

Name:

Partners' name(s):

Laboratory 5: Types of Matter and its changes

- Compounds, mixtures, elements, chemical /physical properties
 - Classify several different compounds, elements and mixtures by appearance.
 - Observe and classify several chemical and physical changes.
 - Classify several elements.
 - Chemical and physical changes
 - Examples of metals, nonmetals and metalloids to classify.

Lecture Notes

What are the different classes of matter?

What are the three different types of elements and what are their properties?

What are physical properties?

What are physical changes?

What are chemical properties?

What are chemical changes?

B. Observing and classifying types of changes of matter

- **Perform the following tests at your lab bench. In your lab notebook, label each experiment and record your observations. Classify each experiment as a chemical or physical change.**

1. Watch your instructor light the Bunsen burner and then do it yourself.
2. Obtain a piece of magnesium ribbon from the reagent bench and place it in the burner, holding it with your crucible tongs. Do not look directly at the flame.
Observation:

Type of Change: _____

3. Obtain 1/8 teaspoon of baking powder and mix it with 1 ml of water in your test tube.
Observation:

Type of Change: _____

4. Using your graduated cylinder, obtain 2 ml of copper (II) sulfate solution from the reagent bench. Put it into a test tube. Rinse your graduated cylinder with deionized water and obtain 2 ml of sodium hydroxide solution and mix them together in the tube.
Observation:

Type of Change: _____

5. Obtain some ice from the reagent bench. Place it in a beaker. Observe what happens inside and outside the beaker.
Observations:

Type of Change: _____

6. Obtain a piece of copper. Using the crucible tongs, hold the copper in the burner.
Observation:

Type of Change: _____

7. Your instructor will show you a distillation apparatus. Set one up just like it and boil some copper (II) sulfate solution until you begin to see drops of water coming out of the condensing tube.

Observation:

Type of Change: _____

8. Obtain 10 ml of milk in a beaker and mix with about 3 ml of vinegar. Stir with your glass stirring rod. Do not pour any solid down the sink.

Observation:

Type of Change: _____

Observe the following demonstrations by the instructor

9. Change of state of iodine

Observation:

Type of Change: _____

10. Electrolysis of water

Observation:

Type of Change: _____

11. Reaction of zinc and sulfur

Observation:

Type of Change: _____

12. Changes of sulfur

Observation:

Type of Change: _____

13. Reaction of calcium

Observation:

Type of Change: _____

14. Sodium in water

Observation:

Type of Change: _____

Calculations

None

Questions and Answers:

- What is the difference between chemical and physical changes?

- What is the difference between zinc and a compound of zinc?

- In a different colored pen or pencil, make corrections to the table in which you classified the elements into metals and nonmetals. Cross out the word unsure and put the word metalloids.

Conclusions and Reflections

What is something from today's lab that you could use in your classroom someday?

Have you learned the difference between compounds, mixtures and elements? If not, what is a question you have that would help you see the difference.

What was it that you did today that helped you see the difference between chemical and physical change?

What is something you are confused about?
