DEPARTMENTAL LABORATORY POLICIES

Checking into Your Lab
You must complete the safety evaluation and all check-in paperwork before performing any experiments. If you miss your first lab session for any reason, you must attend a make-up session to obtain the safety information. IF YOU DO NOT ATTEND ONE OF THESE SESSIONS, YOU WILL BE DROPPED FROM THE COURSE. You may be tested on any information presented during this session at any time throughout the semester.

Medical Information Form
The medical information form provides vital information to doctors if you are unconscious or incapacitated. Please fill out the form with any information that would be necessary for medical personnel to know in an emergency. You will never be asked to show the information on this form to your TA or other students at any time during the semester, so please note any information that will be needed in an emergency. Keep this medical form in your lab notebook and bring it to all classes. You will not be allowed to remain in lab without this form.

Injuries or illness or Under the Influence
If you are injured in the laboratory, you must go to Health Services. If you are become ill during the lab, you are allowed to leave the lab without penalty. You will then need to discuss make-up options with your TA. If you enter your lab under the influence of drugs or alcohol, your TA has the obligation to immediately remove you from the lab without a make-up option.

Evacuation Plan
You must participate in an evacuation drill before starting lab. You will be shown where to meet with your TA in the event of an evacuation. Once at the site, the TA will take attendance to determine if everyone got out of the building. DO NOT LEAVE THE MEETING SITE UNTIL DISMISSED BY YOUR TA. If you are not in your lab at the time of an alarm, but have checked in, go to the designated meeting spot to make sure your TA knows you are not in the building.

Making up a Laboratory
Lab make-up policies vary by instructor. If you have missed a lab due to illness, or if you know you will be missing a lab for any reason, contact your TA as soon as possible to be instructed on the laboratory policy for your particular course.

Checking Equipment
Most students will be sharing equipment drawers with other students. To avoid conflicts on missing or broken equipment, make sure you check drawer contents every time you check into a lab. If you are missing something, the TA will submit a replacement request online and direct you to go up to the stockroom for a replacement item; you will not be charged. If you do not notify the TA that the item is missing within 30 minutes, you will be held responsible for replacement, so please get to lab and check your drawer on time. You are responsible for the equipment even if you never opened the drawer, so please check the contents each time you come to lab.

Breakage During Lab
From the 30 minute mark until the end of lab you are responsible for the equipment in their drawers. If anything is missing and/or broken during this time period until the end of the lab period, the item is reported as previously explained. However, it is then your responsibility to go up to the stockroom to receive a replacement. You may pay for the replacement at this time with your Ram Account, but are not required to. If you decide not to pay when given the replacement, you will be billed. You may check to see if you have a bill online at the stockroom web-page. IF YOU DO NOT PAY A LAB BILL BY THE END OF THE SEMESTER YOU WILL HAVE A REGISTRATION HOLD PLACED ON YOUR E-CAMPUS ACCOUNT.

Billing Due to Missing or Broken Equipment
When sharing lab drawers, if the person directly after you opens the drawer and reports a missing item, as the last person to use that equipment, you are considered responsible and will be sent a bill for that item. If you receive a bill for broken or missing equipment, you need to go to the stockroom with your RAM card as soon as possible to pay for the items reported. If you have an outstanding stockroom bill at the end of the semester a registration hold will be placed on your e-campus account.

Stockroom Policies and Hours
All replacement items are obtained between 8 a.m. and 5 p.m. from the Chemistry Dept. Stockroom (Pastore 210). All transactions must be via a RAM card, not cash. There is a CVC machine located in the Student Union.

Dropping a Section
If you drop your lab, you must check out of your equipment drawer. Contact your TA about checking out of your drawer. If your drawer is not properly checked out a registration hold may be placed on your e-campus account.
SAFETY AND ENVIRONMENTAL COMPLIANCE REGULATIONS

