

SECTION EIGHT: SAFETY

8.1 SAFETY REGULATIONS

Accepted as policy 4/2005 updated 10/31/2016

I. Policy Statement

The chemistry department is committed not only to providing a safe environment for students, faculty, staff and visitors but also to creating a dynamic safety culture that incorporates the following concepts:

- Everyone is responsible for safety.
- Department members take a proactive approach – anticipating potential problems and correcting situations of concern.
- Safety education is an integral component of chemistry coursework.

II. Safety Personnel

1) Department Safety Officer

The role of the department safety officer is to work in conjunction with the university EH&S office to advise and assist the department in issues of safety.

2) Safety Committee

The safety committee is a standing committee chaired by the departmental safety officer and consists of the department chair, a classified staff stockroom employee, an instrument technician and two or more faculty members who are appointed annually. The committee meets quarterly and additionally as needed for major incidents, serious near miss cases or serious safety concerns. The department chair is a non-voting member of the safety committee.

III. General Department Policy

1) Training

The department provides safety training for students and all department personnel - teaching, research and stockroom assistants, faculty and staff.

a) New Department Employees

- New faculty and staff meet individually with the safety officer for orientation to the department's safety program and to discuss individual needs.
- All new employees must attend training on the Chemical Hygiene Plan. This training is a state requirement per the "Laboratory Safety Standard" (WAC 29662-40001-40025). Chemical Hygiene Plan training is provided by EH&S.
- The department provides safety training for students and all department personnel including but not limited to teaching, research and stockroom assistants, faculty, and staff.
- PIs train the employees working in their lab in safe practices and hazards specific to their lab, including reviewing the SOPs and MSDS or SDS. The PI will maintain written records of the training in their CHP binder kept in the lab. (WAC 296-67-025, WAC 296-828-20005, WAC 296-800-14020, WAC 296-828-20015)

b) Students

- Prior to the first lab class, students are shown the department safety film.
- Before each lab, safety concerns of the upcoming experiment are discussed in the pre-lab lecture.

2) *Emergency Procedures*

The following emergency procedures have been established, approved by EH&S, and are updated as needed.

- a) Spill Response (SP001) – see Attachment A.
- b) Facility Emergency (SP002) - see Attachment B.
- c) Personal Injury (SP003) - see Attachment C.
- d) Emergency Egress (SP004) - see Attachment D.

3) *Personal Protective Equipment (PPE)*

1) Dress Code

Personal clothing is the first barrier between one's skin and chemical hazards. Appropriate clothing is required for entry into any research or teaching laboratory. Appropriate clothing is minimally defined as a shirt, long pants or skirt, and full coverage shoes. Clothing must overlap, covering lower extremities. This is the base requirement for all laboratories, whether active or inactive.

- Teaching labs have the additional requirement of full clothing coverage. All skin from the shoulders across the collar bone to toes must be completely covered (excluding hands).
- Research lab appropriate dress code is determined by the Principal Investigator. At a minimum, research lab dress code must follow the minimum requirements outlined in section III.3.1.

2) Eye Protection

Appropriate safety eye wear must be worn at all times in teaching labs, stock room, the designated areas within each research lab, and any place where chemical experimentation is being conducted under the auspices of the Chemistry Department.

- Teaching labs
Chemical splash goggles are required at all times during active teaching labs. Chemical splash goggles must be indirectly vented, splash resistant, and impact resistant and meet ANSI Z87.1 specifications.
- Research labs
The research lab PI is responsible for the specific type of eyewear required within their research lab space based on the procedures and/or chemical hazards present. These requirements must meet all legal state and federal codes for employee safety. (WAC 296-800-160, and 29 CFR 1910.133)

3) Lab Coats

Lab coats provide an additional barrier between chemical hazards and contact with a person's skin. Lab coats should fit appropriately as to not create an additional hazard and should be buttoned completely when conducting hazardous procedures.

