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# HAZARD COMMUNICATION

Written Program

## Introduction

### PURPOSE

To establish procedures for Miami University employees who use, handle, and store chemical products at Miami University facilities and ensure that the hazards of all chemicals purchased or produced are evaluated and the information concerning their hazards is transmitted to employees (including contractors). The delivery of information is to be accomplished by employee training, container labeling and other forms of warning, and Material Safety Data Sheets (MSDSs).

### REFERENCES

Occupational Safety and Health Administration. *Code of Federal Regulations*. Chapter 29, Part 1910, Section 1200, "Hazard Communication." (29 CFR 1910.1200)

### ABBREVIATIONS

*The following abbreviations appear in this program:*

EHSO	Environmental Health and Safety Office
HAZCOM	Hazard Communication
HMIS	Hazardous Materials Identification System
MSDS(s)	Material Safety Data Sheet(s)
MU	Miami University
OSHA	Occupational Safety and Health Administration
PERR(P)	Public Employment Risk Reduction (Program)
PPE	Personal Protective Equipment

### PROLOGUE

The HAZCOM Program is established to ensure MU employees are informed of the potential hazards associated with the handling, use, and storage of chemical products as well as addressing the requirements of PERRP HAZCOM Standard. In keeping with the requirements of this program, all employees who are potentially exposed to chemical products shall receive information and training, as required by the standard, so that they may understand, participate in, and support the measures that are established at MU to protect them from the potential hazards of chemical products.

To implement a comprehensive HAZCOM program for MU employees who are exposed to chemical products, initial training, industrial hygiene monitoring (as appropriate), and access to MSDSs shall be provided.

All policies, provisions, and procedures listed in this program are the responsibility of MU. Employees and contractors are required to comply with all aspects of this program. Any employee who willfully violates or disregards provisions of this policy will be subject to disciplinary action as specified by University policy. Any contractor who willfully violates or disregards provisions of this policy will be subject to penalties up to and including removal from the job and/or loss of contract according to the provisions of the contract. This program applies to laboratories under certain conditions. Refer to Miami University's Laboratory Standard and Chemical Hygiene Plan.

## REVISIONS

EHSO shall review the HAZCOM Program at least annually, or more often if necessary. Only EHSO can add, delete, or modify any material in this program. Requests for changes in the program may be submitted in writing to EHSO.

## ACCESSIBILITY

A copy of the HAZCOM Program is located in EHSO. Departments can obtain a copy by contacting the Health and Safety Program Coordinator in EHSO. Employees can obtain a copy through their supervisor.

## DEFINITIONS

**Acute Effect:** An adverse health effect resulting from a single, short-term exposure to a hazardous substance.

**Article:** A manufactured item that is formed to a specific shape or design during manufacture; which has end use function(s) dependent in whole or in part upon its shape or design during end use; and which does not release, or otherwise result in exposure to, a hazardous chemical, under normal conditions of use.

**Chemical:** Any element, chemical compound or mixture of elements and/or compounds.

**Chemical Manufacturer:** An employer with a workplace where chemical(s) are produced for use or distribution.

**Chemical Name:** The scientific designation of a chemical according to the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature, or a name that will clearly identify the chemical to conduct a hazard evaluation.

**Chronic Effect:** An adverse health effect resulting from a long-term exposure to a hazardous substance with symptoms that develop gradually over time, or that recur frequently.

**Combustible Liquid:** Any liquid having a flashpoint at or above 100° F (37.8° C), but below 200° F (93.3° C), except any mixture having components with flashpoints of 200° F (93.3° C), or higher, the total volume of which make up 99% or more of the total volume of the mixture.

**Common Name:** Any designation or identification such as code name, code number, trade name, brand name or generic name used to identify a chemical other than by its chemical name.

