

5.0) CHEMICAL SAFETY

Chemical Hazard Communication

The purpose of this program is to provide appropriate information concerning the hazards of chemicals present and used at the University of Kansas - Lawrence Campus is available and to communicate this information to University personnel. This is necessary so that they may be informed of the potential risks associated with the hazardous chemicals in their work area and aware of how to protect their safety and health.

This program, hereafter referred to as the University of Kansas Chemical Hazard Communication Program (KU-CHCP), has been designed to meet the requirements established by the Kansas Department of Human Resources - Division of Industrial Safety and Health (KDHR-ISH). This state agency requires public sector employer's in Kansas to fully comply with the Federal Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard - 29 CFR 1910.1200. The Federal OSHA Hazard Communication Standard compels employers to provide employees with information concerning the hazards associated with the chemicals in their workplace. This standard requires a written hazard communication program, container labels and other forms of warning, inventory of chemicals, material safety data sheets, and chemical safety training and information sessions.

Program Policy

No faculty, staff, or students of the University of Kansas - Lawrence Campus shall engage in any job, project, or task which presents the risk of exposure to hazardous chemicals without first having received the appropriate information and training as required by this program. This is necessary in order to protect the safety and health of University personnel and achieve the goals and requirements of the University's Safety and Health Policy.

Application

The KU-CHCP applies to all chemicals or chemical products present at the University which meet the definition of a hazardous chemical and to which University personnel may be exposed under normal conditions of use or in a foreseeable emergency.

Hazardous Chemical - any chemical with one or more of the following properties:

- Physical Hazards: Combustible Liquid, Compressed Gas, Explosive, Flammable, Organic Peroxide, Oxidizer, Pyrophoric, Unstable, or Water Reactive.
- Health Hazards: Carcinogens, Corrosives, Irritants, Sensitizers, Toxic or Highly Toxic Agents, Reproductive Toxins, Hepatotoxins, Nephrotoxins, Neurotoxins, Hematopoietic System Agents, Agents which can damage the eyes, skin, lungs, or mucous membranes.
- This includes laboratory chemicals, cleaning agents, floor strippers, maintenance solvents and oils, paints and thinners, compressed gases, printing inks and solvents, photocopy inks and toners, and many other chemical products.

Exceptions - chemicals to which the KU-CHCP does not apply:

- Food, drugs, cosmetics, or alcoholic beverages packaged for sale to consumers or intended for personal consumption by employees in the workplace.
- Any consumer product or hazardous substance where it can be demonstrated that it is used in the workplace in the same manner as normal consumer use, and the use results in a duration and frequency of exposure which is not greater than consumer exposure.
- Any drug (as defined by the Federal Food, Drug, and Cosmetic Act) that is used in its final form for direct administration to the patient (Health Center Pharmacy).

University Personnel - means an individual representing or associated with the KU-Lawrence Campus in one of the following ways:

- Faculty, Staff, or Student Employees who may be exposed to hazardous chemicals under normal operating conditions or in a foreseeable emergency.
- Individuals engaged in either an academic, research, or volunteer relationship with the University but not classified as employees of the University and who may be exposed to hazardous chemicals under normal operating conditions or in a foreseeable emergency.
- University personnel who are never exposed to hazardous chemicals are not covered by this KU-CHCP.

Responsibilities

KU Dept. of Environment, Health & Safety - shall have responsibility for campus-wide coordination of the KU-CHCP. This shall include the following:

- Development, review, and maintenance of the written KU-CHCP.
- Assist campus units in implementing the KU-CHCP.
- Develop appropriate general hazard communication training programs and perform general training sessions for campus units as requested.
- Develop and maintain a central repository for original copies of Material Safety Data Sheets forwarded by campus units and/or manufacturer's.
- Maintain a comprehensive, campus-wide chemical inventory list based upon the information provided from campus units.
- Perform periodic inspection of units to assess adherence to the KU-CHCP.

Unit Director, Supervisor, or Designee - shall have ultimate responsibility for compliance with all provisions of the KU-CHCP applicable within their unit. This includes:

- Unit specific chemical inventory list is developed and kept current.
- Appropriate container labeling and other forms of warning are in place.
- MSDS's for each hazardous chemical present in their unit are readily available to their employees from somewhere within the unit, or at their work areas.
- Each of their employees has been provided the appropriate (general and specific) Chemical Hazard Communication Information and Training.

University Personnel - shall be responsible for complying with all provisions of the KU-CHCP. This includes:

- Being aware of hazardous chemicals present in the work area and keeping supervisor apprised of chemical inventory changes.
- Make sure each container of hazardous chemical being used is properly labeled and appropriate hazard warnings are in place before performing tasks.
- Know where MSDS's are located and be familiar with the hazard information for the

chemicals routinely used.

