University of Connecticut

HAZARD COMMUNICATION PROGRAM

_____

[Department/Location/Shop]

I. Introduction

As part of its continuing effort to reduce exposure and risk to University of Connecticut employees, the _____ has implemented this Hazard Communication Program to provide
[department/location/shop]
information about hazardous chemicals used in the workplace and appropriate preventive and protective measures. This written program is designed to comply with the requirements of UConn's Hazard Communication Policy and the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200).

_____is responsible for coordinating and administering the Hazard
[Name of supervisor or designee]
Communication (HAZCOM) program for _____.
[department/location/shop]
He/She serves as the first point of contact for employees on HAZCOM issues for the department. Additional information and support is available through Environmental Health & Safety (EH&S).

II. Scope

This written program applies to all covered employees of the University of Connecticut Storrs campus and branch campuses.

A covered employee is defined as a worker who may be exposed (actually or potentially) to hazardous chemicals under normal operating conditions or in foreseeable emergencies, e.g., an equipment malfunction resulting in an uncontrolled release of a hazardous chemical.

Generally, this written program does NOT cover office workers or other employee groups whose jobs would not be likely to involve chemical exposures, or who may encounter hazardous chemicals only in non-routine, isolated instances. Employees within these job classifications would, however, be covered if their normal work routine required them to walk through areas where hazardous chemicals are used/stored.

Laboratory personnel are covered by a different OSHA standard, "Occupational Exposure to Hazardous Chemicals in Laboratories." For more information on the laboratory standard, consult the University's Chemical Hygiene Plan, available from EH&S.

III. Hazardous Materials Inventory

Each department is required to maintain an inventory of the hazardous materials used or stored for non-laboratory use by departmental employees. The Hazardous Material Inventory for _____ is attached as Appendix B.
[department/location/shop]
This inventory lists each material as identified on the Material Safety Data Sheet (MSDS) and container label. Materials no longer present are deleted from the list and new materials are added as they are introduced into the workplace by_____.
[Name of supervisor or designee]

This inventory must be attached to this written program and must be available to employees at each work location during normal work hours.

IV. Material Safety Data Sheets (MSDS)

The_____ has a current MSDS on record for each hazardous chemical in use.
[department/location/shop]

_____is responsible for maintaining and updating the MSDS file(s).
[Name of supervisor or designee]

If an MSDS is not on file, _____ will request the MSDS from the manufacturer,
[Name of supervisor or designee]

importer or distributor of the product.

The University of Connecticut will rely on the initial hazard evaluation performed by the manufacturer, importer or distributor of the product.

MSDSs are located at _____ where they are readily accessible to employees
[location of MSDSs]

during work hours. Where employees must travel between workplaces during a work shift, the MSDSs are kept in the primary work area. No employee is required to work with a hazardous chemical for which an MSDS is not available.

EH&S does not maintain a central file of MSDSs for the University of Connecticut. However, MSDSs for many products are available through the Internet (for links to MSDS information, visit the EH&S website at www.ehs.uconn.edu/Occupational/?p=links). Furthermore, Central Stores maintains MSDSs for all materials that are in their inventory and that are supplied to the University community.

For information on reading and understanding MSDSs, see Appendix C.

V. Product Labels and Other Forms of Warning

The purpose of labeling is to provide workers with information about the potential hazards of the chemicals they use and to provide information needed to allow an employee to find the corresponding MSDS. *Original containers* must be labeled, tagged or otherwise marked with the product name, manufacturer's name and address, and appropriate hazard warnings. Any questions about the proper interpretations of these warnings should be referred to _____ who will, in turn, refer them to EH&S, as appropriate.
[Name of supervisor or designee]

Secondary Containers into which chemicals have been transferred from an original labeled container must also be labeled. This is required if the product will be used for more than one work shift, or by more than one employee. Secondary containers must be labeled with the **product name**, and the appropriate **hazard warnings**. This can be done with either a pre-printed label or container supplied by the manufacturer or by physically writing this information directly on a container or blank label.

Labels must be included on stationary processes containing hazardous chemicals and piping systems (except those used for conventional heating and cooling) that pass through areas that are normally occupied, or where personnel may be exposed in the event of a leak or rupture.

