Hazard Communication Program

1.0 Purpose

To establish an effective Hazard Communication Program which enables the University of the District of Columbia to provide a safe learning and working environment for the campus community.

2.0 Scope

This program applies to all tasks and duties performed at the University of the District of Columbia by all members of the campus community including but not limited to faculty, staff, contract personnel, vendors, and visitors.

3.0 Responsibility

3.1 Department Heads – Deans, Directors, Assistant Directors

- Provide organizational compliance to support this program.
- Provide specific area compliance with this program.
- Ensure that all personnel have completed appropriate departmental training and are informed of the potential hazards of regulated chemicals, chemical products and processes prior to beginning work in their department.

3.2 Chairs and Supervisors

- Ensure that all personnel who fall within his/her area of responsibility have completed required training prior to beginning work.
- Request Hazard Communication labels when necessary (new installation, defaced or unreadable NFPA labels, personal protective equipment (PPE) signs etc).
- Ensure proper implementation of this program through periodic inspections of the work area.
- Ensure that hazards associated with a new regulated chemical or product are communicated to faculty and staff and other affected individuals as soon as practical.
- Ensure that all faculty and staff have been trained and are familiar with the Material Safety Data Sheets (MSDSs) and where the MSDSs are located.
- Forward new or revised MSDSs and a New Regulated Chemical or Product Notification Form if applicable to the Office of Environmental Health and Safety.
3.3 Faculty and Staff

- Inform Supervisor or Chair of missing labels on newly arrived and existing containers.
- Label portable containers with the content of the container and any applicable hazard warnings.
- Use only materials for which you are trained and authorized to use.
- Faculty and staff must request a MSDS for all regulated chemicals or products ordered. Before submitting the order through PASS, complete the comment box by stating a MSDS must accompany the shipment. Attach the comment to the order.

**NOTE:** The requisitioner of the regulated chemical or product must insure that the comment is made part of the order.

- Place new or revised MSDSs in the binder labeled *Material Safety Data Sheets* and include building and room number on the label to ensure MSDSs are stored in the same location as the chemicals or products they represent.
- Forward a copy of all new or revised MSDSs to their Supervisor or Chair who will then forward the MSDSs to Risk Management.
- Review labels/MSDS’s prior to using non-routine materials.

3.4 Risk Management

- Administer the Hazard Communication Program.
- Maintain the University’s master file of MSDSs and Hazardous Chemical Inventory.
- Review in-house labels whenever necessary to update the label information and to determine whether the label conveys the appropriate hazard warnings for the material identified on the label.
- Train new employees about the Hazard Communication Program.
- Inform contractors of general University safety rules, applicable safety and health procedures and information about the availability of MSDSs.
- Review new MSDSs for completeness, significant new physical and health hazard information and inform University Supervisors and Chairs.
• Review health and safety data for new regulated chemicals or products and determine what, if any, precautions are necessary.

• Review environmental data for new regulated chemicals or products and determine if any, procedures are necessary.

**NOTE:** A new chemical or new product procedure is included in Appendix D.

3.5 **Department of Contracting and Procurement:**

• Procurement ensures that the request for a MSDS is forwarded as a part of the order to the vendor.

• Inform contractor management that it is the contractor’s responsibility to ensure that their employees are adequately informed of the potential hazards associated with the work area in which they will be assigned consistent with the information provided.

3.6 **Contractors**

• Faculty and Staff overseeing contractors to the University must inform them of any area specific Personal Protection Equipment (PPE) requirements.

• Contractors under the purview of Campus Services. Campus Services must inform contractor management of the location of the University MSDSs and any area specific PPE requirements during the initial project start-up meetings.

4.0 **APPLICABLE FORMS & REFERENCE DOCUMENTS**

4.1 **Forms**

• New Chemical and New Product Notification Form – Form ENV0006

• Hazard Communication Program Audit – Form HS0001

4.2 **Reference Documents**

• Summary of NFPA 704- Appendix A

• Guide to Reading an MSDS – Appendix B

• Hazardous Chemical Definition – Appendix C

• New Chemical and New Product Introduction Procedure – Appendix D
5.0 **Safety Precautions**

Read and understand all chemical or product safety labels before using the chemical or product. Be familiar with the chemical’s or product’s MSDS and wear all recommended personal protective equipment recommended by the manufacturer.

