**The Reaction between Zinc and Copper(II) Oxide**

## Aim

To study the reaction between zinc and copper oxide.

## Curriculum link

Topic III Metals

## Apparatus

* Bunsen burner and heatproof mat
* Watch glass
* One 100 cm3 beaker
* Glass rod
* Electronic balance, 0.01 g readability (shared among groups)
* Safety screen (optional)

## Chemicals

* 2.0 g of copper(II) oxide powder
* 1.6 g of zinc powder
* Approximately 10 cm3 of 2 mol dm-3 hydrochloric acid

## Procedure

1. Weigh 2 g (~0.025 mol) of copper(II) oxide and 1.6 g (~0.025 mol) of zinc powder. Mix the powder thoroughly to give a uniformly grey powder.
2. Put the grey powder from (1) in the shape of a ‘sausage’ about 5 cm long onto a heatproof mat.
3. Heat one end of the ‘sausage’ from above with a roaring Bunsen flame until it begins to glow, then remove the flame. If the glow does not spread along the ‘sausage’, heat the mixture again until it has all reacted.
4. Put a little of the cool residue onto a watch glass and add a little 2.0 mol dm-3 hydrochloric acid to dissolve it. Observe the residue remained on the watch glass careful.

## I:\2016-17\EDB Secondment\Talk\20170424\Zinc with copper (II) oxide 4.pngVideo

<https://youtu.be/FwoXKly3t6g>

<https://youtu.be/APzexosR94I>

## Safety precautions

Conduct a risk assessment for this experiment, and summarise the key precautions below.

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## Questions

1. Describe and explain the observations while the mixture was undergoing the reaction.

2. Describe and explain the observations when the residue was added with hydrochloric acid.

## Reference

The Royal Society of Chemistry. (1995). *Classic Chemistry Demonstrations*.