

**UNIVERSITY OF HOUSTON-CLEAR LAKE  
ENVIRONMENTAL, HEALTH AND SAFETY DEPARTMENT**

		<b>Effective Date</b> February 7, 2018	<b>Number</b> L 01
<b>Subject</b> Laboratory Safety Policy			
<b>Reference</b> SORM RMTSA Vol.III Ch. 7.13, 7.16, 7.18		<b>Special Instructions</b> None	
<b>Distribution</b> Laboratory Faculty & Staff		<b>Reevaluation Date</b> Biannual	<b>No. Pages</b> 7

**I. PURPOSE**

This document is a summary of safe laboratory practices to help prevent personal injury. It is not all encompassing or all-inclusive, but intended as a handout to supplement the Lab Safety Manual and Chemical Hygiene Plan.

**II. POLICY**

The following policies have been established to ensure laboratory experiments are safe and positive learning experiences. Each person that enters the lab (students, faculty, and staff) has the responsibility to recognize and understand the safety and health hazards associated with chemicals and equipment within the laboratory and each experiment performed. Each individual working with chemicals or in an area where chemicals are being used must adhere to the following at ALL times. Failure to follow these procedures will result in your dismissal from the lab session, and repeated noncompliance will result in removal from the course.

**III. PROCEDURES**

- A.** Always wear the appropriate protective equipment and clothing in a lab where chemicals are present or in chemical handling and storage areas.
1. **Eye protection** – Safety goggles for liquids, or safety glasses must be worn. Prescription glasses must have safety glasses or goggles worn on top, unless they are *prescription safety glasses* with clip-on side shields. Contacts are not recommended while working with chemicals (even with safety glasses) due to the risk posed by chemicals, which includes absorbing vapors, trapping chemicals next to the eye or melting to the eyes.
  2. **Lab Coat and clothing** – Long sleeved lab coats should always be worn in the lab when chemicals are used. This is primarily to protect the user, but if chemicals were to splash onto clothing, that clothing would have to be removed and laundered or discarded. So a lab coat is also for your own modesty benefit. Clothing should be made of natural materials instead of synthetic (synthetic reacts and melts more easily), with long pants and closed toe shoes (not sandals) that cover the entire foot. Lab coats and/or shirts should be long sleeved.

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3. **Gloves** – Wear the safety gloves provided, and change them whenever they become contaminated. Gloves were designed to prevent immediate contact of chemicals with the skin. Be aware that after a period of time and dependant on the type of glove, chemicals may react with the glove or seep through it (breakthrough).
4. **Hair** – Tie back and confine long hair and loose clothing to prevent accidental “dips” into the material working with, or from getting caught in flames and equipment.

**B. MATERIAL INFORMATION AND USE**

1. Read the procedures in advance, so you will be prepared to do the experiment. Lack of familiarity wastes your time and is a major cause of injury. Know the hazards before you do the experiment.
2. Always Read the chemical label before using a chemical in the lab. Know the physical and chemical hazards associated with the materials that are being utilized. This information may also be obtained from Safety Data Sheets (SDS), which are available in the binders in front of the chemical stockroom, in the lab, or from the manufacturer online.
3. Use equipment and chemicals only for their intended purpose, and only as instructed. Never perform unauthorized experiments, preparations, or other work involving chemicals. Experimenting with chemicals when you are unaware of their properties or reactions can be quite dangerous. Even if you know what may happen, the actual outcome could be more reactive than you thought.
4. Never perform any hazardous work alone in the laboratory. At least **two** people must be present, and undergraduate students must be supervised by an instructor at all times.
5. Never leave a running chemical experiment unattended, especially while it is being heated or is rapidly reacting.
6. Never remove chemicals from the lab without instructor authorization.
7. Never engage in horseplay, pranks or other acts of mischief in the laboratory.

**C. INCIDENTS AND EMERGENCIES**

1. Be aware of the location of the safety equipment in the laboratory: fire alarm, fire extinguisher, emergency eyewash, and safety shower so you know where to go if you ever need to use them. Also know your closest evacuation route out of the building, not just the primary route. Every second counts in an emergency.
2. Report all accidents, however minor, to the professor immediately. If there is an imminent threat, you may contact the Police at extension 2222 or Environmental Health & Safety at ext. 2106 during office hours. Then leave the area and barricade it or post signage.
3. If you are splashed by a chemical, remove any affected clothing, and wash the area thoroughly for at least 15 minutes. Ensure that the water and rinsed materials do not get washed onto other clothing (i.e., remove socks as well if material gets onto pants legs), so that the material is not held against the body by clothing. All contaminated clothing must be laundered prior to reuse, or discarded.

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4. Treat burns immediately by putting the burned area under cold water for at least 15 minutes to remove the heat and reduce subsequent pain and blisters.
5. Follow-up medical attention is necessary for chemical exposures, at the very least to ensure conditions do not worsen or in case medication is needed. Have someone observe those injured for the next 24 hours.
6. Financial obligation for medical treatment is your responsibility. In the event of an injury, medical assistance may be called for you and payment is between you and the medical institution(s) that provided services to you. It is required that you carry health insurance.