- Pay attention to chemical hazard information and training provided and follow its requirements.

Chemical Inventory

The unit director, supervisor, or designee shall establish and maintain a current inventory of all hazardous chemicals present in their unit.

- This may be accomplished as either a comprehensive unit chemical inventory list or may be a compilation of sub-unit (work areas) inventory lists.
- The chemical inventory list should be kept as current as possible (KU-EHS Dept. recommends monthly updating).

The unit director, supervisor, or designee shall keep the unit or sub-unit chemical inventory lists readily accessible to all unit employees. The unit director, supervisor, or designee shall submit the unit or sub-unit chemical inventory lists to the KU Dept. of Environment, Health and Safety no later than January 1 of each calendar year. As a minimum, the chemical inventory list shall contain the following information: (See page 5-10 for an example form)

- Identity of Hazardous Chemical - (Trade Name, Product name or Chemical Name)
- Chemical's Manufacturer - (Correspond to above)
- Location Information - (Building, Department, and Room# or Area)
- Quantity of Chemical Present - (Maximum Daily Amount & Average Daily Amount)

Labels and Other Forms of Warning

Container Labels

The Federal Hazard Communication Standard requires that chemical manufacturers, importers, and/or distributors shall ensure that each container of hazardous chemical(s) leaving their workplace is labeled, tagged, or marked with the following information:

- Identity of the Hazardous Chemical
- Appropriate Hazard Warning
- Name and Address of the chemical manufacturer, importer, or other responsible party.

The unit director, supervisor, or designee, shall be responsible for ensuring that all containers of hazardous chemicals which their unit receives are labeled with the information identified above.

- Containers of hazardous chemicals without this information shall not be accepted.
- The original manufacturer's/importer's/distributor's label shall not be removed or defaced from incoming containers unless it is immediately replaced with a label which provides the required information.

The unit director, supervisor, or designee, shall be responsible for ensuring that each container of hazardous chemical(s) stored/handled/used in or by their unit is labeled, tagged, or marked with the following minimum information:

- Identity of the Hazardous Chemical
- Appropriate Hazard Warning
- All container labels shall be legible, in English (as a minimum), and prominently displayed on the container.

Other Forms of Warning

Appropriate hazard warning signs are to be displayed in areas where there may be sufficient concentration of airborne chemicals to present a physical or health hazard to employees. This would include areas such as: welding, indoor operation of internal combustion engines or devices, indoor application of paints or adhesives, grinding or sanding operations, removal of asbestos and/or lead containing materials, pesticide application, chemical mixing, usage or manipulation, or any other operation/activity which has the potential for hazardous emissions.

The unit director, supervisor, or designee shall ensure that any person producing a potentially hazardous environment has posted the appropriate area hazard warning signs before initiating the operation/activity. Contact the KU Office of Environment, Health & Safety for assistance in identifying and obtaining the appropriate area hazard warning signs.

Material Safety Data Sheets

Chemical manufacturers, importers, and distributors are required to send a Material Safety Data Sheet (MSDS) with the initial shipment of a chemical or when MSDS information is updated. The MSDS contains detailed information about the chemical such as:

- The product identity as used on the container label.
- The chemical and common name(s) of the hazardous chemical(s).
- Physical and chemical characteristics of the hazardous chemical.
- The physical hazards of the hazardous chemical.
- The health hazards of the hazardous chemical.
- The hazardous chemical's primary routes of entry.
- The OSHA permissible exposure limit (PEL), ACGIH threshold limit value (TLV), or any other recommended exposure limit or safety level.
- Whether the hazardous chemical is a carcinogen or potential carcinogen.
- Generally applicable precautions for safe handling and use (hygiene practices, protective measures, spill clean-up procedures).
- Generally applicable control measures (engineering controls, work practices, PPE).
- Emergency and first-aid procedures,
- MSDS date of preparation or last changes to it.
- Name, address, and telephone number of party responsible for preparing or distributing the MSDS (Manufacturer, Importer, Distributor, etc.).

The Federal Hazard Communication Standard requires that the University must maintain in the workplace copies of the required MSDS's for each hazardous chemical present, and must ensure that they are readily accessible (no barriers to immediate employee access) during each work-shift to employees when they are in their work areas. Therefore, the unit director, supervisor, or designee shall make an MSDS for each hazardous chemical present in their unit readily available to employees within the unit.

- Original copies of MSDS's received by units may be forwarded to The KU Dept. of

Environment, Health & Safety for inclusion in a centralized MSDS repository.