6.0 **Procedure**

6.1 **Definitions:**

- **Hazardous Chemical** - a chemical which is a physical or chemical health hazard for which there is an MSDS. For further information see Appendix C – Hazard Chemical Definition.

- **Portable Container** - any container whose contents are intended for immediate use.

- **Hazard Chemical Inventory** - the listing of all MSDSs.

- **Hazard Communication Labels** - an identifying mark on or attached to a container that describes the hazards associated with the container contents.

6.2 **Labeling**

6.2.1 Hazardous chemicals in portable containers shall not be accepted for use at the University or shipped from the University unless labeled with at least the following information:

- Identity of the hazardous chemical(s).

- Appropriate hazard warnings (e.g. flammable, reactive, corrosive, etc.).

- Name and address of the chemical manufacturer, importer, or other responsible party.

6.2.2 Hazardous chemicals or products shall not be used in the work area unless labeled with the following information (minimum information required):

- Identity of the hazardous chemical(s).

- Appropriate hazard warnings (e.g. flammable, reactive, corrosive, etc.).

6.2.3 All labels will be legible, in English, and prominently displayed on the container.
6.3 Material Safety Data Sheets (MSDSs)

- Hazardous chemicals or products shall not be used at University unless a MSDS has been obtained, and the New Material Notification Form (if applicable) has been completed and submitted to Risk Management.

The MSDS will be the most current one supplied by the manufacturer, importer, or distributor.

- Once new and significant health information becomes available regarding a hazardous chemical or product, the revised MSDS will be placed in the binder located in the appropriate department or area and in the MSDS central file located in Risk Management.

- MSDSs are available to employees and others in Risk Management.

**NOTE:** A guide to reading an MSDS is included in Appendix B with additional hazard determination information contained in Appendix C.

6.4 Hazardous Chemical Inventory

- Every hazardous chemical or product known to be present at the University must be listed in the Chemical Inventory database within fifteen (15) days of its introduction into the University by the department or area that purchased it.

- Updated Chemical Inventory lists for each applicable room will be forwarded electronically to the Office of Environmental Health and Safety annually by the department Supervisor or Chair or his/her
designee but no later than December 7<sup>th</sup> of each year.

6.5 **Training and Information**

All employees working with or potentially exposed to a hazardous chemical(s) or product(s) will be informed and trained concerning the potential hazards of the materials to which they may be exposed.

6.5.1 When a new employee is hired, training will include:

- The requirements and location of this Hazard Communication Program.

- Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as industrial hygiene monitoring, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being release, etc).

- How to read and understand a MSDS. This information is available in Appendix B – Guide to Reading a Material Safety Data Sheet.

- How to read/understand the university labeling systems.

- The measures employees can take to protect themselves from these hazards, including procedures implemented to protect employees, such as appropriate work practices, emergency procedures, and personal protective equipment to be used.

- Orientation training will be provided by the employee’s department at the time of initial assignment to the work area, or whenever a new hazard is introduced into the work area.

6.5.2 Department orientation training will include:

- The usual physical and chemical health hazards in the work area.

- The measures faculty and staff can take to protect themselves from these hazards, including procedures implemented to protect faculty and staff, such as appropriate work practices, emergency procedures, and personal protective equipment to be used.

- Refresher training, specified by Risk Management, and any department orientation training will be conducted annually.

- Risk Management shall keep a copy of all training records.

6.6 **Non-Routine Tasks**
Before any new routine task is performed which could involve exposure to hazardous materials, the Supervisor and/or Chair should contact the Office of Environmental Health and Safety to discuss appropriate safe work practices. Some examples of new non-routine tasks are: Confined Space Entry, Tank Cleaning, and the use of new regulated chemicals or products.

