

University of Tennessee Safety Plan

Program Subject: Hazard Communication Plan	Reviewed/Revised: 6/1/2013
Affected Area: All Departments who handle and store chemicals	Date Effective: 1/1/09
Contact Information: Program Owner: Environmental Health and Safety	

1.0 Purpose, Applicability, and Scope

- 1.1 Purpose-The purpose of this procedure is to ensure that the hazards of chemicals used in the workplace are evaluated, and those hazards are communicated to both employers and employees. In addition, the purpose is to minimize hazardous exposure to chemicals and to provide information to emergency personnel, as required by TOSHA's Hazard Communication Right-to-Know Standard and the Occupational Exposure to Hazardous Chemicals in the Laboratory Standard.
- 1.2 Applicability-This shall apply to all places of employment on the UTK campus where students, staff and faculty are exposed or potentially exposed to a hazardous chemical hazard(s).
- 1.3 Scope- This procedure applies to all chemicals known to be present in the workplace such that employees can be exposed under normal conditions of use or in a foreseeable emergency.

2.0 Abbreviations, Acronyms, and Definitions

GHS-Global Harmonization System
HMIS-Hazardous Materials Information System
OSHA-Occupational Safety and Health Administration
MSDS-Material Safety Data Sheets
NFPA-National Fire Protection Association
PPE-Personal Protective Equipment
SDS-Safety Data Sheets
TOSHA-Tennessee Occupational Safety and Health Administration

2.1 Definitions

Hazard Communication-Means through which employers inform their employees about hazards in the workplace (i.e. training and MSDS), which are regulated by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

Hazard Communication does not apply to:

- Cosmetics
- Tobacco Products
- Wood or wood products

- Food or alcoholic beverages
- Drugs
- Biological hazards
- Radiation hazards
- Pesticides
- Articles, as defined in 29 CFR 1910.1200(c)

Hazardous substance – Any substance that is capable of causing an acute or chronic health condition in humans or adversely impacting the environment. Substances that are considered physical hazards (flammable substances, explosives, shock sensitive, etc.) are included in the definition of a hazardous substance. The OSHA Hazard Communication Standard, 29 CFR 1910.1200 and the OSHA Chemical Hygiene Plan 29 CFR 1910.1450 are the two main standards that define a hazardous substance.

Employee- A worker who may be exposed to hazardous chemicals under normal operating conditions, or in foreseeable emergencies.

Employer- A person engaged in a business where chemicals are either used, distributed, or are produced for use or distribution, including a contractor or subcontractor.

Global Harmonization System- developed by the United Nations as an international standardized approach to hazard communications. This ensures that chemical hazard communication is consistent on a global scale.

Safety data sheet (SDS) Formally known as Material Safety Data Sheets (MSDS)- Detailed information bulletin prepared by the manufacturer or importer of a chemical that describes the physical and chemical properties, physical and health hazards, routes of exposure, precautions for safe handling and use, emergency and first aid procedures, and control measures.

3.1 Roles and Responsibilities

- a. Chemical Users (employees) shall :
 1. Be trained before they work with, use, or handle hazardous chemicals upon initial employment and when new hazardous chemicals are introduced. Refresher training shall be conducted annually and documented appropriately for all employees.
 2. Stay informed about the hazards of any chemicals known to be present in their workplace, and work with those chemicals in a safe manner.
 3. Know how to protect themselves from adverse effects of chemicals.
 4. Ensure all containers are properly labeled.

