A. Purpose

The Occupational Health and Safety Administration (OSHA) Hazard Communication Standard (HCS) (29 CFR 1910.1200) provides both employers and employees the right-to-know the hazards and identities of chemicals that are used in the workplace. Moreover, in accordance with the OSHA HCS, Columbia University (CU) has developed a comprehensive Hazard Communication Program (HCP) to ensure that the transmittal of information regarding chemical hazards is accomplished by means of proper container labeling and other forms of warning, safety data sheets, and employee training. Furthermore, proper and effective hazard communication will ultimately result in a reduction of chemical sourced illnesses and injuries in the workplace.

The Columbia University Hazard Communication Program has been established to ensure compliance with the OSHA HCS standard on all campuses of CU, including the Morningside, Medical Center, and Lamont-Doherty Earth Observatory Campuses. Implementation of the CU HCP requires providing and maintaining important health and safety information about the hazards associated with using hazardous chemicals used by staff, students, researchers, and faculty. These individuals may be exposed to chemicals, or products containing hazardous components, in their workplace, laboratories, classrooms, or as part of their daily job functions.

The Columbia University Office of Environmental Health and Safety (EH&S) has developed this written Hazard Communication policy to ensure that:

1. The individuals or departments responsible for the implementation of the Hazard Communication program are specified.
2. Specific or potential chemical hazards are recognized and properly communicated by the responsible department.
3. The locations of important health and safety information, such as SDSs, are specified.
4. The requirements for employee training are specified.
5. The requirements for labeling hazardous containers are specified.
6. Procedures to be followed when outside contractors are conducting work with or near hazardous chemicals.
7. Emergency procedures are established.

B. Applicability/scope

1. This policy specifically applies to any chemical which is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.
2. In accordance with OSHA 1910.1200(b)(3), this policy applies to laboratories only as follows:
a. Labels on incoming containers of hazardous chemicals are not to be removed or defaced.
b. Maintenance of any safety data sheets that are received with incoming shipments of hazardous chemicals, and ensure that they are readily accessible during each work-shift to laboratory employees when they are in their work areas.
c. Ensuring that laboratory employees are provided information and training in hazard communication.
d. Laboratories that ship hazardous chemicals are considered to be either a chemical manufacturer or a distributor under the HCS, and thus must ensure that any containers of hazardous chemicals leaving the laboratory are labeled in accordance with 1910.1200 (f), and that a safety data sheet is provided to distributors and other employers.

Please refer to Columbia University’s Laboratory Chemical Hygiene policy for information on safety requirements for hazardous chemical use in laboratories, including the hazard identification and hazard communication requirements for laboratories.

3. This Hazard Communication policy does not apply to chemicals or products that fit the following definition:

a. Any article which is formed to a specific shape or design during manufacturing and does not release or otherwise result in exposure to a toxic substance under normal conditions of use.
b. Products intended for human consumption.
c. Retail and cafeteria food sale operations and all other retail trade operations, exclusive of processing and repair areas.
d. Any food, food additives, color additive, drug or cosmetic or distilled spirits, wines or malt beverages.

C. Definitions

1. Chemical means any substance, or mixture of substances.

2. Chemical manufacturer means an employer with a workplace where chemical(s) are produced for use or distribution.

3. Chemical name means the scientific designation of a chemical in accordance with 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 for the purpose of conducting a hazard classification.

4. **Classification** means to identify the relevant data regarding the hazards of a chemical; review those data to ascertain the hazards associated with the chemical; and decide whether the chemical will be classified as hazardous according to the definition of hazardous chemical in this section. In addition, classification for health and physical hazards includes the determination of the degree of hazard, where appropriate, by comparing the data with the criteria for health and physical hazards.

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

6. **Employee** means a worker who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies. Workers such as administrative office workers who encounter hazardous chemicals only in non-routine, isolated instances are not covered.

7. **Employer** means a person engaged in a business where chemicals are either used, distributed, or are produced for use or distribution, including a contractor or subcontractor.

8. **Exposure** or exposed means that an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (e.g. accidental or possible) exposure. "Subjected" in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact or absorption.)

9. **Foreseeable emergency** means any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which could result in an uncontrolled release of a hazardous chemical into the workplace.

10. **Hazard category** means the division of criteria within each hazard class, e.g., oral acute toxicity and flammable liquids include four hazard categories. These categories compare hazard severity within a hazard class and should not be taken as a comparison of hazard categories more generally.

