

Supersaturation Lab

Theory: (define these) solution, saturation, physical equilibrium, supersaturation, seed crystal

Purpose - To explore the concept of supersaturation

Materials:

1. Test Tube Pyrex
2. Bunsen Burner
3. Sodium Sulfate
4. Test Tube Holder
5. Balance

Procedure

1. Place 5 grams of Sodium Sulfate in a clean test tube
2. Add 15-20mL of distilled water to test tube
3. Gently heat the test tube in the Bunsen burner. **BE CAREFUL NOT TO POINT THE TUBE TOWARD ANYONE AND HAVE YOUR GOOGLES ON!!!!** Heat the solution until all the solid has dissolved.
4. Place the test tube in the rack and add one more crystal to the warm solution. Observe.
5. Place the test tube in an ice bath to cool. Don't disturb the tube.
6. When the tube of solution is cold, gently remove it from the ice water bath and place it in the rack.
7. Add one more pinch of Sodium Sulfate and observe.
8. Clean up by warming the solution again over the burner to create a solution and put in sink with lots of water.

Data:

Describe your observations: initially steps 3,4 and 7.

Discussion:

(Answer each question in terms of temperature change and equilibrium.)

1. At the end of step three, is the solution unsaturated, saturated or supersaturated? Explain.
2. At the end of step six, is the solution unsaturated, saturated or supersaturated? Explain.
3. At the end of step seven, when crystallization is complete, is the solution unsaturated, saturated, or supersaturated? Explain.

Conclusion: