

**University of New Haven**  
DEPARTMENT OF CHEMISTRY and CHEMICAL ENGINEERING

**A. Instructions:**

**Student:** Read carefully the following laboratory rules, safety precaution, and regulations. Your laboratory conduct will be governed by these rules, and any deviation from these rules and regulations may result in dismissal from the laboratory. After you have read the list, sign your name on the attached acceptance form and return the form to your instructor. Keep the remainder of the document as a reference.

**Instructor:** Read through all items with the class and explain importance and relevance of each. Give a “tour” of the location and operation of the safety items. Complete and sign the instructor checklist. Check off submission of attachment with acceptance signature on your class roster “safety sheet” column, clip the sheets and give them to the safety officer.

**B. Laboratory Rules:**

1. Safety Goggles must be worn at all times in the Laboratory.
2. Unauthorized experiments are prohibited, and only those chemicals required for the experiment to be performed are to be used. Perform the experiments as directed. Do not do anything that is not part of an approved experimental procedure. Follow all instructions given by your instructor.
3. No smoking, drinking, or eating in the laboratory.
4. No working alone in the lab.
5. Dress Appropriately
  - a. DO: Tie back long hair to keep it away from flames and chemicals.
  - b. DO: Wear a Lab Coat and Gloves (when appropriate)
  - c. DO: Wear shoes which cover the entire foot.
  - d. DON'T: Wear Sandals or Open Toed Shoes
  - e. DON'T: Wear loose clothing/sleeves.
6. Do not Taste Chemicals
7. Report all accidents, emergencies and spills to the instructor immediately.
8. General horseplay will not be tolerated.
9. No headsets, music, or phones during lab.
10. Maintain an orderly and clean working area
11. Never take chemicals, supplies or equipment out of the laboratory without the knowledge and consent of the instructor.

### **C. Emergency Procedures**

#### **If a chemical is spilled on the bench or floor:**

1. Inform Laboratory Instructor of location of the spill and identity of the chemical.
2. Alert other students of the spill and keep them away from the contaminated area.
3. Assist the instructor in cleaning up the spill (and any broken glass) with the appropriate tools.
4. Assist the Instructor in evacuating lab if the spill presents a health hazard to lab occupants.
5. Contact emergency personnel.

#### **If a chemical is spilled on a person or an individual is injured during the lab:**

1. Inform laboratory instructor of the spill, including the identity of the chemical spilled.
2. Do not leave an injured individual(s) alone.
3. Treat burns and chemical exposure by rinsing skin under running water for at least 15 minutes. Eyewash stations and showers are available for extensive spills.
4. Remove any clothing that has been contaminated by chemicals.
5. Contact campus police at extension 7070
6. After situation has stabilized, fill out accident report with the help of the instructor.

#### **If there is a fire:**

1. Inform instructor of the emergency
2. Use a safety shower or fire blanket to extinguish a fire on clothing/individual
3. If a fire is contained within a beaker, it may be extinguished by placing a watch glass over the beaker.
4. If a fire was started by a heat source (Bunsen burner/hotplate), turn off the source immediately.
5. For large or uncontrollable fires, vacate the area and contact Campus Police at x7070
6. After situation has stabilized, fill out an accident report with the help of the instructor

#### **Laboratory evacuation:**

In the event of a large chemical spill or fire, or fire alarm the laboratory instructor will direct students to evacuate the laboratory. The evacuation procedure is:

Students told to leave the building. Students should walk and use the stairwells.  
If possible, turn off equipment and shut doors to lab  
Activate the fire alarm for the building  
Report the fire to Campus Police at extension 7070.

#### **Emergency contacts:**

Primary contact is Campus Police at extension 7070 from an on campus phone

In Campus Police cannot be reached, call emergency dispatcher at 9-911

#### **D. Clothing and Personal Protective Equipment**

1. Wear appropriate protective equipment. ANSI approved eye protection should be worn at all times. This means chemical splash goggles. In addition, gloves and face shield, lab coats or aprons should be used as appropriate. You are responsible for providing your own goggles. ANSI Approved Chemical Splash Goggles are required. The Campus Bookstore sells ViSORGOGS, the Department of Chemistry and Chemical Engineering Approved Eye Protection. Students who do not bring safety goggles to lab will not be able to conduct the experiment and will receive a zero for the experiment.
2. No sandals or open shoes. Preferably, footwear should be made of synthetic or natural leather, or any material that does not absorb liquids. Students will not be allowed to participate in an experiment if they are wearing inappropriate footwear.
3. Gloves will be provided for experiments where there is a risk of chemical exposure through skin absorption. Gloves are available in the bookstore if you would prefer to wear gloves for all experiments. To prevent the spread of chemicals to unwanted areas, remove gloves and wash hands before touching computers, instruments, sample holders and doorknobs. Remove gloves and wash hands before leaving the lab.
4. A lab coat should be worn in the lab to protect your clothing and skin. The lab coat should fit properly, particularly in the sleeves. Suitable lab coats can be purchased at the Campus Bookstore.
5. Long loose hair should be tied back during the lab.

#### **E. Safety Equipment**

Each laboratory is equipped with emergency and first aid equipment. Learn the locations and operation of all available safety equipment. Know what to do in the case of an emergency. Specific safety equipment may vary from one laboratory to another.

