Pre-Lab Questions

Molar Volume of a Gas

Answer the following questions to prepare for the concepts covered in this lab.

1. Write the balanced equation for the reaction that occurs between magnesium metal and hydrochloric acid.

2. Explain how changes in pressure and temperature affect the volume of a gas.

3. The ideal gas law is based on the assumption that there are no attractive forces between gas molecules. Many gases, including hydrogen, come very close to behaving like ideal gases at low pressure and/or high temperature. Explain why.

4. How many moles of hydrogen gas can be produced from a reaction that involves 0.025 g of Mg and an excess of hydrochloric acid? What volume would this gas occupy at STP?