11. **Hazard class** means the nature of the physical or health hazards, e.g., flammable solid, carcinogen, oral acute toxicity.

12. **Hazard statement** means a statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.
13. **Hazardous chemical** means any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.

14. **Health hazard** means a chemical which is classified as posing one of the following hazardous effects: acute toxicity (any route of exposure); skin corrosion or irritation; serious eye damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated exposure); or aspiration hazard. The criteria for determining whether a chemical is classified as a health hazard are detailed in Appendix A to §1910.1200—Health Hazard Criteria.

15. **Immediate use** means that the 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.

16. **Label** means an appropriate group of written, printed or graphic information elements concerning a hazardous chemical that is affixed to, printed on, or attached to the immediate container of a hazardous chemical, or to the outside packaging.

17. **Label elements** means the specified pictogram, hazard statement, signal word and precautionary statement for each hazard class and category.

18. **Mixture** means a combination or a solution composed of two or more substances in which they do not react.

19. **Physical hazard** means a chemical that is classified as posing one of the following hazardous effects: explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid or gas); self-reactive; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; or in contact with water emits flammable gas. See Appendix B to §1910.1200—Physical Hazard Criteria.

20. **Pictogram** means a composition that may include a symbol plus other graphic elements, such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a chemical. Eight pictograms are designated under this standard for application to a hazard category.

21. **Precautionary statement** means a phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling.

22. **Produce** means to manufacture, process, formulate, blend, extract, generate, emit, or repackage.
23. **Product identifier** means the name or number used for a hazardous chemical on a label or in the SDS. It provides a unique means by which the user can identify the chemical. The product identifier used shall permit cross-references to be made among the list of hazardous chemicals required in the written hazard communication program, the label and the SDS.

24. **Responsible party** means someone who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

25. **Safety data sheet (SDS)** means written or printed material concerning a hazardous chemical that is prepared a document, provided by manufacturers and/or distributors of chemicals, that details properties of the chemical, its physical, health, and environmental health hazards, protective measures and safety precautions for handling, storing, and transporting the chemical, and other pertinent safety information. Safety Data Sheets are an element of the Globally Harmonized System for Classification and Labeling of Chemicals (GHS), and must be presented in a standardized format, in accordance with GHS guidelines in paragraph (g) of the OSHA HCS.

26. **Signal word** means a word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used in this section are "danger" and "warning." "Danger" is used for the more severe hazards, while "warning" is used for the less severe.

27. **Use** means to package, handle, react, emit, extract, generate as a byproduct, or transfer.

28. **Work area** means a room or defined space in a workplace where hazardous chemicals are produced or used, and where employees are present.

29. **Workplace** means an establishment, job site, or project, at one geographical location containing one or more work areas.

D. **Procedures**

1. **Training**
   a. The EH&S Office shall develop a general employee training program to meet the training requirements of the Hazard Communication Standard. It is the responsibility of each department to provide its employees training for processes which are unique to that department. The EH&S Office is available for assistance in the development of these programs.
   b. Every department where an employee may be exposed to hazardous chemicals under normal operating conditions is responsible for insuring that employees are trained accordingly. Additional information shall be provided whenever the potential for exposure to hazardous chemicals is altered or whenever new and significant information is received by the department concerning the hazard of a chemical. New or newly assigned employees shall be provided
training before working with or in a work area containing hazardous chemicals. Undergraduates and graduates students registered in courses where they may be exposed to hazardous chemicals under normal operating conditions or foreseeable emergencies should be provided training before working with or in a work area containing hazardous chemicals/materials. Training is the responsibility of the instructor.

c. The training program shall include but is not limited to the following:
   i. Information on interpreting chemical container labels and SDSs and the relationship between these two methods of hazard communication and how to obtain a SDS.
   ii. Methods and observations that may be used to detect the presence or release of a hazardous chemical; such as monitoring conducted by the employer, continuous monitoring devices, and visual appearance and odor of hazardous chemicals when being released.
   iii. Introduction to toxicology and risk assessment, acute and chronic effects, and physical and health hazards of the hazardous chemicals that employees could potentially be exposed to. Where numerous chemicals are involved, generic training detailing the classes of chemicals may be utilized.
   iv. Procedures for safe handling of hazardous chemicals and measures that employees could take to protect themselves such as appropriate work practices, personal protective equipment to be used, cleanup procedures, emergency procedures and disposal of hazardous chemicals. Chemical specific training at discretion
   v. Departments and individuals providing training shall keep a record of the dates of training sessions and the names of the employees and/or students attending.

