

1. Physical and Chemical Changes Lab.

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Lab 1. Physical and Chemical Changes Lab

Purpose: To identify physical and chemical changes through different experiments.

Procedure:

Experiment A

1. Dissolve a small amount of copper sulfate pentahydrate in water(no more than 1.2cm deep).
2. Holding the test tube with a test tube holder, strongly heat the mixture over a Bunsen burner flame. Make sure that the mouth is directed at a wall, away from other people.
3. Continue heating until a residue remains and the color changes.
4. Allow the substance to cool.
5. Add approximately 10ml of water to the test tube.
6. Pour the solution into the waste container provided.

Experiment B

1. Place a test tube into a test tube rack.
2. Place HCl into the test tube(~2cm deep of HCl).
3. place a 1.5cm piece of magnesium ribbon into the HCl.
4. Pour Mg/HCl waste into the container.

Experiment C

1. Dissolve a scoop of Epsom salts into 50ml of water in a 250ml beaker and stir to dissolve.
2. Add 3 droppers full of household ammonia. Do not drink.
3. Pour the solution down the drain. clean/dry the equipment.

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Experiment D

1. Place 5 drops of silver nitrate into a test tube.
2. Add 5 drops of sodium chloride into the test tube.
3. Rinse test tube in the sink.

Experiment E

1. Put about 50ml of water into an Erlenmeyer flask and take the temperature of the water.
2. Add half a scoop of sodium bicarbonate to the flask and swirl to mix.
3. After 1 minute, measure the temperature ~~in the sink~~ of the mixture.
4. Rinse flask in the sink.

Experiment F

1. Measure one small scoop of sodium polyacrylate into a beaker.
2. Add 10ml of water into the beaker.
3. Invert the beaker over the sink.
4. Add 10ml of water into the beaker.
5. Invert the beaker over the sink.
6. Put contents of the beaker into the appropriate waste container. Rinse out the beaker with lots of water.

Observations:

Experiment A

- The water is clear and the copper sulfate is blue.

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- There are some popping noises when heating and a smell is produced (water boiling smell).

- When mixed, the mixture is a transparent blue.

- It mixes as the water boils and becomes slightly darker and less transparent.

- After the liquid evaporates, there is a blue deposit left in the test tube. Some of it seemed to turn white. I think it is left over copper sulfate.

Experiment B

- HCl was clear, magnesium was metallic.

- When combined, it was exothermic, let off vapor, and bubbled.

Experiment C

- Water is clear, ammonia is clear (smells bad), Epsom salt is white.

- mixing Epsom salt has no reaction.

- Mixing in ammonia makes a milky, cloudy mixture with things floating inside.

Experiment D

- Silver nitrate and sodium chloride are clear.

- When mixed, it turns white and begins to deposit a white substance. Cloudy.

Experiment E

- Water is white clear and 32°C.

- Sodium bicarbonate is white powder.

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9/12/24-9/13/24

- End mixture is clear.

- End mixture is 29°C.

Experiment - It cooled by 3°C.

Experiment F

- Water is clear, sodium polyacrylate is white.

- The mixture is a solid, opaque substance that sticks to the beaker.

- The sodium polyacrylate absorbed all of the water.

- It is a jelly like substance that looks like ice.

Conclusion:

The purpose of the lab was to identify physical and chemical changes through different experiments. We achieved this purpose by performing 6 different experiments and determining whether or not it was physical or chemical. Experiment A was a physical change because mixing water and copper sulfate gave a blue liquid, boiling away that water left a white powder, and adding water back turned it blue again. Experiment B was a chemical change because adding a magnesium strip to HCl caused it to dissolve the strip and had an exothermic reaction. Experiment C was a chemical reaction because mixing water, Epsom salts and ammonia created a

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milky, cloudy substance with chunks floating in it. Experiment D was a chemical reaction because mixing the silver nitrate and sodium chloride yielded a white and cloudy liquid. Experiment E was a chemical changes because it was an endothermic reaction. It cooled by about 3°C. Experiment F was a physical change because the sodium polycarbonate absorbed the water, which can be evaporated back out.