablet has dissolved completely, record the time on your graph.
5. Repeat steps 1-4 with hot and room temperature water.

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| --- | --- | --- | --- | --- | --- |
| Water | Observations | Temperature | Time Start | Time End | Rate of Reaction |
| Cold |  |  |  |  |  |
| Room Temp |  |  |  |  |  |
| Hot |  |  |  |  |  |

Lab Questions

1. What is a chemical reaction?
2. How can we speed up a chemical reaction?
3. How can we slow down a chemical reaction?
4. How did the hot temperature affect the rate of the reaction in this lab?
5. Explain why the reaction occurs this way. Use the words molecules and movement in your answer.