- A copy of the MSDS must still be present in the work area where the chemical is stored/handled/used and maintained so as to make the MSDS readily available to the employee.
- The KU-EHS Dept. recommends either a Unit MSDS file cabinet or a Unit MSDS notebook. Units which have several or numerous work areas or sub-units should develop an MSDS notebook or file for each work-area or sub-unit.
- The MSDS notebook or file must correspond to the unit's hazardous chemical inventory list; and both should be located in an area readily accessible to all unit personnel.
- MSDS's are also accessible over the Internet. The KU-EHS Dept. maintains an MSDS link page at the EHS Website. Go to WWW.EHS.UKANS.EDU and click on MSDS Links. From there you can search for many MSDS's.

The unit director, supervisor, or designee shall be responsible for initiating and documenting the efforts undertaken to obtain the appropriate MSDS if one is not available in the work area or one has not been received. Assistance in obtaining MSDS's from manufacturers, importers, and distributors is available from the Dept. of Environment, Health & Safety.

Employee Information and Training

The Federal Hazard Communication Standard requires that the University must provide its employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment and whenever a new physical or health hazard for which they have not received training is introduced into their work area.

The unit director, supervisor, or designee, is responsible for providing each of their employees with the appropriate Chemical Hazard Communication Information and Training which must include the following, as a minimum:

- Location of hazardous materials in the workplace.
- Location, availability, and details of the University of Kansas written chemical hazard communication program.
- Methods and observations that may be used by personnel to detect the presence or release of hazardous chemicals in the work area.
- The physical and health hazards of the chemicals in the work area.

- The measures employees can take to protect themselves from these hazards, including specific procedures the University and/or unit has implemented to protect employees from exposure to hazardous chemicals (engineering controls, work practices, emergency procedures, personal protective equipment, waste disposal procedures, etc.).
- Location, availability, and details of unit specific hazard communication information, such as; unit chemical inventory lists, unit MSDS's, etc.

The KU Dept. of Environment, Health & Safety has developed general hazard communication and chemical safety training programs which meet these requirements and will gladly present them. A training session takes approximately 1-1.5 hours to present. Contact the KU-EHS Dept. to schedule a Chemical Hazard Communication Training Session.

In addition to general hazard communication training, it is the supervisor's responsibility to provide training on specific chemicals used/stored in the work area and whenever a new chemical hazard is introduced into the work area.

Training Documentation

It is the responsibility of the unit director, supervisor, or designee to provide all required chemical hazard communication training and appropriately document that training. This shall include records which indicate the following: (See page 5-9 for example training log form)

- Employee name, position, SSN, and signature.
- Training session title, date, location, and instructor.
- Copy of training contents/outline or handout.

Non-Routine Tasks

All tasks involving hazardous chemicals which are being done for the first time, or only periodically, shall be considered a non-routine tasks.

The unit director, supervisor, or designee shall provide any person required to perform a non-routine task with appropriate hazard communication training and sufficient time to review appropriate hazard information prior to initiation of the task. This information includes MSDS's, container labels, technical or product specification sheets, and any other appropriate hazard information. Contact the KU EHS OFFICE for assistance in collecting additional information or for review of safety/hazard concerns.

Contractor Notifications

Contractor employees are to be informed of hazardous chemicals which they may encounter at their work location on campus and provided with the name of the University person(s) from whom chemical safety information is available. The unit directly overseeing (usually the Office of Design & Construction Management or Facilities Operations) the contractor is responsible for providing this information to the contractor.

Contractors who will be bringing and using hazardous chemicals on campus shall maintain MSDS's and a chemical inventory list at their campus work location. This information shall be readily available to the KU Dept. of Environment, Health & Safety, contracting unit, or local emergency service as needed.

Trade Secrets

In some cases, the chemical manufacturer may withhold the complete chemical identity from the MSDS if it is a trade secret. However, the chemical and physical properties must be disclosed on the MSDS. Trade secret information will be made available to health professionals for medical treatment of exposed personnel, assessment of hazards and employee exposures, and selection of appropriate safety precautions. Contact the KU-EHS Dept. for further assistance.

KU-CHCP

UNIT SPECIFIC INFORMATION

- 1) Unit: _____
- 2) Unit Director: _____
- 3) Unit KU-CHCP Coordinator: _____
- 4) Unit/Work Area Chemical Inventory Coordinator: _____
- 5) Unit/Work Area Chemical Labeling Coordinator: _____
- 6) Unit/Work Area MSDS Coordinator: _____
- 7) Unit/Work Area Training Coordinator: _____
- 8) Unit/Work Area Location for Copy of KU-CHCP: _____
- 9) Unit/Work Area Location for Chemical Inventory List: _____
- 10) Unit/Work Area Location for MSDS's: _____

Chemical Storage & Handling

Because of the large number of chemicals in use on campus, it is impractical to state how to properly store each one or what effects each chemical will have if mishandled. For information on a specific chemical, you should consult the container label, MSDS, and your supervisor. Contact EHS Dept. (864-4089) if further assistance or information is needed.

