

Name: _____ **Virtual Empirical Formula of Magnesium Chloride Lab**

Procedure: Watch the following video to see the lab technique and collect the data:

<https://www.youtube.com/watch?v=ry33yyXdTg0>

Questions from the video:

1. What are we trying to determine in the lab?
2. What did you observe during the reaction?
3. How do you know when all of the magnesium has reacted?
4. **SAFETY:** What is the purpose of putting a watch glass over the beaker during heating?
5. Why does the beaker need to be heated and weighed multiple times?

DATA

Mass of Magnesium Ribbon:	_____ grams
Mass of beaker and watch glass	_____ grams
Mass of beaker, watch glass and Magnesium chloride	_____ grams

ANALYSIS

1. Show your work and calculate the mass of Magnesium chloride that was produced
2. Show your work and calculate the mass of chloride in the sample.
3. Show your work and determine the empirical formula of magnesium chloride based on your data.

Post Lab Questions

1. A lab group did not reheat the sample after letting it dry overnight. How might this affect their determination of the empirical formula? Would you expect the formula to have 'extra' chloride, 'extra' magnesium or no effect at all?

2. In another lab section, they performed a similar lab where they determined the empirical formula of Magnesium Oxide by burning magnesium ribbon. The data they collected is provided below. Based on their data, determine the empirical formula of magnesium oxide. Show all your work while accounting for significant figures and rounding
 - a. Mass of magnesium ribbon: 1.252 grams
 - b. Mass of magnesium oxide produced: 2.076 grams

3. During a laboratory experiment, a compound containing potassium, nitrogen, and oxygen was found to be 38.7% by weight potassium, 13.9% nitrogen, and 47.4% oxygen. What is the empirical formula of the compound?

4. A 5.753 gram sample containing carbon, hydrogen and oxygen is analyzed through combustion analysis, producing 11.003 grams of carbon dioxide and 6.758 grams of water. Determine the empirical formula for this compound.