

Lab: Burning Magnesium

Introduction:

When magnesium is in its metal form it will burn very easily in air. However, in order to start the reaction (the burning) the magnesium metal needs a source of energy. The flame provides a source of heat so that the magnesium atoms can react with the oxygen found in the air in a synthesis reaction to form the compound magnesium oxide, which is a white powder.

Your task will then be to determine the empirical formula of this compound based off your calculations of the number of moles reacted.

Objectives:

1. To form a compound from the elements magnesium and oxygen
2. To determine the empirical formula of the compound produced in this chemical reaction

Procedure:

1. Put on safety goggles.
2. Measure the mass of the empty crucible at your station. Record the value in the data table provided.
3. Measure the mass of magnesium ribbon at your station. Record the value in the data table provided.
4. Break the magnesium ribbon into smaller pieces and place in the crucible.
5. Lower the o-clamp so that it sits about 5cm above the Bunsen burner.
6. Place the clay triangle and crucible onto the o-clamp.
7. Light the Bunsen burner.
8. Carefully move the ring stand so that the crucible sits above the Bunsen burner.
9. Wait a few minutes for all contents to heat up.
10. With tongs, carefully remove one piece of the magnesium ribbon and place it in the flame of the Bunsen burner.
11. Once a reaction occurs (a bright light), place the magnesium back into the crucible. All the other pieces of magnesium should start to react.
12. Don't look directly at the burning magnesium ribbon as it is reacting.
13. Once it has finished reacting, turn off the Bunsen burner.
14. Remove the crucible and place on the wire mesh to cool down.
15. Measure the mass of the crucible and residue. Record the value in the data table provided.
16. All contents can be placed in garbage.