

# Determining the empirical formula of magnesium oxide essay sample

[Science](#), [Chemistry](#)



In the Lab Determining the Empirical Formula of Magnesium Oxide, students set out to find if there is a true 1: 1 ratio in the empirical formula of MgO.

This was determined by burning the Magnesium until a white smoke started to protrude. This showed the reaction of Oxygen combining with Magnesium to form Magnesium Oxide. This was then measured again and turned out to be slightly heavier than the measurement before. This added weight is Oxygen, forming the combustion of Magnesium Oxide. The formula for Magnesium Oxide is  $\text{Mg}_1 \text{O}_1$ , a 1: 1 ratio of Magnesium to Oxygen.

But after performing the lab a ratio of  $\text{Mg}_1.15 \text{O}_1$  was shown. Theory

The reaction that occurred in this lab is a synthesis reaction. A synthesis reaction is when at least two or more substances combine to form a single product. In this instance the two reactants that were apparent are Magnesium, and Oxygen. This reaction is not a combustion reaction because it does not produce carbon dioxide or a form of water. Students set out to find if a ratio of 1: 1, magnesium to oxygen is true in this lab. In order to find this out students found the empirical formula of magnesium and oxygen. An empirical formula is the ration of atoms in a compound. In this lab the empirical formula for magnesium and oxygen would be, for every one magnesium atom there would be one oxygen atom. Procedure

This lab was started by first weighing the Crucible and the lid that are being used in grams, after they have both sat over a Bunsen burner to burn off an excess materials from any usage before. Then, a 25cm portion of Magnesium was added and then weighed along with the crucible and it's top. After the previous step was completed, the crucible and the Magnesium were heated

until white smoke started to protrude from with the crucible. After all the smoke had disappeared and the crucible was left to cool for five minutes, the Crucible and all of its contents were measured again. The final weighing of the crucible with the magnesium should weigh more, due to the oxygen combining with magnesium to form Magnesium Oxide.