

UConn

LABORATORY INSPECTION PROGRAM

Environmental Health and Safety
University of Connecticut
3102 Horsebarn Hill Road U-4097
Storrs, CT 06269-4097
860-486-3613
ehs@uconn.edu

Laboratory Inspection Program	
Last Reviewed Date:	07-01-2022
Last Revised Date:	07-20-2022
Effective Date:	2013
Applies To:	Faculty, staff, students, and visitors working in laboratories with hazardous chemicals at the Storrs and regional campuses, except for UConn Health.
Contact:	EHS Chemical Health and Safety Manager

TABLE OF CONTENTS

I. PURPOSE.....	1
II. SCOPE	1
III. POLICY STATEMENT.....	1
IV. ENFORCEMENT.....	2
V. RESPONSIBILITIES.....	2
A. UNIVERSITY CHEMICAL HYGIENE OFFICER (CHO)	2
B. DEPARTMENT HEAD.....	2
C. PRINCIPAL INVESTIGATOR (PI)/LAB MANAGER	3
D. LAB WORKER.....	3
E. ENVIRONMENTAL HEALTH AND SAFETY	4
VI. INSPECTION PROCEDURE.....	4
VII. DOCUMENTATION.....	5
A. TRAINING HISTORY	5
B. CHEMICAL HYGIENE PLAN.....	6
C. CHEMICAL INVENTORY	6
D. SAFETY DATA SHEETS.....	6
E. WORKPLACE HAZARD ASSESSMENT FORM.....	7
F. LABORATORY SAFETY INFORMATION CARDS.....	7
G. LAB-SPECIFIC STANDARD OPERATING PROCEDURES	7
VIII. PERSONAL PROTECTIVE EQUIPMENT	7
A. REQUIREMENTS.....	8
B. RESPIRATORS.....	8
IX. FUME HOODS.....	9
A. FUME HOOD OPERATION	9
B. FUME HOOD USAGE AND STORAGE.....	9
X. CHEMICAL MANAGEMENT	10
A. CHEMICAL LABELING	10
B. EMPTY CONTAINER MANAGEMENT	10
C. CHEMICAL STORAGE NEAR SINKS/FLOOR DRAINS	10
D. CHEMICAL COMPATIBILITY	11
E. CORROSIVE STORAGE	11
F. FLAMMABLE STORAGE	11
G. COMPRESSED GAS CYLINDERS	12
H. CRYOGENIC LIQUIDS	12
I. PEROXIDE-FORMING CHEMICALS	13
XI. REGULATED WASTE.....	13
A. HAZARDOUS WASTE LABELING	13
B. HAZARDOUS WASTE CONTAINER MANAGEMENT	14
C. HAZARDOUS WASTE STORAGE.....	14
D. BIOMEDICAL WASTE MANAGEMENT	14

XII. HOUSEKEEPING AND PERSONAL HYGIENE	15
XIII. SPRINKLER SYSTEM CLEARANCE	15
XIV. EYEWASH STATIONS AND SAFETY SHOWERS	16
XV. ELECTRICAL SAFETY	16
XVI. CONTROLLED SUBSTANCES	17
A. RECORDKEEPING	17
B. MANAGEMENT, STORAGE, AND SECURITY	18
XVII. ADDITIONAL CRITERIA	18

APPENDICES

APPENDIX A. LABORATORY SAFETY SELF-INSPECTION CHECKLIST

APPENDIX B. REGULATED WASTE SELF-INSPECTION CHECKLIST

APPENDIX C. CONTROLLED SUBSTANCES SELF-INSPECTION CHECKLIST

Laboratory Inspection Program

I. PURPOSE

The purpose of the Laboratory Inspection Program is to prevent accidents and injuries by identifying, eliminating, and minimizing actual or potential hazards in labs and to ensure compliance with regulations and University standards. Environmental Health and Safety (EHS) conducts inspections to ensure lab personnel:

1. Remain compliant with applicable training requirements;
2. Implement appropriate engineering controls, administrative controls, and work practices;
3. Wear proper personal protective equipment;
4. Use and maintain laboratory equipment in a safe operating condition;
5. Effectively manage hazardous chemicals and regulated wastes; and
6. Understand the appropriate procedures to follow during emergencies.

EHS also performs inspections to collaborate with lab personnel to address lab-specific hazards and help provide a work environment that is free of recognizable hazards.

