

Materials Required



Watch glass



Spatula



Copper Sulphate



Burner

Procedure

Real Lab Procedure

1. Take some crystals of copper sulphate ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$) in a spatula.
2. Heat these crystals on a burner by keeping the spatula directly over the flame of the burner.
3. The change in colour of the copper sulphate crystals changes to white during the heating.
4. Stop heating when it becomes completely white.
5. Transfer the content to a watch glass.
6. Keep the watch glass in an open atmosphere for some time and allow it to cool and the white colour of the anhydrous copper sulphate is changed to blue.

Simulator Procedure

1. Drag and drop the bottle cap to open the copper sulphate bottle.
2. Drag and drop the spatula towards the bottle.
3. Click on the burner knob to turn on the flame.
4. Drag and drop the spatula towards the burner.
5. Drag and drop the spatula towards the watch glass after the clock stops.

6. Click on the Inference icon: - The blue copper sulphate crystals changes to white,
 $\text{CuSO}_4 \cdot 5\text{H}_2\text{O} \rightarrow \text{CuSO}_4 \cdot \text{H}_2\text{O} \rightarrow \text{CuSO}_4$
7. Click on the watch glass after the clock stops to zoom the copper sulphate crystals
8. Click on the Inference icon: - The white copper sulphate crystals changes to blue,
 $\text{CuSO}_4 + 5\text{H}_2\text{O} \rightarrow \text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

Observations

- i. On heating, the blue colour of copper sulphate crystals first changes into Bluish white and then to White.
- ii. On cooling, the colour of copper sulphate again turns Blue.

Result and Discussion

- According to your studies, when a hydrated sample of copper sulphate is heated, it loses the water of crystallisation and becomes dehydrated, resulting in a white colour.
- This copper sulphate that has been dehydrated regains water.
- As a result, the precise reason of colour change is hydration and dehydration.

Precautions

- Carefully hold the spatula with copper sulphate crystals.
- Avoid bringing your face too close to the hot spatula, as it may cause injury.