Safety Regulations
1. Each student is responsible for leaving his or her lab bench in clean and neat condition before leaving lab.
2. Safety goggles/glasses, a lab coat and shoes must be worn at all times in the lab.
   a. They must be approved by or purchased through the chemistry department.
      i. See the stockroom manager for approval of items not purchased through the department.
   b. Sandals, open-toed shoes, clogs, or any shoes that do not cover your entire foot are not allowed in lab.
   c. Disposable lab coats and booties for covering sandals can be purchased at the stockroom.
3. Wash your hands before leaving lab.
4. Do not sit on the lab benches or the floor in the lab section of the building. This includes the hallway.
5. Listen to your TA about special precautions and safety concerns regarding the experiment.
6. If you spill a chemical on you, immediately wash with cold water for 15 minutes and notify your TA.
7. If injured, you must go to University Health Services accompanied by a safety professional.
8. Know the location and operation of the emergency safety equipment:
   a. Fire extinguisher, eye wash station and safety shower, hood and telephone.
9. No food or food consumption allowed in the lab.
   a. This includes chewing gum, tobacco products and water bottles.
   b. Smoking is not allowed anywhere in the building
10. You may not enter or work in the laboratory unless a TA is present in the room with you.
11. You are required to review the experiment, all lab waste policies and Material Safety Data Sheets (MSDS) pertaining to your experiment before performing that lab.
12. Read all bottle labels carefully and observe warnings.
13. Turn off gas jets when not in use. The "off" position is when the handle is at right angles to the pipe.

Waste Disposal Regulations
1. Report all spills and breakage to your TA immediately.
2. Do not dispose of broken glass in the regular trashcans.
   a. Please put all glass in the GLASS ONLY receptacles
   b. Do not put paper or other material in the GLASS ONLY receptacles.
   c. Do not use broken or cracked glassware; dispose of in GLASS ONLY receptacle.
3. No chemical waste may be poured down the drain or put in the trash.
4. Place all chemical waste into the appropriately labeled bottles.
5. Keep all caps tightly shut on all of waste containers tightly unless adding waste.
6. No contamination is allowed on the outside of the bottle.
7. If you are unsure how to dispose of a chemical, ask your TA.
MATERIAL AND SAFETY DATA SHEETS (MSDS)

Overview
1. Provides information on physical state, hazards and safety precautions required for a particular chemical
2. Available in each lab for all chemicals used for an experiment
   a. Review MSDS for all chemicals to be used before starting experiment

MSDS Sections
1. Material Identification
   a. Identity of organization or company creating the MSDS and date of issue
   b. Material’s identity; includes both common and chemical names
2. Ingredients and Hazards
   a. The products individual hazardous chemicals and their relative percentage of concentration
      i. Level of hazard
         1. Danger: severe hazard
         2. Warning: intermediate hazard
         3. Caution: moderate hazard
3. Physical Data
   a. Boiling point, solubility, specific gravity, melting point, molecular mass, color and appearance
4. Fire and Explosion Data
   a. Dangers if the material is exposed to other chemicals, air or water
5. Reactivity Data
   a. Conditions and chemical characteristics that could cause the material to catch on fire or explode
   b. Flash points, upper and lower explosive limits
6. Health Hazard Data
   a. Routes of entry into the body; inhalation, skin absorption, etc.
   b. Acute and chronic effects
   c. Specific risks: carcinogen, teratogen, etc.
   d. Exposure limits
   e. Emergency and first aid procedures
   f. Precautions and safety equipment needed to work safely with the material
7. Spill, Leak and Disposal Procedures
   a. Precautions and safety equipment required in case of an accident
8. Special Protection Information
   a. Methods for reducing exposure to a particularly hazardous chemical
   b. Ventilation, special breathing apparatus, protective clothing
9. Special Precautions and Comments
   a. Safe storage and handling
   b. Types of containers, labels and storage conditions
   c. Policies for transporting the chemical

Terminology
1. Poison Material that has toxic effects on the system
2. Toxin Material that is poisonous to the system
3. Acute Rapid onset of toxic effect after exposure
4. Chronic Toxic effect noted over time
5. Cumulative Toxin builds up in body
6. Carcinogen Material that causes cancer
7. Mutagen Material that causes genetic mutation
8. Teratogen Material that causes birth defects
9. Caustic Material that causes chemical burns or eats away at equipment
10. Corrosive Same as caustic, but usually used to describe equipment destruction
11. Lacrymator Material causes irritation of the eyes, skin or respiratory system
12. Flammable Material that burns
13. Inflammable Material that burns
14. Combustible Material that burns
15. Explosive Material that may explode under certain conditions, ex: exposure to air, water, etc.
16. Oxidizer Material that causes other substances to burn
17. Peroxide former Material that forms explosive peroxides when exposed to air
18. Flash point Lowest temperature at which a vapor given off by a material will ignite.
NFPA Labels

