

Name: _____

Partners: _____

Stoichiometry of Magnesium Oxide

In this experiment, the measured mass of magnesium metal will be reacted with an excess of oxygen through burning. The data will be used to find the theoretical yield for this reaction to make magnesium oxide. We will then compare the theoretical value to your actual results for this reaction and determine your percent yield.

Procedure:

1. Determine the mass of a clean, dry crucible or small evaporating dish.
2. Measure the mass of a piece of magnesium ribbon or magnesium turnings, and the crucible/dish.
3. Place the crucible/dish with the magnesium on a ring stand with a triangle, cover it, and begin heating slowly, observing what happens.
4. When the burning has stopped, continue to heat the crucible/dish for another 2-3 minutes. Then let the crucible/dish cool.
5. Determine the mass of the contents of the crucible/dish. The dish should be cool to the touch (be careful).

Data: *(Sample data table. Make your own in your lab notebook.)*

Mass of crucible/dish: _____

Mass of crucible/dish and magnesium _____

Mass of crucible/dish and product _____

Calculations:

Mass of magnesium reacted _____

Mass of final product _____

Mass of oxygen reacted _____

Moles of magnesium reacted _____

Moles of magnesium in product _____

Moles of oxygen reacted _____

Moles of oxygen atoms reacted _____

How much magnesium oxide should
you have gotten? _____

What is your percent yield? _____

Conclusions:

1. Why did you or did you not get the theoretical amount of magnesium oxide?
2. How do your results compare with other groups?
3. If you did not completely burn the magnesium (that is, all of it did not react), how would your determination be off?