These locations include: **[list affected stationary processes and piping systems]**

No one shall intentionally deface or obscure container labels or hazard warnings on incoming containers of hazardous materials. Supervisors of employees using hazardous materials are responsible for ensuring that labels are legible on all containers in their work area.

Labeling systems, such as the *Hazardous Materials Identification System* (HMIS) or the *National Fire Protection Agency (NFPA)* Diamonds, may be used to complement, but not replace, labeling requirements. Additional training is required for these labeling systems. Additional labeling systems that are in use in this department include: **[list additional labeling systems]**

VI. Training

All employees potentially exposed to hazardous materials in the workplace must be provided with training prescribed in the Hazard Communication Standard. It is the responsibility of _____ to provide job-specific chemical safety training and to
[Name of supervisor or designee]
contact EH&S to make arrangements for general training of new employees prior to any job assignment involving work with hazardous substances.

The training includes, as a minimum:

1. the provisions of the OSHA Hazard Communication Standard, including:
   a. what is an MSDS, what information do MSDSs contain, and how they are obtained,
   b. labeling requirements and how labels relate to MSDSs,
   c. requirements and elements of a written Hazard Communication Program,
   d. requirements for training.

2. an overview of general toxicology, including methods to recognize hazards, hazard evaluation, and common methods to prevent and control employee exposure.

More specific information on certain hazardous materials or categories of materials used in the workplace is provided to employees by the department. Supervisors or designees are responsible for informing employees of:

1. the location and availability of the written Departmental Hazard Communication Program, the chemical inventory, and the MSDS file;

2. the nature and potential health and safety risks of hazardous substances to which employees are exposed in the course of their employment;

3. proper handling procedures, including use of personal protective equipment, for hazardous materials to which employees are exposed in the course of their employment;

4. appropriate emergency treatment for exposures and procedures for cleanup of leaks and spills; and

5. the location of hazardous substance containers present in their workplace.

Additional training must be provided to employees when new hazards are introduced into the work area, and before any changes in operation which may affect the hazard to which they may be exposed.

VII. Outside Contractors

The _____ will provide a copy of this written Hazard
[Department/location/shop]
Communication Program, the chemical inventory, and the opportunity to review MSDSs on file to contractors planning to work in an area where hazardous chemicals are used or stored.

Per the OSHA Hazard Communication Standard, the contractor is expected to inform & provide the _____ with a chemical inventory and MSDSs of the
[Department/location/shop]
materials to be introduced into the work area in the course of their work at the University of Connecticut. The contractor must also provide information on the location of chemical use and storage to the _____. The contractor is responsible for the removal of all unused
[Department/location/shop]
portions of the chemicals and their waste products from the University.

VIII. Non-Routine Tasks

Special hazards which employees may encounter when performing non-routine duties in the course of their work will be discussed with the employee before the job begins. It is the responsibility of the supervisor to ensure that employees receive necessary specialized training. Information will be provided on safe handling, personal protective equipment, appropriate exposure monitoring, and other possible control measures. Assistance in evaluating the hazards of non-routine tasks and determining the appropriate precautions and protective measures is available from EH&S. Written standard operating procedures will be attached to this department's written Hazard Communication Program.

IX. Responsibilities

Supervisor (or designee)

- Coordinates and administers the Hazard Communication Program for the department;
- Acts as first point of contact for employees with questions related to Hazard Communication;
- Maintains hazardous materials inventory that can easily be cross-referenced to the container labels and MSDSs, and reviews annually;
- When new hazard inventories are produced, saves old inventories in an archival file in accordance with OSHA's record retention requirements;
- Ensures that the inventory and the written program are readily accessible to all appropriate personnel during their normal working hours when they are in their work areas;
- Acquires and maintains MSDSs;
- Ensures that the MSDSs are readily accessible to all appropriate personnel during their normal working hours;
- Provides contractors and supervisors of other departments with necessary information (chemical hazards, labeling information, location of MSDS, etc.);
- Obtains information from contractors and supervisors of other departments regarding chemicals they will use in work areas;
- Reviews written Hazard Communication Program and audits effectiveness at least annually (See Appendix E);
- Ensures all containers, stationary processes, and affected piping systems are properly labeled;
- Ensures employees attend required general training provided by EH&S, or provides the general

