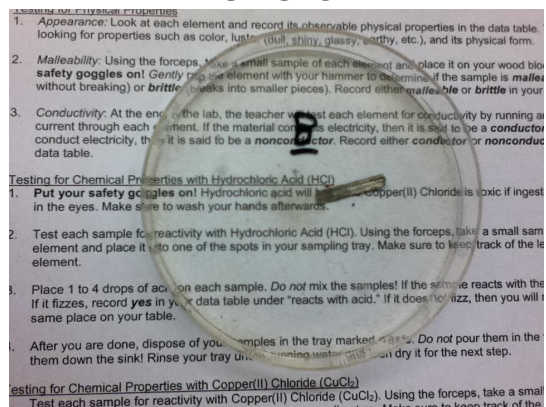


Element A



re
or Physical Properties
variance: Look at each element and record its observable physical properties in the data table. You should record for properties such as color, luster (dull, shiny, glassy, earthy, etc.), and its physical form.

Activity: Using the forceps, take a small sample of each element and place it on your wood block. Put your goggles on! Gently rap the element with your hammer to determine if the sample is **malleable** (if it breaks) or **brittle** (breaks into smaller pieces). Record either **malleable** or **brittle** in your data table.

Activity: At the end of the lab, the teacher will test each element for conductivity by running an electric current through each element. If the material conducts electricity, then it is said to be a **conductor**. If it does not conduct electricity, then it is said to be a **non-conductor**. Record either **conductor** or **non-conductor** in your data table.

Chemical Properties with Hydrochloric Acid (HCl)
your safety goggles! CH3COOH Hydrochloric acid will burn and Copper(II) Chloride is toxic if ingested or in your eyes. Make sure to wash your hands after this activity.

For each sample for reactivity with Hydrochloric Acid (HCl). Using the forceps, take a small sample of the element and place it into one of the sample wells. Make sure to keep track of the letter for each element.

Add 1 to 4 drops of acid on each element. Observe if the element reacts with the acid. If it bubbles or fizzes, record **yes** in your data table. If it does not fizz, then you will record **no** in your data table.

When you are done, dispose of your samples in the tray marked **waste**. Do not pour them in the trash can. Rinse the tray under running water and then dry it for the next step.

[illegible]

• forces (2)
 • Periodic table on pages 9-10
 • **Procedure**
Testing for Physical Properties
 1. **Appearance:** Look at each element and record its color, luster (dull, shiny, glassy, etc.), and its physical form (solid, liquid, gas, etc.).
 2. **Malleability:** Using the samples, take a small amount of each element and place it on your wood surface. Gently rap the element with a hammer to determine if the sample is **malleable** (it flattens out) or **brittle** (it breaks into small pieces). Record either **malleable** or **brittle** in your data table.
 3. **Conductivity:** At the end of the lab, the teacher will give you an element for conductivity by running current through each element. If the material conducts electricity, it is said to be a **conductor**. If it does not, it is called an **insulator** or **nonconductor**. Record **conductor** or **insulator** in your data table.
Testing for Chemical Properties
 1. **Put your safety goggles on** in the eyes. Make sure you are wearing them at all times.
 2. Test each sample for reactivity with water. Take a small amount of each element and place it in a beaker of water. If the sample reacts with water, record **reacts** in your data table. If it does not, record **no reaction**.
 3. Place 1 to 4 drops of acid on each sample. If it fizzes, record **yes** in your data table. If it does not, record **no**.
 After you are done, dispose of your samples in the tray marked **waste**. Do not pour the samples down the sink or into the water and then dry it for the next lab.

cedure

ing for Physical Properties

Appearance: Look at each element and record its other basic physical properties in the data table (color, luster, odor, density, melting point, boiling point, malleability, etc.), and its physical form (solid, liquid, or gas).

Malleability: Using the hammers, take a small sample of each element and place it on your wood safety goggles on! Gently rap the element with the hammer to determine if the sample is **malleable** (does not break) or **brittle** (breaks into smaller pieces). Record either **malleable** or **brittle** in your data table.

Conductivity: At the end of the lab, the teacher will test each element for conductivity by running a current through each element. If the material conducts electricity, then it is said to be a **conductor**. If it does not conduct electricity, then it is said to be a **nonconductor**. Record either **conductor** or **nonconductor** in your data table.

ing for Chemical Properties with Hydrochloric Acid (HCl)

Put your safety goggles on! Hydrochloric acid will burn and Copper(II) Chloride is toxic if it gets in the eyes. Make sure to wash your hands afterwards!

Test each sample for reactivity with Hydrochloric Acid (HCl). Using the forceps, take a small sample of each element and place it into one of the spots in your sampling tray. Make sure to keep track of which element goes into which spot.

Place 1 to 4 drops of acid on each sample. **Do not mix the samples!** If the sample reacts with the acid, record **yes** in your data table under "reacts with acid." If it does not fizz, then record **no** in your data table.

Do not pour the acid down the drain. It is a strong acid and will burn. It is in the tray marked **waste**. Do not pour the acid down the drain.

