

LAB: Copper Sulfate Crystals

Last Name: _____, First _____ per ____

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 (CuSO_4) 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 an 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

