Solvent Volume and Dissolving Rate

Name_____Date_____Period___Group___

Problem: You will be making a solution in this lab, using a liquid solvent (water) and a solid solute (epsom salt,sugar or something simple). If you increase the amount of solvent you use, what will this do to the rate of dissolving ? (Check your definitions of the new terms in this lab if necessary.)

Hypothesis:_____

_____

Variables: By the time you finish this experiment ,you will need to identify the different types of variables present in this investigation. Consult your notes for definitions of the types of variables.

Independent Variables:_____

_____

Dependent Variables:_____

_____

Controlled Variables:_____

_____

Procedures:

1– Use the beaker to get about 35–40 ml/cm^3 of room temperature water from the water container. **Do not use tap water.**

2–Add 10 cm^3 of room temperature water to the first test tube and 20 cm^3 of room temperature water to a second test tube. Use the graduated cylinder to measure the water.

3–Place a massing dish on the balance and adjust the balance to read zero with the massing dish on it. This is called *taring* a balance. For this lab, you will be using an electronic balance.

4–Now add the solid to the massing dish until the balance reads 1 g.

5–**Trial # 1:** Now add the 1 g of the solid to the first test tube (you may want to use a funnel to make it easier) which should be in the test tube rack. **Immediately** start to spin a stirring rod between your thumb and index finger to dissolve the solid in the tube. ***You must stir the liquid in the test tube the same way and at the same rate for each and every trial you do, otherwise your times will mean nothing.***

6-Time how long it takes for the solid to dissolve from the moment you start stirring until it all dissolves. Record your answer in the data chart in minutes and seconds. While this is being done , your partner should do the next step.

7–Measure out another 1 g amount of the solid the same way as you previously did.

8– Repeat step 6 but this time do it for the second test tube.

9–**Trial # 2:** Mass out another **1** g of the solid as you did earlier and repeat steps 6–8, so that there is now a total of **2** g in each test tube. Be sure to record your times in the chart.

Materials: Electronic Balance, massing dish, 2 test tubes with solid stoppers, soluble solid, graduated cylinder, room temperature water, funnel, stirring rods , test tube rack or beaker, stopwatch if available

Safety: Be careful with the solid. General safety rules apply.

Amount of water in test tube	Total mass of solid in the test tube	
	Trial # 1: **1 g** **Time to dissolve in minutes and seconds**	Trial # 2: **2 g** **Time to dissolve in minutes and seconds**
First Tube 10 ml/cm^3		
Second Tube 20 ml/cm^3		

1. Which test tube took less time for the solid to dissolve, and come up with a logical reason why it did ?

_____

_____

2. Which test tube would become saturated sooner, if more of the solid continues to be added in equal amounts to each test tube and then stirred?

_____

3. By the end of the experiment, which of the test tubes is more likely to be able to dissolve more solid ?

_____

Overall Conclusion : 1-State if your original hypothesis was correct or incorrect. This should be based on the best information collected from the experiment. **2-** If it was incorrect, give the correct answer, again based on the best information collected from the experiment. **3**-Include a brief summary of the data collected during the experiment telling how it supports your answer for the hypothesis.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Sources of Error Identify ***two*** things that people may have done incorrectly that would have caused them to get totally different answers from the rest of the class. These errors must be unique,in other words they have not been applicable in previous labs.They must be ***new*** sources of error.Be ***specific*** about what might have been done.

_____

_____

_____

_____

_____

_____