**D. EQUIPMENT & SUPPLIES**

1. Never mouth pipette chemicals when transferring solutions. Instead, use a pipette bulb to transfer solutions.
2. Never return reagents poured out back into stock bottles or insert anything (spatula, etc.) into a reagent bottle, as this contaminates the original stock. Share with someone else that needs to use it or put into waste container at the end of lab.
3. Use a glass tube insertion tool when placing tubes into rubber stoppers. Always lubricate glass tubing, thermometers, or thistle tubes before inserting them into a stopper, and wrap toweling around them while inserting into the stopper. (Keep your hands together in the process.)
4. Use a laboratory fume hood to perform chemical experiments when instructed to or when available, especially if there is a possibility of poisonous or irritating fumes being emitted from the chemicals utilized.
5. Keep equipment away from the edge of the lab bench to prevent spillage.
6. Support all beakers and flasks with clamps.
7. Do not use cracked or chipped glassware. If you come across any, ensure the glassware is rinsed clean, and then place in the broken glass container.
8. Never use flames with volatile or flammable materials.
9. Turn off your Bunsen burner or other heat source when you are finished using it. Never leave it on unattended.

**E. EATING, DRINKING, AND SMOKING**

1. No eating, drinking, smoking, gum chewing, applying cosmetics or taking medicine in laboratories where chemicals are used.
2. No food, beverage, or drinking or eating utensils in areas where chemicals are handled or stored. Food containers may not be used for sample or storage containers.
3. Glassware used for laboratory operations may never be used to prepare or consume food or beverages.
4. Laboratory refrigerators, ice chests, cold rooms, ovens, and so forth may not be used for food storage or preparation.
5. Laboratory water sources (including deionized water) may not be used for drinking water.

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6. Laboratory chemicals should never be consumed or tasted, regardless of what they are or their perceived hazard.
7. Check odors only if instructed to do so, by gently wafting some of the vapor towards your nose with your hand. Be sure your work area is adequately ventilated for your experiment.
8. There is no smoking allowed inside campus buildings, which extends to the laboratories. Please also be aware that opened tobacco product packages can absorb chemical vapors.
9. Wash hands and arms with soap and water before leaving the work area, even if you have been wearing gloves.

**F. HOUSEKEEPING AND MAINTENANCE**

1. The work area should be kept clean and uncluttered, with chemicals and equipment stored away when not in use. Chemicals should not be stored on the floor.
2. Clean the work area upon completion of a task and at the end of the class.
3. Waste materials should be poured into the appropriate waste container (not into the trash or down the sink) and glassware rinsed out and put away.
4. Keep drawers and cabinet doors closed and electrical cords off the floor to avoid trip hazards.
5. Prevent slips and trips by cleaning up spilled liquids promptly and by keeping the floor free of loose items such as stirring rods, glass beads, stoppers, backpacks, etc... (Custodial staff are prohibited from cleaning up chemical spills, and are not expected to clean floors that have not been properly decontaminated after a spill)
6. Never block or even partially block the pathway to an exit or to safety equipment, such as the safety shower or fire extinguisher. Keep aisles clear of obstacles such as boxes, chemical containers, and other storage items that might be put there (even temporarily).

**G. LABORATORY SAFETY POLICY ACKNOWLEDGEMENT – Below is the text that appears as students take the Blackboard Laboratory Safety Training test.**

By taking this General Laboratory and Chemical Safety Comprehension Exam, I acknowledge that this serves as my electronic signature, and that I have received, read, understood, and agree to follow the Laboratory Safety Policy described herein.

I agree to abide by any additional written and/or verbal instructions provided by my instructor and/or teacher's aid. I agree that if there is something that I do not understand during this lab course, I will ask for more information so that I will know how to perform all lab assignments safely. I recognize that safety is my responsibility and failure to follow these policies and instruction(s) may result in injury to myself and/or others, and may result in permanent suspension from this course.

**IV. STUDENT SIGNATURE PAGE FOR FACULTY (OPTIONAL)**

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**GENERAL LABORATORY AND CHEMICAL SAFETY ACKNOWLEDGEMENT**

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Course Subject and Section Number(s)	Semester and Year	Faculty Name
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I acknowledge that I have received and read, understand, and agree to follow the laboratory safety policies in the "General Laboratory and Chemical Safety Policy" provided to me. I also agree to abide by any additional written or verbal instructions provided by my teacher or teacher's assistant. If there is something that I did not understand, or during this lab course that I do not understand, I will ask for more information so that I know how to perform all lab assignments safely. I recognize that safety is my responsibility and failure to follow these policies and instruction may result in injury to myself or others, or may result in permanent suspension from this class.

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**V. APPROVAL**



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Director of Environmental, Health & Safety

Date: February 7, 2018

**VI. REVISION LOG**

<b>Revision Number</b>	<b>Approval Date</b>	<b>Description of Changes</b>
1	8/29/14	Creation of Student Lab Safety Procedures Fall 14, with signature page if faculty desired a paper signature submitted for acknowledgement and agreement. Procedures posted in and acknowledgement agreement created as a test in blackboard General Lab Safety Training.
2	8/22/17	Removal of signature page and notation that acknowledgement agreement done electronically. Agreement test merged with content test as part of instructions to remain constant with new question pool.
3	2/7/18	Add SOP template, optional signature page