

# CHEMICAL HYGIENE PLAN

## Science Laboratories

Prepared By



April 2022

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South Portland, Maine 04106

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## REVISIONS

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SMCC employees – We encourage comments and suggestions on the Plan. Send your suggestions to:

SMCC Environmental Health and Safety  
741-5932

## 1.0 INTRODUCTION & APPLICABILITY

This Chemical Hygiene Plan (Plan) has been established by Southern Maine Community College (SMCC) to comply with OSHA Occupational Exposure to Hazardous Chemicals in Laboratories Standard 29 CFR 1910.1450, and the OSHA Personal Protective Equipment Standards of 29 CFR 1910 subpart I.

The Maine Department of Labor requires all employers with chemical laboratories to comply with Federal regulations governing these areas.

This Plan applies to:

- Faculty, staff, and work-study students (Employees) who may come into contact with chemicals and products containing chemicals during laboratory work.
- Laboratories (e.g. Chemistry, Biology, Marine Science) located on both the South Portland and Brunswick campuses
- Laboratory use of chemicals, as documented in the Hazard Communication Plan, and all cultures, dissection specimens and biological materials

The objective of this Plan is to identify the work practices, procedures, personal protective equipment and other equipment that will protect Employees from harm arising from the storage and use of hazardous chemicals in the laboratory.

The Plan is designed to accommodate the wide variety of laboratory activities by establishing general safe operating procedures. The Plan references additional information included in the [Hazard Communication Plan](#).

The information in this Plan must be supplemented with laboratory specific information, policies and procedures typically detailed within Department lesson plans and/or laboratory documents.

Students who work with chemicals in the classroom are not covered by this Plan and shall adhere to the best safety practices documented in course and lab curriculum.

**[Safety Data Sheets \(SDS\) are available electronically, 24/7, via the SMCC intranet.](#)**

**From the [my.smccme.edu](http://my.smccme.edu) homepage scroll down to the Quick Link for Safety Data Sheets on lower left hand side of page.**

**Bookmark this link at your computer for future reference.**

## 2.0 PROGRAM ADMINISTRATION

29 CFR 1910.1450 (e)(3)(vii) and Appendix A(B)

### 2.1 RESPONSIBILITIES

#### Environmental Health and Safety Coordinator (EH&S)

- Responsible for ensuring proper management of the Chemical Hygiene Plan. This includes working with employees to develop and implement appropriate lab policies and safety training programs, completing safety audits, and disposal of chemicals.

#### Department Chair

- Shall see that their Department observes the provisions of the Plan and that additional measures are developed for specific laboratory safety procedures when needed.
- Ensures new-hire Employees are aware of this Plan and applicable procedures
- Responsible for identifying the individual who is responsible for Department's adherence to laboratory safety procedures. This individual can be an instructor or faculty member. This designated individual will be referenced as the "Lab Manager".
  - There may be one Lab Manager who oversees laboratories across both SMCC Campuses or Department Chair may assign a location specific Lab Manager

#### Lab Manager

- Responsible for ensuring adherence with chemical hygiene policies in the laboratory.
- Knowing the chemical hazards for all chemicals used in the laboratory and performing a hazard assessment on any new chemical brought into the lab
- Maintaining updated chemical inventories based on chemical use and ordering,
- Updating hard copy classroom Safety Data Sheet binders when in place for teaching purposes only,
- Determining the proper level of protective equipment, ensuring the performance of protective equipment, providing training for staff on the use and maintenance of all safety equipment
- Reviewing, revising and customizing the chemical hygiene plan to meet the specific program requirements.
- Acts as a resource for Employees with questions on chemical usage, compatibility or a requirement of this Plan.
- Ensures a current copy of this Plan and the **Emergency Actions for Hazardous Materials** poster is maintained in each laboratory.

## Employees

- Faculty, staff, and work-study students have the ultimate responsibility for safety in the lab by following safe work practices and notifying the Lab Manager of any safety issues.
- Faculty and Adjuncts are responsible for teaching students about chemical hazards, safety practices, and PPE use in the classroom.

