

# Snowstorm in a Jar

Recommended Ages: 4-12

One of the best ways to learn about chemistry is to experiment with **chemical reactions**. A *chemical reaction* happens when you add two substances together and they create a new substance by rearranging their molecules. We can use a chemical reaction between acids and bases to create a flurry of activity in a jar.

## Materials:

- Oil (vegetable, olive, etc.)
- Clear Jar or Cup
- Water
- Blue Food Coloring
- Alka Seltzer or White Paint

## Procedure:

1. Fill your jar about 3/4ths of the way with oil.
2. In a separate bowl or cup, add water and white paint. Make it as thin or thick as you like.
3. Pour the white paint mixture into your jar. What happens when you do this?
4. Add your Alka Seltzer tablet to the jar. Now what happens?



## Things to change and try!

- Try changing the size of the Alka Seltzer pieces!
- Change the temperature of the water. Does it change the reaction?



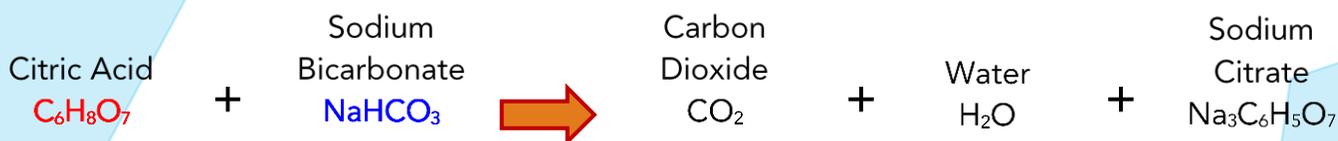
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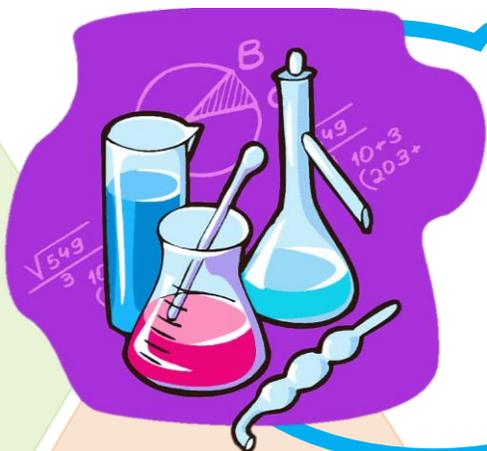
**What happened?** Alka Seltzer contains **sodium bicarbonate** and **citric acid**.

When added to water, the tablet begins to dissolve. The sodium bicarbonate splits apart to form sodium and bicarbonate ions that then react with the hydrogen ions from the citric acid. This causes the formation of carbon dioxide gas and water so we see bubbles!

This is the formula for the chemical reaction:



The oil is **hydrophobic**, which means that it doesn't mix with the water. Water is denser than the oil and sinks to the bottom. When the chemical reaction takes place in the water, the carbon dioxide bubbles that form are the least dense and rise to the top, releasing the gas into the air in the room. What happened after that? What happens when the Alka Seltzer stops reacting?



## DID YOU KNOW?

A **chemist** is someone who studies everything about the different chemicals that exist in our world, like liquids that don't like each other! If you liked exploring this activity, maybe chemistry is for you!