**Supersaturation Lab**

**Objective:** To prepare a supersaturated solution of sodium sulfate and to observe the effect of seeding a supersaturated solution.

**Materials:** safety goggles, test tube rack, test tube, test tube holder, beaker, Bunsen burner, water, ice, sodium sulfate decahydrate

**Procedure:**

1. Wear safety goggles and obtain equipment.
2. Place 5 g of sodium sulfate in a clean test tube. Add 10 mL of water. **Record**

 **your observations.**

1. Hold the test tube using the test tube holder and gently heat it in the burner flame, agitating the mixture gently until the entire solid has dissolved. (When heating a test tube, never point the mouth of the tube at yourself or anyone else. Make sure to warm the bottom and sides of the tube evenly. Never heat only the bottom of the tube.)
2. Place the test tube in the test tube rack.
3. Add one more crystal of sodium sulfate to the test tube and **record your**

 **observations.**

1. Place the test tube in a beaker of ice water to cool. Be careful not to disturb the test tube or its contents during the cooling process. If crystals begin to form in the solution, as it is cooling, reheat the tube to redissolve the crystals, and cool the tube again. **Record your observations**.
2. When the solution is cold, gently remove the tube from the ice water bath. Replace the test tube in the test tube rack and drop in one small crystal of sodium sulfate. Describe what you see. Touch the bottom of the test tube to the palm of your hand**. Record your observations.**
3. Dispose of the crystals by washing them into the sink and flushing them down the drain with water.
4. Clean up your area, put away all your equipment and wash your hands.

**Observations:**

Step# Observations

2.

5.

6.

7.

**Questions:**

Use your observations to determine if the solution was unsaturated, saturated, or supersaturated. Refer to the PowerPoint or video to help you. **Reminder-if you “see” any type of crystals it is saturated. Un and Super are clear and the only way to tell them apart is by adding a crystal and watching what happens.**

1. At the end of step 5, is the solution unsaturated, saturated, or supersaturated. Explain.

1. At the end of step 6, is the solution unsaturated, saturated, or supersaturated. Explain. Give evidence for your answer.
2. At the end of step 7, when crystallization is complete, is the solution unsaturated, saturated, or supersaturated? Explain.
3. Describe one simple test that will determine whether a solution is unsaturated, saturated, or supersaturated. Explain how to interpret the test results.