## 2.2 PLAN AVAILABILITY

The Chemical Hygiene Plan is available:

- Within each laboratory
- On the [My.SMCCME.EDU](http://My.SMCCME.EDU) intranet under the Environmental, Health and Safety section of the “Staff” portal
- Upon request from EH&S

## 3.0 BASIC SAFETY RULES AND PROCEDURES

29 CFR 1910.1450(e)(3)(i) and Appendix A(E)

All Employees working in the laboratory must follow the basic safety rules detailed below.

1. No work may be performed alone in the laboratories.
2. Only closed toe shoes shall be worn in the lab
3. All lab activities extending beyond scheduled class time, or occurring outside of class time must be approved by the course faculty or staff.
4. No eating or drinking is allowed in laboratories where hazardous chemicals are present. This includes chewing gum.
5. Food or drink in any laboratory refrigerator must be clearly labeled “for laboratory use only-not for consumption”.
6. Never engage in horseplay, games or pranks in the laboratory.
7. Don’t talk or text on your cell phone, surf the internet, or otherwise distract yourself with electronics when working with chemicals. Stay focused on the task at hand.
8. Wash your hands with soap and water before leaving the laboratory, even if you have been wearing gloves.
9. Know the hazards of the materials being used.
10. Assume that chemicals are hazardous until you have all of the information. Read and understand the information on the Safety Data Sheet (SDS).
11. Read labels carefully to make sure you are using the right chemical.
12. Do not taste any chemicals and do not smell chemicals directly.
13. Do not pipette solutions by mouth.
14. Do not underestimate the hazards of a chemical.
15. Wear all personal protective equipment as identified for the laboratory activity.

16. Inspect all lab containers prior to use.
17. Carry chemical containers with two hands when moving them around and never place them where they can easily be knocked over.
18. Dispose of waste materials according to instructions following local, state, and federal disposal requirements. Ask the Lab Manager if you have questions.
19. Know how to respond in case of an emergency. Clean spills promptly
20. Know the location and operation of safety equipment in the lab.
21. Report all accidents or unsafe conditions to the Lab Manager.
22. Seek first aid or emergency treatment if injured

Additional laboratory rules and procedures have been developed for specific laboratories and are documented in standard operating procedures for laboratory exercises or by the course faculty or staff.

## **4.0 CONTROL MEASURES**

29 CFR 1910.1450(e)(3)(ii)

SMCC laboratories uses a hierarchy control measures including engineering, administrative and personal protective equipment (PPE) to reduce Employee exposure to hazardous chemicals.

### **4.1 ENGINEERING CONTROLS**

Engineering Controls are methods for minimizing exposure to chemicals. Engineering controls must be maintained in proper working order and must not be modified unless testing indicates the changes will not reduce protection. Engineering controls must be checked in accordance with the established laboratory safety procedures or factory recommended procedures.

Some engineering controls are equipped with a manometer or digital continuous reading monitoring device, which indicates adequate air flow. When in use, Employees will monitor equipment and discontinue use of unit if the velocity goes out of range.

Employees will report improper functioning of engineering controls to the Lab Manager immediately.

#### **4.1.1 Laboratory Chemical Fume Hoods**

A chemical fume hood must be used for all procedures involving a chemical with a permissible exposure limit, or PEL, less than 50 parts per million (ppm). PELs are commonly found on the SDS. Consult the Lab Manager or EHS if guidance is required.

The exhaust system shall provide an average face velocity between 75 fpm and 125 fpm (feet per minute) except where more stringent requirements are prescribed or if velocity is preset by the manufacturer.

Fume hood face velocity will be tested per the inspection schedule outlined in Section 11. Velocity testing can be performed in house by SMCC staff or an outside vendor. Velocity testing must be documented.

**WORK PRACTICES YOU MUST FOLLOW FOR HOODS**

- Always check hood for positive air flow prior to use;
- Keep the hood sash closed when not working in the hood;
- When working in the hood, keep sash height as low as possible so that there is just enough room for your hands to fit under it;
- Don't store chemicals or waste inside the hood;
- Don't use the hood for disposal of chemicals; and
- Minimize interference with the inward flow of air into the hood.

