

Title: Finding Solutions

Name_____

Purpose: To test 3 different variables that relate to the speed which a solute dissolves in a solvent.

Materials: Erlenmeyer flasks, balance, sodium thiosulfate, other labware

Procedures:

Control Procedure:

1. Weigh out a 1.0 g portion of sodium thiosulfate.
2. Prepare an Erlenmeyer flask with 100 mL of water.
3. Allow it to dissolve without touching it again. Time how long it takes.
4. With your group, decide on three variables that may affect the speed of dissolving. Write your procedures below. All must dissolve 1.0 g sodium thiosulfate in 100 mL of water.

Procedure #1

- 1.
- 2.
- 3.

Procedure #2

- 1.
- 2.
- 3.

Procedure #3

- 1.
- 2.
- 3.

Show your teacher your procedures before beginning. Fill in the top of the data table with a brief summary of the variable being tested. Be ready to report to your class with a summary of your results.

Data

	Control: Add 1.0 g then do NOT swirl.	#1	#2	#3
Time to dissolve completely				
Sketch at particle level.				

Analysis:

1. What is the solvent in these experiments?
2. What is the solute in these experiments?
3. Which procedure produced the fastest dissolving time?
Why?
4. Which was slowest?
Why?

Based on the data from class:

5. How did swirling the flask (agitation) affect the motion of the particles?
6. What effect did this have on the time to dissolve?
7. How did heating the water effect the motion of the particles?
8. How did that effect the time to dissolve?

9. How did pulverizing the particles affect the time to dissolve?

10. Why did it have that affect?

11. If you were part of an industry that needed to quickly dissolve a substance like sodium thiosulfate, which process would you recommend? Consider the most practical and energy efficient process that saves the most time.

Conclusion: