Carnegie Mellon University

Hazard Communication Program

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Environmental Health and Safety

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1. Purpose

The Carnegie Mellon University (CMU) Hazard Communication Program (HCP) is designed to provide accurate, up-to-date information and appropriate training for all employees who use hazardous chemicals on-site. This written HCP describes the procedures used to convey information about hazardous chemicals and meets or exceeds the requirements of OSHA's (Occupational Safety and Health Administration) Hazard Communication Standard, 29 CFR 1910.1200.

2. Policy

It is the policy of CMU to ensure that employees are aware of the physical and health hazards associated with chemicals in their work area, and of the procedures for the safe handling and use of the chemicals.

3. Scope

The HCP applies to all *non-laboratory* personnel at CMU. Note that *laboratory* personnel use of hazardous materials is addressed in the Carnegie Mellon Chemical Hygiene Plan.

Personnel whose use of hazardous chemicals is limited to consumer products, *used in the same manner as a consumer would,* are NOT addressed by this HCP.

Certain provisions of this program are not applicable to personnel whose use of hazardous chemicals consists *only of handling closed containers*. The sections on labeling, Safety Data Sheets (SDS) and training (to the extent that they may protect themselves in the event of a leak or spill) **ARE** applicable in this circumstance.

4. Availability of the Program

This written program is available to all personnel of CMU who work with hazardous chemicals. A written copy shall be accessible at each work site. An electronic copy is accessible from the Environmental Health and Safety (EHS) web site.

5. Managing and Updating the Program

The Chemical Hygiene Officer is responsible for managing and regular updates of the HCP.

6. Responsibilities

a. **University Administration**

University administration is responsible for providing executive support for the University's HCP by ensuring that there are sufficient monetary and personnel resources to administer the HCP.

b. **Area Manager, Supervisor or Department Head**

The Area Managers, supervisors or department heads (or their designees) are responsible for:

i. Determining whether there are hazardous chemicals present in their work areas (EHS is available to assist in this determination).
ii. Ensuring that chemical inventories are prepared for each area of their responsibility.
iii. Ensuring that the inventories are updated at least annually in the format provided by EHS.
iv. Ensuring that the inventory is accessible in the applicable work area either by posting or by on-line availability.
v. Ensuring that all personnel within their jurisdiction who work with hazardous chemicals receive training according to the requirements of the OSHA Hazard Communication Standard.
vi. Ensuring that new chemicals are evaluated for potential effects as hazardous chemicals before use (EHS is available to assist in this function).
vii. Ensuring that for every hazardous chemical present, an SDS is available for review at the work area, either in a paper copy or via computer.
viii. Ensuring that all chemical containers are labeled according to the requirements of the OSHA Hazard Communication Standard.
ix. Ensuring that that information (and training where appropriate) on chemical hazards present in the work area is provided to service contractors or maintenance personnel, as well as to visitors, where appropriate

c. **Environmental Health and Safety (EHS)**

EHS personnel are responsible for:

i. Assisting area managers, supervisors and department heads in the determination of the presence of hazardous chemicals in a given work area.
ii. Assisting area managers, supervisors and department heads in the evaluation of new chemicals proposed for purchase.
iii. Providing a framework for the creation and maintenance of a University-wide chemical inventory.
iv. Providing information for chemical users to obtain SDSs.
v. Performing Hazard Communication training for employees according to the OSHA Hazard Communication Standard requirements.
vi. Preparing and updating the University's written HCP, and any related documents and/or policies.
vii. Coordinating any response or interaction with OSHA regarding hazard communication.
viii. Auditing the Hazard Communication Standard compliance of individual work areas

as is deemed necessary.

d. **Personnel Using Hazardous Chemicals**

All personnel using hazardous chemicals in their work areas are responsible for:

i. Receiving OSHA Hazard Communications training.

ii. Following the procedures specified for the use and handling of hazardous chemicals, including storage, transport, labeling, protective equipment, etc.

iii. Knowing the location of the:

1. Written HCP,
2. Chemical Inventory for their work area, and
3. SDSs for the hazardous chemicals with which they work.

iv. Understanding the health hazards of the hazardous chemicals with which they work.

7. Defining Hazardous Chemicals

Hazardous chemicals shall be defined as either a health hazard or a physical hazard (or both).

a. Health hazard - a chemical for which there is significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed personnel. The term "health hazard" includes chemicals which are carcinogenic, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, or agents which damage the lungs, skin, eyes, mucous membranes, liver, kidneys or other target organs.

b. Physical hazard - a chemical for which there is scientifically valid evidence that it is a corrosive, an oxidizer, a combustible liquid, a compressed gas, an explosive, a flammable, an organic peroxide and unstable (reactive) or water reactive.

CMU will rely on the hazard determinations made by the manufacturers of the chemicals that are used on-site. This hazard information is available from labels and SDSs. For by-products and intermediates produced on site, standard reference texts, toxicological databases and the OSHA Hazard Communication Standard will be used to identify any hazards and to prepare appropriate labels. EHS will coordinate these efforts along with the appropriate user.

