

CHEMICAL HAZARD COMMUNICATION PROGRAM

Biological Systems Engineering

General Policy

In accordance with the Washington Administrative Code, Hazard Communication Standard, this program has been developed and implemented by: Biological Systems Engineering. The general purpose of this program is to ensure each employee is informed and trained on the Hazard Communication Standard, the location and hazardous properties of the chemicals used in the workplace, and the protective measures required.

The program applies to all locations where employees might be exposed to hazardous chemicals during normal working conditions or an emergency situation. The department administrator and/or designee, Jonathan Lomber, has overall responsibility for the program. A copy of this program and the material safety data sheets (MSDS) will be available in LJ Smith 213 for employee review. (MSDS are available from the manufactures website)

Chemical Inventory List

The PI or their Designee will maintain a list of the hazardous chemicals used by the department, and update the list as necessary. The list will be updated immediately upon receipt of any chemical. The identity of each chemical on the list must match the name on the container label and the name on the MSDS. The chemical inventory list is at the end of this program.

Container Labeling

The PI or their Designee is to ensure all primary and secondary containers of hazardous chemicals in their area are properly labeled. Labels on containers from the manufacturer are to list the following:

- Identity of the hazardous chemical(s);
- Appropriate hazard warnings including target organs; and
- Name and address of the chemical manufacturer, importer, or other responsible party.

All secondary containers are to be labeled. Information on secondary labels must include the chemical identity and the hazard information from the manufacturer's label.

For labeling assistance see Jonathan Lomber.

Material Safety Data Sheets (MSDS)

A material safety data sheet is a written document describing the identification of the common name(s) of the product, chemical substances, physical and health hazards, entry route(s), permissible exposure limit, and any precautions or controls for safe use. The document also includes emergency first aid procedures; the date the MSDS was prepared; and the name, address, and telephone number of the chemical manufacturer or importer.

MSDSs are located _____ at the manufacture's website _____ and are available to all employees for review during each work shift. If MSDSs are not available, immediately contact your supervisor.

Material safety data sheets are defined as an employee exposure record and therefore must be retained for 30 years. MSDSs for chemicals no longer used by the department will be retained and maintained by the department. Refer to the section entitled "Employee Exposure Records" for additional information.

Employee Information And Training

_____ PI or their Designee _____ is responsible for conducting employee training. Prior to starting work, employees using, or potentially exposed to, hazardous chemicals receive initial training on the Hazard Communication Standard and the safe use of those chemicals. Additional training will be conducted when a new chemical hazard is introduced into the workplace. Training will be conducted before any chemical is used. Employee training is to be documented by recording the employee names, and the date and content of the training.

The following training and information is provided to each employee covered by this program:

- A summary of the standard and the purpose, location and availability of the written program, the list of hazardous chemicals, and associated material safety data sheets. A summary of the standard is at the end of this program.
- Informing employees of any operations in their work area where hazardous chemicals are present.
- How to read chemical labels and review MSDSs to obtain appropriate hazard information. The glossary at the end of this program lists some common MSDS terms.

- The physical and health hazards of the chemicals in the work area, including the likely symptoms or effects of overexposure. The glossary at the end of this program lists some common physical and health hazard terms.
- The methods and observation techniques used to determine the presence of a hazardous chemical release. Detection methods may include monitoring devices, visual appearances or odor.
- The measures the department has implemented to minimize employee exposure to hazardous chemicals. These measures may include engineering controls, the use of personal protective equipment, and specific work practices employees must follow to minimize chemical exposure.
- The emergency procedures to initiate in the event an employee is exposed to a hazardous chemical.

If an employee has been exposed to a hazardous chemical refer to the "Chemical Exposure Incident Procedure" section of this program for instruction.

Chemical Spills

Employees can clean-up chemical spills ONLY when all of the following conditions are met:

- The chemical is known and the spill can be cleaned-up in ten minutes or less.
- Employees are trained to safely clean-up chemical spills.
- Employees can wear the same personal protective equipment that they wear during normal work activities.
- Appropriate clean-up supplies are readily accessible.
- The chemical does not have a Ceiling Limit listed in [WAC 296-841](#) or can create an Immediate Danger to Life and Health (IDLH) atmosphere. IDHL information can be found in the [NIOSH Pocket Guide to Chemical Hazards](#).
- Clean-up materials are disposed of per SPPM [5.66](#).

Employees cannot clean-up mercury spills; call EH&S for assistance.

If any of the above conditions cannot be met, then immediately call 911 and qualified emergency response personnel will respond to clean-up the spill.

Personal Protective Equipment (PPE)

Supervisors or designees are to perform hazard assessments of each work task to determine if hazards, including *chemical hazards*, are present, or are likely to be present, requiring the use of PPE (see SPPM S30)

Supervisors evaluate chemical hazards and select suitable PPE using information from the MSDSs, container labeling, Environmental Health and Safety (335-3041) and other resources as necessary. **Personal Protective Equipment Hazard Assessment and Certification Guidelines** are available from

Environmental Health and Safety which can be used to perform and document hazard assessments. Employees will be trained to use properly fitted PPE. Employee PPE training can be documented using the form provided in the guidelines.