- Teaching labs
Lab coats are required at all times in active teaching labs.
- Research labs
The research lab PI is responsible for identifying when lab coats are required to be worn by lab employees. Lab coats must be readily available to anyone that steps into a

designated chemical use area within a research lab. (WAC 206-800-160, 29 CFR 1910 Subpart I)

4) Gloves

Chemical resistant gloves provide a barrier between chemical hazards and skin contact. Because gloves are often the only PPE in place to protect hands from chemical exposure, proper glove selection is important. Glove selection information can be obtained via Safety Data Sheets (SDS), section 8 Exposure Controls/Personal Protection or EH&S Guide to Selecting Gloves.

- Teaching labs

Gloves must be readily available in teaching labs. The lab instructor is responsible for identifying and conveying to students when gloves are required.

- Research labs

The research lab PI is responsible for identifying when gloves are required and what type of gloves are appropriate for the hazards present. Gloves must be readily available to anyone that steps into a designated chemical use area within a research lab. (WAC 206-800-160, 29 CFR 1900 Subpart I)

5) Exceptions

The only departmentally approved exceptions to the above PPE requirements can be found in appendix A002. These exceptions are subject to change at any time a review process is warranted.

IV. Teaching Labs

The nature of undergraduate teaching labs – introducing inexperienced people often in large numbers to safe laboratory practices - offers a significant challenge. The department addresses this challenge with the following information and expectations.

1) Students

- On the first day of lab, students are given a copy of the department's Lab Safety Rules (see attachment E) and sign a statement to indicate that they understand and will abide by these rules. The acknowledgement statement is usually contained on the check-in sheet. For labs without a standard check-in sheet a separate acknowledgement for students to sign will be made available, this statement will be collected and retained by the lab instructor for the quarter. All lab instructors should encourage students to read the lab safety rules before signing the check-in sheet or acknowledgement.
- On the first day of lab students are shown a department approved safety video in the 100 level classes. It is advised that it is also shown during the first lab class of fall quarter in upper level courses, at the discretion of the instructor.
- The department's Lab Safety Rules are to be strictly and impartially applied.

2) Student Employees

- Teaching Assistants (TAs), Research Assistants (RAs), and Stockroom Assistants (SAs) are compensated whether through wages or credit and therefore are required to attend training under section III.1.
- Safety Guidelines for Research and Teaching Assistants (a safety training brochure created by the department safety representative) outlines the basic department safety

regulations, see attachment A004. This document is reviewed annually by the Safety Officer and updated by the department safety committee as necessary.

- Safety in Academic Chemistry Laboratories, a pamphlet produced by ACS is required reading for all TAs, RAs and SAs.
- TAs, RAs and SAs are required to attend the EH&S Chemical Hygiene Plan training and to both model and enforce laboratory safety rules in the lab.
- All TAs, RAs and SAs take an online safety quiz to demonstrate an understanding of basic lab safety principles and to document safety training.

V. Research Labs and the Chemistry Stockroom

Unlike teaching labs where training comes from repeating established procedures, the interests and methodologies present in research labs vary from lab to lab and often include the continued introduction of new procedures and materials. The research PI is best able to determine the lab specific hazards and has the primary responsibility for safety. The Chemistry Stockroom functions more like a research lab than a teaching lab so the two are grouped for this discussion. The Stockroom Manager is responsible for safety in the stockroom.