5. Notify their supervisor as soon as possible after exposure to a hazardous chemical in the workplace.
- b. Department heads (Employers) who have employees who use hazardous chemicals under their control shall:
1. Ensure their non-laboratory employees are trained on the Hazardous Right-to-Know Standard, and the UT-K Hazard Communication procedure and that they post adequate notification informing the employees of their rights under the TOSHA Hazardous Right-to-Know Law by providing a copy of the “You Have a Right to a Safe and Healthful Workplace” TOSHA poster.
 2. Ensure their laboratory employees are trained on the Occupational Exposure to Hazardous Chemicals in the laboratory standard and the UTK Hazard Communication procedure.
 3. Determine the required personal protective equipment needed in their work area and ensure their employees are properly trained in the use of that equipment.
 4. Ensure that the proper PPE is made available to their employees.
 5. Assure that all hazardous chemicals that enter or leave the workplace are properly labeled, tagged, or marked in a manner which complies with the Hazardous Right-to-Know Law, and does not conflict with any other regulation pertaining to hazardous materials.
 6. Develop safe procedures for work in their areas, as well as written procedures for emergencies.
 7. Ensure that a procedure exists to review and update label information.
 8. Ensure that a current chemical listing (inventory) is maintained. The inventory must include the chemical name, the CAS number, and the location of where the chemical is used or stored.
 9. Ensure all employees have access to SDS and are informed of any hazards related to chemicals they will use in their workspace. This can be done by either hard copies, or via a computer, fax, etc, as long as the employees are properly trained; there is assurance they can operate the system and they have access to the SDS at all times.
 10. Ensure that any students, contractors, sub-contractors, vendors, salesperson(s), or visitors are informed of any hazardous chemicals used in the areas being visited, or where a person will be working. These people will be provided, or required to provide personal protective equipment for their safety.
 11. At least once/year, the employer will forward a statement to EHS certifying that all applicable employees have been properly trained, and will maintain all training records for at least 30 years.
 12. Ensure that EHS is receiving hardcopies of SDS for any new chemicals ordered in their work area.
 13. Make sure that specific training is provided for non-routine tasks.
 14. Deal with employee exposure to hazards immediately and take steps as necessary to provide medical evaluation, monitoring or treatment.
 15. Ensure that all employees have been trained on the new GHS standards that OSHA has incorporated into the Hazard Communication Standard by December 2013.

c. EHS shall:

1. Serve as a technical resource for questions and comments regarding the Hazard Communication standard.
2. Coordinate, audit and determine compliance of UTK's Hazard Communication procedure.
3. Maintain a backup library of hardcopy Material Safety Data Sheets and provide ready access to MSDS during an emergency (accidental release).
4. Provide the fire chief with a copy of the chemical inventory and SDS, and the names and phone numbers of the representatives who can be contacted for information during an emergency situation.
5. Submit necessary reports to regulatory agencies.
6. Provide classroom and on-line Hazard Communication training to campus.
7. Revise the UTK campus written hazard communication policy.
8. Manage the Chemical Inventory computer system for campus.
9. Offer HazCom training to the campus community.

d. Visitors shall:

1. Be provided, or required to provide their own safety and personal protective equipment.
2. Notify UTK of the hazards of any chemicals they are delivering or using while on campus.
3. Disclose health hazards and fire protection information for any trade secrets, which will be protected.
4. Comply with OSHA's Hazard Communication Standard and with UTK's hazard communication procedure.

4.1 Procedure

In 1983, OSHA adopted the Hazard Communication Standard. The HazCom standard is often called the "Right-to-Know" law, or HazCom. Under the HazCom standard, all employees have a right and a need to know:

- What chemicals you are exposed to
- The hazards of working with these chemicals
- What steps employees can take to protect themselves and those they work with

Integration of GHS:

In March 2012, OSHA integrated components of the GHS (Global Harmonization System) with the existing Hazard Communication (HAZCOM) standard. The GHS standard was developed by the United Nations and is already used in several countries around the world. OSHA incorporated portions of the GHS into the HazCom standard so that container labeling, SDS (formally MSDS) content and format, and chemical hazard determinations are standardized and consistent from workplace to workplace.

Components of HAZCOM (1910.1200)

There are five components of the HAZCOM standard (1910.1200) that UTK must comply.

These include: chemical inventory, labeling, written program, training and SDS.

Below is a detailed description of each of the 5 HAZCOM components and the changes to these categories due to GHS.

1) Chemical Inventory

An electronic or paper copy of a chemical inventory of each hazard chemical normally used or stored in the workplace must be compiled and maintained. UTK compiles their chemical inventory on the EHS web-site at <http://www.pp.utk.edu/ChemInv/>, and EHS has a procedure for maintaining the chemical inventory on this web-site (Chemical Inventory Procedure, EC-5). The inventory must be updated at least annually and anytime revised information is made available and the currency of the information will be checked at a minimum of once/year. **All employees who are using or exposed to any hazardous chemicals on the inventory must have access to the inventory.** The inventory must include both containerized and non-containerized hazardous substances (i.e. dusts, exhaust fumes, etc). If the chemical is not hazardous, then it should not be included in the chemical inventory. Please refer to UTK's procedure on chemical inventories for more information.

