

Magnesium and Magnesium Oxide

Name: _____

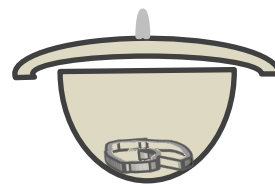
Aim: To produce magnesium oxide from magnesium (metal) and to analyse its composition.

Equipment: crucible and lid, tongs, pipe-clay triangle, Bunsen burner, heat-proof mat, magnesium ribbon (5-10 cm long), electronic balance, safety glasses.



Method:

1. Record the mass of the crucible and its lid: _____
2. Record the mass of the strip of magnesium: _____
3. Curl up the magnesium ribbon into a neat spiral and place it in the crucible. Make sure that the curled-up ribbon is resting on the bottom of the crucible and that no part of it is sticking up; this makes it react quicker. Practise lifting the crucible lid with the tongs before you start heating.
4. Heat the magnesium strongly in the crucible, keeping the lid on the crucible. The magnesium will soon start to glow and then turn white. Ensure that it doesn't burn too quickly by keeping the lid on.
5. Occasionally lift the lid (with tongs) to allow oxygen in.
6. After all the magnesium metal has been completely transformed into magnesium oxide, allow everything to cool down, and then reweigh the crucible, its lid, and the MgO (all together).



Safety Note: The crucible will be extremely hot after it has been heated.

Results:

Before Reaction

A: Mass of Mg	
B: Mass of Crucible and Lid	
C: Mass of crucible + lid + Mg	

After Reaction

D: Mass of crucible + lid + MgO	
E: Mass of MgO (D minus B)	
F: Overall increase in mass (mass of oxygen) (E minus A)	

Observations:

Describe what happened when the magnesium was heated. _____

Questions:

1. Why was there an overall increase in mass? _____

2. Why is it better to calculate the mass of the magnesium oxide that was produced rather than scraping out the magnesium oxide onto the electronic scales?

Analysis:

_____ g Mg + _____ g O₂ → _____ g MgO (see A, F, and E in the tables above.)

% (by weight) of Mg atoms in MgO: $\frac{\text{Mass of Mg}}{\text{Mass of MgO}} \times 100\% = \text{_____} \times 100\% =$

% (by weight) of O atoms in MgO: $\frac{\text{Mass of O}}{\text{Mass of MgO}} \times 100\% = \text{_____} \times 100\% =$