General Safety Procedures for Ordering Chemicals

- Estimate the amount of each chemical required by carefully preplanning the work task.
- Select only those chemicals for which the available ventilation is adequate.
- Obtain supervisor approval before ordering chemicals.
- Obtain and review hazard information (MSDS) prior to ordering new or unusual chemicals.
- Order chemicals in smallest quantity possible.
- Prepare for the storage and use of the substance (establish storage location, post appropriate warning signs, obtain necessary personal protective equipment, transmit proper handling information to personnel.)

General Safety Procedures for Receipt and Distribution of Chemicals

- Do not accept any chemical whose container is not properly labeled.
- Review and observe specific information (container label & MSDS) on the safe handling and storage of the chemical.
- When transporting chemicals, verify that the load is stable and secure. Whenever possible, transport chemicals on freight-only elevators to avoid potential exposure to public.
- When transporting gas cylinders, use an appropriate hand truck (never drag or roll cylinder), leave valve cap on until the cylinder is in place, and handle only one cylinder at a time.

General Safety Procedures for the Storage of Chemicals

- Keep all containers in good condition and properly labeled.
- Store incompatible chemicals separately (do not store unsegregated chemicals alphabetically).
- Segregate chemicals by hazard class (flammable compressed gases, non-flammable compressed gases, poisonous compressed gases, flammable liquids, combustible liquids, flammable solids, corrosives-acids, corrosives-bases, poisonous compounds, oxidizers, organic peroxides, spontaneously combustible reactives, water reactives, explosives, and radioactives).
- Segregation/separation of chemicals should be by physical means (walls, dikes, beams).
- Secure all storage shelves and cabinets to prevent tipping.
- Verify that storage locations are dry and adequately ventilated.
- Do not store chemicals above eye level.
- Keep flammable liquids in approved safety cans and safety cabinets.
- Containers of hazardous liquids should be stored in secondary containment.
- Should keep adequate supplies of spill control/cleanup absorbent on hand.

General Safety Procedures for the Handling and Usage of Chemicals

- Know the hazards associated with the materials you are using (review labels & MSDS).
- Review emergency spill procedures and be familiar with your responsibilities.
- Know the locations and proper use of available safety equipment (emergency shower, eyewash, fire extinguisher, fire alarm, and emergency phone numbers).
- Avoid working alone with chemicals; use the buddy system if possible.
- Do not eat, drink, smoke, chew gum, or apply cosmetics, or store these items in areas where chemicals are stored or used.

- Confine long hair and loose clothing when working with chemicals.
- Wear the appropriate shoes at all times (no sandals, perforations, or open toed shoes).
- Wear personal protective equipment (eye protection, hand protection, clothing) appropriate to protect from the chemical's hazard.
- Wear appropriate respiratory equipment when airborne contaminants cannot be sufficiently restricted by engineering controls.
- Never depend upon a "smell" to detect or to warn of airborne chemicals.
- Do not smell, taste, or touch with bare hands, any chemicals.
- Should keep chemical containers closed at all times except when filling or removing material.
- Keep work areas clean and uncluttered and with chemicals and equipment properly labeled and stored. Clean up your own drips and minor spills immediately. Report other spills to your supervisor and dial (911) if it is an emergency (major spill or medical attention is needed).
- Do not leave potentially hazardous chemicals or processes unattended.
- Practice good personal hygiene by always washing your hands and face after handling chemicals and before eating, drinking, or smoking.

Chemical Disposal

The University has a responsibility to dispose of waste chemicals in a safe and environmentally sound manner. Some chemicals can be disposed as normal solid waste, or down the sanitary sewer, but many may need to be disposed as hazardous waste. Below is some general chemical disposal information. For additional waste disposal information or a copy of the University's written chemical waste disposal program, contact the Department of Environment, Health & Safety (864-4089).

- Contact Department of Environment, Health & Safety before using chemicals to determine how spent, used, or unwanted material must be properly disposed.
- Collect spent or used material into a compatible container and label (in English) the container with the specific chemical content and volume. Keep container closed at all times except when filling. Collect different or incompatible chemicals into separate containers.
- Contact EHS Dept. (864-4089) to arrange for the removal and disposal of surplus, used, or unwanted chemicals.
- Practice pollution prevention: Chemical reuse, redistribution, source reduction, material substitution, procedure modifications, inventory management, reclamation, recycling, and Environment, Health and Safety approved waste reduction procedures are all viable techniques. Call the Environment, Health and Safety Department for pollution prevention assistance (864-4089).