2) Written Program

UTK's written Hazard Communication program covers how the HAZCOM program will be implemented at UTK. This program assures that all aspects of HAZCOM have been addressed. UT Knoxville's written Hazard Communications plan can be found on the EHS web-site at: www.ehs.utk.edu, or by contacting EHS at 974-5084. In addition, all department heads and employers are required to maintain an up-to-date Chemical Hygiene Plan, which should include a comprehensive set of basic rules and procedures for the safe use of hazardous chemicals established and documented for their specific work area. EHS has written procedure (EHS policy number HM 5) which can be used to assist department heads in writing a Chemical Hygiene Plan that is specific to their department's needs.

3) Labels

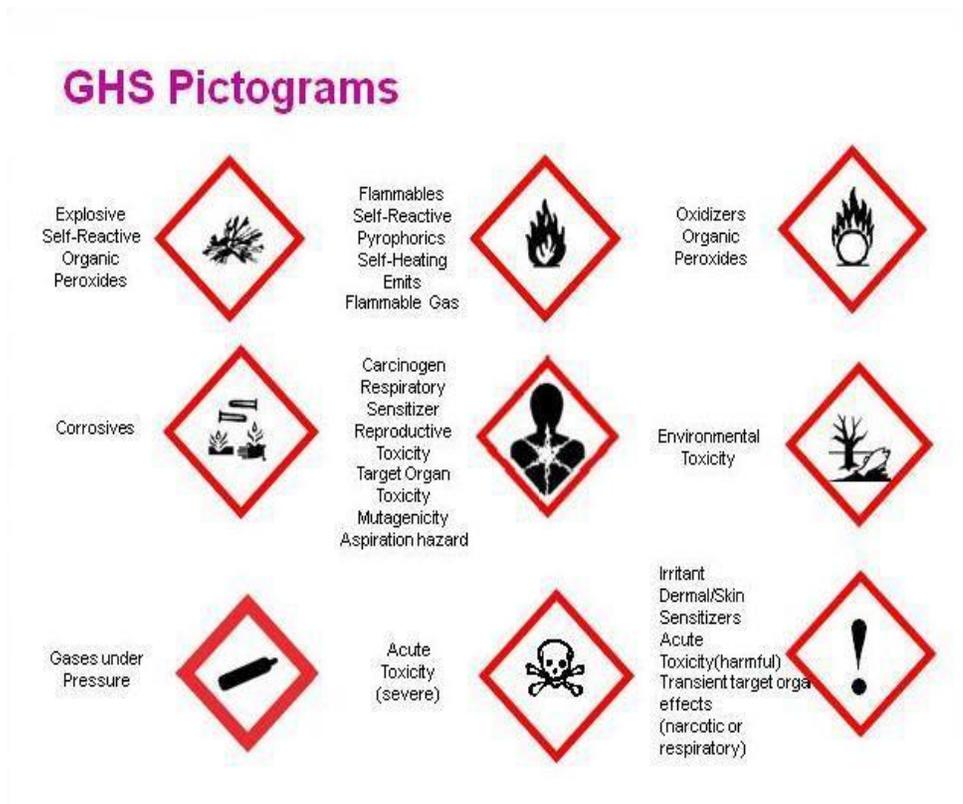
OSHA's HazCom standard requires that hazard warning labels must be placed on every container of hazardous chemicals in the workplace. Labels must be legible, in English, and prominently displayed.