Element G

Purpose
The purpose of this lab is to investigate both the physical and chemical properties of eight unknown elements. Knowing the properties of these elements will aid in classifying them as metals, nonmetals, or metalloids. This lab is adapted from ChemComm: Chemistry in the Community, Second Edition, 1993.

Materials

- 8 unknown element samples, lettered a to h
- plastic sampling trays (2)
- small hammer
- wood block
- 1.0 M hydrochloric acid (HCl)
- Periodic Table on pages 698-699 in your textbook
- forceps (2)

Procedure
Testing for Physical Properties
1. **Appearance:** Look at each element and record its color, luster, and its physical form. You should be looking for properties such as color, luster, brittleness, softness, and its physical form.

2. **Malleability:** Using the forceps, take a small sample of each element and place it on your wood block. Put your safety goggles on! Gently tap the element with the hammer to determine if the sample is **malleable** (flattens without breaking) or **brittle** (breaks). Record either **malleable** or **brittle** in your data table.

3. **Conductivity:** At the end of the lab, the teacher will provide an element for conductivity by running a current through each element. If the element conducts electricity, then it is said to be a **conductor**. If it does not conduct electricity, then it is said to be a **nonconductor**. Record either **conductor** or **nonconductor** in your data table.

Testing for Chemical Properties with Hydrochloric Acid (HCl)
1. **Put your safety goggles on!** Hydrochloric acid is toxic if ingested or splashed in the eyes. Make sure to wash your face and hands after use.

2. Test each sample for reactivity with Hydrochloric acid (HCl). Using the forceps, take a small sample of each element and place it into one of the spots on the plastic sampling tray. Make sure to keep track of the element.

3. Place 1 to 4 drops of HCl on each sample. Observe the samples. If the sample reacts with the acid, it fizzes, record **yes** in your data table under "reacts with acid." If it does not fizz, then you will record **no** in your data table.

4. After you are done, dispose of your samples in the tray marked **waste**. Do not pour them in the trash can. Pour them down the sink! Rinse your tray with running water and then dry it for the next step.

Testing for Chemical Properties with Copper(II) Chloride (CuCl₂)
1. **Put your safety goggles on!** Copper(II) chloride is toxic if ingested or splashed in the eyes. Make sure to wash your face and hands after use.

2. Test each sample for reactivity with Copper(II) chloride (CuCl₂). Using the forceps, take a small sample of each element and place it into one of the spots on the plastic sampling tray. Make sure to keep track of the element.

3. Place 1 to 4 drops of CuCl₂ on each sample. Observe the samples. If the sample reacts with the acid, it fizzes, record **yes** in your data table under "reacts with acid." If it does not fizz, then you will record **no** in your data table.

4. After you are done, dispose of your samples in the tray marked **waste**. Do not pour them in the trash can. Pour them down the sink! Rinse your tray with running water and then dry it for the next step.

Element H

Metal or Nonmetal: Physical and Chemical Properties of Elements
Geology 1P Mr. Truesger

Name _____ Period _____ Date _____

Purpose
The purpose of this lab is to investigate both the physical and chemical properties of eight unknown elements. Knowing the properties of these elements will aid in classifying them as metals, nonmetals, or metalloids. This lab is adapted from ChemComm: Chemistry in the Community, Second Edition, 1993.

Materials

- 8 unknown element samples, lettered a to h
- plastic sampling trays (2)
- small hammer
- wood block
- 1.0 M hydrochloric acid (HCl)
- Periodic Table on pages 698-699 in your textbook
- forceps (2)

Procedure
Testing for Physical Properties
1. **Appearance:** Look at each element and record its color, luster, and its physical form. You should be looking for properties such as color, luster, brittleness, softness, and its physical form.

2. **Malleability:** Using the forceps, take a small sample of each element and place it on your wood block. Put your safety goggles on! Gently tap the element with the hammer to determine if the sample is **malleable** (flattens without breaking) or **brittle** (breaks). Record either **malleable** or **brittle** in your data table.

3. **Conductivity:** At the end of the lab, the teacher will provide an element for conductivity by running an electric current through each element. If the element conducts electricity, then it is said to be a **conductor**. If it does not conduct electricity, then it is said to be a **nonconductor**. Record either **conductor** or **nonconductor** in your data table.

Testing for Chemical Properties with Hydrochloric Acid (HCl)
1. **Put your safety goggles on!** Hydrochloric acid is toxic if ingested or splashed in the eyes. Make sure to wash your face and hands after use.

2. Test each sample for reactivity with Hydrochloric acid (HCl). Using the forceps, take a small sample of each element and place it into one of the spots on the plastic sampling tray. Make sure to keep track of the letter of the element.

3. Place 1 to 4 drops of HCl on each sample. Observe the samples. If the sample reacts with the acid, it fizzes, record **yes** in your data table under "reacts with acid." If it does not fizz, then you will record **no** in your data table.

4. After you are done, dispose of your samples in the tray marked **waste**. Do not pour them in the trash can. Pour them down the sink! Rinse your tray with running water and then dry it for the next step.