### 6.7 Hazardous Chemicals in Unlabelled Pipes

Employees will be informed of hazardous chemicals in unlabeled pipes on which they may perform work and of the potential hazards involved in the event of exposure to the materials. This will be done during department orientation training. The extent of information provided will include material safety data sheets and other available information as used in training employees concerning other hazards, including the Safety Color for Physical Hazards and Piping Systems.

### 6.8 Program Review and Revision

- Risk Management will review this program and make revisions as necessary concentrating on Program administration and training.

- Review will occur at least annually. The Office of Environmental Health and Safety shall post revised editions of this program on the University website.

### 7.0 PREVENTIVE MAINTENANCE

None required.

### 8.0 QUALITY RECORDS AND RETENTION TIMES

- New Chemical and New Product Introduction Form # – ENV0006 - 3 year retention time

- Hazard Communication Program Audit – 7 year retention time
Appendix A

Hazard Communication Program – Summary of NFPA 704
Hazard Communication Program Appendix A – Summary of NFPA 704

1.0 Purpose

The purpose of Appendix A – Summary of NFPA 704 is to have a simple, standard visual reference to hazards which may be presented by short-term, acute exposure to a material during fire, spill or related emergencies. This information will be communicated using the following summary from the National Fire Protection Association (NFPA) Standard 704 - Identification of the Fire Hazards of Material.

2.0 Scope

This procedure defines health hazard and the degrees of the hazard, flammability hazard and the degrees of the hazard, reactivity hazards and the degrees of the hazard and special hazards and their symbols.

3.0 Responsibility

It is the responsibility of all faculty, staff, contractor personnel, vendors, and visitors to understand the NFPA - Standard 704 which is the University’s standard visual reference for hazards posed by regulated chemicals or products during a fire, spill or related emergency.

4.0 Applicable Forms and Reference Documents

4.1 Forms

• None

4.2 Reference Documents

• NFPA – Standard 704

5.0 Safety Precautions

Prior to entering a room or building containing a NFPA label, it is incumbent upon the individual entering that area to have knowledge and understanding of the hazards posed by the chemicals or products stored and/or used within.

6.0 Procedure

Summary of the National Fire Protection Association (NFPA) Standard 704

Definitions

6.1 Health Hazard – The likelihood of a material to cause, either directly or indirectly, temporary or permanent injury or incapacitation due to an acute exposure by contact, inhalation or ingestion.
6.2 **Degree of Hazard** – The degree of the hazard shall be ranked according to the probable severity of the health effects to personnel as follow:

4  Materials which, on very short exposure, could cause death or major residual injury.

3  Materials that on short exposure could cause serious temporary or residual injury.

2  Materials that on intense short exposure, could cause temporary incapacitation or possible residual injury, including those requiring the use of respiratory protective equipment that has an independent air supply.

1  Materials that on short exposure could cause irritation, but only minor residual injury, including those requiring the use of an approved air purifying respirator.

0  Materials that on short exposure under fire conditions, would offer no hazard beyond that of ordinary combustible materials.

6.3 **Flammability Hazards** – The degree of susceptibility of materials to burning. Since many materials will burn under one set of conditions, they may not under another set. The form or condition of the material is taken into consideration when developing this summary.

6.4 **Degree of Hazard** – The degree of the hazard shall be ranked according to the susceptibility of materials to burning as follows:

4  Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will readily burn.

3  Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, are readily ignited under almost all conditions.

2  Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal circumstances form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating may release vapor insufficient quantities to produce hazardous atmospheres with air.

1  Require considerable preheating under all ambient temperature conditions, before ignition and combustion can occur.
0 Materials that will not burn. This degree usually includes any material that will not burn in air when exposed to a temperature of 1500 °F (815.5 °C) for a period of 5 minutes.

6.5 Reactivity (Instability) Hazard

- **Reactivity (Instability) Hazards**: the degree of susceptibility of materials to release energy.

- **Materials Types**

  A **Reactive Material** is a material that can enter a violent chemical reaction with water.

  An **Unstable Material** is a material in its pure state or as commercially produced, will vigorously polymerize, decompose, condense, become self-reactive or otherwise undergo a violent chemical change under conditions of shock, pressure, or temperature.

