

# Puspa Shrestha

Best Quality Resource Site for Class 11 And 12 Students  
(Based on Updated Curriculum 2077)

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Puspa Shrestha

## EXPERIMENT NO: 3

NAME OF EXPERIMENT: TO OBTAIN THE CRYSTALS OF BLUE VITRIOL IN PURE AND DRY STATE FROM BAZZAR COPPER SULPHATE

### APPARATUS REQUIRED

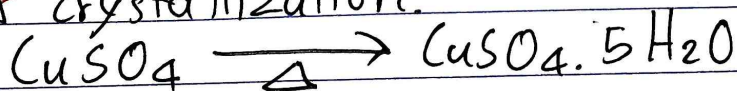
1. Beaker
2. Funnel
3. Burner
4. Porcelain basin
5. Tripod stand
6. Glass rod
7. Filter paper

### CHEMICAL REQUIRED

1. Impure bazaar copper sulphate

### THEORY

Pure crystal of copper sulphate can be obtained by crystallization of saturated solution of impure Bazaar copper sulphate. The solution which can dissolve no more solute at given temperature is called saturated solution. The process by which a saturated solution at given temperature is heated to a temperature called crystallization point and then allowed to cool to obtain crystalline substance is called crystallization.



Crystals can be defined as homogeneous substances having a fixed shape, sharp edge and shining

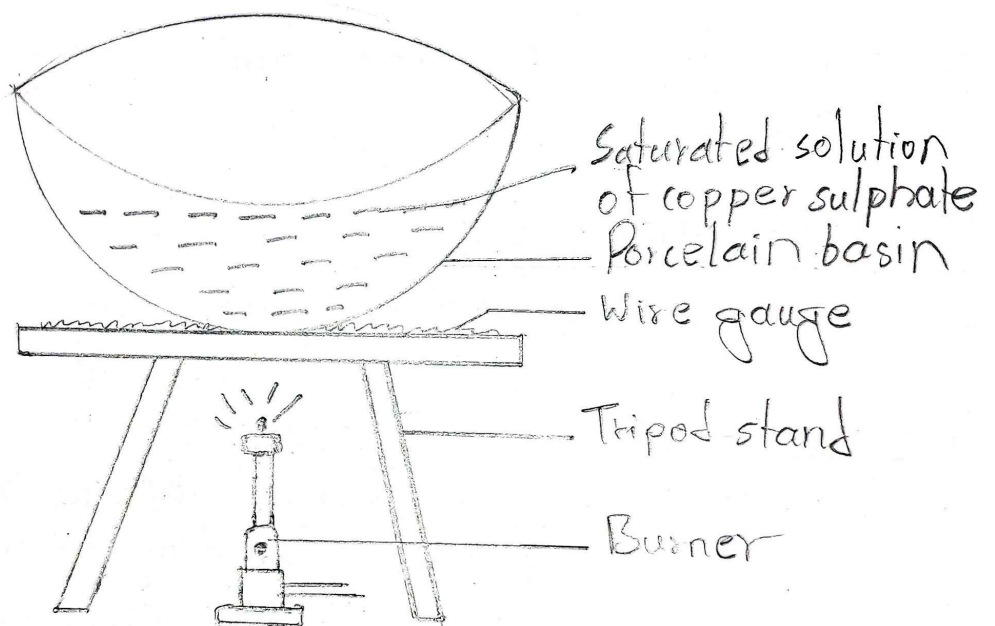
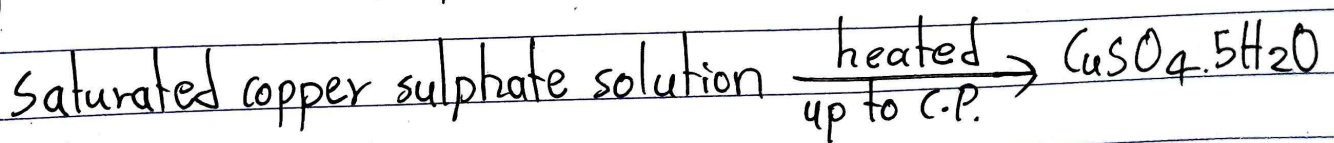


Fig. Formation of supersaturated solution of copper sulphate.

appearance. All the crystalline substances are made up of crystals.

### PROCESS

1. One test-tube of water was taken in a clean beaker and impure copper sulphate was added to the beaker to get a saturated solution at room temperature and filtered with constant stirring with a glass rod.
2. Then the saturated solution of copper sulphate was taken in the porcelain basin and evaporated up to the crystallization point (To confirm the crystallization point, a drop of the solution was removed/taken with a glass rod on a dry outer surface of a test tube filled with cold water. The appearance of milli-crystals showed reaching of crystallization point).
3. After reaching that point the basin was removed from the flame and allowed to cool slowly at room temperature, basin was floated in a water trough containing cold water. After some time there was the formation of the crystal.
4. Crystals were separated from the liquid by decantation of mother liquor and soaked between pieces of filter paper.



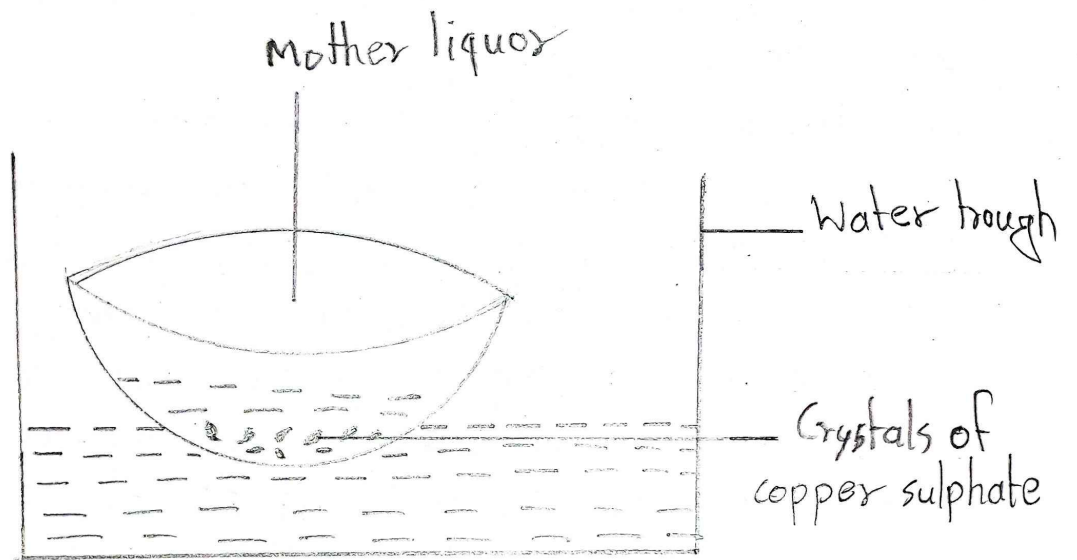


Fig: Formation of copper sulphate crystals.

## OBSERVATION TABLE


Experiment	Observation	Inference
1. Drops of heated solution was taken and kept over dry outer surface of test tube filled with cold water.	1. Milli crystals did not form.	1. The crystallization point was not reached.
2. Experiment no. 1 was repeated after further heating of the solution.	2. Milli crystals were observed.	2. The crystallization point was reached.

## PRECAUTIONS

1. Saturated solution of copper sulphate should be prepared at room temperature.
2. Solution should be evaporated upto crystallization point.
3. Solution should not be evaporated completely.
4. Blue vitriol should never be dried in open flame.

## RESULT

Pure and dry crystals of copper sulphate was obtained from its impure sample.

  
09/09/21