

Chemistry Lab: The Law of Conservation of Mass

Name: _____ Period: _____ Date: _____

Data

<i>Data Table</i>	<i>Trial 1 Mass (g)</i>	<i>Trial 2 Mass (g)</i>	<i>Trial 3 Mass (g)</i>	<i>Average Mass (g)</i>
Bottle, cap, H ₂ O, & Alka-Seltzer tablet (Mass of total system before reaction)				
Mass of total system after reaction				
Final Mass (after squeezing bottle)				

Analysis

1. What evidence did you observe that indicates that a chemical reaction took place?

2. Compare the mass of the closed system before the reaction and the mass of the closed system after the reaction. Describe your results. _____

3. Does this experiment prove the Law of Conservation of Mass? Explain? _____

4. How do you account for the difference in mass after the top was opened and water was squeezed up into the neck of the bottle? _____

5. Was this experiment conducted in a "closed" or "open" system? How would you define closed reaction system and open reaction system? _____

Post Lab Questions

Wax appears to disappear as a candle burns. How can the Law of Conservation of Mass apply to this reaction?

When ammonium nitrate (NH₄NO₃) explodes, the products are nitrogen, oxygen, and water. When 40 grams of ammonium nitrate explode, 14 grams of nitrogen and 8 grams of oxygen form. How many grams of water form? (Show your work!)

Zinc metal reacts with yellow crystals of sulfur in a fiery reaction to produce a white powder of zinc sulfide. A chemist determines that 65.4 g of zinc reacts with 32.1 g of sulfur. How many grams of zinc sulfide could be produced from 20.0 g of zinc metal? (Show your work!)