If a Department elects to utilize a Fume Hood for the sole purpose of storage, the Fume Hood:

- Must be clearly marked as "Not for laboratory use"
- Will be exempt from face velocity testing

Employees can not utilize this Fume Hood for laboratory work until the unit is inspected, found to be in full working order and face velocity testing is brought current.

Each Department is responsible for notifying EH&S when a new Fume Hood is installed.

<b>Locations of chemical fume hoods</b>		<b>Status</b>
South Portland Campus	Hildreth Prep Room between Room 102 and 106	In use
South Portland Campus	Hildreth Chemistry Lab Room 202	In use
South Portland Campus	Marine Science Lab room 104	Storage only
Brunswick Campus	Learning Center Room 157	In use
Brunswick Campus	MATEC Room 233	In use
Brunswick Campus	MACTEC Room 109	In use



### 4.1.2 Spray Booths –Not in Use

On the Brunswick Campus, spray booths are located in MATEC Room 117 and Room 124. The standard operating procedures (SOP) for the spray booths must be reviewed prior to use. A copy of the SOP is located at the spray booth doors. The exhaust rate of the system will be checked annually by in house SMCC staff or an outside vendor

### 4.1.3 Nederman Exhaust Systems –Not in Use

On the Brunswick Campus, MATEC Room 107 is equipped with four (4) Nederman Exhaust Systems. These systems are designed to be flexible for positioning over work stations to control organic vapors and solvents. The exhaust rate of the system will be checked annually by in house SMCC staff or an outside vendor

### 4.1.4 Storage Cabinets

SMCC provides both chemical storage rooms and storage cabinets for flammable and corrosive chemicals. Unless an Employee is present, cabinets should be locked or be in a locked room.

- Flammable cabinets are heavy-walled yellow metal cabinets prominently marked “FLAMMABLE” in large red letters. Always be sure flammables are stored in one of these areas. **Do NOT place any combustible items such as paper or cardboard in a flammable area.**
- All acids, bases, and other corrosives are stored in blue wooden or plastic cabinets with the word “CORROSIVE” in large white letters on the side. One of these cabinets must always be used for storing corrosives.

### 4.1.5 Ventilation

All labs have a ventilation system to provide continuous air exchange. Never tamper or adjust ventilation systems yourself. If an Employee believes that ventilation isn't working properly, they should follow their change of command to contact Facilities Management.

## 4.2 PROTECTIVE CLOTHING AND EQUIPMENT

Personal protective equipment (PPE) includes clothing, gloves and eye ware used in the laboratory to protect Employees from splashes and spills. PPE should be easy to remove in event of an accident and should be fire resistant.

SMCC provides PPE to all Employees covered by this Plan at no cost. General PPE requirements for laboratory work are:

- Eye protection will be worn during chemical transfer and handling, in experiments or any other time chemicals are present. Goggles, safety glasses and face shields are acceptable

- Regular eyeglasses are not acceptable
- Employees are strongly discouraged from wearing contact lenses in the lab
- Gloves will be worn as appropriate to the material and task, consult SDS or Lab Manager
- Additional PPE as/if recommended on the SDS for each chemical being used

**Everyone in the laboratory is required to wear appropriate PPE and clothing to avoid chemical exposure.** Information on appropriate PPE is located on the SDS for each chemical and will be listed on the lesson plan for each classroom activity.

Inspect PPE before each use for cracks, leaks, or wear. Defective personal protective equipment should not be used. This includes scratched eye protection. Single use, disposable gloves should not be reworn.

#### **4.2.1 Lab Coats**

Employees will wear lab coats when required by the Lab Manager, lesson plan or SDS.

#### **4.2.2 Hearing Protection**

At this time there are no documented activities that require the use of hearing protection.

#### **4.2.3 Respirators**

At this time there are no documented activities that require the use of a respirator.

#### **4.2.4 Safety Equipment**

All SMCC buildings are equipped with safety equipment including: eyewash stations, safety showers, fire extinguishers and first aid kits. The location of safety equipment is marked on the evacuation plans located near each entrance/exit door. Prior to commencing work in a laboratory an employee should familiarize themselves with the location of all safety equipment and emergency evacuation procedures.

The area in front of each eyewash, safety shower and fire extinguisher should be clear of trash, furniture or clutter. Employees must have quick and ready access to this equipment in the event of an emergency.

