

Chem 116

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Assignment 2 Extra Problem: Collecting a gas over water

The following apparatus is used to collect hydrogen gas over water. First, the jar of water is filled with water and inverted so that there is no gas in it. A tube is connected to the reaction vessel so that any gas produced will be released into the jar. Then 0.0500 grams of magnesium metal are added to the reaction vessel, and excess aqueous sulfuric acid is also added. The reaction vessel is quickly sealed and the reaction proceeds, displacing water in the jar as it goes. On this day in the laboratory, the atmospheric pressure is 752 mmHg. The water temperature is 22°C. What should the total volume (in mL) of gas collected be?

The balanced chemical reaction that takes place is

