Name: _____

Period: ____ Subject: _____

Date: _____

Lab: Combustion of Magnesium

Objectives:

- observe evidence that a chemical reaction is taking place
- measure changes that take place in a chemical reaction and analyze their meaning
- devise a method to determine if the product(s) of a reaction is/are ionic compounds

Equipment:

Note: This is an incomplete list. Make sure you take note of all the equipment used in this lab in order to include a proper list in the "Materials" section for the writeup of this lab in your notebook.

- clay ring (the triangle thingie)
- crucible
- sample of magnesium

Procedure:

1. Obtain a sample of magnesium from your teacher. Place your magnesium in a small ceramic crucible. Measure the mass of your sample using a triple beam or electronic balance.
2. Place the clay triangle in the ring on the ring stand 7-10 cm above the top of the Bunsen burner.
3. Place the crucible (with the magnesium sample) in the clay ring and heat the crucible with a hot flame. The crucible should be positioned at the top of the flame.
4. When the magnesium ignites and burns with a bright white light, turn off the burner. Do ***not*** look directly at the magnesium while it's burning.
5. After the magnesium has finished burning, use tongs to place the crucible on the lens glass on your laboratory bench so the crucible and sample may cool faster. Do ***not*** place the sample directly on the lab bench as this may crack the crucible.
6. After the crucible and sample have cooled for about 5 minutes, reweigh the sample.
7. Put 10 ml of distilled or deionized water into a small beaker and check the conductivity. Now, add the ashes to the beaker, stir thoroughly, and recheck the conductivity.

Data:

Mass of Mg (g) before reaction	Moles Mg before reaction	Predicted mass of product (g) after reaction	Actual mass (g) of product after reaction	% Difference

Analysis/Results:

1. Did you notice any energy released by this reaction? What form did this release of energy take?
2. The magnesium reacts with certain components in the air. How could we know this?
3. The product of this reaction is mostly magnesium oxide. What is the chemical formula for this product? How many grams of this product would you expect to get? (You will have to calculate how many moles you expect to get first, then find the mass of that many moles of magnesium oxide.) Also, calculate the percent difference of product from what you expected.
4. What are some of the possible explanations for why you didn't get as much magnesium oxide as you expected?
5. What happened to the conductivity of the water when you added the magnesium oxide ashes? Does this tell us anything about whether magnesium oxide is a covalent or ionic product?
6. What type of product is magnesium oxide a common ingredient in? (Possible reference: your local pharmacist).

Conclusion:

When you burn a piece of wood, the resulting ashes are lighter. What happened to the extra mass? When you burned the magnesium, how did the mass change? Compare and contrast this case with the situation where you burn wood.