Maintenance and Inspections of safety showers, eyewashes and fire extinguishers is detailed in Section 11 of this Plan.

First Aid Kits are discussed in Section 12 of this Plan

### **4.3 HOUSEKEEPING**

It is everyone's responsibility to keep the workspace and laboratory clean. All Employees must ensure the laboratory is clean prior to and at the end of each lab session.

## RULES FOR GOOD HOUSEKEEPING

- Keep unobstructed access to emergency equipment such as showers, eyewash, fire extinguishers, and emergency exits. The general rule of thumb is to ensure a 3 foot clearance from the equipment.
- Keep work areas clean and uncluttered, with chemicals and equipment properly labeled and stored.
- Clean the work area at the end of each experiment or operation or at the end of the day.
- Make sure all gas and water outlets are completely shut off
- Gas cylinders must be properly secured
- Return all items used in the lab to their proper storage location.
- Dispose of chemical wastes properly. Contact the Lab Manager for instructions.
- Avoid use of extension cords.
- Ensure personal items do not create trip hazards and keep them from becoming contaminated.
- Never place flammable/combustible items next to flames or other heat sources.
- Clean any spills on the floor or bench immediately.

## 5.0 CHEMICAL PROCUREMENT

29CFR1910.1450 Appendix A(D)

Procurement of new chemicals may only be done by the Department Chair or Lab Manager. SMCC's chemical purchase policy requires that chemicals are bought in the **smallest practical amounts**. Whenever practical, you should request pre-diluted solutions to minimize use of concentrated chemicals and reduce the risk associated with mixing and spillage.

### 5.1 NEW CHEMICAL PURCHASES

1. Prior to purchase, a hazard assessment must be completed by the Lab Manager for all new chemicals to determine potential hazards and ensure proper handling, storage and disposal methods necessary for the chemical.
2. Prior to receipt of a new chemical the following must be in place
  - Necessary chemical storage and clean up materials
  - Necessary procedures for handling and disposal
3. Upon receipt of a chemical the Lab Manager will provide an electronic or paper SDS to EH&S so the Department's online chemical inventory can be updated
4. Upon receipt and when container is first opened the Lab Manager or Employee will ensure the each original container is labeled with the following information
  - Color coded storage label (See Appendix A of this Plan)

- Date the chemical is received
  - Date the chemical is first opened
5. Upon receipt of the chemical, the chemical storage category should be determined and material should be placed in the corresponding storage location as discussed in this Plan

## **5.2 EXISTING CHEMICAL PURCHASES**

1. Upon receipt and when container is first opened the Lab Manager or Employee, will ensure the each original container is labeled with the following information
  - Color coded storage label (See Appendix A of this Plan)
  - Date the chemical is received
  - Date the chemical is first opened
2. Upon receipt of the chemical, the chemical storage category should be determined and material should be placed in the corresponding storage location as discussed in this Plan

## **5.1 CHEMICAL DONATIONS**

Chemical donations by businesses and local intuitions are often well intended; however there may be unintended consequence for SMCC, such high disposal cost or increased regulatory compliance in accepting such chemicals.

SMCC will not accept donations of chemicals without review to ensure that the material:

1. Is needed by the college for academic programs;
2. Is useful to SMCC as donated;
3. It is not past it's shelf life date; and
4. Is not a hazardous waste.

Follow SMCC's procedure for approval of In-Kind Gifts (Donations). Details are located within the [College Handbook](#) portal on the SMCC intranet.

# **6.0 CHEMICAL LABELING**


All containers must be labeled as to their contents. Manufacturer labels on chemical containers shall not be removed or defaced and must be prominently displayed. Chemical labels must be readable and free from chemical encrustation. If a manufacturers label cannot be read, it must be replaced.

Secondary containers are those containers which contain a small amount of chemical. These secondary containers must be labeled too.

## **6.1 PRIMARY CONTAINER LABELS**

All chemicals received from chemical manufacturers and distributors must have labels indicating the chemical identity and common name, manufacturer name, address and phone number, pictograms, signal words, hazards statements, and precautionary statement. Toxicity warning signs or symbols should be prominently visible on the labels.