II. SCOPE

The Laboratory Inspection Program applies to faculty, staff, students, and visitors working in laboratories with hazardous chemicals at the Storrs and regional campuses, except for UConn Health.

III. POLICY STATEMENT

The University of Connecticut is committed to providing a healthy and safe work environment for

all activities under its jurisdiction and complying with all applicable federal, state, and local safety regulations and standards. Department heads, principal investigators, laboratory managers, lab workers, and other authorized individuals all share the responsibility for minimizing personnel exposure to laboratory hazards, correcting violations identified during inspections, and complying with the requirements in the Laboratory Inspection Program.

IV. ENFORCEMENT

Lab personnel, including principal investigators, laboratory managers, lab workers, visitors, and others working in UConn labs, who fail to comply with the guidelines in the Laboratory Inspection Program may be subject to disciplinary measures in accordance with University Laws and By-Laws, **General Rules of Conduct for All University Employees**, applicable collective bargaining agreements, and the UConn **Responsibilities of Community Life: The Student Code**.

V. RESPONSIBILITIES

Individuals overseeing or working in laboratories where hazardous chemicals are used or stored are responsible for following the guidelines listed in the Laboratory Inspection Program. The responsibilities of each position are outlined below:

A. UNIVERSITY CHEMICAL HYGIENE OFFICER (CHO)

- Reviews and updates the Laboratory Inspection Program.
- Works with departments, principal investigators, laboratory managers, and lab workers to develop, implement, and enhance the inspection program.
- Provides technical assistance to lab personnel regarding adherence to the Laboratory Inspection Program.

B. DEPARTMENT HEAD

- Directs lab personnel within their department to comply with the guidelines of the Laboratory Inspection Program.
- Instructs lab personnel within their department to complete Lab Safety and Chemical Waste Management training provided by EHS annually.
- Reviews inspection reports brought to their attention by EHS.

- Collaborates with EHS and principal investigators or laboratory managers to ensure timely corrective action of unresolved inspection violations.

C. PRINCIPAL INVESTIGATOR (PI)/LAB MANAGER

- Follows the guidelines of the Laboratory Inspection Program and ensures compliance with all EHS policies and programs applicable to their labs.
- Completes and ensures lab personnel complete Lab Safety and Chemical Waste Management training provided by EHS annually.
- Maintains an accurate, up-to-date chemical inventory for each laboratory.
- Reviews and updates the **Workplace Hazard Assessment(s)**, as needed.
- Provides training to lab personnel that addresses the hazards, controls, work practices, personal protective equipment (PPE), and emergency procedures specific to the lab.
- Maintains and makes available lab-specific training **documentation** for lab personnel, including the contents of training and a list of personnel receiving the training.
- Ensures that minors (individuals under 18 years old) are supervised at all times by qualified laboratory personnel.
- Provides appropriate personal protective equipment to lab personnel for the health hazards, physical hazards, and equipment identified in the Workplace Hazard Assessment.
- Reviews and approves protocols and procedures of lab personnel for potential safety and/or technical issues prior to active research.
- Develops lab-specific standard operating procedures (LSOPs) for lab personnel engaged in research with **aqua regia solutions, hydrofluoric acid, piranha solutions, pyrophoric chemicals**, and other high hazard chemicals.
- Ensures lab personnel properly collect, label, and manage regulated wastes.
- Ensures that lab(s) remain clean, orderly, and in a sanitary condition.
- Ensures the safe operation of laboratory equipment through proper installation, inspection, maintenance, and repair.
- Contacts **Facilities Operations** or EHS when safety showers, eyewash stations, fume hoods, or other safety-related equipment are not working properly.
- Adheres to all University, department, and laboratory-specific safety policies, procedures, and directives.

D. LAB WORKER

- Reviews and follows the procedures and work practices outlined in the Laboratory Inspection Program and all EHS policies and programs applicable to their labs.

- Completes Lab Safety and Chemical Waste Management training provided by EHS annually.
- Uses engineering, administrative, and work practice controls to minimize exposure to hazards present in the lab.
- Wears appropriate personal protective equipment as specified in the **Workplace Hazard Assessment**, safety data sheets (SDSs), or other applicable documentation.
- Receives approval from the principal investigator or laboratory manager prior to conducting research involving hazardous chemicals.
- Notifies and consults with the principal investigator or laboratory manager prior to making changes to existing, reviewed procedures.
- Properly collects, handles, labels, stores, and manages hazardous chemicals and wastes.
- Ensures that lab(s) remain clean, orderly, and in a sanitary condition.
- Reports unsafe conditions and near misses to the principal investigator or laboratory manager and EHS.
- Adheres to all University, departmental, and laboratory-specific safety policies, procedures, and directives.