  A **Stable Material** is a material that normally has the capacity to resist changes in its chemical composition, despite exposure to air, water, and heat as encountered in fire emergencies.

- **Degrees of Hazard**: The degree of the hazard shall be ranked according to the ease, rate and quantity of energy released as follows:

  4 Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. This degree usually includes materials that are sensitive to localized thermal or mechanical shock a normal temperatures and pressures.

  3 Materials that in themselves are capable of detonation, or explosive decomposition or explosive reaction, but require a strong initiating source or that must be heated under confinement before initiation.

  2 Materials that readily undergo violent chemical change at elevated temperature and pressures.

  1 Materials that in themselves are normally stable, but can become unstable at elevated temperatures and pressure.

  0 Materials that in themselves are normally stable, even under fire conditions.

- **Special Hazards** - the other properties of the material that may cause special problems or require special fire fighting techniques.
• **Symbols**

Materials that demonstrate unusual reactivity with water shall be identified with the letter (W).

Materials that possess oxidizing properties shall be identified by the letters OX.

7.0 **Preventive Maintenance**

None

8.0 **Quality Records and Retentions Times**

None
Appendix B

Hazard Communication Program – Guide to Reading a Material Safety Data Sheet
Hazard Communication Program Appendix B – Guide to Reading a Material Safety Data Sheet

1.0 Purpose

To provide procedures on how to read Material Safety Data Sheets (MSDSs).

2.0 Scope

This procedure covers all MSDSs for chemicals or products requiring an MSDS at the University of District of Columbia.

3.0 Responsibility

This procedure must be followed by all university faculty, staff, contractor personnel, vendors, and visitors.

4.0 Applicable Forms and Reference Documents

4.1 Forms

- None

4.2 Reference Documents

- None

5.0 Safety Precautions

6.0 Procedure

Material Safety Data Sheets (MSDS) – A Hazard Determination must be conducted by the manufacturer or importer of hazardous chemicals or products and report those findings in the MSDS. Although MSDSs vary they must contain at least the following information. For further information, and definitions, see Appendix C – Hazardous Chemical Definition.

6.1 Section I: Chemical/Product Identification:

- Lists the identity of the chemical and how it is listed on the label.

- Name, address and phone number (usually including an emergency phone number) of the manufacturer or importer.

6.2 Section II: Composition/Information on Ingredients

- List the hazardous ingredients and identity of the compound.
6.3 **Section III: Health Hazard Data**
- List most likely route of exposure
- Lists effects of exposure (Acute & Chronic)

6.4 **Section IV: Emergency & First Aid Procedures**

6.5 **Section V: Fire Fighting Measures Explosion Hazard Data**
- Flash point & Flammability limits
- LEL & UEL
- Fire fighting precautions & type of extinguishing media.

6.6 **Section VI: Accidental Release Measures**
- Personal Protective Equipment
- Specific materials and methods to use when cleaning up leaks or spills

6.7 **Section VII: Precautions for safe handling and use**
- Safe handling methods
- Safe storage methods
- Personal hygiene precautions
- Any other relevant precautions.

6.8 **Section VIII: Exposure Controls, Personal Protection**
- Lists any exposure limit for each product.
- Personal Protective Equipment
  - Respirator
  - Gloves
  - Eye protection (Goggles, face shields, etc.)
- Ventilation requirements and recommendations.

6.9 **Section IX: Physical/Chemical Characteristics**
- Boiling/Melting Point
- Vapor Pressure, Vapor Density and Evaporation Rate
- Water solubility
- Normal Appearance and Odor

6.10 Section X: Reactivity

- Explains what will happen if the chemical is mixed with other chemicals, water, or air.

- Stability of the chemical

7.0 Preventive Maintenance

None

8.0 Quality Records and Retention Times

All revisions of MSDS for chemicals and/or products used by the University will be kept for the life of the University.
Appendix C

Hazard Communication Program – Hazard Determination
Hazard Communication Program Appendix C – Hazard Determination

1.0 PURPOSE

The purpose of Appendix C - Hazard Determination is to serve as a reference for the Material Safety Data Sheets Health Hazard section.