A sample GHS label is included below:

<b>SAMPLE LABEL</b>	
<p style="text-align: center;"><b>PRODUCT IDENTIFIER</b></p> <p>CODE _____            Product Name _____</p> <p style="text-align: center;"><b>SUPPLIER IDENTIFICATION</b></p> <p>Company Name _____            Street Address _____            City _____ State _____            Postal Code _____ Country _____            Emergency Phone Number _____</p> <p style="text-align: center;"><b>PRECAUTIONARY STATEMENTS</b></p> <p>Keep container tightly closed. Store in cool, well ventilated place that is locked.            Keep away from heat/sparks/open flame. No smoking.            Only use non-sparking tools.            Use explosion-proof electrical equipment.            Take precautionary measure against static discharge.            Ground and bond container and receiving equipment.            Do not breathe vapors.            Wear Protective gloves.            Do not eat, drink or smoke when using this product.            Wash hands thoroughly after handling.            Dispose of in accordance with local, regional, national, international regulations as specified.</p>	<p style="text-align: center;"><b>HAZARD PICTOGRAMS</b></p> <div style="text-align: center;">  </div> <p style="text-align: center;"><b>SIGNAL WORD</b> <b>Danger</b></p> <p style="text-align: center;"><b>HAZARD STATEMENT</b> <b>Highly flammable liquid and vapor.</b> <b>May cause liver and kidney damage.</b></p> <p style="text-align: center;"><b>SUPPLEMENTAL INFORMATION</b></p> <p><b>Directions for use</b>            _____            _____            _____</p> <p>Fill weight: _____ Lot Number _____</p> <p>Gross weight: _____ Fill Date: _____</p> <p>Expiration Date: _____</p>

Additional information on the GHS labeling system can be found in Section 3 of SMCC [Hazard Communication Plan](#).

## 6.2 SECONDARY CONTAINER LABELS


Secondary Container Labels will meet all requirements of the [HazCom Program](#) Section 3.2 and include the additional points below:

- All laboratory secondary containers must be labeled with the appropriate color from the Color Coding System for hazard identification (Appendix A), which identifies chemical grouping for storage.
- For multiple secondary containers for a product used in workstations, as part of a kit or in laboratory exercises, it is acceptable to develop a coding or coloring system to uniquely identify the container. All employees must understand the coding or

coloring system that is used and be able to reference the complete chemical label and SDS.

- For chemical mixtures prepared in the laboratory, containers must be marked with the name or initials of the person responsible for preparation.

Below is a sample of a label that SMCC uses for secondary containers. EH&S has a template for these labels that can be printed and filled out by hand.

<b>Product Name:</b> <u>Sulfuric Acid 1N</u>	
<b>Date:</b> <u>10/16/09</u>	

The four-color symbol you see on the secondary label is known as the NFPA diamond. The colors on the NFPA diamond stand for specific hazards:

- The blue space refers to the product's health hazards;
- The red one tells you the level of fire hazard;
- The yellow one refers to the stability of the product;
- The white space is usually blank, but sometimes contains a specific symbol for certain types of hazards, for example "W" meaning "don't mix with water".

The numbers go from "0", meaning no hazard, to "4" which indicates an extreme hazard. Review the [Hazard Communication Program](#) for additional detail.

## 7.0 HAZARDOUS CHEMICAL HANDLING AND STORAGE

Use and storage of hazardous chemicals is regulated by federal, state, and local regulations. These regulations include OSHA worker protection standards, emergency response and planning regulations and local building and fire codes. The following chemical handling practices were developed for activities at SMCC to comply with the applicable regulations.

### 7.1 HAZARDOUS CHEMICAL HANDLING

Know the hazards of the materials being used.

- Review and become familiar with the Safety Data Sheet (SDS) for chemicals used. SDS sheets are available on-line as [MSDS online](#)
- Determine the potential exposure risks associated with the chemical and determine if work needs to be performed under the chemical hood
- Determine what PPE is required for working with the chemical

- Determine if there are environmental conditions associated with the chemical that must be adhered to, ie: temperature sensitive, shock sensitive, ignitable
- Ensure that all containers are labeled with the required hazard information
- Read labels carefully to make sure you are using the right chemical.