**Compressed Gas:** A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 PSI at 70° F (21.1° C); or a gas or mixture of gases having, in a container, an absolute pressure exceeding 104 PSI at 130° F (54.4° C) regardless of the pressure at 70° F (21.1° C); or a liquid having a vapor pressure exceeding 40 PSI at 100° F (37.8° C) as determined by ASTM D-323-72.

**Container:** Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of this program, pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

**Designated Representative:** Any individual or organization to whom an employee gives written authorization to exercise such employee's rights under this section. A recognized or certified collective bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization.

**Distributor:** A business, other than a chemical manufacturer or importer, which supplies hazardous chemicals to other distributors or to employers.

**Employee:** A MU faculty member, staff member, student worker, or contract employee who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies. (Workers who encounter hazardous chemicals only in non-routine, isolated instances are not covered.)

**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.

**Explosive:** A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

**Exposure or exposed:** A situation in which an employee is subjected to a hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.), and includes potential (e.g., accidental or possible) exposure.

**Flammable:** A chemical that falls into one of the following categories:

- a. *Aerosol, flammable:* An aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening.
- b. *Gas, flammable:*
  - (1) A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of thirteen percent (13%) by volume or less.
  - (2) A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than twelve percent (12%) by volume, regardless of the lower limit.
- c. *Liquid, flammable:* Any liquid having a flashpoint below 100° F (37.8° C), except any mixture having components with flashpoints of 100° F (37.8° C) or higher, the total of which make up 99% or more of the total volume of the mixture.
- d. *Solid, flammable:* A solid, other than a blasting agent or explosive as defined in 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

**Flashpoint:** The minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite.

- Organic peroxides, which undergo auto-accelerating thermal decomposition, are excluded from any of the flashpoint determination methods.

**Foreseeable Emergency:** Any potential occurrence that could result in an uncontrolled release of a hazardous chemical into the workplace (e.g., equipment failure, rupture of containers, failure of control equipment, etc.).

**Hazard Category:** A method of classifying a chemical, using the HMIS system, in terms of flammability, health hazard (toxicity), reactivity, whether it requires the user to wear personal protective equipment, and any target organ information. Each category is assigned a numerical hazard degree (0-4).

**Hazardous Chemical:** Any chemical or chemical-containing product which presents a physical or health hazard.

**Hazard Warning:** Any words, pictures, symbols, or combination thereof appearing on a label or other appropriate form of warning which convey the specific physical or health hazard(s), including target organ effects, of the chemical(s) in the container(s).

**Health Hazard:** Any chemical for which there is statistically 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 employees. The term includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins (toxic to the liver), nephrotoxins (toxic to the kidneys), neurotoxins (toxic to the nervous system), agents which act on the hematopoietic system (blood forming), and agents which damage the lungs, skin, eyes, or mucous membranes.

**Identity:** Any chemical or common name which is indicated on the material safety data sheet (MSDS) for the chemical. The identity used shall permit cross-references to be made among the required list of hazardous chemicals, the label and the MSDS.

**Immediate Use:** A situation in which a hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

**Importer:** The first business with employees within the Customs Territory of the United States which receives hazardous chemicals produced in other countries for the purpose of supplying them to distributors or employers within the United States.

**Label:** Any written, printed, or graphic material, displayed on or affixed to containers of hazardous chemicals.

**Material Safety Data Sheet (MSDS):** Written or printed material concerning a hazardous chemical which is prepared in accordance with the “Material Data Safety Sheet” section of this program.

**Miami University:** The Miami University main campus in Oxford, Ohio and its regional campuses.

**Mixture:** Any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

**Organic Peroxide:** An organic compound that contains the bivalent -O-O-structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

**Oxidizer:** A chemical other than a blasting agent or explosive as defined in 1910.109(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

**Physical Hazard:** A chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

**Produce:** To manufacture, process, formulate, or repackage.

**Product Name:** (See "Common Name.")

**Pyrophoric:** A chemical that will ignite spontaneously in air at a temperature of 130° F (54.4° C) or below.

**Readily Accessible:** The condition whereby an employee can easily retrieve, within a reasonable amount of time, information or materials required to perform their job duties.