2.0 SCOPE

This work instruction covers all MSDSs.

3.0 RESPONSIBILITY

This procedure must be followed by all University faculty, staff, contractors, personnel, vendors, and visitors.

4.0 APPLICABLE FORMS & REFERENCE DOCUMENTS

4.1 Forms

None

4.2 Reference Documents

None

5.0 SAFETY PRECAUTIONS

None

6.0 PROCEDURE

6.1 Definitions:

- **Hazardous Chemical**: A Hazardous Chemical is a chemical which is a physical hazard or a health hazard.

- **Health Hazards**: Any chemical which meets the definitions described in Appendix A of 29 CFR 1910.1200 are considered health hazards. These definitions include:
  - **Carcinogen**: A chemical is considered to be a carcinogen if:
    - It has been evaluated by the International Agency for Research on Cancer (IARC), and found to be a carcinogen or potentially carcinogenic; or,
    - It is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or,
    - It is regulated by OSHA as a carcinogen.
Corrosive: A chemical that causes visible destruction of, or irreversible alterations in living tissue by chemical action at the site of contact.

Reproductive toxins/hazards: Chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).

- **Mutagens**: Mutate the sperm or egg and leads to birth defects and miscarriages.
  
  Example: Lead

- **Teratogens**: Lead to birth defects of developing fetuses.
  
  Example: Effects of Thalidomide

**Irritant**: A chemical which is not corrosive, but which causes reversible inflammatory effect on living tissue by chemical reaction at the site of contact.

**Sensitizer**: A chemical, that causes an allergic reaction in normal tissue after repeat exposure to the chemical.

**Chemical Toxicity**: Relative to dose effect. The toxic effect of a chemical is dependent upon the following concepts:

- The **degree** of toxicity of the chemical.
- The **quantity** of the chemical.
- The **duration** of the exposure.
- The **frequency** of the exposure.

  Example: *Apple seeds have a small quantity of cyanide in them.*

**Degree of Chemical Toxicity**

- Low: Minor symptoms that go away when exposure ceases.
- Moderate: Requires medical attention.
- High: Deadly after a single brief exposure or after prolonged exposures.

**Target Organ Effects**: The following is a target organ categorization of effects, which may occur, including examples which have been found to cause such effects. These examples are presented to illustrate the range and diversity of effects and hazards found in the workplace, and the broad scope employers
must consider in this area, but are not intended to be all-inclusive.

**Hepatotoxins**: Chemicals which produce liver damage.
- Signs & Symptoms: Jaundice; liver enlargement.
- Chemicals: Carbon tetrachloride; nitrosamines.

**Nephrotoxins**: Chemicals which produce kidney damage.
- Signs and Symptoms: Edema, proteinuria.
- Chemicals: Halogenated hydrocarbons, uranium.

**Neurotoxins**: Chemicals which produce their primary toxic effects on the nervous system.
- Signs and Symptoms: Narcosis; behavioral changes; decrease in motor functions.
- Chemicals: Mercury; Carbon disulfide.

**Agents which act on the blood or hematopoietic system**: Deprive the body tissues of oxygen.
- Signs and Symptoms: Cyanosis; loss of consciousness
- Chemicals: Carbon monoxide; Cyanides

**Agents which damage the lung**: Chemicals which irritate or damage the respiratory tissue.
- Signs and Symptoms: Cough; tightness in chest; shortness of breath.
- Chemicals: Silica, Asbestos.

**Cutaneous hazards**: Chemicals which affect the dermal layer of the body.
- Signs and Symptoms: Defatting of the skin; rashes; irritation.
- Chemicals: Ketones; chlorinated compounds.

**Eye Hazards**: Chemicals which affect the eye or visual capacity.
- Signs & Symptoms: Conjunctivitis; corneal damage.

**Physical Hazards**: Has the potential to explode, cause a fire or react violently with other chemicals.

**Compressed Gas**: large amount of stored energy

**Explosives**

**Fire Hazards**:
- **Pyrophorics** - ignite spontaneously in air below 130 degrees F.
- **Flammable Liquids** – ignite easily at temperature below 100 degrees F.
- **Combustible Liquids** – ignite easily at 100 degrees F or above.
- **Oxidizers** – supply the oxygen required to start or support a fire.

