

Practical 2 – Chapter 1

Determination of the empirical formula of magnesium oxide

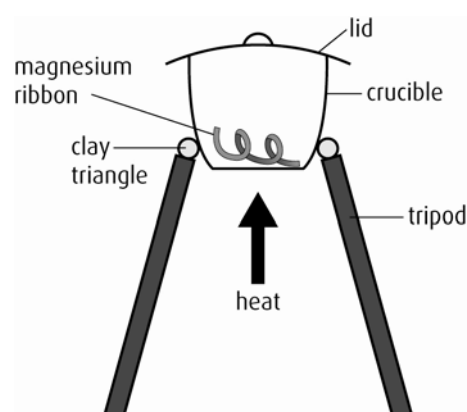
The aim of this experiment is to determine the empirical formula of magnesium oxide and help you get used to some of the criteria for internal assessment.

Safety

- Both the crucible and lid will get very hot. Extreme care must be exercised when handling them; tongs should always be used.
- Avoid looking directly at the magnesium ribbon when it is burning.
- Wear eye protection.

What to do

- 1 Weigh a crucible and its lid.
- 2 Weigh out accurately a strip of magnesium ribbon of mass approximately 0.10 g.
- 3 Place your piece of magnesium ribbon in the crucible. Put the lid on the crucible and place it on the clay triangle on the tripod.
- 4 Heat the crucible strongly, lifting the lid every few seconds to let in air but being careful not to let out too much of the white powder (**Care!**).
- 5 When you think the reaction has finished, allow the crucible to cool down and then weigh it and the contents.



Observation is an important skill for scientists. The IB criteria require you to make qualitative observations. When you come to evaluating your experiments any observations that you have made can be very useful in identifying sources of error.

You should make a minimum of five observations during this practical.

Your quantitative data should be recorded in a table similar to that below.

Raw data

	Mass / g	Uncertainty / g
Magnesium ribbon		
Crucible		
Crucible + products		

Use your data to work out the empirical formula of magnesium oxide.

The empirical formula of magnesium oxide should be MgO .

Suggest five sources of systematic or random error in this experiment. For each error suggest an improvement.