AMERICAN UNIVERSITY

WASHINGTON, DC

Hazard Communication Program

AURM-EHSP-018-2014

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1.0 Purpose

It is the policy of the American University to ensure a safe and healthful work environment for all employees. For chemical hygiene and safety, this is achieved through the implementation of the comprehensive Hazard Communication Program (HCP) and a Chemical Hygiene Program (CHP)

The Hazard Communication Program (HCP) provides access to information regarding the hazardous nature and safe use of chemicals at American University in non-laboratory settings.

The Chemical Hygiene Plan applies to American University College of Arts are Sciences Biology, Chemistry and Psychology research and teaching laboratories as well as chemical stockrooms. The Chemical Hygiene Plan and Hazard Communication Program are aligned for a common approach to requirements for labeling requirements, training, and material data safety sheet (MSDS) and/or safety data sheets (SDS)

Additionally, the Hazard Communication Program is not intended to address radiological safety and/or radiological safe work procedures, hearing conservation (except in the case of ototoxic agents) or any other non-chemical physical hazards.

Other physical hazards (noise, vibration, heat, errant electricity, etc.) are addressed in individual SOPs oriented for the specific hazard. Employees are trained for specific safe work practices with regards to physical hazards as they apply to job classification and/or special project involvement.

2.0 Scope/Field of Application

The Hazard Communication Program applies to all American University faculty and staff at all American University facilities and project sites, with the exception of laboratories. It also applies to all facilities and personnel that use, store, or transport chemicals.

The HCP is incorporated by reference into the university's Chemical Hygiene Plan, which applies to College of Arts and Sciences research and teaching laboratories.

3.0 Responsibilities

3.1 Chemical Hygiene Officer

The Chemical Hygiene Officer (CHO) has the responsibility for ensuring that the HCP is implemented in American University facilities. CHO services for Facilities Management is provided by the Environmental Health & Safety office. Duties include:

- Understanding the provisions of the HCP and how they are implemented in each department engaging in the use of chemicals.
- Maintaining the MSDS library.

- Understanding the current requirements for regulated chemicals.
- Direct/implement training and education programs for employees specific to the CHP
- Write hazard determinations and risk assessments for processes and projects requiring the use of chemicals.
- Ensure that containers of chemicals in the laboratory and storage areas are properly labeled.
- Annually review and update the HCP as required by changes in procedures, processes, addition/subtraction of chemicals and regulations related to chemical use.

3.2 Facilities Management Directors and Assistant Directors

Facilities management is responsible for understanding the Hazard Communication program and its implementation in their respective work areas. These managers must ensure that laboratory employees within their area are implementing the HCP in accordance with the written program.

3.3 Facilities Management Supervisors

The Laboratory Supervisors have primary responsibility for maintaining chemical hygiene and safety in their laboratory, this includes:

- Understanding the provisions of the HCP and implementing the program in each work area supervised
- Ensure that all employees are trained on and follow the HCP
- Ensure appropriate labeling of chemical containers
- Understand and interpret Safety Data Sheets
- Understand and abide by warning labels
- Ensure that facilities for use of any chemical and material being ordered are adequate
- Ensure employees are informed of any hazards inherent to the chemicals in use or storage
- Containers of hazardous chemicals are properly labeled and that safety data sheets are readily available
- Possess a general knowledge of regulatory requirements concerning chemicals and materials

3.4 Facilities Management Employees

Employees are responsible for planning and conducting each laboratory operation in accordance with the procedures detailed in this program. Specific responsibilities include:

- Understanding the HCP and its application to the employee's job functionality;
- Gain knowledge of chemical hazards in the workplace through participating in training programs and reviewing MSDS;
- Ensure that chemical containers are properly labeled and report missing/illegible labels to the Supervisor or CHO.

4.0 Regulated Materials

The Hazard Communication Standard is specific with respects to the categories of materials for which MSDS acquisition, labeling and training are applicable and not applicable.

