**Film Canister Rockets**

**Question:** What can we change to affect the length of time it takes for the rocket to launch?

**Purpose:** To investigate how we can affect the rate of reactions.

**Hypothesis:** If…then…

**Materials:** Make a list.

**Procedure: 1.** Put on your safety glasses.

**2.** Divide an Alka-Seltzer tablet into four equal pieces.

**3.** Fill a film canister one-half full of water.

**4.** Place one of the divided pieces of Alka seltzer tablet into the canister as you start the time. Place the lid on right away. **(Baseline Sample)**

**5.** Stop timing when the lid comes off.

**6.** Repeat step 5 to 7 to test your hypothesis with different tablet pieces changed to match your hypothesis.

**7.** Complete steps 1-8 again to get a second trial.

**Observations:** Record your results in the following table.

Table 1: Time trials for three surface areas of Alka seltzer tablets

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Trial | What you changed in the experiment | Time 1 | Time 2 | Average Time |
| Trial #1 |  |  |  |  |
| Trial #2 |  |  |  |  |
| Trial #3 |  |  |  |  |
| Trial # 4 |  |  |  |  |

Discussion: Answer the following questions:

1. What did you change for each of your 3 trials?
2. Why is it important to use the same amount of alka seltzer tablet for each test?
3. Is the reaction between the water and the alka seltzer tablet a physical or chemical change? How do you know?

Conclusion: Include 1 or 2 key points.

Were your hypothesis correct?

Keep in mind:

**Surface Area** is the exposed matter of a solid substance.

You can think of this as the part that is free to react.