

Conservation of Mass Lab

During a chemical reaction, atoms, molecules, or ions collide, rearrange, and form products. Word and chemical equations describe the chemical changes that occur during a chemical reaction.

Purpose: Investigate two different chemical reactions and determine if mass is gained or lost during the reaction.

Materials and Equipment

Safety Considerations

- Iron (III) nitrate and sodium hydroxide are both corrosive, toxic, and irritants. Wash any spills on skin or clothing immediately with plenty of cold water. Report spills to your teacher.

Procedure

1. Put on eye protection and a lab apron.

Part A: Iron (III) Nitrate and Sodium Hydroxide

2. Practice holding the empty test tube with tongs and sliding it into the empty Erlenmeyer flask. Seal the flask to check that the test tube fits and that the stopper forms a tight seal.
3. Measure 5mL of sodium hydroxide solution in the 10 mL graduated cylinder. Pour this solution into the flask.
4. Pour 5 mL of iron (III) nitrate solution into the small test tube.
5. Tilt the flask and carefully slide the test tube into it. Do not allow the test tube contents to spill.
6. Seal the flask with the stopper.
7. Measure and record the total mass of the flask and its contents.
8. Slowly tip the flask to allow the two solutions to mix.
9. Measure and record the total mass of the flask and its contents.
10. Properly dispose of any waste in marked containers.

Part B: Antacid Tablet in Water

11. Add 50 mL of tap water to a 250 mL beaker.
12. Take an antacid tablet out of its package.
13. Place the tablet and the beaker of water on the scale. Measure and record the total mass of the cup, water, and tablet.
14. Add the tablet to the water. Record your observations.
15. When the visible reaction has stopped, measure and record the total mass of the beaker and its contents.
16. Properly dispose of the beakers contents in the marked waste container.