All containers containing hazardous materials must be properly labeled or marked with the following required information:

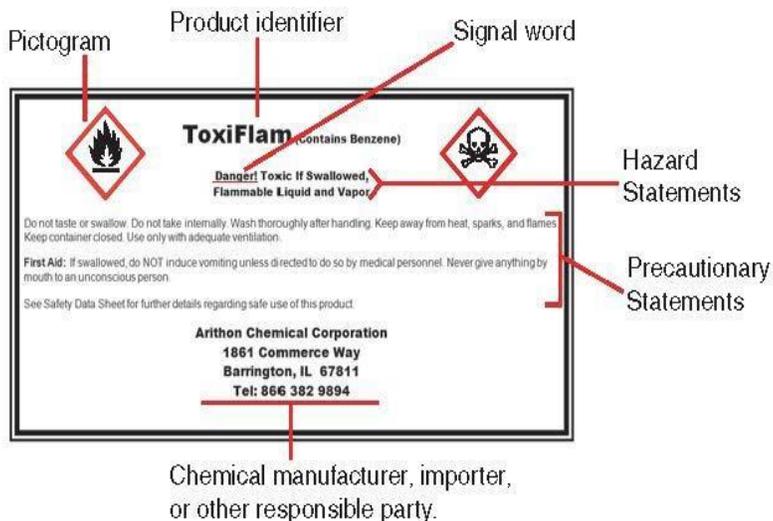
- a. Product Identifier: name or number used on the label and the SDS. It can be a chemical name, a product name, or some other identifier that helps locate the SDS quickly.
- b. Signal Word: used to alert the user to a potential hazard and is determined by the hazard class and category of the chemical. There are two signal words used:

- Danger-more severe hazards
 - Warning-less severe hazards
- c. Hazard Statements-standardized phrases assigned to a specific hazard class and category. They are used to describe the nature and the degree of hazard. Examples include: “causes serious eye damage” and “fatal if swallowed”.
 - d. Precautionary Statements-standardized phrases assigned to a specific hazard class and category. There are four types of precautionary statements, covering prevention, response in case of accidental spills and exposure, storage and disposal. Examples include: “wear protective gloves/protective clothing” and “store locked up”.
 - e. Supplier Information-refers to the name, address and telephone number of the chemical manufacturer, importer, or other responsible party.
 - f. Pictograms-a symbol on a white background with a red border that conveys specific information about the hazards of a chemical. There are a total of nine pictograms:

Below is a list of all 9 GHS Pictograms and their meanings:



Below is an example of the components of a GHS label:



Departments receiving containers without appropriate form of warning should take action to have the material returned or obtain a label from the manufacturer, importer or purchase a label.

Portable or secondary containers do not have to be labeled **if** it is intended only for immediate use (on that shift), will be used up by the employee who transfers the chemical from one container to another container, **and** the container remains in his/her custody at all times. If all three criteria are not met, the container must be appropriately labeled. Labels must be cross-referenced with the SDS and the chemical inventory entry, and must be written in English. They must be placed on a prominent area of the container. Employers can label the container in another language, but the information must be presented in English as well. EHS recommends the use of GHS labels on secondary containers, but this is not a requirement, as long as the required information is labeled. Regardless of the type of labeling system selected, the employer must ensure that employees are fully aware of the hazards and understand the labeling system.

Other labeling and signage may be required to communicate hazards in the work areas, such as NFPA diamonds, HMIS (Hazardous Chemicals Identification System) labels, door placards (see EHS policy HM55 for more information), and other postings.

4) **Training and Information**

EHS shall provide information to chemical users about this policy, including deadlines and format for submittal. Each person who handles or uses hazardous chemicals shall be trained

before they work with, use, or handle hazardous chemicals upon initial employment and when new hazardous chemicals are introduced. Refresher training shall be conducted annually and documented appropriately for all employees. All training must be documented by the supervisor.

At a minimum, the training agenda will include the following topics:

1. Defining the hazard communication standard, the reasons why the standard was written, and the employees' rights under the standard.
2. Explanation of the existence of the written plan and how each employee has a right to review the document.
3. The chemical container labeling requirements to include:
 - a. chemical name(s)
 - b. hazards
 - c. protection requirements
 - d. improper handling
 - e. first aid treatment
4. Explanation of the requirement for conducting periodic chemical inventories.
5. Explanation of the requirement that a Safety Data Sheet (SDS) be procured for each hazardous chemical. Advising where the sheets are kept in the unit and exactly how an employee can arrange to review the sheets. An orientation relative to the information available from the SDS.
6. A discussion of the types of questions to which a properly trained employee should be able to effectively respond. Examples of the questions typically asked by a TOSHA inspector during an evaluation of a chemical hygiene program is:
 - a. Do you work with any hazardous chemicals?
 - b. Do you know what the Hazard Communication (Right-To-Know Law) is?
 - c. Can the chemicals you work with hurt you?
 - d. What could they do to you?
 - e. What precautions have been made to protect you against the hazards of the chemicals?
 - f. Have you had any training?
 - g. Do you know what an MSDS is?
 - h. Do you know who to contact if you wish to review the written hazard communication plan or review an MSDS?
 - i. Do you know that if you complain to your supervisor about your working conditions that the University cannot reprimand you?

