Phase Change Lab

Question: Do all substances change phases in the same way?

Hypothesis: If we compare phase changes between dry ice and regular ice, then we will see that

because

Materials: 2 glass beakers, 2 glass jars, 2 pieces of plastic wrap, 1 spoon for handling dry ice, warm water, 2 ice cubes, 2 pieces of dry ice, 1 drop of dishwashing soap

Procedure:

**TASK ONE:** Using the spoon, put the largest piece of dry ice into the empty glass jar, and attach the plastic wrap to the top. Place a cube of ice into the second empty jar and attach plastic wrap on top. Observe these throughout the completion of the remaining tasks.

**TASK TWO:** Place a water ice cube in a beaker and a dry ice cube in another beaker. Wait a few minutes and observe the phase changes.

**TASK THREE:** Using the spoon, place a small piece of dry ice on your lab table. Place the water ice cube next to it. Give each a little push and observe their motion. Return cubes to the beakers.

**TASK FOUR:** Add half a cup of warm water to each beaker containing water ice and dry ice. Compare what happens.

**TASK FIVE:** Add a drop of dishwashing liquid to each of the beakers of water ice and dry ice.

Phase Change Lab

Question: Do all substances change phases in the same way?

Hypothesis: If we compare phase changes between dry ice and regular ice, then we will see that

because

Materials: 2 glass beakers, 2 glass jars, 2 pieces of plastic wrap, 1 spoon for handling dry ice, warm water, 2 ice cubes, 2 pieces of dry ice, 1 drop of dishwashing soap

Procedure:

**TASK ONE:** Using the spoon, put the largest piece of dry ice into the empty glass jar, and attach the plastic wrap to the top. Place a cube of ice into the second empty jar and attach plastic wrap on top. Observe these throughout the completion of the remaining tasks.

**TASK TWO:** Place a water ice cube in a beaker and a dry ice cube in another beaker. Wait a few minutes and observe the phase changes.

**TASK THREE:** Using the spoon, place a small piece of dry ice on your lab table. Place the water ice cube next to it. Give each a little push and observe their motion. Return cubes to the beakers.

**TASK FOUR:** Add half a cup of warm water to each beaker containing water ice and dry ice. Compare what happens.

**TASK FIVE:** Add a drop of dishwashing liquid to each of the beakers of water ice and dry ice.

|  |  |  |  |
| --- | --- | --- | --- |
| **TASK #** | **DIAGRAM and OBSERVATIONS of** **DRY ICE** | **DIAGRAM and OBSERVATIONS of** **WATER ICE** | **EXPLANATION**(why do you think that’s happening) |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| 5 |  |  |  |

Phase Change Lab Analysis

1. What phase change did you observe with the dry ice? Provide observations to support your claim.
2. What phase change did you observe with the regular ice? Provide observations to support your claim.
3. How does water behave differently (its properties) as a liquid compared with as a solid?
4. How does carbon dioxide behave differently (its properties) as a gas compared with as a solid?
5. What is causing the change in the dry ice and the water ice? Describe what is happening at the molecular level to the substances (water and carbon dioxide) as they experience a phase change.