

# SATURATION



NAME: \_\_\_\_\_ DATE \_\_\_\_\_

OBJECTIVE: Understand how temperature affects saturation

## METHODS

### Materials

- |                 |                      |                   |
|-----------------|----------------------|-------------------|
| - 250 mL beaker | - Graduated cylinder | - Sodium chloride |
| - Spatula       | - Scales             | - Weight boat     |
| - Thermometer   | - Stir rod           |                   |

### Procedures

1. Pour 100 grams of distilled water into the beaker (Remember 1 gram = 1 mL)
2. Record the temperature of the water
3. Weigh 10 grams of sodium chloride. Pour into beaker and stir until dissolved
4. Continue this process until the sodium chloride will no longer dissolve. Salt crystals will remain on the bottom of the beaker and will not dissolve. This is the saturation point.
5. Estimate the amount of sodium chloride that is left on the bottom of the beaker. Subtract this from the total amount you put into the solution.
6. Record the mass of sodium chloride used to saturate the water.
7. Pour out the solution and clean your beaker.
8. Heat the 100 grams of distilled water to 50 °C. Remove from stand.
9. Weigh 10 gram of sodium chloride. Pour into beaker and stir until dissolved.
10. \Continue this process until the sodium chloride will no longer dissolve. When you have reached 30 grams, add 5 grams at a time.
11. Estimate the amount of sodium chloride that is left on the bottom of the beaker. Subtract this from the total amount you put into the solution.
12. Record the mass of sodium chloride used to saturate the water.
13. Pour out the solution and clean your beaker.
14. Heat the solution to 70 °C. Remove from stand.
15. Weigh 10 gram of sodium chloride. Pour into beaker and stir until dissolved.
16. Continue this process until the sodium chloride will no longer dissolve. When you have reached 30 grams, add 5 grams at a time.
17. Record the mass of sodium chloride used to saturate the water.
18. Graph your results

Temp	Mass

## CONCLUSIONS

1. What is a:

Residue

Solute

Solution

Solvent

2. How did temperature affect the solubility of the sodium chloride?

3. Explain how temperature affected the solubility of the sodium chloride

4. Explain the connection between the energy of the water particles at higher temperatures and the resulting solubility of the sodium chloride