Know the safety equipment. When in the lab you must know:

- The location of eyewash stations, safety showers, fire extinguishers, first aid kits, and emergency exits;
- How to respond in case of an emergency.
- How to use the safety equipment

General Procedures for Handling Chemicals

- Perform a check of all engineering controls to ensure that equipment is functioning properly before working with chemicals. This includes ventilation hoods and ventilated storage rooms.
- Review the requirements for personal protective equipment needed to work with a chemical and ensure that all equipment is worn prior to commencing activities

## **7.2 HAZARDOUS CHEMICAL STORAGE**

SMCC restricts access to chemical storage areas through signage and secured storage areas. Students are never allowed in these rooms unsupervised. Storage for flammable and corrosive chemicals was outlined in Section 4 above.

## **7.3 CHEMICAL COMPATIBILITY AND SAFE STORAGE**

The Lab Manager is responsible for following safe storage practices of chemicals. This includes separating incompatible chemicals and identifying unstable compounds that need disposal, such as peroxide formers, after their indicated expiration date.

Chemicals must be grouped according to their hazard category (i.e. strong acids, strong bases, oxidizers, flammables, pyrophorics, self-reactives, etc.). SMCC stores chemicals in accordance with the Color Coding System for hazard identification (Appendix A).

Those chemicals which are not flammable or corrosive must be stored on metal or wooden shelves, preferably with lips to prevent materials sliding off. Materials should not be stored above eye level or on the floor. Gas cylinders may be stored on the floor, but they must be secured, segregated according to compatibility, and stored upright and away from heat sources.

Storage of chemicals must be secured and is not allowed at the lab bench or areas outside the designated chemical storage room.

Before using a refrigerator for storage of any chemical, an Employee should check with the Lab Manager. Never store flammable or corrosive chemicals in refrigerators. Food for consumption may not be stored in laboratory refrigerators. Any food used in laboratory exercises must be labeled “for laboratory use only”.

All chemical containers should be inspected for rust, corrosion, and leakage each time they are used. Employees who see a concern with a container should contact the Lab Manager right away.

## **7.4 CHEMICAL INVENTORY**

To ensure that SMCC maintaining a safe work environment for Employees working with hazardous chemicals, it is necessary to maintain an updated chemical inventory. The chemical inventory also provides the information necessary for regulatory reporting on hazardous chemicals.

The Department Chair, Lab Manager or designee will perform the Chemical Inventory in line with procedures defined in Section 5 of the [Hazard Communication Plan](#).

A chemical inventory is completed annually, by the end of the Spring semester, to prevent over stocking chemicals and storing chemicals past their expiration date. During the inventory all containers are checked to ensure they are properly labeled, closed and in good condition.

All chemicals identified as outdated, unlabeled, unknown, or unwanted during the inventory should be clearly marked and the list of chemicals must be provided to EH&S for a hazardous waste determination prior to disposal.

## **8.0 LABORATORY SIGNS**

29 CFR 1910.1450 Appendix A (D)(7)  
29 CFR 1910.1200

### **8.1 LABORATORY SIGNAGE**

The following signs and placards must be posted prominently in the laboratory:

- SMCC EMERGENCY PROCEDURES, to be followed in the event of fire, spill, medical emergency, or other incident and a floor diagram showing the location of exits, safety showers, eyewash station, fire extinguisher, fire blanket;
- **Emergency Actions for Hazardous Materials** poster found in Attachment B, which includes emergency telephone numbers for Campus Security, Facilities Management and the Lab Manager
- Large red placards showing the location of fire extinguishers; and
- Warnings at areas or equipment where special or unusual hazards exist.

## **9.0 SPILLS AND ACCIDENTS**

29 CFR 1910.1450 Appendix A (D)(9)



In the event of a significant spill (based on chemical type and quantity) or serious accident, Employees will follow the emergency procedures listed on the **Emergency Actions for Hazardous Materials** document posted in each laboratory. An example can be found in Attachment B.

Make the call(s) *before beginning cleanup*. Write down a description of what happened for future reference and investigation.

An authorized person will assess the nature of the spill to determine the appropriate response and whether the spill needs to be treated as hazardous waste.

