

Case Western Reserve University

Chemical Hygiene Plan



The Chemical Hygiene Plan applies to your laboratory only if you meet ALL of the following criteria:

- (i) Chemical manipulations are carried out on a “laboratory scale”;
- (ii) Multiple chemical procedures or chemicals are used;
- (iii) The procedures involved are not part of a production process; and
- (iv) “Protective laboratory practices and equipment” are available and in common use to minimize the potential for employee exposure to hazardous chemical.

The Hazard Communication Standard applies to those that meet the following criteria:

- (i) Laboratories that are using only commercial products or a small amount of chemicals in a non-laboratory use.
- (ii) All non-laboratory employees who may be exposed to hazardous chemicals in the course of their work, both normal conditions and emergencies.
- (iii) Consumer products when not used in the same frequency and volume as the consumer.

IF YOUR LABORATORY DOES NOT MEET ALL OF THE ABOVE CRITERIA, CONTACT EHS (368-2907) FOR CONSULTATION.

OSHA Definitions:

Laboratory: a facility where the “laboratory use of hazardous chemicals” occurs. It is a workplace where relatively small quantities of hazardous chemicals are used on a non-production basis.

Laboratory scale: work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person. Excludes those workplaces whose function is to produce commercial quantities of materials.

Chemical Hygiene Plan

The Chemical Hygiene Plan (CHP) is a laboratory specific document that details the safety procedures in use in a specific laboratory. The Hazard Communication Plan (HCP) is a document that details the safety procedures for certain laboratory employees and all non-laboratory employees who may be exposed to hazardous chemicals in the course of their work, both in normal conditions and emergencies. The HCP applies to laboratories that are using only commercial products or a small amount of chemicals in a non-laboratory use. The HCP also applies to consumer products when not used in the same frequency and volume as the consumer. The goal of the CHP is to provide the necessary guidance to the laboratory staff or employee required to maintain a safe work environment while dealing with hazardous materials or physical/ health hazards.

The Primary Investigator (PI) of a laboratory or the supervisor of non-laboratory employee is responsible for maintaining a safe work environment for the laboratory staff/ employee. As such, the PI is given the title of Chemical Hygiene Officer (CHO). The CHO is required by federal law to provide a CHP to the laboratory staff/ employee that is specific to the laboratory. Further, the CHO is responsible for providing training in the CHP sufficient to allow the laboratory staff/ employee to implement the CHP. This training is required initially upon employment, and when there is a change in the plan or annually, whichever is the shorter time interval.

Upon employment at CWRU, all employees dealing with or possibly having exposure to hazardous materials are given an overview OSHA Laboratory Standard class at the EHS office. This training is NOT substitute training for the laboratory specific training to be given by the CHO. EHS publishes a Laboratory Safety Manual and Physical Safety Manual to be used as a reference in producing a CHP. These manuals are available on the EHS website (<https://www.case.edu/ehs/>).

Date: _____

Primary Investigator's (CHO) Name: _____
Please Print

Primary Investigator's Email: _____

Primary Investigator's Department: _____

Primary Investigator's Phone: _____ Fax: _____

Primary Investigator's (CHO) Signature: _____

Laboratory Location: Building: _____ Room: _____

Laboratory Location: Building: _____ Room: _____

Laboratory Location: Building: _____ Room: _____

Complete and send a copy to:
EHS
Service Building, First Floor
Location Code: 7227
Attention: Safety Services

Review Date

Review the CHP/ HCP annually and/or whenever there are any changes in procedure. Submit a copy of the title page, this sheet, and any changes to the EHS office.

Review Date: _____ Changes: _____

Review Date: _____ Changes: _____

Review Date: _____ Changes: _____

Review Date: _____ Changes: _____

Review Date: _____ Changes: _____

Review Date: _____ Changes: _____

Review Date: _____ Changes: _____

Review Date: _____ Changes: _____

Review Date: _____ Changes: _____

Review Date: _____ Changes: _____

Review Date: _____ Changes: _____

The CHP must include the following items:

Training Outline

Use the information on the next pages to help outline the laboratory-specific training to be given to the laboratory staff by the CHO.