8. Hazardous Chemicals Location and Inventory

a. **Listing of sites with hazardous chemicals present (this list is not exhaustive)**

The following areas of the university have hazardous chemicals present (note that laboratories are not included in this listing):

i. Facilities Management Services

ii. Housing Services

iii. College of Fine Arts: (Art, Drama, Design, Architecture, etc.)
iv. Photographic development areas
v. Robotics
vi. Integrated Innovation Institute (III)
vii. 6555 Penn Avenue
viii. Athletics
ix. Printing, Copying and Publication Services
x. Student Health Services
xi. Maker Spaces (laser cutters, 3D printers, soldering, etc.)
xii. Groups with facility managers or coordinators who may handle hazardous materials

b. **Inventory Information**

An inventory of hazardous chemicals present in each work area is to be prepared under the direction of the area supervisor, manager or department head. Chemical inventories should be created and updated in the university's Chemtracker system.

The inventory of hazardous chemicals for each work area:

i. Must be accessible to all personnel during their work shift, either through electronic or paper means.
ii. Should be updated as changes are made.
iii. Should be submitted to EHS upon preparation and after each update.

9. Labels and Warnings

a. **Labeling Systems in Use**

For incoming materials, CMU relies on the manufacturer's label, providing it meets the requirements of the current Hazard Communication Standard. This label will have the following information present:

i. The identity of the hazardous chemicals contained.
ii. Appropriate hazard warnings that provide at least general information regarding the hazards of the chemicals.
iii. The name and address of the chemical manufacturer.

Products with labels not meeting this requirement will either be returned to the manufacturer or relabeled properly. It is strongly encouraged that all personnel order materials from manufacturers with compliant labels.

A secondary container is one to which the hazardous materials have been transferred from the original containers. All secondary container labels must have the following information present:

i. The identity of the hazardous chemicals contained.

ii. Appropriate hazard warnings that provide at least general information regarding the hazards of the chemicals.

EHS will assist in the preparation of any secondary container labels. Frequently, the information needed for the completion of the label can be obtained from the SDS.

b. **Label Requirements and Procedures**

i. Manufacturer-supplied labels shall not be removed or defaced except under the following conditions:
   1. The label does not meet the requirements of the standard.
   2. The container has been emptied and will either be disposed of or used for a different material.

ii. The OSHA Hazard Communication Standard requires that labels for secondary containers display at least the following information:
   1. The identity of the hazardous material(s).
   2. Appropriate hazard warnings (i.e., text, pictures, symbols or any combination that provides at least general information regarding the hazards of the chemical and which, in conjunction with the other information immediately available to employees, will provide specific information regarding the physical and health hazards of the material).

iii. Signs, placards, or other written materials may be used when labels are impractical for an *individual stationary process container* (such as a tank or pipe) as long as they supply the same information as a label.

iv. Containers into which hazardous materials are transferred (on campus) must be labeled according to the specifications in (4.2.2) above, with the exception of containers that are intended only for the immediate use of the employee performing the transfer. For the purposes of this standard, “immediate use” means a container that will always be under the control of and used only by the person who performs the transfer and only within the work shift in which it is transferred.

v. The contents of any unlabeled containers may be sampled and analyzed at the “owning” department’s expense to determine the identity of the material(s) in the container.

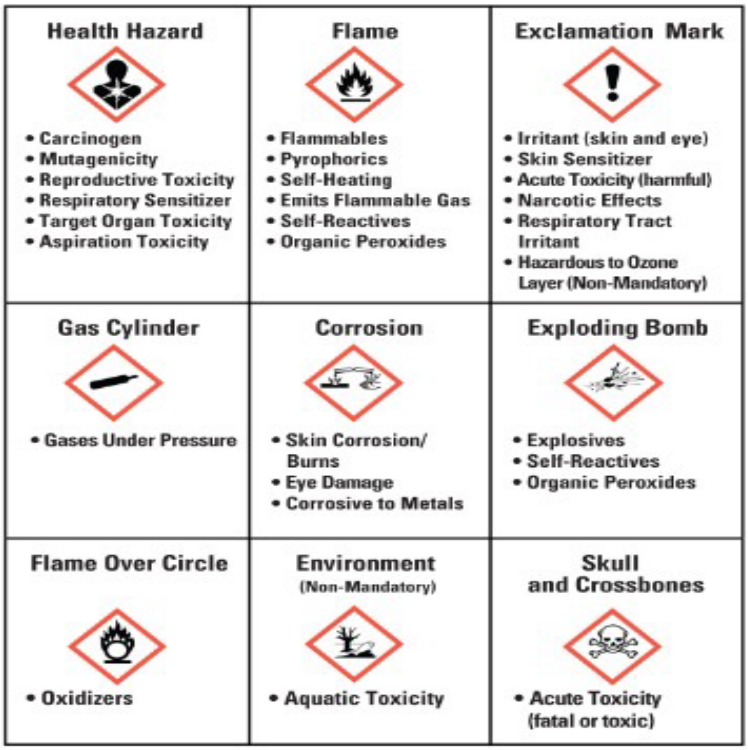
vi. In the event in a change in the hazard information, it is the responsibility of the area supervisor, manager or department head to ensure that updated label information be present on a container label. When an updated SDS is received, it must be reviewed to determine the need for different labeling information. EHS is available for assistance with this task.

c. **Globally Harmonized System – Pictograms**

In March of 2012, OSHA adopted the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals, which requires pictograms to be placed on labels and SDSs. Pictograms are graphic representations to alert personnel of the chemical hazards to which they may be exposed.

