Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Dry Ice Labs**

**1.Triple Point of Dry Ice**

Materials: Safety glasses, dry ice, plastic pipet, plastic cup, tap water, pliers, scissors

Procedure:

1. Obtain needed materials.
2. Place 2 or 3 small pieces of dry ice on the table and observe them until they completely sublime. Record your observations.
3. Fill the plastic cup ½ full with tap water.
4. Cut off the stem of the pipet at an angle leaving 1 ½ inches.
5. Slide 8-10 small pieces of dry ice down the pipet stem and into the bulb.
6. Using pliers, fold the opening of the stem and clamp it securely shut with the pliers so the no gas can escape.
7. Immediately lower the pipet into the cup of water so the bulb is submerged. Record your observations.
8. After 10-15 seconds, loosen the grip on the pliers and observe the bulb. Record your observations.
9. Re-tighten the grip on the pliers and record your observations.
10. Repeat steps 6 and 7 as many times as possible. Record your observations.

**Observations:**

**Questions:**

1. What does sublime mean?
2. What compound is dry ice?
3. What is a triple point?
4. Observe the phase diagram of carbon dioxide below, what is the temperature and pressure at the triple point of CO2?



**2. Dry Ice Rainbow**

Materials: Goggles, Plastic Cup, Water, Dry Ice, Universal Indicator

Procedure:

1. Obtain needed materials.
2. Fill the cup ¾ with water, and place 1 pipette full of Universal Indicator in your cup.
3. Place a chunk of dry ice (Ping pong ball sized) into your cup. Record your observations.

Observations:

Questions:

1. What is an indicator used for?
2. What did the changes of color indicate? What does that tell you about the dry ice?

**3. Dry Ice Song and Dance**

Materials: Goggles, Dry Ice, Various substances

Procedure:

1. Obtain several small pieces of dry ice.
2. Place them on the table and record your observations.
3. Touch various substances (metal, paper, water, etc.) to the dry ice and record your observations.

Observations:

Questions:

1. What causes the behavior of the dry ice when set on the table?
2. What causes the noise created by the dry ice when it encounters certain substances?

**4. Dry Ice and Magnesium Demo (will do together)**

Materials: Goggles, Dry Ice, Magnesium metal, bunsen burner, Gloves, Tongs

Procedure:

1. Obtain a small sample of magnesium and light it on fire using the Bunsen Burner.
2. Place the lit Magnesium inside two pieces of dry ice. Record Observations.

Observations:

Questions:

1. What was the resulting substance left inside the dry ice?
2. What observations would lead you to believe the substance may not be magnesium anymore? How might you test this?