training and site-specific training under EH&S' Train-the-Trainer Program;
- Provides chemical and area-specific training to employees, with assistance from EH&S, as needed;
- Provides re-training when a new chemical hazard is introduced;
- Ensures employees receive necessary specialized training for non-routine tasks;
- Ensures that employees are provided with and use all designated engineering controls and personal protective equipment, heed all chemical hazard warnings, and follow safe usage instructions.
- Develops written emergency procedures to be followed in the event of a hazardous chemical release or exposure (see attached example, Appendix D);
- Reports all significant spills or releases of hazardous chemicals to the University Fire Department by dialing 911;

EH&S

- Assists departments in developing and implementing a Hazard Communication Program;
- Assists departments in obtaining MSDSs, when necessary;
- Develops and provides general and Train-the-Trainer training;
- Assists supervisors with specific training, when necessary;
- Maintains training records of general training classes, and Train-the-Trainer Program classes conducted for supervisors or designees;
- Provides advice on health and safety issues related to chemical safety and handling;
- Conducts employee chemical exposure monitoring, where appropriate;
- Periodically audits Hazard Communication Programs.

Employee

- Attends general and specific training;
- Does not deface container labels;
- Labels new containers not meeting the definition of process containers appropriately;
- Reviews each product's container label and MSDS before using it;
- Notifies supervisor when there is a problem with the hazardous chemical inventory, label, MSDS, or if there is a health and safety concern;
- Uses personal protective equipment appropriately;
- Works with hazardous chemicals in a safe manner, following guidelines outlined in training.

X. Additional Information

Further information on the OSHA Hazard Communication Standard, the University's Hazard Communication Policy, this written program, and the hazardous chemical listing, labeling and MSDS requirements is available by contacting the Department of Environmental Health and Safety, 3102 Horsebarn Hill Rd., Unit-4097, Storrs, CT 06269-4097 (486-3613)

APPENDIX A

The Occupational Health and Safety Administration
Hazard Communication Standard
29 CFR 1910.1200

APPENDIX B

Hazardous Chemical Inventory

Use the attached form for the hazardous chemical inventory. Please print legibly with black ink. When new chemical products are added to the list, write "added" and the date in the last column; print your name under the date. When chemical products are no longer present, write "deleted", the date, and your name in a similar manner.

TERMS

CHEMICAL IDENTITY/PRODUCT TRADENAME - the name identified on the container label which is cross-referenced to a corresponding Material Safety Data Sheet (MSDS).

PRODUCT CLASSIFICATION - physical state (solid, liquid, gas) and hazardous properties (flammable, corrosive, oxidizer, reactive, carcinogen, highly toxic, irritant, sensitizer, toxic, etc.) listed on the container label or MSDS.

DATE REVISED - when materials are added/deleted from the list with the reviser's name.

See example below:

Department/Unit:	Heating Plant	
Storage/Use Location:	Basement	
Prepared by: John Doe		**Date:** 00/00/00
Chemical Identity/Product Name	**Product Classification**	**Date Revised**
XYZ Cleaner	flammable, corrosive, liquid	
ABC Cleaner	carcinogen, liquid	Deleted 00/00/00 J. Doe

Hazardous Chemical Inventory

Department/Unit:		
Storage/Use Location:		
Prepared by:		**Date:**
Chemical Identity/Product Name	**Product Classification**	**Date Revised**

APPENDIX C

Reading and Understanding Material Safety Data Sheet Information

In accordance with the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, departments are required to obtain Material Safety Data Sheets (MSDSs) from the manufacturer and make them accessible to personnel. A system should be in place to catalogue MSDSs when received. If an MSDS is not received with a shipment, it may easily be obtained by requesting one from the manufacturer. Several chemical distributors have MSDSs available through the Internet. The EH&S web page has links to many of these sites at www.ehs.uconn.edu/Occupational/?p=links.
The following is provided to help you interpret the information found on manufacturers' MSDSs. While the format of these data sheets varies from manufacturer to manufacturer, certain components appear on each sheet.

