

Table of Contents

Purpose

The intent of the Chemical Hygiene Plan (CHP) is to inform individuals at Skidmore College of relevant health and safety policies and procedures, and to inform them of their rights and obligations under federal and state directives. The CHP is intended minimize the risk to personnel, facilities, and the environment from the use hazardous materials. These policies and procedures are based on currently accepted practices and ensures compliance with laws, statutes, and regulations including the Occupational Safety and Health Administration (OSHA) Laboratory Standard found at [29 CFR 190.1450](#) and the Environmental Protection Agency (EPA) [Emergency Planning and Community Right-to-Know Act \(EPCRA\)](#). The CHP is not intended to be all-inclusive, and cannot address specific handling procedures for all materials, but describes general protective guidelines for working with hazardous materials or a specific category of material.

Scope

Skidmore College is committed to providing a safe and healthy work environment for the entire campus community.

The CHP is intended to help individuals:

- Maintain risk of exposure to hazardous materials at the lowest practical level;
- Minimize risk of work-related injury and illness;
- Minimize risk to the environment;
- Comply with applicable regulations and standards, and,
- Attain the above goals with a minimum burden on teaching and research activities.

Plans and procedures regarding, waste management, biological safety, disposal of regulated medical waste, Institutional Animal Care and Use (IACUC), and radiation safety are not part of the CHP. Questions concerning these other programs should be directed to ehs@skidmore.edu or general

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Individuals working in a space that meets one or more of the above requirements (hereinafter referred to as a laboratory or lab) must comply with the OSHA Laboratory Standard and this document.

The CHP applies only to laboratories; however, it is applicable to all spaces that utilize chemicals, regardless of the area of research or laboratory activity. For example, research and teaching laboratories that utilize hazardous chemicals are examples of workplaces where the CHP is applicable. Storage or preparatory areas that stock and supply chemicals in direct support of laboratory operations are also within the scope of this CHP. Non-laboratory workplaces that use or store hazardous materials fall under the scope of the [Skidmore College Hazard Communication Program](#); for example, studio arts, print shops, maker spaces, machine shops, and photo labs.

Roles and Responsibilities

Office of Environmental Health and Safety for Academic Affairs (EHS)

The office of EHS serves as the health and safety resource and administrator of College Academic Affairs safety policies. EHS is responsible for:

- developing, implementing, training, record keeping, and
- maintaining the CHP in compliance with federal, state and local regulations.

Chemical Hygiene Officer (CHO)

The CHO is responsible for the implementation of the provisions of this CHP. Certain aspects of the program may be delegated to others as indicated. However, the overall responsibility for the execution of the CHP rests with the CHO. All students and employees are expected to actively participate in the program to ensure its success. The lead CHO for Skidmore College is:

Kara Cetto Bales
Associate Director, EHS for Academic Affairs
(518) 580-5130
kcetto@skidmore.edu

The CHO will:

- Establish, maintain, and revise the CHP;
- Monitor procurement, use, storage, and dispo

Chemical Hygiene Committee

The Chemical Hygiene Committee (CHC) is responsible for providing technical guidance in the development and implementation of the CHP. The CHC is responsible for reviewing the CHP annually.

The CHC is comprised of the following individuals:

- Kara Cetto Bales, Associate Director of EHS for Academic Affairs, Chair
- Paul Davis, Art Department Shop Supervisor and Building Safety Coordinator
- Loretta Greenholtz, Director of EHS for Academic Affairs
- Gary Lachance, Building Trades Manager
- Tim Munro, Director of Campus Safety

Department Chairs/Program Directors

Each individual department and/or program is responsible for ensuring that lab-specific procedures needed to supplement this plan are developed and implemented in a timely manner. The department or program director will:

- support the implementation of the CHP;
- assist the CHO in maintaining awareness and compliance with the CHP;
- work to remedy any laboratory deficiencies associated with formal or informal EHS audits;
- allocate appropriate resources/funding for laboratory related health and safety equipment, as needed.