**Responsible Party:** Someone who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

**Route of Entry:** The means by which a material may enter the body.

**Specific Chemical Identity:** The chemical name, Chemical Abstracts Service (CAS) Registry Number, or any other information that reveals the precise chemical designation of the substance.

**Unstable (reactive):** A chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure or temperature.

**Use:** To package, handle, react, or transfer.

**Water-Reactive:** A chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

**Work Area:** A room or defined space in a workplace where hazardous chemicals may be used, and where employees are present.

**Workplace:** An establishment, job site, or project, at one geographical location containing one or more work areas.

## Material Safety Data Sheets

All existing chemicals in use at MU shall have the most current MSDS on file.

EHSO shall be provided a MSDS for sealed containers of any hazardous chemical received before the chemical is distributed. If an incoming hazardous chemical does not have an accompanying MSDS, the chemical shall be held in a storage location until the MSDS has been received and is provided to, and is reviewed by EHSO (This includes materials received as samples for evaluation that are requested by authorized university personnel). Any department that receives a MSDS with a chemical shipment shall immediately route the original to EHSO.

A master file of MSDSs representing each chemical product used on campus shall be maintained by EHSO.

### ACCESSIBILITY

MSDSs may be kept in any form and shall be made accessible to employees and their representatives through one of the following methods:

- *Computer access:* CD-ROM through MU's Campus Network.
- *Master File:* Available from EHSO upon written request during normal business hours for reference.
- *Departmental Copies:* chemicals specific to a given building, room, or work area.

Departments shall ensure that in all cases the required information is provided for each hazardous chemical, and is readily accessible during each work shift to employees when they are in their work area(s).

Where employees must travel between workplaces during a workshift, the MSDS may be kept at a central location at the primary workplace facility. Departments shall ensure that their employees can immediately obtain the required information in an emergency.

## Chemical Inventories/Audits

EHSO shall generate and maintain a comprehensive chemical inventory and update it periodically. The inventory record shall reflect the identity and campus location of the chemical or chemical-containing product. Each hazardous chemical listed on the inventory shall have its corresponding MSDS on file in EHSO and be available upon request to those employees or their representatives who are authorized to use the chemical.

## Contractor Coordination

Contractors shall exchange hazard communication information with the project manager before starting work.

Contractors shall submit documentation of their employees' most recent OSHA Hazard Communication training.

Contractors planning to bring chemicals on campus shall provide the Project Manager with a list of those chemicals prior to starting work. In addition, the contractor shall have corresponding Material Safety Data Sheets (MSDS) accessible on-site for the duration of work operations. If applicable, the contractor shall explain their labeling system to the Project Manager.

A campus-wide chemical inventory is maintained by the Environmental Health and Safety Office (EHSO). The contractor can obtain a list of chemicals in a given work area by submitting a written request to EHSO at least three business days in advance.

## Employee Information and Training

Information and training shall be provided to employees regarding hazardous chemicals in their work area before their initial assignment, and whenever a new hazard is introduced into their work area before it is used. All employees (including new, temporary, transferred, part-time, and student employees), working with or potentially exposed to hazardous chemicals will be trained regarding the potential hazards to which they may be exposed prior to or at the time of their initial assignment to work with the chemicals. Employees are responsible for participating in HAZCOM training, understanding emergency procedures, using the correct personal protective equipment when working with or around hazardous chemicals, and practicing safe and sensible work habits.

Departments are responsible for informing EHSO in writing of any employees that may require training under this program before, or at the time of their initial assignment to work with hazardous chemicals. If a new hazardous chemical is introduced in the workplace that was not covered in the employee's most recent training, the supervisor is responsible for providing training and informing EHSO in writing *at least monthly*.

HAZCOM training shall involve classroom instruction and cover the informational and training requirements specified in this program. Employees shall be required to sign a training roster upon completion of the training program which shall be maintained by EHSO.