4.1 Materials subject to the standard:

- Pesticides when subjected to the labeling requirements of FIFRA (7 U.S.C. 136 et seq.)
- Chemical substances or mixtures as defined and subject to the labeling requirements of TSCA (15 U.S.C. 2601 et seq.) including wood or wood products treated with such substances or mixtures.
- All food, drug, food additives, color additives, cosmetics, medical/veterinary devices or products as defined by and subject to the labeling requirements of the FFDCA (21 U.S.C. 301 et seq.) or by the Virus-Serum-Toxin Act of 1913 (21 U.S.C. 151 et seq.)
- All distilled spirits, wine or malt beverages as defined by and subject to the labeling requirements of Federal Alcohol Administration Act (27 U.S.C. 201 et seq.)
- Any consumer product or hazardous substance as defined by and subject to the labeling requirements of the CPSA (15 U.S.C. 2051 et seq.) and by the Federal Hazardous Substance Act (15 U.S.C. 1261 et seq.)
- Agriculture and/or vegetable seed treated with pesticides and labeled in accordance with the Federal Seed Act (7 U.S.C. 1551 et seq.)

4.2 Materials not subject to the standard

- Any hazardous substance as defined by CERCLA (42 U.S.C. 9601 et seq.) when it is the focus of a CERCLA remedial or removal action.
- Tobacco and tobacco products
- Wood or wood products where the only hazard is flammability or combustibility as certified by the manufacturer.
- Food and Beverages sold or prepared for use in retail establishments.
- Any over the counter drug and prescription drugs intended solely for use by an employee. All first aid supplies intended for use at the facility are also exempted.
- Any cosmetics packaged and intended for consumer use.
- Any consumer product including hazardous substances as defined by the CPSA and FHSA were the use of the product is used at the workplace as intended by the manufacturer and when the exposure to the worker is equivalent to exposure from the intended use.

5.0 Chemical Inventory

A chemical inventory must be maintained for all chemicals in use/storage within American University facilities. The CHO will add new chemicals to the inventory upon notification from Facilities supervisors or employees.

Formal chemical inventory will be audited quarterly during or in addition to the scheduled safety inspection. The CHO or designee will complete the inventory of all chemicals in use and/or storage. This inventory will be the basis for audit/review of the safety data sheet library.

5.1 Safety Data Sheets

A MSDS library is maintained for all chemicals received at each facility in accordance with the list of materials that are regulated by the Standard (see Section 6: Hazard Communication Regulated Materials). SOP-SWI-007 defines the Acquisition, Use and Maintenance of the MSDS library.

According to the Hazard Communication Standard, manufacturers and importers are responsible for development and distribution of MSDS for all chemicals and mixtures as defined in Section 6. MSDS may precede the shipment of chemicals or may be submitted with the shipment.

The MSDS inventory is available to all employees and visitors on the Environmental Health & Safety website under "Hazard Communication."

Any chemical or commercial formulation without an MSDS may NOT be used until a current MSDS is obtained. Should a chemical be received without a MSDS, the facility's supervisor must notify the CHO and suspend use of the material until an MSDS is located or until an exemption of the material for the Standard can be verified.

5.2 Globally Harmonized System (GHS)

Training for the new hazard communication standard, including an introduction to the Globally Harmonized System, or GHS, will take place by December 2013.

Chemical labels and Safety Data Sheets will be in the GHS format by June 2016.

6.0 Container Labeling and Information Transfer

6.1 Training

All American University employees actively engaged in handling hazardous materials will participate in annual Hazard Communication training. All laboratory employees and visitors engaging in activities involving hazardous materials are to have Hazard Communication training at the beginning of employment or involvement in laboratory work and then annually thereafter.

Training will be conducted by the laboratory supervisor or the CHO and will minimally include the following:

- MSDS Use and Interpretation
- Specific hazards in the area of employment
- Review of this Hazard Communication program and associated Safe Work Instruction SOPs as well as the OSHA Hazard Communication Standard
- Review of HMIS and NFPA labeling systems.

6.2 Container Labeling

Hazardous Materials Identification System (HMIS) Labeling:

All American University facilities employ the Hazardous Materials Information System (HMIS) to communicate the health, flammability and physical hazards for chemicals drawn from larger vessels into non-manufacturer specifically labeled containers.