Laboratory Supervisors

A laboratory supervisor is anyone facilitating, authorizing and overseeing any type of lab work, including facuehe540qdmisorlaboraehe540qge (e)-(m)1 (e)-3 f (e)1 end ovedeN 1.5 anyor-4 (nyx Tw (u))-3pliaon c

Laboratory Workers

A laboratory worker is an individual (other than a laboratory supervisor) who may work independently or in an unsupervised fashion. Laboratory workers shall:

- Follow all health and safety standards and rules set by the CHP, College and/or lab supervisor;
- Report all hazardous conditions to their laboratory supervisor;
- Wear or use any prescribed personal protective equipment;
- Report any job-related injuries or illnesses to their laboratory supervisor;
- Refrain from the operation of any equipment or instrumentation without proper instruction and/or authorization

While students in an academic laboratory are not considered laboratory workers by the OSHA Lab Standard, the rules/requirements/procedures outlined herein shall be an integral part of Skidmore's academic learning and research environment to provide for the protection of all personnel.

Laboratory Visitors

Laboratory visitors are individuals who do not normally work in a laboratory but may need to visit a lab to perform assigned work without the laboratory supervisor present. Laboratory visitors include Campus Safety staff, Facilities maintenance and building trades staff, custodial staff, and any other person who enters a laboratory but does not meet the definition of laboratory worker. Responsibilities of laboratory visitors include, but are not limited to:

- Comply with all personal protective equipment and work practices in the spaces they enter;
- Do not disturb any equipment on benchtops or fume hoods;
- Direct any questions to the laboratory supervisor or CHO;
- Report unsafe conditions to their supervisor or CHO

Academic Administrative Assistants

Individuals directly involved with ordering and/or receiving packages involving chemicals and supplies shall:

- Assist faculty and the CHO with the timely procurement and proper storage of necessary

- Fire Extinguisher Use
- Radiation Safety
- Laser Safety
- Animal Care
- Biosafety
- Research Ethics
- Hazard Communication

Laboratory Supervisors

All laboratory supervisors must complete the following trainings every 3 years:

- Advanced Laboratory Safety
- Hazardous Waste Management
- Fire Extinguisher Use

If the scope of lab work, as determined by EHS, will involve the use of radiation, lasers, animals or biological materials, the following trainings may also be necessary:

- Radiation Safety
- Laser Safety
- Animal Care
- Biosafety
- Research Ethics

Laboratory Workers

All new laboratory workers (including students in an academic laboratory) must participate in General Laboratory Safety Training and pass a proficiency exam (80% or above) before work begins in the lab. The General Laboratory safety training only needs to be completed once.

If a laboratory worker will at any time work independently without the laboratory supervisor present, the laboratory worker must also complete the following trainings **annually**:

- Advanced Laboratory Safety
- Hazardous Waste Management
- Fire Extinguisher Use

The following trainings may also be required depending on the scope of work, as determined by the laboratory supervisor or EHS:

regarding waste management can be found at <https://www.skidmore.edu/ehs/>.

- For all emergencies contact Campus Safety at 518-580-5566 (or x5566 from a campus phone).
- Accidents and injuries must be reported and filed with EHS.

Personal chemical hygiene

Good personal chemical hygiene habits minimize chemical exposure.

- Wash your hands frequently during the use of lab facilities even if you were wearing gloves.
- Always wash your hands after contact with any hazardous material, and before eating, drinking, or applying cosmetics.
- Long hair must be tied back/secured.
- Wearing contact lenses in the laboratory is discouraged as the lens material may absorb and concentrate many chemicals.
- Wear appropriate clothing (and shoes) to protect your skin in the event of an accidental spill.

Housekeeping

An unorganized, cluttered laboratory increases the likelihood of chemical spills and splashes due to tripping or knocking over chemical containers.

- Keep areas around safety equipment such as fire extinguishers, safety showers, and eyewashes clear/unobstructed.
- Avoid clutter and keep walkways clear.
- Have designated storage areas for chemicals and hazardous waste.

Food and drink in the laboratory

- Never consume food or beverages, chew gum or apply cosmetics in labs or chemical storage areas.
- Do not store food or beverages in labs (including refrigerators) or chemical storage areas.
- Rooms that are adjacent, but separated by floor-to-ceiling walls, and do not have any chemicals or other hazardous materials present may be used for food consumption/preparation at the discretion of the laboratory supervisor responsible for the area.

Basic chemical handling and storage procedures

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- Avoid [working alone in the laboratory](#) when handling hazardous chemicals, carrying out chemical reactions, or performing other high-risk operations.
- Use cautious judgment when leaving operations unattended: i) post signs to communicate appropriate warnings and precautions, ii) anticipate potential interruptions of electric, water, or other services and provide containment and/or shielding for release of toxic substances.
- Always assume that unknown materials are toxic, and that a mixture is more toxic than its most toxic component.
- Use proper labeling practices for materials transferred from the original manufacturer's container into a secondary container (e.g. beaker, flask, or bottle):
 - Materials in use: labeled with the contents
 - Storage of materials: labeled with the contents, corresponding pictograms, and if applicable the chemical concentration.
- Chemical storage areas need to be labeled.
- Chemicals should never to be stored under a sink, directly on the floor, or in a corridor.
- Minimize the storage of chemicals in work areas, such as on a lab bench or in a fume hood.

