

Lab- Law of Conservation of Mass

Introduction: Does mass change in a chemical or physical reaction? In this series of experiments you will find the answer to this question.

Procedures:

Work in groups of four and follow the directions for each mini-experiment. Use your balance very carefully and remember to mass all the objects at the BEGINNING and END of each experiment.

Lab 1-Mass of Ice

materials: beaker, ice and balance.

procedure:

1. Mass the chunk of ice in the beaker.
2. Wait until it melts.
3. Mass again.

prediction: Will the mass change? How?

1. Mass before _____
2. Mass after _____
3. change in mass _____

Lab 2-Mass of dissolved salt

materials: salt, graduated cylinder, balance, beaker, cup

procedure:

1. Place 30 mL of water in a small beaker. a small spoonful of salt in a cup.
2. Place a spoonful of salt in a cup.
3. Mass the cup of salt with the beaker of water.
4. Mix the salt into the water and stir.
5. Mass beaker with salt water.

prediction: Will the mass change? How?

1. mass unmixed..... _____
2. mass mixed..... _____
3. change in mass..... _____

Lab 3-Mass of Mixed Solutions

materials: two solutions, two beakers

procedure:

1. Measure 15 ml of NaCl solution into a beaker
2. Measure 15 mL of AgNO₃ solution into a beaker.
3. Mass both solutions.
4. Slowly pour AgNO₃ into NaCl (one drop at a time)
5. Mass both beakers and the new solution.

prediction: Will the mass change? How?

1. mass unmixed..... _____
2. mass mixed..... _____
3. change in mass..... _____

Lab 4-Mass of a Gas

Materials: flask with lid, 1/4 of an Alka Seltzer tablet, balance and goggles

Procedure:

1. Fill the flask 1/3 full of water.
2. Mass the flask, water, lid and tablet.
3. Add the tablet and quickly put the lid on.
4. Mass again.
5. Allow gas to escape (open) mass again.

Prediction: Will the gas have mass?

1. mass before..... _____
2. mass after..... _____
3. change in mass. _____
4. mass after gas released _____
5. change (#1-#4=)..... _____

1. Which experiments were physical changes?

2. Which experiments were chemical changes?

3. Did the mass change in the physical or chemical changes?

3. What kind of molecules are in ice? Water? As ice melts, where do it's molecules go?

4. Where do molecules of salt go when they dissolve in water? What happens to their mass?

5. When the two solutions were poured together a new substance forms. What was it made of?

6. Why did the mass change when the lid was taken off in Experiment 4?

7. The Law of Conservation of Mass states: Mass is always conserved in a physical or chemical reaction as long as nothing is added or lost. Reword this in a sentence you understand.

8. Do you think our 4 experiments proved this law? Why?

Conclusion-What are three things you learned? Be specific and write in c