

Lab The Stoichiometry of an Acid + Bicarbonate Reaction

Instructions

1. Preparation and Massing of the Pipets

As you work, you will construct your own data table. A grid is provided on the report page. Obtain a pipet full of 3.0 M sulfuric acid. Next, record the mass of a clean, modified jumbo pipet (reaction vessel). Then, place between 0.50 and 0.70 grams of sodium bicarbonate into the modified jumbo pipet and again record its mass. Then, put together both pipets (see diagram on back) and record the total mass of the entire assembly.

2. Perform the Reaction

SLOWLY release the sulfuric acid drop-wise into the sodium bicarbonate. **Wait for each drop to stop reacting before you release the next one.** Continue releasing the acid in this manner until effervescence ceases. This may take several minutes. Make sure all of the powder is rinsed from the sides by swirling the container. When the reaction is complete, record the mass of the entire unit again.

Rinse out the reaction vessel and repeat all of the above steps. You will need two sets of data for the calculations.

3. Calculations

Using the recorded masses, determine the grams of gas released during the reaction for each of your two trials. **CLEARLY SHOW THE STEPS IN YOUR CALCULATION AND LABEL EVERYTHING.**

Write a balanced chemical equation for the reaction you have performed in this experiment.

Calculate the THEORETICAL mass of gas that you should have produced from this reaction for both trials of the lab (2 calculations).

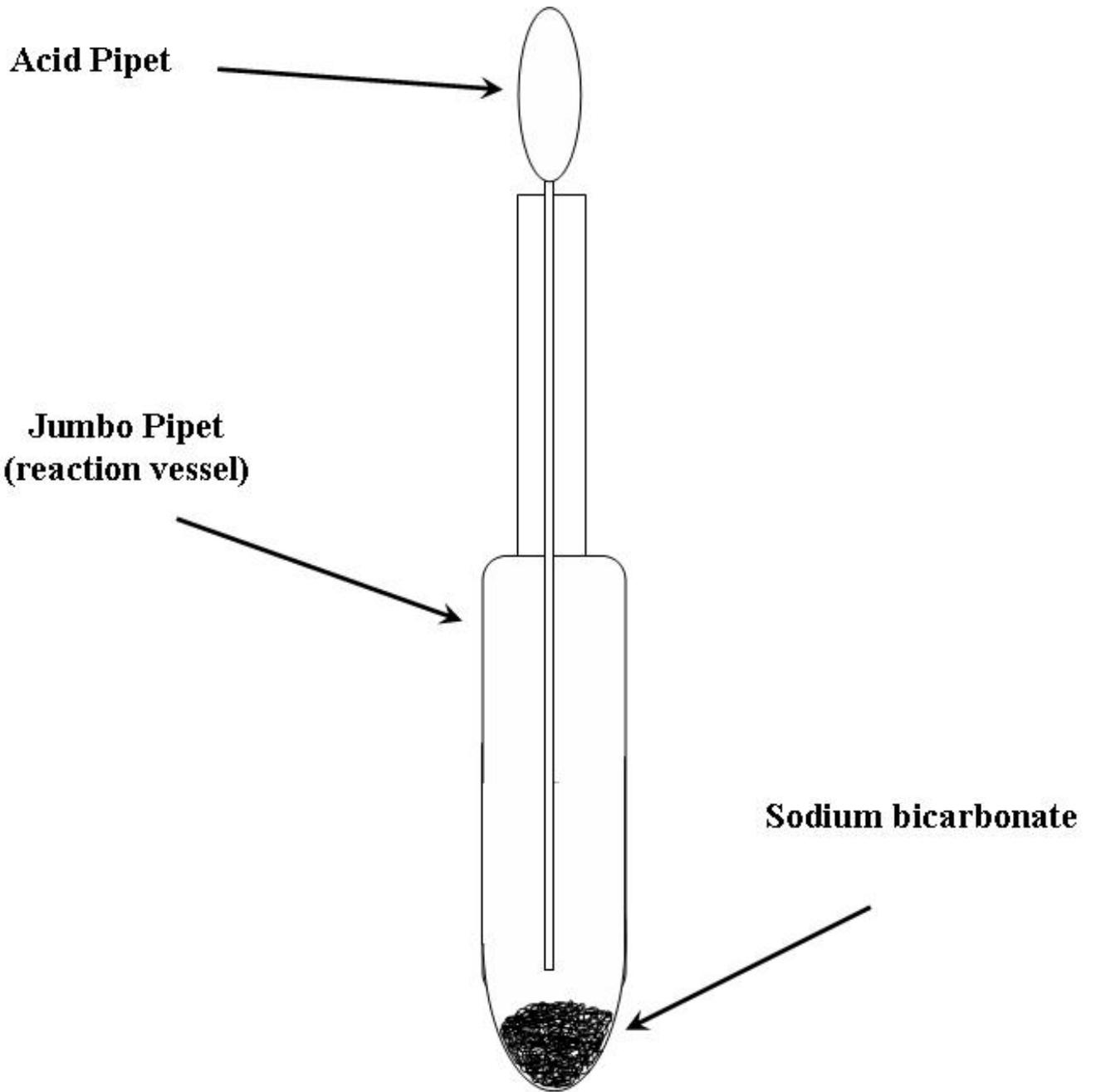
Calculate the % difference for each trial using the formula:

$$\% \text{Difference} = \frac{(\text{lab value} - \text{theoretical value})}{\text{theoretical value}} \times 100$$

4. Summary

Write a summary discussing your two percentages. In your summary, suggest at least TWO reasons why you don't have a zero percent difference. For full credit, you must write in complete sentences and clearly communicate well thought out, valid ideas that relate to this topic.

Diagram



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Report Sheet Name _____ Date _____

Balanced Equation:

Calculations:

Summary: