

# GCSE Required Practicals

Chemistry

How to write a method...just think of CIDER!

**C**ontrol variables

**I**ndependent variable

**D**ependent variable

**E**quipment

**R**epeats



# Chemistry Practical 1 | Making salts

Preparation of a pure, dry sample of a soluble salt from an insoluble oxide or carbonate, using a Bunsen burner to heat dilute acid and a water bath or electric heater to evaporate the solution.

1. Measure **40 cm<sup>3</sup>** sulphuric acid into the 100 cm<sup>3</sup> beaker. The volume does not need to be very accurate, so you can use the graduations on the beaker.
2. Set up the tripod, gauze and heatproof mat. Heat the acid **gently** using the Bunsen burner until it is almost boiling. Turn off the Bunsen burner.
3. Use the spatula to add **small** amounts of copper (II) oxide powder. Stir with the glass rod. Continue to add copper (II) oxide if it keeps disappearing when stirred.
4. When the copper (II) oxide disappears the solution is clear blue. **Stop adding the copper (II) oxide when some of it remains after stirring.** Allow apparatus to cool completely.
5. Set up the filter funnel and paper over the conical flask. Use the clamp stand to hold the funnel. Filter the contents of the beaker from step **3**.
6. When filtration is complete, pour the contents of the conical flask into the evaporating basin. Evaporate this gently using a water bath (250 cm<sup>3</sup> beaker with boiling water) on the tripod and gauze. **Stop heating once crystals start to form.**
7. Transfer the remaining solution to the crystallising dish. Leave this in a cool place for **at least 24 hours**.
8. Remove the crystals from the concentrated solution with a spatula. **Gently** pat the crystals dry between two pieces of filter paper. These are pure dry crystals of copper (II) sulphate.

Can you find the **cider**?

1. Control
2. Independent
3. Dependent
4. Equipment
5. Repeats



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2. Set up the tripod, gauze and heatproof mat. Heat the acid **gently** using the Bunsen burner until it is almost boiling. Turn off the Bunsen burner.
3. Use the spatula to add **small** amounts of **copper (II) oxide powder**. Stir with the glass rod. Continue to add copper (II) oxide if it keeps disappearing when stirred.
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7. Transfer the remaining solution to the crystallising dish. Leave this in a cool place for **at least 24 hours**.
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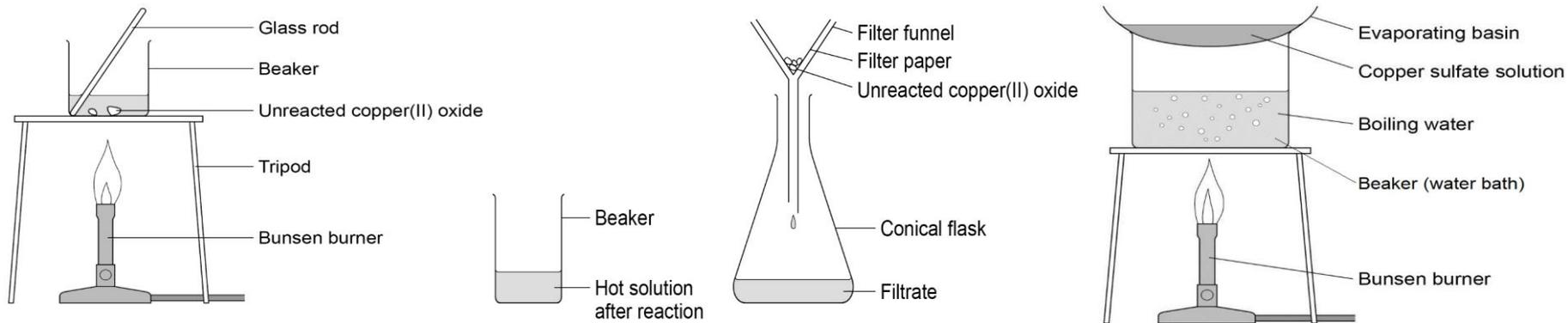
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# Extra



Students should be warned not to boil the acid. If students add copper (II) oxide to hot acid in large portions, the resulting frothing may go over the top of the beaker. Students should be reminded of the importance of good filtering technique (e.g. correct paper folding, liquid level not above top edge of filter paper). Students will also need to be reminded not to allow the water bath to boil dry.

The procedure may require two 60 minute lessons to complete. If so, it is suggested that the filtrate is retained at the end of the first lesson for evaporation during the second.

Students must not be allowed to take their crystals home. The waste crystals can be recycled to make up new copper (II) sulfate stock solutions.