The laboratory is not required by the Hazard Communication Standard to label chemicals that are in manufacturer or importer labeled containers. Chemical container labels must not be removed or defaced or made otherwise illegible in any fashion.

Should a container require a HMIS label for a chemical not included in the current HMIS system, the employee must notify the CHSO of name of the chemical. The CHSO will then generate a HMIS equivalent label.

National Fire Prevention Association Labeling:

Manufacture container labels often exhibit the NFPA hazard diamond. Employees will receive training in interpretation of the NFPA diamond during Hazard Communication training.

6.3 Hazard Communication Warning Signs

Employees and visitors must be informed of general laboratory chemical hazards. Warning signs for laboratories and projects hazards must consist of at least the following where appropriate:

- Mandatory or Recommended Personal Protective Equipment: warning sign to be posted at entrance to laboratory or project room.
- Non-Comestible Food/Beverage: warning sign to be posted on refrigeration unit.
- Storage for acids, bases, other reactive chemicals: warning sign to be posted on the chemical storage cabinet. Warning signs should include precautions for non-compatible substances.
- Notification of any safety equipment or devices that are out of service: Warning sign to be posted at most prominent location.

- Specific Compressed Gas Hazard: warning sign to be posted on the cylinder or at the entrance to the cylinder storage whichever is most prominent.
- Specific Use Ventilation Hoods (i.e. perchloric acid): warning signs for any non-compatible substances to be posted on the hood sash.

7.0 Hazard Characterization

7.1 Flammable or Combustible

- Flammable Liquid: flashpoint below 100oF
- Combustible Liquid: flashpoint between 100oF and 200oF
- Flammable Aerosol: flame projection of 18 inches at full valve opening or flashback at any valve opening.
- Flammable Gas: any gas at STP and at concentrations of <13% forms a flammable mixture with air or any gas that forms a flammable mixture with air where the difference between the UFL and LFL is greater than 12%.
- Flammable Solid: any solid that will ignite upon friction, absorption of moisture, spontaneous change in chemical formula, retained process or manufacture heat, and any solid when ignited burns persistently and vigorously.

7.2 Reactive

Reactive substances are herein defined as those materials that promote an oxidation reaction (oxidizers).

7.3 Explosive

- Any material with the ability to rapidly release of pressure, gas or heat upon exposure to a sudden shock, impact or heat.
- Compressed gases are recognized as explosive by the Hazard Communication standard when:
    - Gas mixture with pressure of greater than 40 psi at 70oF
    - Gas mixture with pressure of >104 psi at 130oF, regardless of atmospheric pressure.
    - Liquid vapor pressure greater than 40 psi at 100oF.

7.4 Corrosive (Caustic)

Corrosive or caustic agents for the purposes of health and safety are those substances that an inflict tissue destruction at skin surface, eyes, and respiratory tract. (Acids, bases, dehydrating agents)

7.5 Toxic Agents

- Carcinogens: those substances defined as cancer causing agents per:
  - OSHA regulation
  - IARC: Group 1 and Group 1B Carcinogens
  - NTC: listed as a carcinogen or potentially carcinogenic.
- Genotoxins: inducing deleterious action on genetic integrity. Genotoxic substances are potentially mutagenic or carcinogenic
- Human Reproductive Toxins:
  - Mutagenicity: substances capable of causing changes in the DNA.
  - Teratotoxicity: substances capable of causing malformation or injury to the fetus or embryo.
- Systematic toxic agents: substances defined inducing illness or injury to particular target organ(s) or system (hepatotoxins, nephrotoxins, hematopoetic toxins, etc.)
- Sensitizers: substances capable of eliciting an allergenic response in humans and/or animals upon repeated exposure.

8.0 Facility Safety and Hygiene Inspections

The American University realizes the importance of good housekeeping practices in reducing accidents and other safety hazards. Formal chemical hygiene and safety inspections are the responsibility of the CHSO and/or Safety Committee delegates. SOP-SWI-009 defines the activities involved with the safety and hygiene inspections including the schedule, inspection and reporting requirements, responsible parties, and violation redress. Inspections include verification of Hazard Communication appropriate labeling. Inspectors will report findings on missing or illegible manufacturer's labels as well as inappropriately labeled non-manufacturer containers.