2. Safety Data Sheets

SDSs are documents containing chemical hazard and safe handling information prepared in accordance with requirements of the OSHA HCS for such documents as specified in §1910.1200 (g).

a. Each department shall maintain updated SDSs for all chemical materials used within that department.

b. The employer shall maintain in the workplace copies of the required safety data sheets for each hazardous chemical, and shall ensure that they are readily accessible during each work shift to employees when they are in their work area(s).

c. Electronic access and other alternatives to maintaining paper copies of the safety data sheets are permitted as long as no barriers to immediate employee access in each workplace are created by such options (§1910.1200 (g)(8)).

d. Where employees must travel between workplaces during a work shift, i.e., their work is carried out at more than one geographical location, the safety data sheets may be kept at the primary workplace facility. In this situation, the employer shall ensure that employees can immediately obtain the required information in an emergency.

e. Departments shall bear the responsibility for providing SDSs for a hazardous chemical distributed interdepartmentally or outside the University.
3. Labeling

a. All containers shall be labeled in English. Labels on containers of hazardous chemicals shall not be defaced or removed. All containers of hazardous chemicals shall be labeled with all of the following information:

   vi. Product identifier
   vii. Signal word
   viii. Hazard Statement(s)
   ix. Pictogram(s)
   x. Precautionary Statement(s)
   xi. Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

b. Chemicals that are transferred from the primary chemical container into a secondary container, the secondary or workplace container must also be labeled with the product identifier, words, pictograms, symbols, or combination thereof which provide at least general information about the specific physical and health hazards of the chemical (1910.1200 f(6)).

c. Labeling is not required for portable containers into which hazardous chemicals are transferred from labeled containers, if intended for the immediate use of the employee who performs the transfer. (1910.1200 f(8)).

4. Work Place Chemical Material List

a. Each department or office shall compile and maintain a Work Place Chemical Material List. This list shall contain the following information for each hazardous chemical normally used or stored in the workplace (1910.1200 e(1)(i)):

   i. The chemical name using the product identifier referenced on the appropriate SDS.
   ii. The list may be compiled for the workplace as a whole or for individual work areas.

b. The Work Place Chemical Material List shall be updated as necessary, but not less than annually.

E. Responsibilities

1. EH&S - Program coordination functions shall be provided by Environmental Health & Safety.
2. Departments, Supervisors, Instructors - Responsibilities of departments, supervisors and instructors are as designated in specific sections of the policy. Funds and other resources necessary for the implementation and administration of this program in accordance with the Hazard Communication Standard, ensuring training of employees and other related activities shall be the responsibility of each department in cooperation with the department of EH&S.

3. Outside Contractors:
   a. Outside contractors using hazardous chemicals shall comply with the specific guidelines required by the respective Facilities Compliance Management of each CU campus; the specific facilities compliance requirements for contractors using hazardous materials may vary for each campus including the Morning Side, Medical Center, and LDEO campuses.
   b. The contractor shall be advised and provided information by the appropriate Project Manager regarding any chemical hazards to which employees of the contractor may be exposed.

4. Rights of Employees
   a. Employees shall not be required to work with a hazardous chemical from a container that does not have a label, except for a portable container intended for immediate use by the employee or student who performs the transfer.
   b. SDSs for any new chemicals introduced shall be made available and accessible for review by employees.
   c. Employees that are routinely exposed to hazardous chemicals shall be informed of such exposures and shall have access to SDSs for the hazardous chemicals. In addition, employees shall receive training from their respective managers on the hazards of the chemicals and on measures they can take to protect themselves from those hazards.
   d. Departments shall provide, at no expense to employees, appropriate personal protective equipment to protect employees from exposures to hazardous chemicals where applicable. An exposure assessment by the EH&S Office is encouraged when employee exposure to chemicals is suspected. Please note that the use of respiratory equipment must be in accordance with the University's respiratory protection policy.
   e. An employee or his/her authorized representative may request copies of all environmental monitoring records.

F. Emergency Contacts
   Not Applicable (N/A)

G. Cross Reference
   N/A
H. Medical Surveillance
   N/A

I. Recordkeeping
   a. Each department shall maintain updated SDSs for all chemicals/chemical materials used within that department.
   b. Departments and individuals providing training shall keep a record of the dates of training sessions and the names of the employees and/or students attending.

J. Appendices
   N/A

K. Forms
   N/A

L. References
   OSHA Hazard Communication Standard §1910.1200

M. Acknowledgements (optional)
   N/A