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PURPOSE

The objective of our hazard communication program is to assure that every chemical used at MUSC is evaluated with regard to potential physical and health hazards. Information regarding potential hazard(s) of chemicals used at MUSC is transmitted to employees and appropriate contractors, and employees are notified with respect to potential hazard(s) resulting from our operations and investigative activities.

OSHA HAZARD COMMUNICATION STANDARD

Chemicals pose a wide range of health hazards (such as irritation, sensitization, and carcinogenicity) and physical hazards (such as flammability, corrosion, and reactivity). OSHA's Hazard Communication Standard (HCS) is designed to ensure that information about these hazards and associated protective measures is disseminated. This is accomplished by requiring chemical manufacturers and importers to evaluate the hazards of the chemicals they produce or import, and to provide information about them through labels on shipped containers and more detailed information sheets called safety data sheets (SDSs). All employers with hazardous chemicals in their workplaces must prepare and implement a written hazard communication program, and must ensure that all containers are labeled, employees are provided access to SDSs, and an effective training program is conducted for all potentially exposed employees.

In August 1987, the United States Department of Labor, through its Occupational Safety and Health Administration (OSHA), revised its standard for communicating potential health and physical hazards to employees, contractors and customers to cover all employees exposed to hazardous chemicals in their work places. This standard has applied to the Medical University of South Carolina since May of 1988. Main requirements of the standard are outlined in this policy.

HAZARD DETERMINATION

Chemical manufacturers must determine both health and physical hazards of the materials they produce.
Inventories of hazardous materials are maintained on each unit and laboratory in medical center buildings. Chemical inventories are posted on all laboratory doors in university buildings.

Chemicals mixed for on-site use must be evaluated to determine if they are hazardous. If a chemical is determined to have a physical or health hazard, a safety data sheet must be prepared and the hazard identified. The following procedure is used to evaluate the hazards of such a chemical:

**Determination of Physical Hazards:**
- The department mixing or using the chemical researches relevant available literature, including published as well as internal information.

(a) Sources to consult in evaluating hazards of chemicals:
  - OSHA Regulations 29 CFR, Part 1910, SubPart Z
  - American Conference of Governmental Industrial Hygienist, *Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment*. (current edition)
  - American Industrial Hygiene Association, *Workplace Environmental Exposure Level Guides*
  - International Agency for Research on Cancer, Monographs (current edition)

- Sources which may be consulted in hazard evaluation
  - Tests conducted in hazard evaluation,
  - Test data from other sources (manufacturers, laboratories, etc.)
  - Commercial databases and standard tests and handbooks (see Appendix C to 29 CFR 1910.1200 for a list of available sources)
  - SDS’s from other manufacturers.

- The information is studied to determine significant physical hazards of the chemical.

**Determination of Health Hazards**
- The chemical is submitted to the responsible health professional in the department producing the material for evaluation of possible health hazards* and aquatic toxicity.
- Relevant available literature including published and internal information is compiled.
- Toxicology and medical literature is reviewed and data from scientifically valid studies evaluated for hazard information.
- The evaluating health professionals report their conclusions to the department.
* Health hazards are determined according to the definitions and criteria set forth in Appendices A and B to CFR 1910.1200 (copy available at Occupational Safety and Health Programs for review).

SAFETY DATA SHEETS (SDS)

Hazard Communication Safety Data Sheet Quick Card

https://www.osha.gov/Publications/HazComm QuickCard SafetyData.html

The producer of a hazardous material must prepare an SDS for the material, supply the customer a copy of the SDS with the first shipment and update the SDS as needed.

Employees and contractors using, handling or storing the chemical at the customer's site must be given the information contained in the SDS as part of a training program. The SDS must be readily available to employees and contractors for review.

The standard requires that the SDS provide:

**Section 1, Identification** includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.

**Section 2, Hazard(s) identification** includes all hazards regarding the chemical; required label elements.

**Section 3, Composition/information on ingredients** includes information on chemical ingredients; trade secret claims.

**Section 4, First-aid measures** includes important symptoms/ effects, acute, delayed; required treatment.

**Section 5, Fire-fighting measures** lists suitable extinguishing techniques, equipment; chemical hazards from fire.

**Section 6, Accidental release measures** lists emergency procedures; protective equipment; proper methods of containment and cleanup.

**Section 7, Handling and storage** lists precautions for safe handling and storage, including incompatibilities.

**Section 8, Exposure controls/personal protection** lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).

**Section 9, Physical and chemical properties** lists the chemical's characteristics.
Section 10, Stability and reactivity lists chemical stability and possibility of hazardous reactions.

Before a chemical or mixture of chemicals is approved for use at the Medical University of South Carolina, a Safety Data Sheet (SDS) for the chemical or mixture must be in place. For a purchased material, the SDS is obtained from the manufacturer or vendor. A material generated on site is covered by an SDS developed here as outlined above. An SDS obtained from a manufacturer or vendor may be modified if the information as received is incorrect or incomplete.

The SDS gives all the information required by the Hazard Communication Standard including the identity of the hazardous components of the material, the health and physical hazards of the material and the protective measures and equipment to be used if potentially exposed to the material.

The SDS provides the means for making the system a useful tool for determining if a chemical is hazardous, precautions to be taken when using, handling or storing, protective equipment to be used, method for disposal, who to contact for more information, etc.