Working alone in the lab

- Laboratory supervisors are responsible for training individuals on the SOP.
- SOPs must be read and an acknowledgement of understanding is required by the trainee (and trainer) before individuals are authorized to work independently.
- Copies must be made available to each person performing the task and to EHS upon request.
- Copies must be maintained by the laboratory supervisor and revised when significant changes are made.
- SOPs should be systematically reviewed on a periodic basis, e.g. every 1-2 years, to ensure that the policies and procedures remain current and appropriate, or to determine whether the SOPs are even needed.

A SOP can be for a generic or specific process/procedure or chemical/chemical class and should include:

1. Lab and SOP descriptive information
 - Process or chemical name/class of chemicals
 - Laboratory supervisor name
 - Date when SOP was finalized/updated
 - Building/room number where work is designated
2. Hazards
 - Equipment or physical hazards
3. Engineering controls and personal protective equipment
 - Description and location of lab-specific controls/equipment to reduce exposure
 - Include specific PPE or combination required for operation
4. Protocol/procedure
 - Include step-by-step instructions
 - Outline special handling and storage requirements
 - Describe restrictions on procedure/quantity/work equipment/work locations/unattended operations, etc.
5. Spill and accident procedures
 - Describe specialized spill clean-up procedures for materials used in the SOP
 - If applicable describe any specialized emergency procedures
6. Waste disposal procedures
 - Specific information on the waste streams generated, storage location, and any special handling/storage requirements.
7. Documentation of training
 - Signature of all users is required

Procedures/chemicals requiring SOPs include, but are not limited to, the use of:

- Extremely low temperatures devices
- Ultraviolet (UV) light sources

- Cotton reacts rapidly with acids; therefore, rubberized aprons and/or chemical resistant sleeves are recommended to be worn over cotton lab coats when working with concentrated acids or other highly corrosive chemicals.

When labels are missing or unclear, the cost of having even a small amount of an “unknown” chemical analyzed prior to disposal will far exceed the purchase prices of an entire container of the chemical.

Safe Handling and Storage Requirements

Chemicals should be stored according to compatibility and storage areas must be appropriately signed.

- Consult SDSs for appropriate storage recommendations.
- Storage area signs are available through EHS (<https://www.skidmore.edu/ehs/forms/waste->

Chemicals developed in the laboratory

The following requirements apply to chemical substances developed in the laboratory:

- Materials should only be produced exclusively for the laboratory's use.
- If the composition of the chemical substance that is produced is known, the laboratory supervisor, to the best of their knowledge, must determine if it is a hazardous chemical. The hazard properties of the material can be determined based on literature of similar substances.
- If the chemical is determined to be hazardous, the laboratory supervisor must provide appropriate training to protect all lab workers.
- If the chemical produced is a product or a byproduct whose composition is not known, the laboratory supervisor must assume that the substance is hazardous and must comply with the requirements of the CHP.

Moving/Transporting chemicals either inside or outside a building

If a laboratory needs to move a few chemicals within a building, follow the guidelines below. If a laboratory needs to move large number of chemicals or materials outside the building, STOP and contact ehs@skidmore.edu for appropriate guidance.

- Lab personnel are responsible for using appropriate safety carriers (secondary containment) when transporting chemicals.
- Carts are preferred for transporting chemicals.
- The appropriate PPE needed to safely handle the chemicals being transported should be moved with the chemicals. In the event of a spill the PPE should be donned.
- Chemicals must be segregated as flammables, oxidizers, acids, or bases, with liquids and solids in each hazard class segregated and in separate transport containers.
- Leak-proof plastic containers are recommended for the transport of liquids.
- Liquid containers should be cushioned to prevent breaking during transport.
- When moving gas cylinders, the protective cap must be in place and the tank must be transported with the aid of a hand truck.