For small spills, Employees may be asked to clean up the spill without outside help or ask the Facilities Management custodian to do so.

Responsible staff will evacuate all persons from the spill or accident area to the assembly area if necessary. A member of Faculty or Staff must account for all people in the laboratory and accompany them to the assembly area and remain there until it is certain that the spill is not hazardous and the “all clear” has been given.

EH&S and the Lab Manager will investigate the spill and make required reports to Executive Staff and outside agencies. This will include recommendations to avoid a similar event in the future which Employees will be expected to follow. An Employee who discovered the spill or witness an accident may be consulted as to the sequence of events and asked for advice.

Spill cleanup supplies (absorbents, neutralizers) are available in the laboratories for immediate use.

## **10.0 WASTE DISPOSAL**

29 CFR 1910.1450 (Appendix A (D)(11))  
CMR Chapters 850 and 851

Improper disposal of chemical waste may result in chemical exposure, fire, or other health and safety issues for SMCC staff and students. **KNOW YOUR WASTE!**

Indiscriminate disposal by pouring waste down the drain, disposal to the general trash or disposal by evaporation is not allowed and may violate hazardous waste management regulations and/or the local sewer ordinances.

For any wastes that are generated in the lab a waste determination must be completed prior to disposal. Once a waste determination is made for each waste stream the proper waste disposal method can be assigned. For assistance in completing a waste determination, speak with the Lab Manager or contact EH&S.

Wastes that are determined to hazardous must be collected, managed and disposed in accordance with state and federal regulations. At a minimum all hazardous waste must be in a container that

is closed, dated, labeled as “hazardous waste” and stored in secondary containment to prevent spilling.

SMCC is regulated by the quantity of hazardous waste that is generated and stored on campus at any given time so it is critical that any new hazardous waste streams are identified by lab managers and reported to EH&S to ensure that the regulatory requirements are met.

State and Federal regulations allow the collecting of waste from laboratory work in a container in the lab called a “satellite accumulation area” or SAA. These containers must be labeled as hazardous waste and once full, the container must be moved within **72 hours** to a hazardous waste storage area. All movement of hazardous waste must be coordinated through EH&S.

EH&S inspects satellite accumulation areas and will coordinate removal to the Facilities Management hazardous waste storage area if it is required. EH&S is responsible for all hazardous waste manifests and associated paperwork that DEP requires.

## **11.0 INSPECTIONS**

### **11.1 DEPARTMENT**

Each Department covered by this Plan is responsible for:

- Daily pre/post inspection of laboratory conditions, housekeeping, chemical storage, fume hoods and laboratory safety equipment
- Monthly inspection and replenishment of First Aid supplies

### **11.2 FACILITIES DEPARTMENT**

Facilities is responsible for the inspection and maintenance of all safety items associated with the building envelope and services. This includes but is not limited to:

- Monthly activation of safety showers and eyewash stations to flush the lines and verify proper operation (20 gal/minute)
- Monthly fire extinguisher checks to ensure the units are in working order and accessible
- Annual fire extinguisher certification
- Biannual Fume Hood velocity check(s) if agreed upon
- Nederman Exhaust System checks and repairs in Brunswick

## 11.3 ENVIRONMENTAL HEALTH & SAFETY

The EH&S Coordinator is responsible for:

- Performing Biannual Fume Hood velocity checks where not under Facilities scope
- Informal walk-through inspections
- Conducting an annual safety inspection of each lab to confirm compliance with this Plan. Inspection findings and required corrective actions will be reported to the Lab Manager, Department Chair and (as applicable) Facilities. All identified issues must be addressed as soon as possible and documented for the record.

## 12.0 MEDICAL PROGRAM

29 CFR 1910.1450(e)(3)(vi) and (g)  
29 CFR 1910.1020

### 12.1 MEDICAL CONSULTATION AND EXAMINATION

If an Employee has been exposed to a hazardous chemical to a degree and in a manner that could cause them harm, the employee is entitled to a confidential medical consultation and examination without cost or loss of pay.

