

Name: \_\_\_\_\_

Section: \_\_\_\_\_

### Data and Calculations

1. Unknown sample number \_\_\_\_\_
2. Mass of test tube: \_\_\_\_\_
3. Mass of test tube and sample *before* heating: \_\_\_\_\_
4. Mass of test tube and sample *after* heating: \_\_\_\_\_
5. Mass of sample in the tube *before* heating: \_\_\_\_\_
6. Mass of residue in test tube *after* heating: \_\_\_\_\_
7. Mass of oxygen gas released: \_\_\_\_\_
8. Volume of oxygen gas at room temperature: \_\_\_\_\_
9. Atmospheric pressure: \_\_\_\_\_
10. Vapor pressure of water: \_\_\_\_\_
11. Temperature of water: \_\_\_\_\_

### Questions (to be completed while in the laboratory)

1. Calculate the pressure of the collected oxygen gas (i.e. correct for the vapor pressure of water).
2. How much volume would the gas in question #1 occupy at STP?
3. Determine the moles of oxygen gas collected from the experimental mass of the oxygen gas.



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### Post-lab Questions

1. A sample of an unknown metal chlorate weighing 1.725 g is heated until all of the oxygen is driven off. The residue remaining in the container weighs 0.859 g. Calculate the percentage of oxygen in this metal chlorate.
  
2. 340 mL of oxygen gas are collected by displacement of water at 33 °C and 742 torr, where the vapor pressure of water at this temperature is known to be 37.8 torr.
  - A. What is the pressure of the oxygen gas?
  
  - B. Determine the volume of the oxygen gas at STP.