

**YEAR 7 SCIENCE  
EARTH AND SPACE SCIENCES  
INVESTIGATION - REFINING AN ORE**

**Aim:** To recover a metal from its ore.

**Materials:** • 2M sulphuric acid (2M H<sub>2</sub>SO<sub>4</sub>)

- Copper oxide and sand mix
- 2 x 100 mL beaker
- Stirring rod
- Filter funnel and filter paper
- Power pack, 2 x leads, 2 x alligator clips
- 2 x iron nails
- Bunsen burner
- Tripod and gauze mat
- Bench protector

**Method:** 1. Take 3 teaspoons of the copper oxide ore and place it into a 100 mL beaker.

2. Carefully add 40 mL of 2M sulphuric acid (2 M H<sub>2</sub>SO<sub>4</sub>).
3. Gently heat the beaker above a Bunsen for a few minutes.

*DO NOT LET IT BOIL!*

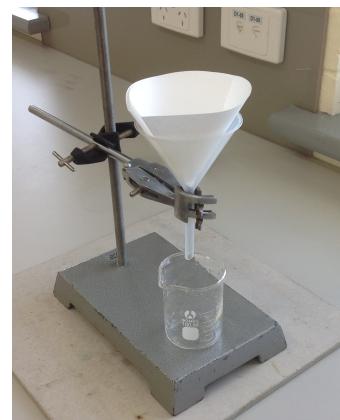
**Safety note**

**Sulphuric acid is corrosive to the skin and a strong irritant to the eyes, nose and lungs. Do not breathe the fumes and wash the skin if exposed to the acid.**

Stir it gently with a stirring rod.



4. Allow the solution to cool and filter it into another 100 mL beaker.

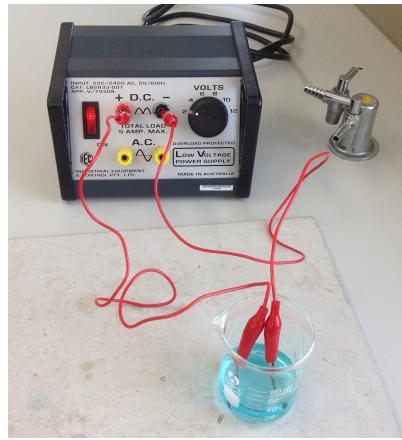


5. Turn the power pack to 2V DC (**use the red and black terminals**) and attach the nails to the leads using the alligator clips.
6. Place the nails carefully into the solution.

***DO NOT LET THE SOLUTION TOUCH THE ALLIGATOR CLIPS!***

**Safety note**

**The alligator clips will react with the solution if they come into contact. This must be avoided.**



7. Observe what takes place at each nail.

**Observations:**

**Discussion:**

**Conclusion:**