Assigning your staff to read the CHP/ HCP does NOT constitute a training class.

Laboratory Personnel

List the work positions and names of people in the laboratory/ work area.

Examples:

Laboratory

4 Research Assistants (names)

1 Primary Investigator (name)

1 Dishwasher (name)

Work Area

4 plumbers (names)

1 electrician (name)

1 supervisor (name)

Chemical Inventory

Produce a chemical inventory of all chemicals in the laboratory (include name and quantity). In addition, when the HCP applies, attach Material Safety Data Sheets (MSDS) for each chemical.

Laboratory Procedures

Provide a general description of procedures and tasks performed in the specific laboratory (attach protocols if needed).

Safety Precautions

Integrate safety precautions into written lab procedures and protocols or for physical and health hazards present in the work area.

CHP Example:

A. Engineering controls available (i.e. fume hoods, biosafety cabinets, etc.)

B. Protective equipment worn (i.e. type of gloves, goggles/glasses, lab coats, etc.)

C. Lab-specific practices (i.e. chemicals in liquid vs. powder forms, designate areas for chemicals, etc.)

HCP Example:

A. When cleaning microscope slides with acetone, a buttoned laboratory coat, safety glasses, and the appropriate chemically-resistant gloves must be worn.

Include an outline of the laboratory site specific training here. Information on what should be included is listed below.

Outline of Lab-Specific Training

Environmental Health & Safety (EH&S) provides the basic Chemical Hygiene Plan (CHP) for all University laboratories. OSHA requires that each laboratory also have a laboratory - specific training outline that describes the annual training each member of the lab receives from the PI or his/her designee. This training should include specific protocols on how to safely carry-out procedures performed in the laboratory. A list of topics which should be included (as appropriate) in the laboratory - specific training outline is included below. This list is not all - inclusive; all hazards relative to work in the laboratory should be addressed. Each laboratory must complete its own Laboratory-Specific Training Outline.

Facility Features

Know the location of facility safety features and understand the proper use of facility equipment.

- Fire alarm pull stations and fire extinguishers
- Nearest safety shower and eye wash and frequency of certification
- Emergency evacuation routes from laboratory, assembly point and check-in person
- Facilities systems, including house gas, compressed air, vacuum lines
- Fume hoods, biosafety cabinets, canopy, snorkels, or other local exhaust ventilation systems

Procedures and Documentation

Read and understand laboratory policies and procedures; know how to access safety-related information.

- Complete EH&S Laboratory Safety Training as determined by your Principal Investigator (PI)
- Review the CWRU Laboratory Safety Manual and know how to access the manual from the laboratory
- Know where to find the Safety Data Sheets (SDSs) for chemicals in the lab and how to develop a Standard Operating Procedure (SOP). Provide and clearly label a special area in the laboratory for the safety documents.
- Understand the laboratory policy regarding proper laboratory attire (long pants, closed-toe shoes) and personal protective equipment (PPE) (laboratory coat, safety glasses, protective gloves)
- Know which materials, processes, and/or areas require additional Personal Protective Equipment (PPE) as listed in the SOP
- Identify acceptable areas for food storage and consumption

- Know proper storage of hazardous chemicals, including segregation by compatibility, secondary containment, and use of safe storage locations such as flammables and corrosives cabinets.
- Make a list of the chemicals in the flammable cabinet or explosion-proof refrigerator. Clearly designate and label areas in your laboratory for other hazardous materials.
- Review, discuss, train, and sign SOPs for chemicals and processes used in the laboratory
- Know proper procedures for collection, storage, and disposal of hazardous waste
- Understand the importance of cleanliness and chemical hygiene in the laboratory. Recognize that all chemical contamination, regardless of how seemingly insignificant, must be cleaned up immediately.
- Develop a system to maintain laboratory safety equipment in good condition such as spill kits, hoods, cabinets and clean laboratory coats. Make sure you have the proper materials for you spill kits.
- Have a glove compatibility chart for the gloves used in the laboratory and understand how to use the information.
- Know how to report large or hazardous spills to obtain assistance and inform laboratory mates and others potentially at risk so they are protected from exposure.
- Understand how to use you fume hood and biosafety cabinet and their respective safety controls. Develop an SOP for the type of local exhaust systems you have in your laboratory.
- Know the procedure for working after hours, who to notify (PI and Security) and use of buddy system.
- Know the quantity limitation for your chemical processes and clearly list this information with acknowledgement of permissions needed in the SOP.
- Know and understand the symptoms of exposures for hazardous materials, PELs and antidotes needed now and stated in the SOP.