Have your laboratory instructor show you the location of the following:

Fire Extinguisher  
Safety Shower  
Eyewash Station  
Emergency Phone  
First Aid Kit  
Fire Blanket  
Chemical Spill Kits  
Materials Safety Data Sheets  
Exit doors of the lab

## **F. Safe Handling and Disposal of Chemicals**

1. Do not taste chemicals.
2. Avoid touching chemical with your hands. Always wash your hands after any chemical contact.
3. Do not smell chemicals directly. If a laboratory procedure requires you to check the odor of a chemical, do so by gently wafting some of the vapor towards your nose with your hand. Your laboratory instructor can demonstrate this procedure for you.
4. No pipetting by mouth. Use the rubber bulbs provided in the lab.
5. Work in a hood when working with reagents that give off dangerous gases, fumes, or dust. Learn the proper operation of hood sashes and use them appropriately.
6. Never return unused reagents to the reagent bottles. Be careful to take only what you actually need. Do not contaminate the reagents. Never insert your own pipettes or medicine droppers into a reagent bottle. Avoid solution contamination by pouring a reagent into a test tube or beaker.
7. Chemicals should always be in a labeled container. Label beakers, flasks or any other distribution container before placing a chemical into it.
8. Clean up all spills immediately, including water. Always inform instructor of any spills that have occurred.
9. Treat all chemicals with the respect they deserve. Know the hazards before you handle the material. Review the Material Safety Data Sheets (MSDS) provided in the lab before you begin working on an experiment and ask your instructor for information.
10. Read the chemical labels very carefully. Read them 3 times: When you pick it up; just before you use it; and after you are finished. Many mistakes - some dangerous - result from mixing the wrong chemicals.
11. Dispose of chemicals properly. Labeled containers will be provided for chemical byproducts from each experiment. Follow your instructor's directions on how to properly dispose of chemical byproducts.
12. In each laboratory, a bench top and/or hood will be designated the chemical distribution area. Leave reagent bottles at the transfer location. Bring test tubes or beakers to this location for transferring chemicals and carrying them back to your bench. You are responsible for cleaning any spillage that may occur. Chemicals should never be distributed from movable carts, they should be taken to the work area or distribution areas.
13. Use carts or chemical carriers for moving all large volume or significantly hazardous substances.
14. When diluting acids, always add the acid to water, never add water to acids.
15. When weighing chemicals use care to prevent contamination of balances. Clean up any spilled materials immediately and dispose of spilled materials as directed by instructor.

## **G. Other aspects of Good Laboratory Practice**

1. Learn the locations and operations of emergency equipment. This includes eyewash, safety shower, fire extinguisher, fire blanket, sinks, first aid supplies and emergency phone location. Know what to do in case of emergency.
2. Students are not permitted access to storage rooms, cabinets or refrigerators.
3. When uncertain of laboratory techniques or procedure, it is your responsibility to consult the laboratory manual or other suitable reference or to ask your laboratory instructor for the proper advice. In this regard, read the experiment procedure in advance before performing it.
4. Laboratory Benches and Hoods are for experiments. A notebook, pen and laboratory manual are the only items you should need during class. Keep them out of hoods and away from flames, heat sources and chemicals.
5. Keep books, back-packs and coats on the designated racks and shelves, do not risk contamination by bringing them into the lab.
6. Do not leave an experiment unattended. Turn off your Bunsen burner or other heat source whenever you are not using it. Turn down and off all apparatus before leaving its station. Turn off all utilities and unplug apparatus before leaving the lab. DO NOT PUT HOT apparatus away in a drawer or cabinet
7. Stools and chairs must be stowed before experiments start. This is important to insure a safe exit in the case of an emergency.
8. Be properly prepared to do the experiment. Read the written procedure in advance and understand what you are going to do. Lack of familiarity wastes your time and is a major cause of injury. Know the hazards before you do the experiment.
9. Pour soap into an item to be washed, do not contaminate soap jar with your brush. Wash with hot water.
10. Avoid injuries by using proper procedures and precautions when inserting glass tubing or thermometers through rubber stoppers.
11. Clean your lab bench, and hood, put away all equipment and reagents, and wash your hands at the end of each work session.
12. Inform the instructor or leave a message for the Lab Coordinator if you see anything unsafe.

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## Student Safety Agreement

**I have read and fully understand the rules, safety practices and regulations governing my conduct in the laboratory. I will abide by these rules and regulations for my own safety and that of others. I understand that failure to follow the rules and safety practices above may result in dismissal from the laboratory session (receiving no credit for the experiment) or, for repeated offenses, dismissal from the course with the receipt of a W.** A copy of these rules and regulations is posted on the stockroom doors in every laboratory.

### Initial for acceptance:

My instructor reviewed these rules with me: \_\_\_\_\_

I am aware of the locations and operation of the safety equipment: \_\_\_\_\_

### Please note any special circumstances or known chemical sensitivities:

(Inform the instructor before the experiment if you have any chemical concerns).

\_\_\_\_\_  
\_\_\_\_\_

Print Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

Instructor \_\_\_\_\_

Course \_\_\_\_\_

Section no. \_\_\_\_\_

Station # \_\_\_\_\_

Semester and Year \_\_\_\_\_

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### Check in Sheet for Laboratory Instructors

- \_\_\_\_\_ I have read the laboratory rules to the students.
- \_\_\_\_\_ I have informed the students of the emergency procedures, including how to properly evacuate from the lab
- \_\_\_\_\_ I have shown the students the locations of all emergency equipment
- \_\_\_\_\_ I have show the students the proper operation of the safety shower and eyewash station.
- \_\_\_\_\_ I have informed the student of the safety goggle policy
- \_\_\_\_\_ I have shown the students how to read an MSDS
- \_\_\_\_\_ I have reviewed/read the rest of the Laboratory safety rules, practices and agreement.
- \_\_\_\_\_ I have given the students the emergency phone numbers.

Print Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

Course \_\_\_\_\_

Section no. \_\_\_\_\_

Semester and Year \_\_\_\_\_