The university requires the pictograms to be present on chemical labels, including on secondary containers. Figure 1 identifies the pictograms:

Figure 1: Pictograms and Hazards



10. Safety Data Sheets

a. **Safety Data Sheet Requirements and Procedures**

Note that the terminology "Material Safety Data Sheet" or MSDS has been changed slightly with the adoption of the GHS. The document is referred to as a "Safety Data Sheet" or SDS.

SDSs are required to be available to personnel in their work area, for every hazardous chemical in the area's inventory. It is the responsibility of the area manager, supervisor or department head to ensure that this requirement is met. No chemical may be used on-site unless the SDS has been received and is available in the work area in which the chemical is to be used. If no SDS is present, one of the following must be performed:

i. Contact the manufacturer and request the SDS.

ii. Go to the EHS web site and view or print the SDS from Velocity EHS.

If no SDS is available, the product must be returned to the manufacturer. Contact EHS at 412-268-8182 to ensure that any shipment of hazardous materials is performed properly.

All SDSs must meet the sixteen-section format requirement and other requirements outlined in the Hazard Communication Standard, 29 CFR 1910.1200 (g)(2). Any SDS not meeting the requirements must be removed from the work site. Note: SDSs in the format labeled "OSHA Form 20" are *not* acceptable.

The area supervisor, manager or department head is responsible for ensuring that only the current SDS is placed in the active file or book. All outdated SDSs must be removed from circulation.

It is recommended that the SDS be present in hard copy format in each work area, although it is permitted to meet this requirement through SDSs available on the CMU web page. The format and mechanism of the availability of SDSs is left to the discretion of the area manager, supervisor or department head. The most current version of the SDS shall be retained.

SDSs shall be accessible in each work area where the hazardous chemical is used.

With the adoption of the GHS, there are also changes in hazard ratings and rankings, which are found on the SDS. See Table 2 below:

Table 2: Hazard Ratings and Rankings

	**THE NFPA SYSTEM:** The NFPA system has hazard numbers ranging from 0 to 4, ***with 4 being the most hazardous and 0 being the least hazardous.***	**THE GHS SYSTEM:** The GHS system has hazard numbers ranging from 1 to 4, ***with 1 being the most hazardous and 4 being the least hazardous.***

11. Information and Training

CMU provides training to all personnel handling or using hazardous chemicals. This training will be performed at initial assignment and again when a new hazard is introduced into the work area. The initial training will be performed and documented by the EHS department. It is the

responsibility of the area supervisor to ensure that personnel attend training when it is necessary.

a. **Training Specifications**

Hazard Communication training shall address the following topics:

i. Description of the OSHA Standard.
ii. How to read SDS and where they are located in the work area.
iii. How to read container labels.
iv. Where the inventory is located in the work area and where the hazardous chemicals are located or being used in the area.
v. Where to locate a copy of the written HCP and the OSHA standard.
vi. Specific information on the chemical the personnel will work with, such as possible health or physical hazards (and how to detect them), ways to protect oneself from exposure, engineering controls or use of protective equipment and emergency response procedures.
vii. The details of the GHS changes, including new pictograms and the new hazard rating system.

12. Contractor/Visitor Information

a. **Contractor Procedures**

The area manager, supervisor or department head is responsible for conveying hazard information to all contractors working in their area(s).

Specific information that must be provided to contractors includes:

i. Either the SDS or the location of the SDS for the chemical(s) which they may come in contact with.
ii. Instruction in the use of the labeling systems present in the area.
iii. Instruction in the proper handling procedures for any hazardous chemical(s) present in the area, where applicable.
iv. Instruction in the use of any engineering controls or protective equipment used when handling the chemical(s), if applicable.
v. Instruction in the emergency response procedures, such as for fire, explosion, chemical leak, chemical exposure or health problem.

b. **Visitor Procedures**

For the protection of visitors present in areas where hazardous chemicals are stored or used, information must be given on these chemicals appropriate to the potential for exposure. The area manager, supervisor or department head is responsible for providing this information. The potential for exposure is dependent on whether the visitor is escorted or not, and the types and quantities of hazardous chemicals present. Escorted

visitors with little or no potential for exposure need only receive basic warning information. Unescorted visitors should follow the requirements for contractors (section 12a) where there is potential for exposure to hazardous chemicals.

13. References

a. **The Hazard Communication Standard, 29 CFR 1910.1200: https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1200**

b. **Chemical Hygiene Plan (CMU written document addressing laboratory exposures)**

c. **Radiation Safety Plan (CMU written document addressing radiation exposures)**