An example of the training log is provided.

Laboratory- Site Specific Training Log

By signing this document, you acknowledge that you have received training that was outlined in the Chemical Hygiene Plan and understand that it is your responsibility to know the hazards associated with the materials you use, and to protect yourself and others from those hazards. In addition, you will strive to maintain awareness of peripheral or adjacent hazards, whether from others in the laboratory or from other laboratory groups. You acknowledge that safety is an inherent responsibility to which each member of the laboratory must commit. You also recognize that unsafe practices in the laboratory will not be tolerated.

Trainee	Signature	Trainer	Trainer Initials	Initial : Date	Annual: Date

Regulated Chemical Inventory

The Environmental Health and Safety is required to collect information regarding the use of OSHA Regulated Chemicals.

Please check boxes below for each regulated chemical you use in your laboratory and fill out the USE QUESTIONNAIRE below for each regulated chemical you use. The information will be used to determine if there is a hazardous exposure probability and if air monitoring is required.

PLEASE CHECK BOXES BELOW FOR EACH REGULATED CHEMICAL USED IN YOUR LABORATORY. IF YOUR LAB DOES NOT UTILIZE ANY OF THESE CHEMICALS, CHECK "OUR LAB DOES NOT USE" BOX.

<input type="checkbox"/>	4-Nitrobiphenyl	<input type="checkbox"/>	4-Dimethylaminoazo-Benzene
<input type="checkbox"/>	Alpha-Naphthylamine	<input type="checkbox"/>	N-Nitrosodimethylamine
<input type="checkbox"/>	Methyl Chloromethyl Ether	<input type="checkbox"/>	Vinyl Chloride
<input type="checkbox"/>	3,3'-Dichlorobenzidine (and its salts)	<input type="checkbox"/>	Inorganic arsenic
<input type="checkbox"/>	Bis-Chloromethyl Ether	<input type="checkbox"/>	Lead
<input type="checkbox"/>	Beta-Naphthylamine	<input type="checkbox"/>	Cadmium
<input type="checkbox"/>	Benzidine	<input type="checkbox"/>	Benzene
<input type="checkbox"/>	4-Aminodiphenyl	<input type="checkbox"/>	1,2-dibromo-3-chloropropane
<input type="checkbox"/>	Ethyleneimine	<input type="checkbox"/>	Acrylonitrile
<input type="checkbox"/>	Beta-Propiolactone	<input type="checkbox"/>	Ethylene oxide
<input type="checkbox"/>	2-Acetylaminofluorene	<input type="checkbox"/>	Formaldehyde Family
<input type="checkbox"/>	Methylenedianiline	<input type="checkbox"/>	1,3-Butadiene
<input type="checkbox"/>	Methylene Chloride	<input type="checkbox"/>	Chromium (VI)

OUR LAB DOES NOT USE REGULATED CHEMICALS

REGULATED CHEMICALS USE QUESTIONNAIRE

(Please fill out one form for each regulated chemical used in your lab)

Lab Location: Building: _____

Department: _____

Room: _____

Regulated Chemical in Use:

1. Please estimate frequency of use of the regulated chemical listed above in any quantity (circle one):

Frequently (Daily to weekly)	Occasionally (Monthly)	Rarely (Less than 12 times/year)
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2. What concentration of this regulated chemical is used in your lab?

3. How often do you use chemical fume hood when you use this regulated chemical (circle one):

Always	Sometimes	Never
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4. If you answered "Never" or "Sometimes" to question #3, please describe briefly the circumstances which prevent you from use of chemical fume hood while working with this regulated chemical at all times:

5. Estimate the amount of the regulated chemical used in your lab per week, in ml (circle one):

0 – 10 ml	11 – 100 ml	over 100 ml
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