The National Fire Protection Association (NFPA) has developed a system for quickly identifying the hazards associated with a particular chemical. Each color indicates a particular type of hazard:

Red: Fire (flammability)

Blue: Health

Yellow: Reactivity (stability)

White: Special Hazard

For the Fire, Health, and Reactivity Hazards, a number from 0 to 4 inside the colored diamond indicates the severity of that hazard (with the number 4 meaning most severe). For Special Hazards, a symbol inside the white diamond indicates the nature of a particular hazard. The table below lists the criteria that must be met for each level. Only one of these criteria is necessary for a material to be assigned a certain hazard level.

### Health (Blue Diamond)

<table>
<thead>
<tr>
<th>Level</th>
<th>Hazard Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Extreme</td>
<td>Highly toxic material: Short exposure could cause death or major injury. Known or suspected human carcinogen, mutagen or teratogen.</td>
</tr>
<tr>
<td>3 Serious</td>
<td>Toxic material: Short exposure could cause serious injury.</td>
</tr>
<tr>
<td>2 Moderate</td>
<td>Moderately toxic material: Known or suspected animal carcinogen, mutagen or teratogen. Intense or continued exposure could cause temporary injury.</td>
</tr>
<tr>
<td>1 Slight</td>
<td>Slightly toxic material: Cause irritation but only minor injury even without treatment. Not dangerous when used responsibly.</td>
</tr>
<tr>
<td>0 Minimal</td>
<td>No chemical is without some degree of toxicity.</td>
</tr>
</tbody>
</table>

### Flammability (Red Diamond)

<table>
<thead>
<tr>
<th>Level</th>
<th>Hazard Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Extreme</td>
<td>Extremely flammable: Flash point below 73 °F (22.8 °C)</td>
</tr>
<tr>
<td>3 Serious</td>
<td>Very flammable: Flash point between 73 °F (22.8 °C) and 100 °F (37.8 °C). Vaporizes readily and ignites at room temperature. Forms explosive mixtures with or burns rapidly in air. May burn rapidly due to self-contained oxygen. May ignite spontaneously in air.</td>
</tr>
<tr>
<td>2 Moderate</td>
<td>Flammable: Flash point at or above 100 °F (37.8 °C) and 200 °F (93.4 °C). Must be heated or exposed to high temperatures to burn. Solid that produces flammable vapors.</td>
</tr>
<tr>
<td>1 Slight</td>
<td>Slightly flammable: Flash point at or above 200 °F (93.4 °C). Must be preheated for combustion to occur. Burns in air when exposed at 1500 °F (815.5 °C).</td>
</tr>
<tr>
<td>0 Minimal</td>
<td>Not flammable: Will not exhibit a flash point. Will not burn in air even at 1500 °F (815.5 °C) for 5 minutes.</td>
</tr>
</tbody>
</table>

### Reactivity (Yellow Diamond)

<table>
<thead>
<tr>
<th>Level</th>
<th>Hazard Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Extreme</td>
<td>Explodes or decomposes violently at room temperature. Reacts violently with common materials or by itself. Sensitive to mechanical or thermal shock at room temperature.</td>
</tr>
<tr>
<td>3 Serious</td>
<td>Explodes only with a strong initiating force or high heat: Promotes oxidation with flammable materials. Sensitive to thermal or mechanical shock at high temperature. React explosively with water without requiring heat.</td>
</tr>
<tr>
<td>2 Moderate</td>
<td>Unstable but does not explode: Reacts violently at room temperature. Violent reaction with water. Forms potentially explosive mixtures with water.</td>
</tr>
<tr>
<td>1 Slight</td>
<td>Unstable at high temperature.</td>
</tr>
<tr>
<td>0 Minimal</td>
<td>Stable material which is not reactive with water.</td>
</tr>
</tbody>
</table>

### Special (White Diamond)

- w Water Reactive
- Ox Oxidizing Agent
- Radioactive
- Poison