LAB: Copper Sulfate Crystals

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Crystals are special kinds of solids (crystalline solids) that are made up of molecules arranged in a regular repeating pattern. In some solids (amorphous solids), the arrangements of the molecules are random throughout the material. In crystalline solids, however, the molecules are repeated in exactly the same pattern over and over again throughout the entire material.

Compounds that form crystals are ionic. When ionic compounds are dissolved in water, the ions separate. One ion takes an electron from the other and it becomes negatively charged. The ion that loses the electron becomes positively charged. When the liquid is allowed to evaporate, the oppositely charged ions come back together and reform the ionic compound with a crystal structure.

PROBLEM: Does the evaporation rate affect the size, shape, or amount of copper sulfate (CuSo₄) crystals?

HYPOTHESIS:	

MATERIALS:

two beakers graduated cylinder stirrer hot water cold water copper sulfate triple beam balance 2 slides

dropper microscope

PROCEDURES:

Day 1

- 1. Prepare a copper sulfate solution by adding 1 gram of copper sulfate to 5 ml of water in a beaker.
- 2. Stir until all of the copper sulfate is dissolved.
- 3. Label three microscope slides, one with an H, one with and R and one with a C. Make sure to write your name and period number on each slide.
- 4. Using a dropper put two drops of the liquid copper sulfate on to slide H, put two drops on to slide C, and two drops on to slide R
- 5. Place slide H on to the warming plate and slide R on the window sill. Put slide C on a tray in the refrigerator. (The heat from the warming plate will cause the liquid to evaporate faster.)

Day 2

- 1. Use a microscope to observe the slides.
- 2. Record your observations in the Data Table

LAB: Making Crystals 1

DATA:

OBSERVATIONS	SHAPE DRAWING	SIZE (mm)	AMOUNT
Slide H			
Slide C			
Slide R			

ANAL	YSIS:			
	What are crystalline solids?			
2.	What are the differences between the crystals grown on each slide			
3.	What kind of compound is copper sulfate?			
4.	What is the chemical formula for copper sulfate?			
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	a. Copper (Cu) atoms			
	b. Sulfur S atoms			
	c. Oxygen atoms			
Did yo	CLUSION: Du find the answer to your problem? Is your hypothesis correct or incorrect? Explain why hypothesis is correct or incorrect? Describe your results and observations.			

LAB: Making Crystals