

# **Policy on Hazardous Chemicals in Laboratories**

DATE: January 11, 2019

## **1.0 STATEMENT OF RESPONSIBILITY**

It is the responsibility of the University to take every reasonable precaution to provide a work environment that is free from recognizable hazards to its employees. The University is required by the Occupational Safety and Health Administration's (OSHA) standard on Occupational Exposure to Hazardous Chemicals in Laboratories Standard (29 CFR 1910.1450) to ensure that the necessary work practices, procedures and policies are implemented to protect employees working in University owned and/or operated laboratories from hazardous chemicals. It is the responsibility of the University and its employees to be well-informed regarding hazardous chemicals and the risks associated with using them in the laboratory.

## **1.1 THE OSHA LABORATORY SAFETY STANDARD**

Laboratory means a facility where the "laboratory use of hazardous chemicals" occurs. It is a workplace where relatively small quantities of hazardous chemicals are used on a non-production basis. The Laboratory Standard applies to all laboratories that handle or use hazardous chemicals in which all of the following criteria are met:

- Chemical manipulations are carried out on a laboratory scale. Laboratory scale means work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person. "Laboratory scale" excludes those workplaces whose function is to produce commercial quantities of materials.
- Multiple chemical procedures or chemicals are used.
- The procedures involved are not part of a production process, nor in any way simulate a production process.
- "Protective laboratory practices and equipment" are available and in common use to minimize the potential for employee exposure to hazardous chemicals.

Generally, where this standard applies, it supersedes for laboratories the requirements of all other Occupational Safety and Health Administration (OSHA) health standards in 29 CFR part 1910, subpart Z, except for the obligation to

maintain employee exposures at or below the permissible exposure limits (PEL) (subpart Z of 29 CFR 1910.1000), prohibition of skin and eye contact where specified by any OSHA standard and in other instances where the scope of hazards are not adequately addressed by this standard.

OSHA's definition of "hazardous chemical" refers to a chemical for which there is statistically significant evidence, based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic systems and agents which damage the lungs, skin, eyes, or mucous membranes. Chemicals with physical hazards such as flammability and reactivity are also considered hazardous.

## **1.2 SCOPE AND APPLICATION**

This policy outlines how the University shall comply with the OSHA Laboratory Safety Standard. All schools at the University engaged in the laboratory handling or use of hazardous chemicals are required to comply with this policy.

This policy does not apply to:

- Work involving chemicals that do not meet the conditions of the definition of laboratory use of hazardous chemicals. In such cases, the University shall comply with all relevant specific substance standards even if such use occurs in a laboratory type setting.
- Work involving the laboratory use of hazardous chemicals that does not have the potential for employee exposure.

## **1.3 RESPONSIBILITY**

The Office of Sustainability & Environmental Safety (EHS). EHS shall be responsible for assisting the University with the implementation of this policy. As part of this responsibility, EHS has developed a generic Chemical Hygiene Plan (CHP) for the University. The primary objective of this document is to provide a general guide for handling hazardous chemicals in laboratories. The CHP will establish the basic safety principles for laboratory procedures, equipment and work practices that are capable of protecting employees from the hazards associated with the use of chemicals in the laboratory. The CHP is intended only to highlight those safety measures necessary for achieving a safe and healthy work environment. Where the scope of hazards are not adequately addressed by the CHP, specific Standard Operating Procedures (SOPs) must be developed by Principal Investigators (PIs) and/or Laboratory Supervisors. In addition, EHS shall

provide consultation services such as laboratory safety training, environmental sampling, accident investigation, and laboratory fumehood testing. The Director of Sustainability & Environmental Safety shall serve as the campus Chemical Hygiene Officer (CHO). The CHO shall have overall responsibility for implementing the CHP.

Schools at the University. The Deans and Department Chairs of the schools at the University are responsible for promoting and ensuring a safe working environment. They are also responsible for ensuring that the provisions of this policy are implemented. Each Department within the schools shall appoint a Safety and Health Representative (SHR). The SHR shall work with the CHO to implement this policy.