**Unstable/ Reactive Chemicals:**

- **Decomposition Hazard** – Break apart into smaller compounds.
- **Polymerization Hazards** – react to form large molecules releasing a large amount of heat.

**Water reacting compounds** – react violently with water resulting in physical and/or health hazards.

*Note:* Many chemicals are both Health & Physical Hazards.
Example: Benzene

### 7.0 PREVENTIVE MAINTENANCE

None

### 8.0 QUALITY RECORDS AND RETENTION TIMES

None
Appendix D

New Chemical and New Product Introduction Procedure
New Chemical and Product Introduction

1.0 Purpose

To provide working instructions for the means to track all new chemicals and products which require a Material Safety Data Sheet at the time they are received at the University and/or its satellite facilities.

2.0 Scope

This work instruction covers all new regulated chemicals and products received at the University and its satellite facilities.

3.0 Responsibility

It is the responsibility of all laboratory department Chairs and Operations and Maintenance Supervisors to ensure that all personnel that fall under their responsibility understand and follow this procedure.

4.0 Applicable Forms and Reference Documents

- New Chemical and Product Introduction Form – Form ENV0006 Rev. 2

5.0 Safety Precautions

The proper personal protective equipment must be worn when potential contact with chemicals or biological specimens may occur. Commensurate with the hazardous nature of the materials to be handled, PPE items can include, but are not limited to; safety glasses, goggles, gloves, full face shield, lab coats or aprons, protective footwear and headgear, earplugs and respirators.
6.0 Procedure

6.1 Definition

- **Regulated chemicals or products** - are those chemicals or products for which a Material Safety Data Sheet (MSDS) has been prepared by the manufacturer.

6.2 When planning to use a new regulated chemical or product on-campus (e.g., this chemical would be considered new to the particular area of intended use although not necessarily new to the University), a Laboratory Supervisor (or designee) or Operations and Maintenance Supervisor (or designee) must ensure that an MSDS accompanies the container in which the material was shipped. One copy of the MSDS must be placed in the MSDS binder where the chemical or product is to be used and/or stored, a second copy must be submitted to the Environmental Protection Specialist along with the completed **New Chemical or Product Introduction Form (see Appendix A)** within **15 days of receipt by the department**.

6.3 **Every chemical known to be present at the University and its satellite facilities must be listed in the chemical inventory database.** The Department Chair (or designee) or the Operations and Maintenance Supervisor (or designee) must update their department’s chemical inventory **within 15 days** of receipt by their department. A copy of each department’s chemical inventory will be electronically submitted to the Environmental Protection Specialist on or before December 7th of each year.

6.4 New Chemical and Product Introduction Forms will be kept for three (3) years by the Environmental Protection Specialist.

7.0 Preventive Maintenance

None

8.0 Quality Records and Retention Times

8.1 New Chemical and Product Introduction Form – Retention time 3 years
New Chemical and Product Introduction Form

Purchaser Must Complete the Following

Faculty/Staff Name: ______________________ Submission Date: __________
Name of Chemical or Product: __________________________
Manufacturer: ________________________________

Is this a new product: □ Yes □ No

Where will the chemical or product be used or tested?
______________________________________________________________________

Briefly describe how this chemical or product will be used (e.g. in performing what task or function).
______________________________________________________________________

Where will this chemical be stored when not in use?
Building: _______ Floor: _______ Room: _______

Check each of the following Personal Protective Equipment required when handling this product or chemical (listed in MSDS):
□ Gloves □ Eye/Face Protection □ Respirator
□ Disposable Clothing/Apron □ Other: ________________________

This section to be completed by Environmental Protection Specialist

Chemical or Product Evaluated By: ______________ Date: __________
MSDS Filed as Required: ______________
Chemical List Updated: ______________