

# Exploring Stoichiometry with Solids, Solutions and Gases

## Data Tables and Observations

### Part A. Sodium Bicarbonate and Acetic Acid

Sample	1	2	3
Mass of $\text{NaHCO}_3$	0.50 g	1.50 g	2.50 g

Observations:

Room Temperature ( $^{\circ}\text{C}$ )	Room Pressure (atm)

1. Sodium bicarbonate needed to neutralize 10.0 mL of 2.0 M acetic acid (show work): \_\_\_\_\_

\_\_\_\_\_  
Teacher Check

Observations of Fourth Flask:

2. Theoretical volume of the balloon (show work): \_\_\_\_\_ mL

Measured circumference of the balloon: \_\_\_\_\_

3. Experimental volume of the balloon (show work): \_\_\_\_\_ mL

4. Compare your experimental volume to the theoretical.

**Part B. Magnesium and Hydrochloric Acid, Part 1**

Assigned volume of hydrogen gas \_\_\_\_\_ mL

5. Mass of magnesium needed (show work): \_\_\_\_\_

\_\_\_\_\_  
Teacher Check

Observations:

Circumference of balloon: \_\_\_\_\_

\_\_\_\_\_  
Teacher Check

6. Experimental volume of the balloon (show work): \_\_\_\_\_

7. Was any reactant left over? If yes, which one and how much of it was left over?

**Part B. Magnesium and Hydrochloric Acid, Part 2**

Assigned mass of magnesium solid \_\_\_\_\_ g

8. Volume of 2.0 M hydrochloric acid needed (show work): \_\_\_\_\_

\_\_\_\_\_  
Teacher Check

Observations:

Circumference of balloon: \_\_\_\_\_

\_\_\_\_\_  
Teacher Check

9. Experimental volume of the balloon (show work): \_\_\_\_\_

10. Theoretical volume of the balloon (show work): \_\_\_\_\_