All employees should be trained about the changes in Hazard Communication Standard with the addition of GHS by December 1, 2013

Employees with potential for exposure to hazardous chemicals shall receive job-specific training in addition to that previously listed including:

- Special emphasis on chemicals listed as carcinogenic.
- Methods/observations used to detect the presence or release of hazardous chemicals.
- Procedures, techniques and protective equipment to prevent exposure.

The training format selected to present the orientation and review sessions will be selected such that maximum effectiveness of communication is achieved. Depending on the evaluation of the comprehension capability of the group to be trained, an appropriate combination of training modes to include audiovisuals, classroom instruction, small group discussion, one on one individualized instruction, on-the-job demonstrations, etc. will be employed.

Specific training for non-routine tasks will be dictated by the situation and evaluated thoroughly in accordance with past experience and knowledge of that situation.

5) Safety Data Sheet (SDS)

The SDS must be readily available at all times to all personnel using hazardous chemicals. If there is difficulty in obtaining an SDS, the requestor must contact the supplier and/or manufacturer for the SDS. The department head must request the SDS in writing from the manufacturer or distributor within (5) business days. If the SDS is not made available, the employee has a right to refuse to work with that hazardous chemical without retaliation. A person in the work area should be designated as the responsible person to ensure there are copies of SDS for every chemical used and stored in the workspace.

The policy of UTK is to maintain a file of Safety Data Sheets (SDS) in each work unit that corresponds to the inventory of hazardous chemicals in that respective work area. MSDS may be maintained in a notebook, or via electronically as long as: reliable devices are readily accessible, workers are properly trained in the use of those devices, there is an adequate backup system and the system is part of the overall Hazard Communication program. A master file of all data sheets made available will be maintained in the files of EHS. This master file of SDSs will be made available upon request during normal working hours, 8:00am to 5:00pm, M-F, by calling 974-5084. During an emergency situation and at times other than normal working hours, individuals can contact the University Police Department at 974-3111 who will have available a current listing and organizations capable of providing emergency management assistance and information.

The Safety Data Sheets are designed to provide information concerning the physical and health hazards of chemicals found in the workplace. OSHA now requires that all SDS must follow a specified 16-section format. An SDS is composed of the following sections, which should be covered in employee training:

1. Identification
2. Hazard(s) identification
3. Composition/information on ingredients
4. First-aid measures

5. Fire-fighting measures
6. Accidental release measures
7. Handling and Storage
8. Exposure controls/personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal considerations
14. Transport information
15. Regulatory information
16. Other information

5.1 Recordkeeping

Starting in 2008 the University's central archived chemical inventories shall be kept for at least 30 years. These records may be kept in electronic or hard copy form.

Material safety data sheets must be kept indefinitely.

An individual training record shall be maintained for each employee and kept for period of employment + 5 years. This should contain:

- List of each chemical used or handled by the employee.
- Date of training on hazardous chemicals.
- A signature of the employee showing training on each chemical used or handled by that employee.

6.0 Attachments

None

7.0 Associated Standards

OSHA: 29 CFR 1910.1200, 29 CFR 1926.59, 29 CFR 1910.1450 (Lab Standard), and TDL Rule 0800-1-9

NFPA: 45, 306, 654, 49

EPA: 40 CFR 171, 172, 173, 177, 259, 260, 261, 262, 265, 265.16, 268, 302, 302.4, 303, 311, 355, 383, 392, 395, 397, 761

TOSHA: Act of 1972 50-3-101: 50-3-919

7.0 Disclaimer

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