

Title: NYU College of Dentistry’s Chemical Hygiene Written Program

Effective Date: November 2005

Revision Date: February 13, 2017

Issuing Authority: VP, Facilities and Construction Management

Responsible Officer: Director Environmental Health and Safety

PURPOSE OF THE WRITTEN PROGRAM

To establish a written program that fulfills the requirements of the OSHA Standard for Occupational Exposures to Hazardous Chemicals in Laboratories [29CFR1910.1450] approved January 31, 1990 and updated March 26, 2012 to align with the inclusion of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Methods used to keep exposures below the OSHA permissible exposure limits [PELs] specified in 29CFR1910.1000, subpart Z are included.

SCOPE OF THIS WRITTEN PROGRAM

The Chemical Hygiene Plan (CHP) was developed to protect clinical and research laboratory employees of New York University College of Dentistry (NYUCD) from exposure to hazardous chemicals and to comply with all provisions of the OSHA Standard, 29 CFR 1910.1450, Occupational Exposures to Hazardous Chemicals in Laboratories.

WHO NEEDS TO KNOW THIS WRITTEN PROGRAM

New York University College of Dentistry’s laboratories.

PROCEDURES FOR IMPLEMENTATION

Responsibilities:

Department of Environmental Health and Safety

Environmental Health & Safety (EHS) has overall responsibility for the Chemical Hygiene Plan and compliance with the applicable OSHA standard (1910.1450). The designated Chemical Hygiene Officer in EHS will work closely with the Assistant Chemical Hygiene Officer in the Office of Compliance and Emergency Response to ensure the Dental Center is complying with all aspects of the regulation.

Directors or Department Chairs

Directors and Chairs must be aware of the Chemical Hygiene Plan and encourage all researchers to utilize the EHS Lab Safety Handbook, attend all safety trainings and store and use all chemical and other hazardous materials safely.

Facilities Manager, Department Manager, Construction Manager and Supervisor

Facilities personnel must be aware of the Chemical Hygiene Plan and the laboratories that are using hazardous materials within their respective facilities.

Maintenance and Housekeeping Personnel

Maintenance and Housekeeping staff must be informed of the hazards present in rooms or labs that they work in. Cleaning tasks in labs must be discussed directly with custodial staff to ensure they do not clean contaminated surfaces that they are not trained on.

Medical Surveillance

In the event of an over exposure or signs and symptoms that indicate exposure to a chemical agent, staff and students should immediately inform their supervisor and either call 911, go directly to NYU Student Health Center, or the NYU Langone Employee Health Service.

Chemical Hygiene Officer (CHO)

NYU designates the Director of Environmental Health & Safety or their designee as Chemical Hygiene Officer (CHO) whose responsibility it is to implement the elements of the plan with the assistance of the NYUCD Assistant Chemical Hygiene Officer [ACHO]. The CHO will annually review the plan, and update it as necessary. Responsibilities of the CHO will include:

1. Work with the ACHO, Department Chairpersons, administrators and other employees to develop and implement appropriate chemical hygiene policies and practices.
2. Monitor procurement, use and disposal of chemicals used in the laboratories.
3. Assist project managers in review of plans for facilities where hazardous chemicals are used.
4. Provide information and training for the CHP.
5. Review the use of extremely hazardous substances and new lab processes or equipment using hazardous materials.

Assistant Chemical Hygiene Officer [ACHO]

NYUCD designates the Senior Quality Assurance Administrator of the Office of Compliance & Emergency Response as the ACHO with responsibilities that include the following:

1. Ensuring employees attend chemical hygiene training sessions.
2. Informing the CHO of the use of extremely hazardous substances and new lab processes or equipment using hazardous materials.
3. Approving the use of extremely hazardous substances and new lab processes or equipment using hazardous materials after review by the CHO.
4. Ensuring that Principal Investigators complete the Environmental Services [ES] survey for extremely hazardous substances when applying for a grant. This survey is part of the grant application material obtained from "Sponsored Programs."
5. Ensuring lab employees adhere to department Standard Operating Procedures [SOPs].
6. Informing employees of Industrial Hygiene [IH] exposure monitoring results provided by EHS.
7. Notification to EHS of changes in an employee's exposure potential.

WRITTEN PROGRAM DEFINITIONS

Hazardous Chemical: Chemical that is a physical and/or health hazard.

Extremely Hazardous Substance: Select carcinogens, reproductive toxins, and substances with a high degree of acute toxicity (Permissible Exposure Limit, PEL, of less than 2 ppm or 2 mg/m³).

New Processes or Equipment: New equipment or procedure used at NYUCD that could possibly expose employees to a hazardous material.

