

Group # _____

Name _____

Period ___ Date ___/___/___

Lab Ch 5 • Making Ionic Compounds

Lab Partners: _____

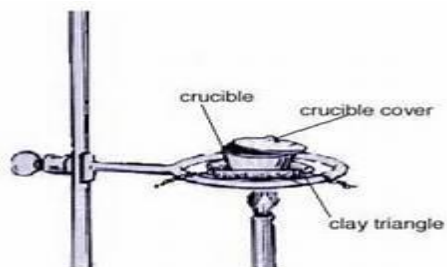
Introduction

Elements combine to form compounds. If energy is released as the compounds are formed, the resulting product is more stable than the reacting elements. In this investigation you will react elements to form two compounds. You will test the compounds to determine several properties. Ionic compounds have properties that are different from those of other compounds. You will decide if the products you formed are ionic compounds.

Objective

- **Observe** evidence of a chemical reaction.
- **Acquire** and **analyze** information that will enable you to decide if a compound has an ionic bond
- **Classify** the products as ionic or not ionic

Illustrations



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Materials

Chemical	Equipment
Magnesium ribbon	Crucible
Distilled Water	Crucible tongs
	Balance
	Ring Stand & iron ring
	Clay triangle
	spatulas
	Stirring Rod
	Bunsen burner
	Conductivity tester
	Beaker

Safety Precautions – WRITE THEM

- Always wear safety glasses and a lab apron
- **Do not look directly at the burning magnesium. The intensity of the light can damage your eyes**
- Avoid handling heated materials until they have cooled

Procedure

1. Arrange the ring on the ring stand so that it is about 7 cm above the top of the Bunsen burner. Place the clay triangle on the ring.
2. Measure the mass of the clean, dry crucible, and record the mass in the data table.
3. Roll 25 cm of magnesium ribbon into a loose ball. Place it in the crucible. Measure the mass of the magnesium and crucible and record this mass in the data table.
4. Place the crucible on the clay ring. Heat the crucible with a hot flame being careful to position the crucible near the top of the flame.
5. When the magnesium metal ignites and begins to burn with a bright white light, immediately turn off the laboratory burner. **Caution:** Do

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not look directly at the burning magnesium. After the magnesium product and crucible have cooled, measure their mass and record it in the data table.

6. Place the dry solid product in a small beaker for further testing.
7. Add 10 mL of distilled water to dry magnesium product in the beaker and stir. Check the mixture with a conductivity checker and record your results.

Cleaning and Disposal

1. Solids go in the trash
2. Clean ALL equipment with LAB Equipment soap & brushes
3. Dry dishes for next lab group and place them on a paper towel.
4. Clean Lab BENCH with small soap bottle and sponge.
5. Wash hands with hand soap.
6. Let me know when you are ready. Do not get unprotected until dismissed.

Data Table

Mass Data	
Materials(s)	Mass (g)
Empty Crucible	
Crucible and Mg ribbon before heating	
Magnesium ribbon	
Crucible and magnesium products after heating	
Magnesium products	

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Post-Lab Questions (Leave at least 5 lines to answer questions)

1. What kind of energy (endothermic or exothermic) was released by the reaction?
2. **Using Numbers:** How do you know that the magnesium metal reacts with certain components of the air? (THINK!! - Use your data table to help EXPLAIN this. 2-3 sentences)
3. **Predicting:** Magnesium reacts with both oxygen and nitrogen from the air at the high temperature of the crucible. Predict the chemical formulas for both products. Write the names of these two compounds.
4. **Analyzing and concluding:** The product formed from magnesium and oxygen is white, and the product formed from magnesium and nitrogen is yellow. From your observations, which compound makes up most of the product?
5. **Analyzing and concluding** Did the magnesium compounds and water conduct an electric current? Do the results indicate whether or not the compounds are ionic? Explain your reasoning.