SDSs for all chemicals and mixtures used or produced for continuing use at the Medical University of South Carolina are maintained at OSHP. Each area using, handling or storing the material has access to the SDS through a computer terminal located in the area and accessible to all employees assigned to the area. Hard copies may be obtained from OSHP.

**TRAINING**

Departments must establish and implement training for employees potentially exposed to a hazardous chemical. The training must include:

(a) How the hazard communication program is implemented.
(b) How to read and interpret information on labels and in an SDS.
(c) How to obtain and use the available hazard information.
(d) The hazards of chemicals in the employee’s work area.
(e) The measures the employee can take for protection against the hazards.
(f) Specific procedures put into effect by the employers to provide protection, such as work practices and the use of personal protective equipment.
(g) Methods and observations, such as visual appearance or smell, which a worker can use to detect the presence of a hazardous chemical to which he or she may be exposed.

Copies of OSHA’s Hazard Communication Standard are kept by the Occupational Safety and Health Programs office. You may receive a copy by calling 843-792-3604 or they may be accessed through [www.osha.gov](http://www.osha.gov). The standard is available for employee
review at any time. MUSC’s Hazard Communication Program is located in the Safety Manual and on the University Risk Management website.

All Medical University of South Carolina employees are given training in the general requirements of the Hazard Communication Standard. Employees assigned to jobs requiring routine use or handling of potentially hazardous chemicals are given additional training by their supervisors with emphasis on health and/or physical hazards of the specific chemical. Employees performing non-routine tasks with potential for exposure to a hazardous material are given special training by their supervisors in dealing with the particular hazard.

Types of Training
General training is offered as part of new employee orientation. Employees are required to receive this training before starting work and on an annual basis. The training covers the requirements of the Hazard Communication Standard, SDS information, location of the written Hazard Communication Program and of SDS's. The training is also carried out in new employee orientation via audiovisual training aids and lectures.

Training is provided for employees who use/handle hazardous chemicals routinely. This training is performed annually via CATTS Annual Training. Emphasis is placed on potential hazards of chemicals likely encountered in the job assignment, covers job procedures, hazard summaries and spill procedures.

Training is provided to employees involved in unusual jobs. This is limited to a few employees who are specialists in performing the particular job, jobs that are done infrequently – details are reviewed and potential problems are addressed each time before starting the job. This training is given by supervisors to small groups or to individuals.

Training is provided to employees that are newly assigned to the job. Before assuming job responsibilities, a new employee (just hired or transferred from another work area) is given training regarding the potential hazards associated with the job. The training consists of both general training and specific training with respect to the hazardous chemicals likely to be encountered while performing the job. This training is given by supervisors to small groups or to individuals.

Training of contractors – the site coordinator and contract supervisor informs contract employees of known hazards that may be encountered during the course of the job and how to use the SDS system. This training is given by supervisor.

CONTAINER LABELING

All containers of hazardous chemicals which are shipped must be labeled to reflect the identity, the hazard warning and the name and address of the chemical manufacturer.
Containers of hazardous chemicals in the workplace, except pipes and piping systems and portable containers whose contents are to be used by one person within the same shift, must be labeled as to identity using the full chemical name (example, “Acetone”) and with appropriate hazard warning (flammable). 704 stickers may be used to identify the appropriate hazard warning.

HAZARDOUS MATERIAL INVENTORIES

Each manager is responsible for the development and maintenance of a hazardous materials inventory list which will identify all of the hazardous materials located within their work area. The manager will be responsible for updating the list.

http://academicdepartments.musc.edu/vpfa/operations/Risk%20Management/occpsafety/formsandfactsheets/forms.htm (click on Chemical Inventory Form)

CHANGE OR ADDITION OF CHEMICALS IN WORKPLACE

Before a hazardous chemical previously unused in an area is put into service, all employees assigned to the area are instructed on the hazards of the materials.

HAZARD COMMUNICATION TO CONTRACTORS

All contractors who perform work at MUSC are provided with information about hazardous materials, which may be encountered by the Site Contract Coordinator with input as necessary from the area(s) involved.

Before starting the job, the contractor is advised that he must 1) conform to safety practices necessary to protect his employees and MUSC employees from exposure to hazards from the job, 2) be aware of unusual situations recognized by MUSC and unique to site operations and 3) be aware of protective equipment, procedures and/or safety rules. They are also advised that chemicals may be brought on site only after an SDS is obtained and reviewed by OSHP. He/she must inform the Site Contract Coordinator of any activity that may adversely affect the safety and health of MUSC employees, and that the MUSC labeling system requires all containers to be labeled identifying the material and containing the appropriate hazard warning.

MONITORING FOR AIRBORNE CHEMICALS

The airborne concentration of chemicals listed in OSHA’s Z Table is determined routinely in the work areas of the Medical University of South Carolina. These chemicals include, but are not limited to, formaldehyde, glutaraldehyde, nitrous oxide, ethylene oxide, and xylene. Personnel monitoring samples and/or area (fixed location) samples are collected and analyzed. The jobs monitored and locations that are sampled were chosen on the basis of those with the greatest potential for employee exposure.
exposure. Potential exposure levels for other chemicals used or produced in the various locations are determined as needed. Monitoring results are reported to the area sampled and to all employees assigned to the job or, if appropriate, to the area. Results are maintained in OSHP.