

Chemistry Lab:
Preparing a compound

Name: _____

In this procedure you will burn magnesium metal. When elements burn, they combine with oxygen from the air to form a compound. The "ashes" left at the end of the experiment will be the compound magnesium oxide.

Materials:

Crucible (small porcelain dish) with lid
Metal crucible tongs
Clay triangle
Asbestos pad
Iron ring and ring stand
Dropper and small beaker of water
Mg curls

Procedure:

1. Set up the ring stand with the iron ring attached. Adjust the height of the ring so it will be 1-2 inches above the Bunsen burner. Place the clay triangle on the ring.
2. Weigh the empty crucible and record its mass on a data table you have created on the next page. Do not pick up the weighed crucible with your hands. Practice using the tongs to pick up and put down the crucible.
3. Get a spoonful of Mg curls. Place the Mg curls in the crucible.
4. Weigh the crucible with the Mg in it. Record this new mass on your data table.
5. Heat the crucible strongly for several minutes until the Mg catches on fire. Watch out! The Mg will burn with a brilliant white light. Once it is burning turn down the flame a bit.
6. Continue heating the crucible until all the Mg has burned and a grayish powder remains. Make sure your Mg is completely burned by blowing **Gently** into the crucible. If you still see the flashing white light, it isn't done burning. If it only glows red it is probably done.
7. When the Mg is completely burned, remove the crucible from the ring using the tongs. **CAREFULL** it is really hot. Set it down on an asbestos pad on your lab table to cool.
8. After it is cooled a few minutes, use a dropper to add about 10 drops of distilled water to the crucible. Try to get directly on the powder itself, not the sides of the crucible. Notice any odor produced as you do this?
9. Using the tongs, return the crucible to the triangle. Heat the crucible again until the powder is completely dry.
10. Remove the crucible and place on the asbestos pad to cool for about 5 minutes.
11. Weigh the cooled crucible and record its mass in your data table. (Remember to use the tongs to pick up the crucible every time.)
12. Return the crucible to the triangle and heat for another 3-5 minutes, cool, and weigh. You should continue heating, cooling, and reweighing the crucible until you get the same mass twice in a row.

Data Table:

1. Write a balanced chemical equation for the reaction that occurred in this experiment.
2. What type of chemical reaction was this?
3. Was there a change of mass for the substance in the crucible after heating?
4. If so, was it a gain or loss? How do you explain your results?
5. How much Oxygen from the air should you have used to burn your Mg?
6. From your equation and data how many grams of product should you have obtained at the end of the experiment? This is called your theoretical yield.
7. Is there a difference between your actual yield (what you obtained in the lab) and your theoretical yield? Explain this difference?