On-Site Contractors/Other WSU Departments

Contractors and other WSU departments may work within and around this department's facilities.

The PI or their Designee will inform contractor(s) and other WSU departments of any hazardous chemicals present in the workplace, the availability of the department's MSDSs and any required protective measures.

Contractors and other WSU departments in the course of their work may expose this department's employees to hazardous chemicals. Jonathan Lomber will request MSDSs for chemicals used by contractors or other WSU departments by contacting Environmental Health and Safety (335-3041).

Hazardous Non-Routine Tasks

Periodically, employees may be required to perform non-routine tasks involving hazardous chemicals. Prior to starting work on any non-routine task the supervisor or designee will conduct a PPE hazard assessment and provide affected employees with the following information and training:

- The specific hazards related to the non-routine tasks
- Protective measures required
- Steps the department is taking to reduce chemical hazards
- Emergency procedures

Hazardous Substances In Unlabeled Pipes

Employees required to work on or near unlabeled pipes will be informed of the substances in the pipes, any potential hazards and protective measures.

Chemical Exposure Incident Procedure

In the event an employee may have been overexposed (inhalation, ingestion or physical contact) to a hazardous chemical, after the necessary medical care has been provided, the supervisor must complete an "Incident Report" form (see SPPM S25.20). The following information should be included on the form: the specific chemical(s), the duration of the exposure, the type of exposure (inhalation, ingestion, skin contact), and personal protective equipment used. Environmental Health and Safety retains this form for 30 years as an employee exposure record.

Employee Exposure Records

The Washington Administrative Code defines MSDSs as an employee exposure record, which must be preserved for 30 years. The MSDSs for chemicals no longer used by the department will be retained and maintained.

Each department supervisor or designee will provide to their employees, at the time of initial employment and annually thereafter, the following information:

- The existence, location and availability of the inactive MSDSs.
- The supervisor or designee is responsible for maintaining and providing access to the MSDSs.
- The employee has the right to access the MSDSs.

Chemical Hazard Communication Standard Summary

The Hazard Communication Standard is based on a simple concept - that employees have both the need and right to know the identities and hazards of the chemicals they are potentially exposed to when working. They also need to know what protective measures are required. This knowledge should reduce work-related injuries and illnesses caused by chemical exposure.

The Hazard Communication Standard establishes uniform requirements to assure that the hazards of all chemicals imported, produced or used in U.S. workplaces are evaluated. The hazard information and associated protective measures are to be transmitted to affected employers and potentially exposed employees.

Chemical manufacturers and importers must convey the hazard information they learn from the evaluations to employers by labels on containers, material safety data sheets (MSDSs). All covered employers must have a hazard communication program to convey this information to their employees through container labeling, MSDSs and training.

Chemical Inventory List

Chemical Inventories are be stored in the red Laboratory Safety Notebook in each laboratory.

Glossary

Carcinogen: A substance or agent capable of causing or producing cancer.

Combustible Liquid: A liquid having a flashpoint at or above 100^o F and below 200^o F.

Corrosive: A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact.

Flammable Liquid: A liquid having a flashpoint below 100^o F.

Flashpoint: The minimum temperature at which a material ignites when exposed to a source such as flame or spark.

Hazardous Chemical: Any chemical whose presence or use is a physical or a health hazard.

Health Hazard: A chemical for which there is significant evidence, based on at least one study conducted in accordance with established scientific principles, which acute or chronic health effects may occur in exposed employees.

Irritant: A chemical, which is not corrosive, that causes a reversible inflammatory effect on living tissue by a chemical action at the site of contact.

LEL, or LFL: Lower Explosive Limit, or Lower Flammable Limit, of a vapor or gas; the lowest concentration that will produce a flash of fire when an ignition source is present.

Mutagen: A substance or agent capable of altering the genetic material in a living cell.

Oxidizer: A chemical that initiates or promotes combustion in other materials, causing fire either by itself or through the release of oxygen or other gases.

PEL: Permissible Exposure Limit.

Physical Hazard: A chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas explosive, flammable, an oxidizer, pyrophoric or water-reactive.

ppm: Parts per million is the concentration of a gas or vapor in air - parts (by volume) of the gas or vapor in a million parts of air.

Pyrophoric: A chemical that will ignite spontaneously in air at a temperature of 130° F or below.

Sensitizer: A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

Specific Gravity: A chemical that is weighed against the weight of an equal volume of water. If a material cannot be dissolved and floats on water it has a specific gravity less than one. If the number is greater than one it will sink.

STEL: Short Term Exposure Limit

Teratogen: A substance or agent which can cause malformations in the fetus.

TLV: Threshold Limit Value

TWA: Time Weighted Average

UEL, or UFL: Upper Explosive Limit, or Upper Flammable Limit of a vapor or gas; the highest concentration that will produce a flash fire when an ignition source is present.

Vapor Density: The weight of a vapor or gas compared to the weight of an equal volume of air. Materials lighter than air have vapor densities less than 1.0. Materials heavier than air have vapor densities greater than 1.0.

Water-Reactive: A chemical that will react to water to release a gas that is either flammable or presents a health hazard.