A. Product Identification

This section gives the name and address of the manufacturer and an emergency phone number where questions about toxicity and chemical hazards can be directed.

Product Name:	Commercial or marketing name.
Synonym:	Approved chemical name and/or synonyms.
Chemical Family:	Group of chemicals with related physical and chemical properties.
Formula:	Chemical formula, if applicable; i.e., the conventional scientific definition for a material.
CAS Number:	Number assigned to chemicals or materials by the Chemical Abstracts Service, where applicable.

B. Hazardous Ingredients of Mixtures

This section describes the percent composition of the substance, listing chemicals present in the mixture. If tested as a mixture, it lists chemicals that contribute to its hazardous nature. Otherwise, it lists ingredients making up more than 1% and all carcinogens.
The OSHA **Permissible Exposure Limit (PEL)**, National Institute for Occupational Safety and Health (NIOSH) **Recommended Exposure Limit (REL)**, and/or the American Conference of Governmental Industrial Hygienists (ACGIH) **Threshold Limit Value (TLV)** will also be listed, if appropriate. The OSHA PEL is the regulated standard, while the others are recommended limits. The PEL is usually expressed in parts per million parts of air (ppm) or milligrams of dust or vapor per cubic meter of air (mg/m^3). It is usually a **time weighted average (TWA)** -- concentration averaged over an eight-hour day. Sometimes, a **Short Term Exposure Limit (STEL)** may be listed. The STEL is a 15-minute TWA that should not be exceeded. A **ceiling limit (c)** is a concentration that must **not be exceeded at any time**. A **skin** notation means that skin exposure is significant in contributing to the overall exposure.

C. Physical Data

This section outlines the physical properties of the material. The information may be used to determine conditions for exposure. The following information is usually included:

Boiling Point: temperature at which liquid changes to vapor state
Melting Point: temperature at which a solid begins to change to liquid
Vapor Pressure: a measure of how volatile a substance is and how quickly it evaporates. For comparison, the VP of water (at 20^o C) is 17.5 mm Hg, Vaseline (non-volatile) is close to 0 mm Hg, and diethyl ether (very volatile) is 440 mm Hg.
Vapor Density (air=1): weight of a gas or vapor compared to weight of an equal volume of air. A density greater than 1 indicates it is heavier than air; less than 1 indicates it is lighter than air. Vapors heavier than air can flow along the ground or floor, where they may pose a fire or explosion hazard.
Specific Gravity (water=1): ratio of volume weight of material to equal volume weight of water.

Solubility in Water: percentage of material that will dissolve in water, usually at ambient temperature. Since much of the human body is made of water, water-soluble substances are more readily absorbed and distributed through the body.
Appearance/Odor: color, physical state at room temperature, size of particles, consistency, odor, as compared to common substances. Odor threshold refers to the concentration required in the air before vapors are detected or recognized.
% Volatile by Volume: Percentage of a liquid or solid, by volume, that evaporates at a temperature of 70^{o}F.
Evaporation Rate: usually expressed as a time ratio with ethyl ether = 1, unless otherwise specified.
Viscosity: internal resistance to flow exhibited by a fluid, normally measured in centiStoke time or Saybolt Universal Secs.
Other Pertinent Physical Data: information such as freezing point is given, as appropriate.

D. Fire and Explosion Hazard Data

This section includes information regarding the flammability of the material and information for fighting fires involving the material.
Flashpoint: the lowest temperature at which a liquid gives off enough vapors to ignite when a source of ignition is present.
Autoignition Temperature: the approximate temperature at which a flammable gas-air mixture will ignite without spark or flame. Vapors and gases will spontaneously ignite at lower temperatures in oxygen than in air.
Flammable Limits: the lower explosive limit (LEL) and upper explosive limit (UEL) define the range of concentration of a gas or vapor in air at which combustion can occur. For instance, an automobile carburetor controls this mixture - too lean (not enough chemical) or too rich (not enough air, as when you flood your engine), will not ignite.
Extinguishing Media: appropriate extinguishing agent(s) for the material.
Fire-fighting Procedures: Appropriate equipment and methods are indicated for limiting hazards encountered in fire situations.
Fire or Explosion Hazards: Hazards and/or conditions that may cause fire or explosions are defined.