1) *Lab CHP (Chemical Hygiene Plan)*

State and federal law mandate the Lab CHP. The purpose of the CHP is to provide laboratory workers with the information needed to work safely in the laboratory and protect themselves from hazardous situations. Each research lab (and the stockroom) must have a lab specific CHP. **The responsibility for this CHP rests solely with the PI.**

- If requested, the safety officer will provide a “bare bones” CHP with basic departmental information.
- The Safety Officer will update generic sections of the research lab CHPs.
- The PI is responsible for all Standard Operating Procedures (SOPs) in the CHP. Standard Operating Procedures for hazardous chemicals, physical hazards and hazardous procedures are a legal requirement and must be present before an employee is allowed to handle the chemical or perform any procedure specified as hazardous. For complete guidelines on SOP requirements please see The CWU Chemistry Department SOP Policy, Attachment A001 (WAC 296-828-20005, WAC 296-828-300, WAC 296-67-001)

2) *Research Assistants and Stockroom Assistants*

- RAs are required to discuss lab specific safety with their research instructor. A signed statement must document this discussion. SAs should do the same with the Stockroom Manager. A copy of this signed documentation should be placed in the CHP for the specific lab.

VI. Chemical Inventory Management System

CHIM (Chemical Inventory Management) is accomplished using an in-house developed FileMaker database management system that allows the department to maintain compliance with federal and state regulations for cradle-to-grave tracking of hazardous chemicals. FileMaker also incorporates Safety Data Sheets into the inventory so that employees may access hazard communication documents electronically.

- 1) The CHIM system is managed by the campus Environmental Health & Safety Department.
- 2) The department is committed to using a computer database for chemical tracking and to maintaining the database.

- 3) Department wide chemical inventories will be performed bi-annually. A report will be generated following each inventory that identifies the shrinkage or loss. These data will be used to look at the shrinkage trend over time and will provide a measure of the security of the chemical inventory.

VII. Miscellaneous Department Safety Policies

1) *Music in Labs*

- Due to a concern for safety in the laboratory and in order to foster a productive learning environment with minimal distraction, music will not be allowed in the teaching labs.
- Music in the research labs is left to the discretion of the research staff, yet music played out loud needs to remain at safe volume levels at all times. Music in all areas within the chemistry department should be kept at a level so as not to disturb others. Headphones in laboratories are prohibited.

2) *Pets in Labs*

- Animals are prohibited in the science building. Per WAC 106-124-801 “No animals, including dogs and cats, except service dogs, will be allowed, under any circumstances, in any university-operated building.”

3) *Working Alone in Labs*

- The PI is responsible for disseminating to their students guidelines for activities that are determined to be safe to perform while working alone in the lab. These guidelines are to be included in the Standard Operating Procedure for the activities that the employees may be performing, or for the chemicals they may be handling.
- Particularly hazardous procedures should only be carried out in the presence of another individual within the same lab space and should strictly follow the SOP approved by the PI.
- PIs will define the hazard level of the procedure being performed and chemicals being used based on the legal definitions and SDS.

4) *Working After Hours in Labs*

- Work performed outside normal Chemistry Office hours (M-F, 8-5) should be approved in writing and reviewed by the research advisor. Written authorization can be communicated via SOPs.

5) *Accommodation of Lab Students with Disabilities*

- Students will be advised in both course syllabi and in the Lab Safety Rules to inform the lab instructor of any functional limitations in performing labs.
- Students who present the lab instructor with a “Confirmation of Eligibility for Academic Adjustments” form from the office of Disability Support Services (DSS) will be asked to share that information with the safety representative so that accommodations can be made. This disclosure must be voluntary and disclosure of information by anyone other than the student is in violation of student privacy and the American with Disabilities Act.
- The safety representative and the lab instructor in conjunction with DSS will determine and implement appropriate accommodations for the student.
- A separate policy has been written to address students with seizure disorders; see Attachment A003.

The following exceptions for donning eyewear and lab coats have been approved after a thorough hazard assessment and review by the Chemistry Safety Committee and approved by the faculty. During teaching labs, the only department approved times when goggles and lab coats are not required as follows

1. During pre-lab lectures when no chemical or physical hazards are present
2. During computational only labs when no chemical or physical hazards are present
3. During oral presentations where no chemical or physical hazards are present
4. During the check-in process for student labs, when no chemical or physical hazards are present, PPE requirements are at the discretion of the lab instructor.

For further questions please contact the department safety representative at x1307.