

1A INVESTIGATION

Laboratory Safety

Name _____

Date _____ Hour _____

Objectives

The purpose of this exercise is to

1. Familiarize you with the basic rules for laboratory safety.
2. Point out safety equipment in the laboratory.
3. Review basic first aid for common accidents.
4. Identify information on warning labels of common products.
5. Discuss the personal protection and hazard index.

Materials List

Suggested household products

Bleach
Hair spray
Household cleaner
Shaving cream
Paint

Suggested laboratory chemicals

Sodium fluoride
Ammonium nitrate
Mercuric chloride
Lead metal

Introduction

The laboratories that you will perform in this course have been designed with the maximum safety possible. However, even household items can become dangerous if they are not used properly. Before you begin a laboratory investigation, you are expected to have read and understood the procedures. You may not begin the in-class portion of the investigation until directed to do so by your teacher. These rules are for your safety, so follow them at all times.

Pre-Laboratory Questions

Read the entire investigation. Answer the following questions prior to class on a separate sheet of paper. Use complete sentences.

1. What is the purpose of this investigation?
2. What should you do if a chemical splashes in your eye?
3. Can household products be dangerous? How can you tell?
4. Give the four items that a label on a container should contain.
5. Give two reasons that household and laboratory chemicals should be stored only in their designated containers.

Basic Laboratory Rules

1. Never perform any experiment without the teacher's permission.
2. Avoid playful, distracting, or boisterous behavior.
3. Work at your own station and do not "visit" with other groups.
4. Never have food or drink in a laboratory.
5. Never taste any chemicals or drink out of any chemical glassware.
6. Place solid trash in the wastebasket and liquid wastes in designated containers.
7. Notify the teacher of any injuries, spills, or breakages.
8. Never leave a flame or heater unattended.

Laboratory Safety Features

- A. Eyewash stations (if equipped)
1. The purpose of the eyewash station is to remove any chemical that gets into your eyes.
 2. Locate the eyewash stations in the room and turn on the water to see how the stations work.
- B. Showers (if equipped)
1. The purpose of the showers is to wash any dangerous chemicals off your clothes or skin.
 2. Locate the shower in the laboratory and observe how it works. **Do not test the shower.**
- C. Fire blanket (if equipped)
1. The purpose of the fire blanket is to wrap up a person if his clothes catch fire.
 2. Locate the fire blanket in the room.

D. Fire extinguishers

1. There may be several different types of fire extinguishers available that are made for different types of fires.
2. Locate the fire extinguishers and determine their specific use.

	<i>Location</i>	<i>Use</i>
a.	_____	_____
b.	_____	_____

Basic First Aid for Minor Injuries (Notify the lab instructor of all accidents.)

1. Eyes—If any chemical gets into your eyes, remove contact lenses and flush the area with plenty of water for fifteen minutes. Seek medical attention.
2. Minor heat burns—Apply cold water to the affected area.
3. Acid or alkali burns—Flush the area with plenty of water. If irritation persists, seek medical attention.
4. Cuts—Wash the area thoroughly with soap and water.
5. Inhalation of chemical dust or vapors—Remove to fresh air and observe for ten to fifteen minutes. Seek medical attention if breathing distress continues.

Warning Labels

Laboratory chemicals and common household products can be dangerous if they are not used properly. Labels on the containers should specify the hazards, first aid procedures, personal protection information, and the hazard index. Complete the following information about the following chemicals. It may not be possible to complete the information on every product since the labels may not contain all of the information. This investigation can be completed by using products found at home.

1. Hazard index
 - Health (e.g., 3—serious hazard)
 - Flammability
 - Reactivity
2. Personal protection index (e.g., D—face shield, gloves, synthetic apron)
3. Warnings—Warnings may include the following:
 - Target organs
 - Combustible or explosive
 - Strong oxidizer or corrosive
 - Storage and disposal instructions
4. First aid
5. Use

F. _____ (Chemical)

1. Hazard index — Health _____ Flammability _____ Reactivity _____

2. Personal protection _____

3. Warnings _____

Target organs _____, and _____

Storage or disposal instructions _____

4. First aid

5. Use _____

G. (Optional) _____ (Chemical)

1. Hazard index — Health _____ Flammability _____ Reactivity _____

2. Personal protection _____

3. Warnings _____

Target organs _____, and _____

Storage or disposal instructions _____

4. First aid

5. Use _____

H. (Optional) _____ (Chemical)

1. Hazard index — Health _____ Flammability _____ Reactivity _____

2. Personal protection _____

3. Warnings _____

Target organs _____, and _____

Storage or disposal instructions _____

4. First aid

5. Use _____