Principle Investigators/Laboratory Supervisor. The ultimate responsibility for the safety and health of personnel working in the laboratory lies with the PI and/or Laboratory Supervisor. They are responsible for:

- Ensuring that all employees under their supervision have received general laboratory safety training from EHS.
- Providing all employees under their supervision with site-specific training and appropriate safety equipment.
- Follow appropriate guidelines prescribed in the CHP.
- Developing SOPs for the use of hazardous chemicals not covered by the CHP.

Employee. Individual laboratory employees are responsible for their own safety. All individuals performing work with hazardous substances must accept a shared responsibility for operating in a safe manner. They also have the responsibility to inform their supervisors of accidents and of any work practices or working conditions they believe to be hazardous.

Student. While students are not covered under the provisions of the OSHA Laboratory Safety Standard, students must be aware of the safety and health hazards associated with laboratory work. Students must also use the appropriate protective equipment while working in the laboratory and must follow all appropriate safety procedures.

## **1.4 EMPLOYEE RIGHTS**

It is the employee's right to receive information about the known physical and health hazards of the chemicals in their work areas and to receive adequate training and equipment to work safely with these substances. Employees have the right to work in a safe environment and inform the PI or laboratory supervisor about potential risks in the laboratory.

## **1.5 AVAILABILITY**

This policy and the CHP must be readily available to employees and employee representatives.

They are available on the Office of Sustainability & Environmental Safety website (printed copies are available from EHS upon request). Each department and laboratory supervisor should maintain a copy in their work area.

## **1.6 ANNUAL REVIEW**

The CHP will be reviewed annually by the CHO.

## **1.7 EMPLOYEE INFORMATION AND TRAINING**

Employees must have access to information and training to ensure that they are aware of chemical hazards in their work area. Such information must be provided at the time of an employee's initial assignment to a work area where hazardous chemicals are present and prior to any assignment involving new exposure situations. Employees should receive periodic refresher information and training to ensure that they are aware of the risks of exposure to hazardous chemicals.

Information provided to employees shall include:

- The contents of the OSHA Occupational Exposure to Hazardous Chemicals in Laboratories Standard.
- The location and availability of the University CHP.
- The Permissible Exposure Limits (PEL) for OSHA regulated substances or published exposure limits for other hazardous chemicals where there is no applicable OSHA standard.
- Signs and symptoms associated with exposures to hazardous chemicals used in the laboratory (available on SDSs).
- The location and availability of known reference materials on the hazards, safe handling, storage and disposal of hazardous chemicals found in the laboratory, including, but not limited to, SDSs received from the supplier.

All of the above information is available from EHS.

General training will be provided by EHS and may take the form of individual instruction, group seminars, audiovisual presentations, handout material, or any combination of the above. Site-specific training may be provided by PIs, Laboratory Supervisors, Laboratory Instructors or an appropriate designee.

General awareness training provided by EHS to employees will include:

- Methods and observations that may be used to detect the presence or release of a hazardous chemical (such as monitoring conducted by continuous monitoring devices, visual appearance or odor of hazardous chemicals, etc.).
- General physical and health hazards of chemicals in the work area. This must include an awareness that many factors influence whether a given chemical might constitute a hazard (e.g. dose, exposure time, genetic background, developmental state, mixtures of interactions of chemicals, etc.).
- The measures employees can take to protect themselves from these hazards. This includes specific procedures the University or department has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used.
- The applicable details of the University CHP.

Site-specific training provided by PIs/Supervisors to employees will include:

- Site-specific SOPs.
- Specific physical and health hazards of chemicals in the work area.

## **1.8 RECORDKEEPING**

General awareness training required by the CHP will be documented by EHS. When such training is conducted by schools or departments, training records must be provided to EHS by the person(s) responsible for the training program. EHS will retain records of all employees who attend the general awareness training. All employee medical records shall be kept by a health care provider or Student Health Services (SHS) and are strictly confidential.

## **1.9 CHILDREN UNDER 18**

It is the responsibility of the laboratory supervisor or PI to ensure the safety and health of anyone under the age of 18 working in or visiting a University laboratory. Prior to allowing anyone under the age of 18 from entering the laboratory, the laboratory supervisor shall have a parent or guardian complete a written consent

statement. The department chairman shall also sign off on the consent statement. At no time shall children under the age of 18 be left unattended in the laboratory. A consent statement form can be obtained from EHS.