

The Great Dry Ice Lab

Dry Ice is the solid form of carbon dioxide. Readily available at your local supermarket, Dry Ice is used in meat packing, food transport, food production, and chemical synthesis. The uses for this wonderful compound are endless. Today, you will be exploring the chemical properties of Dry Ice, and observing what physically occurs.

Materials

1 Plastic Beaker	1 Coin
1 250ml Beaker	1 pair of tongs
1 Graduated Cylinder	1 pair of scissors
1 Candle	1 pipet

Protocol

First, obtain a piece from your lab instructor in a styrafoam cup. Observe the dry ice without touching it. Slide it across the table with your tongs.

Touch a coin to the dry ice. Be sure to not let the dry ice touch your fingers!

Fill the glass beaker half full with water, and drop the dry ice in.

Light a match, and place it into the gas coming off the beaker.

Light the candle, and *POUR* the gas inside the beaker on top of it. Be careful to not let any water splash out.

Put a small piece of dry ice into an empty film canister. Place the top on the canister and place it upside down on your lab table.

Make a soap solution that is one part detergent and one part water. Dip a strip of paper towel into the soap solution and squeeze out the excess liquid. Drag the soapy paper towel across the top of the container of dry ice carefully. A bubble should begin to form.

Add water and a few drops of universal indicator to a large graduated cylinder. Observe this color.

Add a small amount of ammonia to the solution. Observe the new color.

Add pieces of dry ice, one at a time, and watch the color of the solution change from basic to acidic.

Fill a small cup with water. Cut the stem off a large pipet. Use forceps to pick up some small pieces of dry ice and stuff them into the pipet bulb. Fold down what is left of the stem and crimp it shut with pliers. Holding the pipet closed with the pliers, observe the dry ice crystals. Are they beginning to melt? Can you see any liquid CO₂? Carefully lower it into the cup of water and observe what happens.

Results

No real results in this lab. Be sure to answer all of the following questions with full sentences!

Questions

1. Explain why the dry ice slid across the table.
2. Why do you think carbon dioxide is called “dry ice”?
3. Why did the coin make sound? Would a different kind of coin produce a different sound? Why?
4. When you placed the dry ice in a beaker of water, what happened? Explain why.
5. What happened when you placed the match inside the beaker? Why?
6. What happens to the candle? Why?
7. Why were you able to pour this gas?
8. What happens to the film canister? Why?
9. How big did your bubble get before it popped? What is inside this bubble?
10. What color was the indicator in just water? With ammonia? After all the dry ice had been added? What acid are you forming?
11. Why did the pipet bulb do what it did?