Protecting Laboratory Personnel

Controlling exposures to hazards in the workplace is vital to protecting workers. The National Institute for Occupational Safety and Health (NIOSH) has established a hierarchy of controls as a way of determining which actions will best control exposures. The hierarchy of controls has five levels to lower worker exposures and reduce the risk of illness or injury. The preferred order of action based on general effectiveness is:

1. Elimination: physical remove the hazard
2. Substitution: replace the hazard with a method or chemical that is less hazardous
3. Engineering controls: isolate people from the hazard
4. Administrative controls: change the way people work; e.g. use of SOPs
5. PPE: protect the worker

Engineering controls

Engineering controls reduce or prevent hazards from coming into contact with workers. EHS in conjunction with Facilities Services will ensure that equipment is functioning properly and inspected regularly. Contact EHS if you believe there are maintenance issues in your area.

Equipment and service/inspection schedule (responsible party indicated in parenthesis):

- Fume hoods: performance tested annually (Facilities Services)
- Fire extinguishers: visually inspected monthly (Facilities Services); certified yearly (New York Fire & Security)
- Safety showers: visually inspected weekly (EHS); performance tested annually (Facility Services)
- Eyewash stations: performance tested weekly (EHS)
- Spill control kits: inspected annually (EHS)

Exposure and medical monitoring

Monitoring of the lab environment and/or personal exposure may be required if a toxic or hazardous material is listed on one of the OSHA Z-tables. EHS will conduct monitoring as appropriate to ensure that a laboratory worker's exposure does not exceed the action level (or, in the absence of an action level, the PEL) specified by OSHA (see [29 CFR 1910.1450\(d\)](#)). Any person with a reason to believe that exposure levels for a substance are unsafe, may request monitoring through the CHO or EHS office. EHS is responsible for coordinating exposure monitoring requests and determining when monitoring is no longer necessary and can be terminated.

- **Initial monitoring** will be done by EHS to measure worker exposure whenever there is reason to believe that exposure levels for a substance routinely exceed the permissible levels for [Z-1 substances](#) or for any exposure to [Z-2 substances](#).
- **Periodic monitoring** will be conducted by EHS if the initial monitoring performed discloses worker exposure over the allowed levels.
- **Notification of monitoring results** will occur within 15 working days after the receipt of any monitoring results. Individuals will be notified by EHS of the results in writing.

Medical monitoring

Certain situations or exposure conditions may warrant medical consultation or medical monitoring of individuals. All consultations and monitoring are provided at no cost. Examples include medical evaluation for individuals exposed to concentrations of a hazardous substance above the OSHA action level, the PEL or the Short-Term Exposure Limit (STEL).

Recordkeeping

The following records must be maintained:

- Records of any measurements taken to monitor worker exposure are maintained by EHS for at least the duration of employment plus 30 years;
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Laboratory Waste Disposal Policies

The characterization, management storage and disposal of laboratory wastes (i.e. chemical waste including hazardous and non-hazardous solid waste, radioactive or mixed waste, biohazardous and medical waste, and universal waste) is regulated and requires strict compliance with regulatory obligations. All materials collected in the laboratory must be considered laboratory and/or regulated (medical or radioactive) waste unless written approval is obtained to dispose of the materials as “normal” waste in the sewer or landfill. EHS coordinates the collection of all types of wastes with a licensed waste contractor. There is no direct charge to departments/programs for disposal of waste

activity that increases the circulation of poison in the bloodstream. If artificial respiration is necessary, take care not to inhale the chemical from the individual.

If a person is found unconscious in the lab, a confined space, or an area where vapors are likely to be trapped, do not enter the area; the individual may have been overcome by toxic gases or asphyxiated by lack of oxygen in the space. Your entry into the same space may lead to your becoming incapacitated as well. Immediately contact Campus Safety.

Chemicals ingested

If a material is accidentally ingested, contact Campus Safety who will contact Saratoga Hospital or Poison Control Center (800-222-1222). Do not give the person water, milk or anything else unless directed by a medical professional or SDSs. Also, do not induce vomiting even if the person complains of pain or burning sensation in the mouth or throat. Induce vomiting only if so directed by a medical professional.

Sharps injury

In the event of a needle-stick incident, or any other sharps injury involving potential injection hazards, immediately wash the affected body part(s), and gather any necessary information on the suspected materials or chemicals that may have been injected (such as an SDS). Notify Campus Safety of the incident, and wait for EMS arrival. In cases involving actual or potential chemical injection, it is highly recommended that the Poison Control Center be contacted immediately: 800-222-1222.

Other emergencies

For emergencies involving chemical/hazmat spills, biohazardous material exposures, fires, medical emergencies, and evacuation procedures, see [Skidmore's Comprehensive Emergency Management Plan](#)