UNIVERSITY WRITTEN PROGRAM

RESPONSIBILITIES

Standard Operating Procedures:

1. The NYU Laboratory Safety Handbook includes general SOPs for working with hazardous chemicals. This handbook is to be supplemented by additional lab specific procedures for specific classes of hazardous materials as well as specific departmental policies.
2. Copies of the Laboratory Safety Handbook and all lab specific procedures are to be maintained in the lab. Additional copies can be obtained from EHS and found on the website at <https://www.nyu.edu/content/dam/nyu/environmentalHealthSafety/documents/LabSafetyManual.pdf>

Safe Handling Procedures and Implementation of Exposure Controls:

1. Notification Protocol for Clinical and Research Laboratory Department Personnel Working with Hazardous Chemicals at NYUCD
 - a. All Clinical and Research Departmental Personnel that intend to work with hazardous chemicals as defined in the CHP are required to notify the NYUCD's ACHO and the Assistant Dean for Compliance & Emergency Response at ext. 89949 and Director of EHS or its designee at ext. 81450. The Office of Compliance & Emergency Response will maintain a list of principal investigators and/or laboratory managers/administrators who are responsible for each laboratory.
 - b. The Director of Environmental Health & Safety or designee, acting in the capacity of the CHO shall implement NYU's CHP accordingly, with the assistance of the NYUCD's ACHO.
 - c. The NYUCD's ACHO, in addition to carrying out the duties as set forth in the CHP, shall be responsible for notifying the CHO and the Assistant Dean for Compliance & Emergency Response of any changes of the use of hazardous chemical or in the conditions of the laboratory as a result of the use of the hazardous chemicals. The CHO shall respond accordingly pursuant to NYU's CHP.
 - d. Failure to follow this protocol may result in the initiation of sanctions by the Office of Compliance & Emergency Response.
2. Exposure to hazardous and extremely hazardous material will be controlled by the following processes:
 - a. NYUCD labs will maintain chemical inventories of hazardous and extremely hazardous materials used in their work area. The ACHO must inform the CHO when labs are introducing new processes using material that is extremely hazardous.
 - b. Protective measures for work with particularly hazardous substances, including OSHA, NTP or IARC carcinogens, reproductive toxins [mutagens and teratogens], or a substance with a high degree of acute toxicity are developed and communicated to lab workers as required. The need for such specific guidelines is determined by review of health and physical hazards associated with chemicals used in labs.
 - c. EHS evaluates the toxicity of the chemicals by reviewing the supplier's Safety Data Sheets [SDSs]. Each individual in the lab area has the responsibility to review the SDS for any new material prior to

its use.

- d. Recommendations for safe handling of specific chemicals are made to the ACHO. Based on the results of the review, the following may be implemented by the laboratory department:
 - i. Lab will establish a designated area for use of extremely hazardous materials.
 - ii. Lab employee will use specific protective equipment appropriate for the hazardous material, including both engineering controls and personal protective equipment.
 - iii. Specific waste disposal and decontamination procedures will be implemented.
 - e. A chemical inventory will be updated annually in each lab at NYUCD. Each chemical will be reviewed for both physical and health hazard classification. The compiled list for the facility will be maintained by EHS and accessible through NYUs online chemical inventory system.
3. Certain laboratory operations, procedures or activities may require prior approval before they may be carried out. Identification of restricted activities is at the discretion of the ACHO. When lab workers handle chemical substances whose toxicological properties have not been fully evaluated, the material must be handled with appropriate personal protective equipment [PPE] as determined by a hazard evaluation and in a properly ventilated hood.
 - a. EHS will review all purchase requisitions and grant proposals to determine if any processes or equipment using hazardous chemicals are to be used at NYU.
 - b. The ACHO will inform the CHO of the new processes and/or equipment. The CHO will then conduct a review and determine if additional safety and health precautions are necessary.
 - c. The ACHO will approve new processes and equipment based on the review and collaboration with EHS.

Measures To Minimize Exposure:

1. Chemical fume hoods are the first line of defense against exposure to chemical vapors, gases and aerosols for laboratory workers. These ventilation systems must be used when handling hazardous chemicals.
 - a. EHS will test for face velocity of the hoods annually. If the hood is not functioning properly, EHS will notify the appropriate Building Manager as well as the HVAC Department for repair via e-mail. HVAC or Facilities Management will issue a work order number that will be used by EHS to follow up on the completion of the repair. The hood will be re-evaluated after the work is complete per HVAC.
 - b. Lab fume hoods must have a minimum average face velocity of 80 feet per minute [fpm] and a maximum average face velocity of 120 fpm. Sash must be maintained at 18 inches [height the face velocity was tested] and closed when not in use.
 - c. Laboratory personnel are instructed to keep hoods clear of clutter that would cause disruption of air flow into the hood and compromise the protection against hazardous substances.
2. Personal Protective Equipment needs and levels will be determined by the CHO through hazard analysis. Once the PPE selection has been determined, lab workers along with the ACHO are responsible for its use
 - a. Respiratory protection is required by the lab standard only if exposure to a material exceeds the PEL. Refer to NYU written program number 109 for use and procedures.
 - b. Use and selection of skin and eye protective devices are given in NYU written program number 112.