E. Health Hazard Data

This section defines the medical signs and symptoms that may be encountered with normal exposure or overexposure to this material or its components. Information on the toxicity of the substance may also be presented. Results of animal studies are most often given. i.e. *LD_{50} (mouse)=250 mg/kg*. Usually expressed in weight of chemical per kg of body weight. LD_{50} or *lethal dose 50* is the dose of a substance that will cause the death of half the experimental animals. LC_{50} is the concentration of the substance in air that will cause the death of half the experimental animals.
Health hazard information may also distinguish the effects of acute (short term) and chronic (long-term) exposure.

F. Emergency and First Aid Procedures

Based on the toxicity of the product, degree of exposure and route of contact (eye, skin, inhalation, ingestion, injection), emergency and first aid procedures are recommended in this section.
Additional cautionary statements, i.e., *Note to Physician*, for first aid procedures, when necessary, will also appear here.

G. Reactivity Data

This section includes information regarding the stability of the material and any special storage or use considerations.

Stability: "unstable" indicates that a chemical may decompose spontaneously under normal temperatures, pressures, and mechanical shocks. Rapid decomposition produces heat and may cause fire or explosion. Conditions to avoid are listed in this section.

Incompatibility: certain chemicals, when mixed may create hazardous conditions. Incompatible chemicals should not be stored together.

Hazardous Decomposition Products: chemical substances which may be created when the chemical decomposes or burns.

Hazardous Polymerization: rapid polymerization may produce enough heat to cause containers to explode. Conditions to avoid are listed in this section.

H. Spill, Leak and Disposal Procedures

This section outlines general procedures, precautions and methods for cleanup of spills. Appropriate waste disposal methods are provided for safety and environmental protection.

I. Personal Protection Information

This section includes general information about appropriate personal protective equipment for handling this material. Many times, this section of the MSDS is written for large-scale use of the material. Appropriate personal protection may be determined by considering the amount of the material being used and the actual manipulations to be performed.

Eye Protection: recommendations are dependent upon the irritancy, corrosivity, and special handling procedures.

Skin Protection: describes the particular types of protective garments and appropriate glove materials to provide personnel protection.

Respiratory Protection: appropriate respirators for conditions exceeding the recommended occupational exposure limits.

Ventilation: airflow schemes (general, local) are listed to limit hazardous substances in the atmosphere.

APPENDIX D

Emergency Procedures for Chemical Spills/Releases

Minor Incident

Contain the spill/release

Alert others in the affected area and **Notify the Supervisor**

Call 911 if immediate medical attention is required

Consult the **MSDS** for information on proper first aid and clean-up procedures

Administer First-Aid per the MSDS, if applicable

Experienced persons may **Clean Up** the spill/release immediately

Inexperienced persons should **seek guidance** from the supervisor in charge or from EH&S at 6-3613.

All materials used during any clean-up activities should be **disposed of properly** (refer to MSDS or contact EH&S for chemical waste pickup at 6-3613).

Major or Unmanageable Incident

Call 911; the dispatcher will need to know:
A spill/release has occurred
The type/quantity of material involved
The exact location of the incident (building, room, etc.)

Immediately alert supervisor and others and **Evacuate** the affected area

Consult the **MSDS** for information on proper first aid; have the MSDS available to provide to the emergency response personnel

Administer First-Aid per the MSDS, if applicable

Do Not re-enter the area for any reason until emergency response personnel arrive and have cleared the area.

Report any information that you may have regarding the incident to the appropriate authorities.

APPENDIX E

Hazard Communication Program Periodic Review

(Reviews must be conducted at least annually by supervisors or designated personnel)

- ❑ Hazard list reviewed and updated
- ❑ MSDSs reviewed and updated
- ❑ Containers inspected for proper labeling
- ❑ Written program reviewed and modified if necessary
- ❑ Employees informed of any new hazards introduced
- ❑ Emergency procedures reviewed and modified if necessary
- ❑ New employees scheduled for training
- ❑ Employees who need refresher training identified and scheduled for training

Reviewer Name _____

Date Review Completed: _____