9.0 Documentation/Record Control

9.1 Records

- Hazard communication program associated records include the following:
- MSDS
- Hazard Communication Training
- Chemical inventory
- Hazard/risk assessments (SOP-SWI-011)

9.2 Document and Record Security

All Hazard Communication related records are available for all staff and management review. MSDS sheets are available at the locations noted in section 8.2. Staff or visitors should contact

the facility Safety Director, CHO and/or Safety Officer for all other hazard communication related documents.

10.0 Community Right-to-Know and Emergency Planning

American University monitors and reports hazardous chemicals in accordance with the threshold planning quantities set forth by community right-to-know reporting requirements and the EPA's Emergency and Hazardous Chemical Inventory Forms.

11.0 Contract Employees Notification

Contract employees must be informed about the hazardous chemicals they may be exposed to while performing work at American University. This information should be provided by the AU project manager, but may also be requested at any time through the Environmental Health and Safety office.

Contractors bringing hazardous materials onto American University-owned property should have a hazard communication program that meets all OSHA requirements set forth in 29 CFR 1910.1200 and provide all chemical data sheets to the AU project manager prior to bringing the materials on-site.

12.0 Abbreviations

ACGIH:	American Conference of Governmental Industrial Hygienists
AIHA:	American Industrial Hygiene Association
ANPRM:	Advance Notice of Proposed Rulemaking
BEI:	Biological Exposure Index (ACGIH)
CERCLA:	Comprehensive Environmental Response, Compensation and Liability Act.
CPSA:	Consumer Product Safety Act
CFR:	Code of Federal Regulations
CNS:	Central Nervous System
FFDCA:	Federal Food, Drug, and Cosmetic Act
FHSA:	Federal Hazardous Substances Act
FIFRA:	Federal Insecticide, Fungicide and Rodenticide Act.
F.R.:	Federal Register

GHS:	Globally Harmonized System
IARC:	International Agency for Research on Cancer
IDLH:	Immediately Dangerous to Life and Health
MSDS:	Material Data Safety Sheet
NIC:	Notice of Intended Change (ACGIH)
NIOSH:	National Institute of Occupational Safety and Health
OEL:	Occupational Exposure Limit
OSHA:	Occupational Safety and Health Administration
PEL:	Permissible Exposure Limit (OSHA, 8 hour TWA unless otherwise noted)
PNS:	Peripheral Nervous System
ppb:	parts per billion
ppm:	parts per million
REL:	Recommended Exposure Limit (NIOSH, 10 hour TWA unless otherwise noted)
STEL:	Short Term Exposure Limit
STP:	Standard Temperature and Pressure (25°C, 760 mm Hg)
TSCA:	Toxic Substances Control Act
TLV:	Threshold Limit Value (ACGIH, 8 hour TWA)
TWA:	Time Weighted Average
U.S.C.:	United States Code
WEEL:	Workplace Environmental Exposure Limits (AIHA)

13.0 References

National Research Council. Prudent Practices for the Laboratory; Handling and Disposal of Chemicals. National Academy Press, 1981.

OSHA. "Guidance for Hazard Determination for Compliance with the Hazard Communication Standard" (29 CFR 1910.1200) http://www.osha.gov/dsg/hazcom/ghd053107.html

OSHA. 29 CFR 1910.1200 “Hazard Communication/”

OSHA. 71 FR 53617-52627. Advance Notice of Proposed Rulemaking: Hazard Communication

United Nations. Globally Harmonized System of Classification and Labeling of Chemicals. ST/SG/AC.10/30/Rev. 2. United Nations, 2007. (often cited as the ‘purple book’)

OSHA. GHS - OSHA HCS Comparison; Comparison of Hazard Communication Requirements.

14.0 Additional Resources

OSHA 29 CFR 1910.1200 “Appendix A. Health Hazard Criteria”

Department of Homeland Security. “Appendix to Chemical Facility Anti-Terrorism Standards”

Environmental Protection Agency. “List of Lists”