3. Whenever possible, a non-toxic or less toxic chemical or substance should be substituted for a highly toxic one. Alternative chemicals or methods should also be considered for chemicals which are hazardous due to flammability, explosivity or reactivity.
4. Exposure limits as set by OSHA [PELs] and ACGIH [TLVs] are to be observed.
 - a. EHS must perform Industrial Hygiene exposure monitoring if there is a reason to believe that exposure levels for a substance routinely exceeds the action level or ½ the PEL.
 - b. If initial exposure monitoring reveals levels above the action limit, EHS will implement periodic monitoring.
5. Procedures for safe handling and storage of hazardous chemicals or substances are detailed in NYU Chemical Hygiene Written Program .
6. Procedures for waste handling, minimization and disposal are given in NYU Hazardous Waste Minimization and Disposal Program.
7. Safety inspections and lab audits are conducted at least annually. All items noted on the inspection is communicated to the Principal Investigator of the lab.
8. Emergency response plan is to be implemented by Public Safety or EHS when an incident, such as a fire, explosion, or release of hazardous material which has the potential to threaten human health or the environment. A copy of the NYU Emergency Response Manual is housed in the Compliance & Emergency Response office as well as the EHS office.
 - a. All accidents including those involving chemicals are reported to Public Safety
 - b. Reporting procedures are included in the Emergency Response Plan.

Information and Training:

1. A Copy of the College of Dentistry's CHP is located at the Office of Compliance & Emergency Response and the Environmental Health & Safety Office and is available on request by laboratory employees at NYUCD.
2. Employee training will be conducted initially when assigned to a laboratory and upon change within laboratories where exposure situations involving hazardous chemicals or substances will be different. The Office of Compliance & Emergency Response will be responsible for training.
3. Training program will consist of the following information
 - a. Regulations effecting labs with an overview of the requirements of OSHA's Occupational Exposures to Hazardous Chemicals in Laboratories as given in 29CFR1910.1450.
 - b. NYUCD's responsibility under the lab standard.
 - c. Methods used to determine hazardous substances in lab with an explanation of the Permissible Exposure Levels [PELs] for OSHA regulated substances and recommended exposure limits for other hazardous chemicals where there is no applicable OSHA standard.
 - d. Controls for safe handling of lab chemicals with physical and/or health hazards and risk assessments in labs.

- e. Protective measures for chemical storage and transporting lab chemicals including specific procedures implemented such as work practices, emergency procedures and protective equipment to be used.
- f. Use and location of the Safety Data Sheets.

Medical Consultations and Exams:

1. The ACHO will coordinate medical evaluations with the NYU Occupational Health Unit. Lab employees will receive medical consultation in the event of an emergency that results in the likelihood of hazardous chemical exposure. Lab employees will be provided with a medical examination upon the development of signs or symptoms associated with exposure to hazardous chemicals in the laboratory.
2. Physicians will provide a written opinion in accordance with the OSHA Lab Standard. A copy of the standard will be provided to the attending physician by EHS.
3. Bloodborne Pathogens and biological safety is detailed in NYU Bloodborne Pathogens Written Program.

Hazard Identification:

1. NYUCD will primarily rely on the hazard determination of the chemical or substance on the SDS received by NYUCD from the manufacturer.
2. Electronic copies of SDSs will be maintained at the College of Dentistry's Office of Compliance & Emergency Response for chemicals or products used as well as in the EHS Department for chemicals or products used at NYUCD. Individual labs are to have access by computer and/or maintain copies of SDSs specific to the materials used in the lab area. In order to have access to the copies after normal working hours, Public Safety will have access to obtain SDSs and full chemical inventories from NYU's online chemical inventory system.
3. An SDS index of all chemicals and products used at NYUCD will be maintained by utilizing the online chemical inventory system. This list will be the official OSHA list of all chemicals or products at this site.
4. Purchasing Department will send a copy of all purchase requisitions for chemicals to EHS. These requisitions will be reviewed to ensure that EHS has a SDS for the materials. SDS will be requested from the manufacturer or obtained online as necessary.
5. Departments not obtaining or ordering chemicals through the Purchasing Department must notify EHS of chemical purchases. If there is no SDS available, the chemical or substance cannot be used until the SDS has been obtained from the manufacturer, vendor or other resources. A copy of the SDS in an ordered chemical shipment must be sent to EHS by the individual who receives the shipment.
6. All labels must be maintained on all chemical containers received at NYUCD. If a product or chemical is transferred to a new container, the label information [Chemical Name and Primary Hazard Information] must also be added to the container

Record Keeping:

EHS will be responsible for maintaining records of IH exposure monitoring, training, audits, and process/equipment reviews.

Review of the Chemical Hygiene Plan:

The CHO and ACHO will review and update as necessary. Review will be conducted at least annually and may include representatives from other areas to be consulted to assist with the review as deemed necessary by the CHO.

RELATED POLICIES

NYU Environmental Health and Safety Policy