Retraining shall be provided whenever there is a change in an employee's job assignments or duties that presents a new hazard that was not covered in the employee's most recent training. Retraining shall also be conducted whenever an inspection reveals, or when there is reason to believe, that there are deviations from or inadequacies in the employee's knowledge of HAZCOM principles.

## TRAINING PROGRAM ELEMENTS

### Information

*Employees shall be informed of:*

- 1 The requirements of this program.
- 2 Operations in their work area where hazardous chemicals are present.
- 3 The location and availability of the written HAZCOM program, including the required list(s) of hazardous chemicals, and MSDSs.
- 4 Procedures for accessing MSDSs on CD-ROM through MU's Campus Network, where applicable.

### Training

*Employee training shall include:*

- 1 The details of MU's HAZCOM Program, including an explanation of the HMIS labeling system, MSDSs, and how employees can obtain and use the appropriate hazard information.
- 2 Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area.
- 3 The physical and health hazards of the chemicals in the work area.
- 4 The engineering controls, administrative controls, or personal protective equipment to reduce the risk from these hazards, including specific procedures that have been established to protect employees from exposure to hazardous chemicals.

## Labels and Other Forms of Warning

### GENERAL

All hazardous chemicals at MU shall have appropriate labeling. Any label that becomes damaged, defaced, or illegible shall be replaced with a new label. Labeling compliance shall be the responsibility of the department that receives the material and each department shall ensure that its hazardous chemicals stored in small containers are properly labeled in accordance with this program. In work operations where employees only handle chemicals in sealed containers which are not opened under normal conditions of use (such as in a receiving area), the department shall ensure that labels on incoming containers of hazardous chemicals are not removed or defaced. During periodic inspections, EHSO shall verify that departments are complying with the labeling requirements of this program.

Labels or other forms of warning shall comply with either the labeling requirements of this program or with the Hazardous Materials Identification System guidelines. Existing labels shall not be removed or defaced from incoming containers of hazardous chemicals if they indicate the required information. Labels or other forms of warning shall be legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift. *Employees are not required to affix new labels to comply with this program if existing labels already convey the required information.*

### HMIS LABELING SYSTEM

The Hazardous Materials Identification System (HMIS) is a method of classifying a chemical's hazard in terms of flammability, reactivity, and health (toxicity). This classification enables the user to determine what precautions he/she needs to be aware of when working with or around the chemical. The chemical is rated in each of the three hazard categories (flammability, reactivity, and health (toxicity)). The degree of the hazard, minimal to severe, is represented by a number (0 to 4). In addition to the three hazard categories, the HMIS system also indicates whether the user needs to wear/use personal protective equipment and specifies any target organs that may be affected by chronic exposure to the chemical.

### LABEL CONTENT REQUIREMENTS

Each container of hazardous chemicals in the workplace shall be labeled, tagged, or marked with the following:

- 1** Name of the product and the hazardous chemical(s) present in the container.
- 2** Appropriate hazard warnings (e.g., flammable, corrosive, toxic), including specific warnings for carcinogens, mutagens, and teratogens.
- 3** A listing of possible health hazards and target organs.
- 4** Appropriate recommendations for proper safety precautions.
- 5** Name and address (and phone number if possible) of the chemical manufacturer, importer, or other responsible party.

### **SECONDARY CONTAINERS**

If a hazardous chemical is transferred from its original container to another container, the secondary container must also be labeled as indicated above. However, no label is required if a hazardous chemical is transferred into a portable secondary container and used during that work period by the same employee who dispensed it from the original container. If the hazardous chemical in the portable container is not completely used by the end of the shift, it must be returned to the labeled container.

### **ALTERNATIVE LABELING**

Employees may use signs, placards, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable and conveys the information required (in #1 and 2 above) to be on a label. The written materials will be readily accessible to the employees in their work area throughout each work shift.