**Molar Mass Lab**  Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Hr \_\_\_\_

**Objective:** Determine the molar mass of a molecular compound.

**Equipment:** Large Beaker Test Tube

Thermometer 50 mL Graduated Cylinder

**Procedure:**

1. Obtain about 2.5 grams of the unknown solute (Record the exact mass of solute to 0.01g). And add it to a test tube.

2. Add 25.00 mL of water to the test tube with the solute and mix until the solute dissolves. Record the exact volume of water added.

3. Place the test tube in a large beaker. Pack with ice and salt.

4. Place the thermometer in the test tube. Stir continuously after the temperature falls to 0°C. Record the temperature of the solution when the first ice crystals appear.

**Data:**  Mass of solute \_\_\_\_\_\_\_

Volume of water \_\_\_\_\_\_\_ Mass of water\_\_\_\_\_\_\_\_(1mL=1gram)

Freezing point of solution \_\_\_\_\_\_\_

**Calculations:**

**Conclusion:**

**Questions:**

1. How does the concentration of the solution change as ice continues to form in solution?

2. How will the calculated molar mass change if the temperature reading was taken 10 minutes after the formation of the first ice crystals form in the solution?

3. What would your calculated molar mass be if thermometer read a temperature of 0.20˚C above your recorded freezing point temperature?