Identifying Chemical Changes

# Purpose:

What is the question we want to answer in the lab?

# Materials:

* Scoopula
* Test tube rack
* Test tubes
* Safety glasses
* gloves

# Procedure:

This lab is divided into 5 parts:

**Part 1**

1. Obtain the **2 drop bottles** containing **silver nitrate** and **sodium iodide**.
2. Observe and record the physical properties of each starting substance before mixing the substances together.
3. Add a few drops of each chemical into a test tube.
4. Record what happens after the substances were mixed and whether you think a physical or chemical change has taken place.

**Part 2**

1. Obtain the **drop bottle** containing **hydrochloric acid** and a **beaker** of **calcium carbonate**.
2. Observe and record the physical properties of each starting substance before mixing the substances together.
3. Put a scoop of calcium carbonate into a clean test tube.
4. Add a few drops hydrochloric acid to the test tube.

**Part 3**

1. Obtain **2** **beakers** containing **distilled water** and **copper (II) sulfate**.
2. Observe and record the physical properties of each starting substance before mixing the substances together.
3. With your lab scoop, add a few crystals of copper (II) sulfate into a clean test tube.
4. Pour about 5 mL of distilled water into the test tube and swirl the mixture.

**Part 4**

1. In this part, you will use **steel wool** and the liquid from **Part 3.**
2. Observe and record the physical properties of each starting substance before mixing the substances together.
3. Add a small piece of steel wool to the liquid in the test tube from Part 3.

**Part 5**

1. Obtain the **drop bottle** containing **hydrochloric acid** and **1 cm of magnesium ribbon.** You will also need **steel wool.**
2. Observe and record the physical properties of each starting substance before mixing the substances together.
3. Add a few drops hydrochloric acid to the test tube.
4. Clean the magnesium ribbon with the steel wool.
5. Add the magnesium ribbon to the test tube.

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# Data/Observations

**Observations**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Starting Substances—Physical properties | Changes after mixing (state, temperature, colour, quantity) | Physical or Chemical Change | |
| Part 1 | Silver nitrate:  Sodium iodide: |  |  |  |
| Part 2 | Hydrochloric acid:  Calcium carbonate: |  |  |  |
| Part 3 | Water:  Copper II sulfate: |  |  |  |
| Part 4 | Steel wool:  Mixture from Part 3: |  |  |  |
| Part 5 | Hydrochloric acid:  Magnesium ribbon: |  |  |  |

# Discussion

Write a paragraph to answer the following questions.

1. What are some distinguishing physical features of each substance that you could use to distinguish them from each of the other substances?
2. What are some physical changes that you observed? Why would you classify them as physical changes?
3. What are some chemical changes you observed? Why would you classify them as chemical changes?
4. What are some characteristic you use to determine the difference between chemical and physical changes?

# Conclusion

Write a sentence to answer the question we proposed in the purpose.