

## Vinegar and Baking Soda Stoichiometry Lab

### Purpose:

To predict the amount of Carbon Dioxide gas that should be produced in a chemical reaction; then calculate the amount of CO<sub>2</sub> released, the percent yield.



**Materials:** Baking Soda (NaHCO<sub>3</sub>), Vinegar (CH<sub>3</sub>COOH), 2 beakers and electronic balance.

### Procedure:

1. Obtain and record the mass of 100 mL beaker. This is beaker A.
2. With beaker A still on the balance, add approximately 10.0 g of baking soda to the cup. (The mass does not have to be exactly 10.0 g, as long as you record the mass accurately.)
3. Obtain and record the mass of another 100 mL beaker. This is beaker B.
4. Place beaker B on the scale, weigh and record approximately 50.0 g of vinegar. (The mass does not have to be exactly 50.0 g, as long as you record the mass accurately.)
5. Performing the reaction:
  - a. Slowly add vinegar to cup A until the reaction has stopped.
  - b. DO NOT add all of the vinegar, just enough to complete the reaction.
  - c. After the reaction is completed reweigh and record the mass of both cup A and B.
6. Calculate the mass of CO<sub>2</sub> that escaped.

### Useful Formulas:

$$\text{Percent Yield} = \frac{\text{Actual Yield}}{\text{Theoretical Yield}} \times 100$$

$$\text{Percent Error} = \frac{(\text{Actual Yield} - \text{Theoretical Yield})}{\text{Theoretical Yield}} \times 100$$

### Data:

		Data	Units
1	Mass of beaker A (empty)		
2	Mass of Beaker A + Baking Soda		
3	Mass of Baking Soda (2-1)		
4	Mass of beaker B (empty)		
5	Mass of Beaker B + Vinegar		
6	Mass of Beaker B + Vinegar after reaction		
7	Mass of Vinegar added to Beaker A (5-6)		
8	Mass of Beaker A after reaction		
9	Mass of product after the reaction (8-1)		
10	Mass of Baking Soda + Vinegar (3+7)		
11	Mass of Carbon Dioxide lost (10-9)		

# Baking Soda And Vinegar Stoichiometry Lab Answers

**Margaret G. Kimble**



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Kimble,1994      **Subject Guide to Books in Print** ,1997      **Chemistry** James E. Brady,Fred Senese,2004-02-04 Publisher  
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## **Table of Contents Baking Soda And Vinegar Stoichiometry Lab Answers**

1. Understanding the eBook Baking Soda And Vinegar Stoichiometry Lab Answers
  - The Rise of Digital Reading Baking Soda And Vinegar Stoichiometry Lab Answers
  - Advantages of eBooks Over Traditional Books
2. Identifying Baking Soda And Vinegar Stoichiometry Lab Answers
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Baking Soda And Vinegar Stoichiometry Lab Answers
  - User-Friendly Interface
4. Exploring eBook Recommendations from Baking Soda And Vinegar Stoichiometry Lab Answers
  - Personalized Recommendations
  - Baking Soda And Vinegar Stoichiometry Lab Answers User Reviews and Ratings
  - Baking Soda And Vinegar Stoichiometry Lab Answers and Bestseller Lists
5. Accessing Baking Soda And Vinegar Stoichiometry Lab Answers Free and Paid eBooks
  - Baking Soda And Vinegar Stoichiometry Lab Answers Public Domain eBooks
  - Baking Soda And Vinegar Stoichiometry Lab Answers eBook Subscription Services

- Baking Soda And Vinegar Stoichiometry Lab Answers Budget-Friendly Options
- 6. Navigating Baking Soda And Vinegar Stoichiometry Lab Answers eBook Formats
  - ePub, PDF, MOBI, and More
  - Baking Soda And Vinegar Stoichiometry Lab Answers Compatibility with Devices
  - Baking Soda And Vinegar Stoichiometry Lab Answers Enhanced eBook Features
- 7. Enhancing Your Reading Experience
  - Adjustable Fonts and Text Sizes of Baking Soda And Vinegar Stoichiometry Lab Answers
  - Highlighting and Note-Taking Baking Soda And Vinegar Stoichiometry Lab Answers
  - Interactive Elements Baking Soda And Vinegar Stoichiometry Lab Answers
- 8. Staying Engaged with Baking Soda And Vinegar Stoichiometry Lab Answers
  - Joining Online Reading Communities
  - Participating in Virtual Book Clubs
  - Following Authors and Publishers Baking Soda And Vinegar Stoichiometry Lab Answers
- 9. Balancing eBooks and Physical Books Baking Soda And Vinegar Stoichiometry Lab Answers
  - Benefits of a Digital Library
  - Creating a Diverse Reading Collection Baking Soda And Vinegar Stoichiometry Lab Answers
- 10. Overcoming Reading Challenges
  - Dealing with Digital Eye Strain
  - Minimizing Distractions
  - Managing Screen Time
- 11. Cultivating a Reading Routine Baking Soda And Vinegar Stoichiometry Lab Answers
  - Setting Reading Goals Baking Soda And Vinegar Stoichiometry Lab Answers
  - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Baking Soda And Vinegar Stoichiometry Lab Answers
  - Fact-Checking eBook Content of Baking Soda And Vinegar Stoichiometry Lab Answers
  - Distinguishing Credible Sources
- 13. Promoting Lifelong Learning
  - Utilizing eBooks for Skill Development
  - Exploring Educational eBooks
- 14. Embracing eBook Trends

- Integration of Multimedia Elements
- Interactive and Gamified eBooks

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