

Volcano Eruption Lab

Name: _____

Date: _____

Period: _____ Page: _____

Background: Volcanoes tend to erupt either in a violently explosive manner or in quiet and non-explosive manner. To determine why this happens we will be using alka seltzer and some model volcanoes that will help us better understand why this happens. Think of the amount of alka seltzer as the amount of silica present in volcanic magma. Also, stop to consider what we have already covered in class.

Purpose: To investigate which factors determine whether a volcano will erupt violently (explosive) and which factors determine whether a volcano will erupt quietly (non-explosive).

Hypothesis: Which type of magma (basaltic or rhyolitic) do you think will produce a more explosive eruption?

Materials: Alka Seltzer (silica), film canister, and water

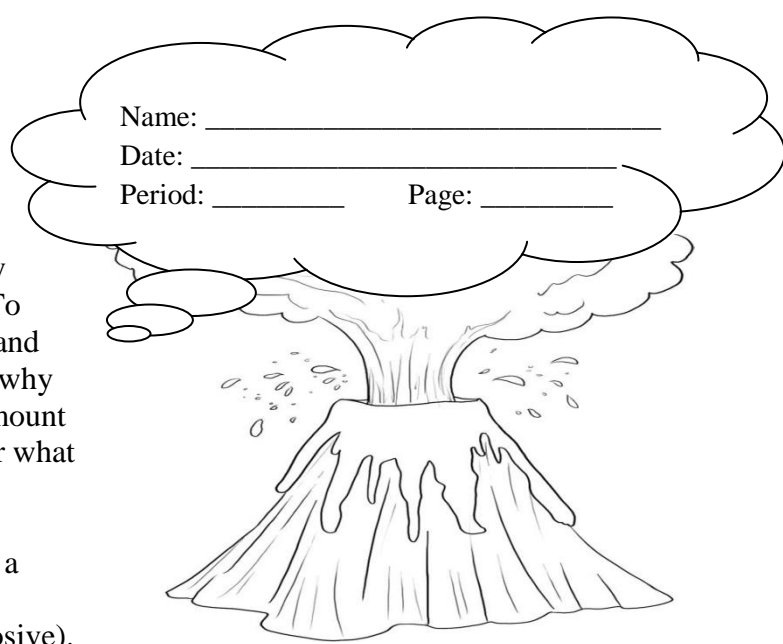
Procedure: Break your alka seltzer tablet into four pieces that are about the same size.

Basaltic Magma: Read Carefully!!!

1. Make sure the lid on your basaltic magma has holes along the top of it. Do not mix up the lids or it will affect your data.
2. Fill up your film canister with 30 mL of water (up to the blue line).
3. Read carefully, the next step happens fast. Place your alka seltzer (silica) into your film canister and QUICKLY place the lid over the film canister.
4. Immediately after you do this, start timing.
5. Stop the timer when the lid pops or off after 2 minutes if nothing happens.
6. Record your observations in your results in the data table.
7. Plot your data point (amount of silica vs. time) from trial 1 on the graph below.
8. Pour your basaltic magma down the drain and clean up any mess.

Rhyolitic Magma:

1. Make sure the lid on your Rhyolitic magma has NO holes in the top of it. Do not mix up the lids or it will affect your data.
2. Fill up your film canister with 20 mL of water (up to the blue line).
3. Read carefully, the next step happens fast. Place your alka seltzer (silica) into your film canister and QUICKLY place the lid over the film canister.
4. Immediately after you do this start timing! Stop the timer when the lid pops or off after 2 minutes if nothing happens.
5. Record your observations in your results in the data table.
6. Pour your Rhyolitic magma down the drain and clean up any mess.
7. Repeat steps 1-7 two more times with the remaining two alka seltzer table pieces



Data:

Magma/Lava Type:	Basaltic	Magma/Lava Type:	Rhyolitic	Rhyolitic	Rhyolitic
Trial #:	1	Trial #:	1	2	3
Time:	__ : _____	Time:			
Observations: Did it explode or not explode? Why or why not?		Observations: Did it explode or not explode? Why or why not?			

Conclusion: Answer in complete sentences

1. What was the purpose of this lab?
2. Which magma released gases? Did it produce a quiet or explosive eruption?
3. Which magma trapped gases? Did it produce a quiet or explosive eruption?
4. What type of volcano will most likely be made of basaltic lava? Would it be a quiet or explosive eruption?
5. What type of volcano will most likely be made of rhyolitic lava? Would it be a quiet or explosive eruption?
6. Considering what we have learned in class, explain in detail why some volcanoes erupt violently and explosively while others erupt quietly and non-explosively.