

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

# Reaction Rate Lab

Chemical reactions occur at a number of different speeds. They may be very fast or they may be very slow. The reaction rate can often be sped up or slowed down. In this lab, you will investigate a few factors which affect the rate of a reaction.

## Materials:

Timer (clock, watch or cell phone)  
Film Canister with Lid  
3 ½ Alka-Seltzer tablets  
Graduated cylinder  
Paper towels

## Procedure:

In this lab you will test the reaction rate of an Alka-Seltzer tablet in 6 different situations.

- |                           |  |                                    |
|---------------------------|--|------------------------------------|
| 1. ½ tablet in Cold Water | 3. ½ tablet in room temp water         | 5. ½ tablet at room temp, agitated |
| 2. ½ tablet in Hot water  | 4. ½ tablet in room temp water crushed | 6. 1 whole tablet at room temp     |

For each test, you must keep accurate time on how long it takes for the reaction to cause the lid of the film canister to pop off.

## Tests:

1. Place ½ of a tablet into the film canister containing 20 mL **COLD** water. Quickly close the lid and time how long it takes for the lid to pop off.  
What factor impacted this rate of reaction? Time: \_\_\_\_\_
2. Place ½ of a tablet into the film canister containing 20 mL **HOT** water. Quickly close the lid and time how long it takes for the lid to pop off.  
What factor impacted this rate of reaction? Time: \_\_\_\_\_
3. Place ½ of a tablet into the film canister containing 20 mL room temperature water. Quickly close the lid and time how long it takes for the lid to pop off.  
What factor impacted this rate of reaction? Time: \_\_\_\_\_
4. Place ½ of a **CRUSHED** tablet into the film canister containing 20mL room temperature water. Quickly close the lid and time how long it takes for the lid to pop off.  
What factor impacted this rate of reaction? Time: \_\_\_\_\_
5. Place ½ of a tablet into the film canister containing 20 mL room temperature water. Quickly close the lid and swirl to agitate, time how long it takes for the lid to pop off.  
What factor impacted this rate of reaction? Time: \_\_\_\_\_
6. Place **1 WHOLE** tablet into the film canister containing 20 mL room temperature water. Quickly close the lid and time how long it takes for the lid to pop off.  
What factor impacted this rate of reaction? Time: \_\_\_\_\_

### Lab Questions:

1. Which experiment is your control?
2. What was the time difference between hot and cold water reactions?
3. Why was there a difference?
4. What was the time difference between crushed and solid tablets?
5. Why was there a difference?
6. Which of the 6 reaction rate factors you tested today caused the reaction to occur the fastest?
7. Why do you think it made it occur faster than the other 5?
8. Which experiment increased surface area?