

WJEC Chemistry GCSE

Specified Practical 7A

Preparation of Crystals

[Methods are adapted from the [Royal Society of Chemistry](#)]

England Specification





Preparation of Salt Crystals

Aim

To prepare a pure, dry sample of soluble salt crystals from an insoluble base (oxide or carbonate).

Equipment list

- 1.0 M dilute sulfuric acid
- Copper (II) oxide powder
- A spatula
- A glass rod
- A measuring cylinder
- Two beakers: one 100 cm³ and one 250 cm³
- Bunsen burner
- Tripod
- Gauze
- Heatproof mat
- Filter funnel and paper
- A small conical flask
- An evaporating basin
- A crystallising dish

Method

1. Measure 20 cm³ sulfuric acid into a measuring cylinder and pour it into the beaker.
2. Heat the acid gently using a Bunsen burner.
3. Add small amounts of insoluble base in this case copper oxide in excess (until no more reacts thus no more effervescence is produced).
4. Filter using filter paper and funnel the solution to remove the excess copper oxide.
5. Pour the solution into the evaporating basin.
6. Evaporate the solution using a water bath until crystals start to form.
7. Leave the evaporating basin in a cool place for at least 24 hours.
8. Gently pat the crystals dry between two pieces of filter paper.

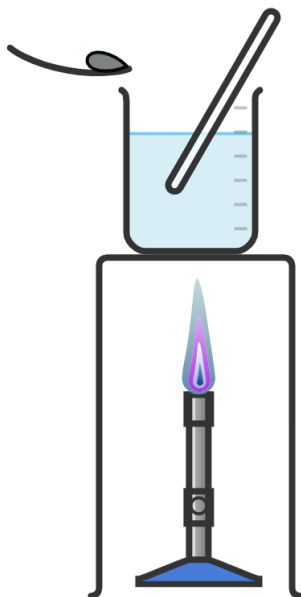
Safety Precautions

- Wear safety goggles as sulphuric acid is corrosive.
- Make sure hair is tied back.
- When the Bunsen burner is not in use, turn it off or leave it on the orange safety flame.
- Be very careful when heating acids, e.g. sulfuric acid releases toxic fumes.



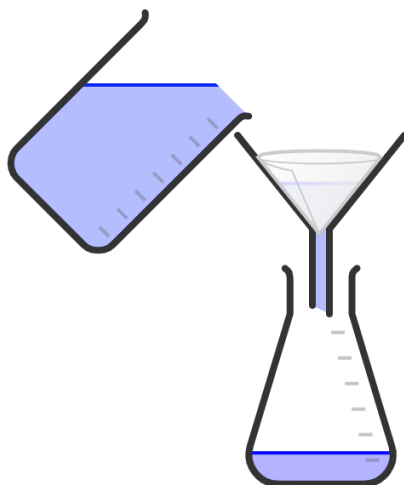


Diagram



[Image created in 'Chemix'](#)

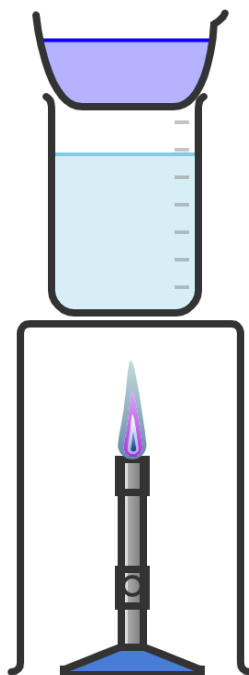
- 1) Add your metal oxide, carbonate or hydroxide to the acid and stir with a stirring rod, gently heat until it stops reacting.



[Image created in 'Chemix'](#)

- 2) Since you used an excess of the metal, carbonate or hydroxide you will find that you have unreacted solid left behind. Filter this out using filter paper and a filter funnel.





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3) Gently, start heating your filtered solution. Then, turn off the Bunsen burner and let the rest of the water evaporate, leaving the salt crystals behind. It's important that this is done slowly so be careful not to heat too fiercely or too rapidly!