### EVENTS AND CIRCUMSTANCES THAT MIGHT RESULT IN OVEREXPOSURE TO A CHEMICAL

- A hazardous chemical leaked, spilled, or otherwise released in an uncontrolled manner;
- A hazardous chemical spilled on the skin or splashed in the eye;
- A person displays signs or symptoms that might indicate overexposure to a hazardous chemical such as rash, headache, nausea, coughing, tearing, irritation or redness of eyes, irritation of nose or throat, dizziness, loss of motor dexterity or judgment.

### 12.2 EXPOSURE ASSESSMENT

All Employee chemical exposure incidents need to be documented on the [Employee Report of Injury](#) form in accordance with Human Resources procedures.

EH&S will investigate workplace incidents. The investigation includes discussion of any action taken including corrective action. EH&S is responsible for investigating chemical exposure incidents and the Lab Manager must be kept informed and included in the investigation.

## 12.3 MEDICAL ASSISTANCE

First aid kits are located in all laboratories. They are to be monitored by Lab Managers, (or designee) on a monthly basis. Supplies can be ordered from Central Services. It is up to each building and Department to oversee the first aid kits in their respective areas. EH&S is not responsible for the individual first aid kit supplies.

Only those trained in first aid and cardiopulmonary resuscitation (CPR) should render such assistance.

If you think that immediate medical assistance beyond first aid is required, call 911.

## 13.0 INFORMATION AND TRAINING

29 CFR1910.1450(f)

SMCC's Hazardous Communication Program requires that Employees be trained on the hazards of the chemicals in the laboratory and how to work safely with them. Refer to the [Hazard Communication Plan](#) for additional information and training requirements.

The Lab Manager, Department Chair or Supervisor must ensure that new hire Employees are trained on the following:

- Content of this Chemical Hygiene Plan and where it is located
- How to look up SDSs;
- Basic symptoms of exposure to chemicals, e.g. nausea, runny eyes, and so forth;
- Methods and observations that students can use to detect the presence or release of a hazardous chemical such as visible appearance, odor, fuming, and such;
- Protective measures such as fume hoods, storage practices, work practices, and personal protective equipment; and
- Emergency procedures to be used in case of a fire, spills, or exposure

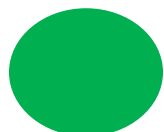
## **14.0 ANNUAL CHEMICAL HYGIENE PLAN AUDIT**

29 CFR 1910.1450 (e)(4)

The Lab Manager will conduct an audit of all phases of the Chemical Hygiene Plan at the end of each academic year in May and will summarize the results in a memorandum with recommendations submitted to EH&S. All recommendations will be reviewed by EH&S and changes to the Plan will be drafted for review and approval.

# APPENDIX A: CHEMICAL STORAGE COLOR CODING SYSTEM

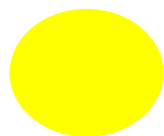
## Color Coding System *Hazard Identification in the Laboratories*



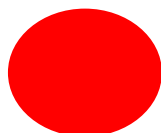
GENERAL STORAGE



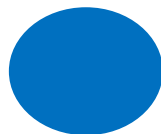
CORROSIVE



OXIDIZERS



FLAMMABLE



TOXIC

## APPENDIX B: EXAMPLE EMERGENCY ACTIONS POSTER

For Room: 156/158	Building: Learning Commons	Department: Biological Sciences
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# EMERGENCY ACTIONS FOR HAZARDOUS MATERIALS INCIDENTS

**FIRES & HEALTH-THREATENING  
HAZARDOUS MATERIAL RELEASES**

**CALL 911**

INCLUDES ALL COMPRESSED GAS CYLINDER LEAKS OR **SYSTEM** FAILURES

**Activate fire alarm. Close door to laboratory or building.**

**Evacuate the area or building.** For building evacuation, proceed to the Assembly Point (EAP) at **The Academy**.

**Administer first aid.** For chemical spills, flush with water for at least 15 minutes or until emergency personnel arrive. Deluge contaminated area with water.

**Notify area management and staff identified below.** Brief arriving personnel.

**RELEASES OF CHEMICALS NOT IMMEDIATELY  
HEALTH THREATENING**

**CALL EXT. 5553 or 741-5553**

USE THIS 24-HOUR SECURITY NUMBER TO REPORT  
CHEMICAL and OTHER HEALTH AND SAFETY INCIDENTS