E. ENVIRONMENTAL HEALTH AND SAFETY

- Reviews, edits, and evaluates the Laboratory Inspection Program as needed.
- Inspects laboratories and develops reports as outlined in the Laboratory Inspection Program.
- Conducts Laboratory Safety and Chemical Waste Management training.
- Provides technical guidance and consultation to lab personnel during inspections regarding work practices, procedures, controls, and personal protective equipment.
- Performs fume hood evaluations.
- Provides consultation related to regulated waste management and disposal during inspections.

VI. INSPECTION PROCEDURE

EHS conducts laboratory safety inspections through **HuskySMS**. EHS prioritizes inspections for laboratories using highly reactive, toxic, or potentially explosive substances. The EHS inspection procedure is outlined below:

1. EHS will email the principal investigator or laboratory manager prior to each inspection. The principal investigator or laboratory manager can either schedule a date and time for the inspection or EHS will show up unannounced.

2. EHS will inspect the laboratory.
3. EHS will create an inspection report and send it by email through HuskySMS to the principal investigator or laboratory manager within seven business days.
4. The principal investigator or laboratory manager must immediately address violations that pose an immediate threat to the health and safety of lab personnel. EHS will notify the principal investigator or laboratory manager of severe violations separately through email.
5. The principal investigator, laboratory manager, or compliance liaison must address each violation and respond to EHS through HuskySMS within 21 days of receipt of the inspection report. Lab personnel must provide a separate corrective action in HuskySMS for each violation.
6. Laboratories identified with unsafe conditions will be re-inspected by EHS. Re-inspections may be either announced or unannounced. If progress is unsatisfactory, a second inspection report will be sent to the principal investigator/laboratory manager and the department head.

In addition to EHS inspections, lab personnel should conduct self-inspections regularly to confirm compliance and identify safety-related issues. Self-inspection checklists for **laboratory safety**, **regulated waste management**, and **controlled substances** are available in the appendices.

VII. DOCUMENTATION

Principal investigators or laboratory managers are responsible for generating and maintaining the following documentation in each laboratory. Documentation must be updated when changes occur. EHS will evaluate the following documentation during inspections.

A. TRAINING HISTORY

- Lab personnel working in labs with hazardous chemicals must complete either Initial Lab Safety and Chemical Waste Management Training or Lab Safety and Chemical Waste Management Refresher training every year.
- Registrants and authorized lab workers managing controlled substances must complete Controlled Substances Training.
- Employees can review their training histories in **HuskySMS**.

- Employees that fail to maintain the training requirements are not authorized to work in laboratories.

B. CHEMICAL HYGIENE PLAN

- Each laboratory is required to have access to an up-to-date copy of the **Chemical Hygiene Plan** in the lab.
- Hard or electronic copies of the document are acceptable for compliance. Electronic copies must be kept on a computer that is readily accessible to lab personnel.
- Lab personnel must review the Chemical Hygiene Plan and complete the **Chemical Hygiene Plan Confirmation** in HuskySMS to confirm acknowledgement of the University chemical safety requirements. EHS will confirm compliance during inspections.

C. CHEMICAL INVENTORY

- Each lab is required to have an up-to-date chemical inventory that contains the names, locations, and approximate quantities of every chemical, including compressed gas cylinders, present in the lab.
- Hard or electronic copies of the inventory are acceptable. Electronic copies must be kept on a computer that is readily accessible to all researchers.
- Inventories must be updated whenever chemicals are added or removed from the lab.
- Lab personnel on the Storrs and Depot campuses (excluding Storrs Chemistry Building) may use the **Vertére Lab Inventory Management Software** to meet the inventory requirement as long as all requirements in the **Laboratory Chemical Inventory Program** are met.
- Lab personnel in the Chemistry Building at the Storrs campus may use the **Vertére Lab Inventory Management Software** to meet the inventory requirement as long as all procedures provided by the Chemistry Department are followed.

D. SAFETY DATA SHEETS

- Each lab is required to have a safety data sheet for every chemical in the lab.
- Hard copies or electronic documents are acceptable. Electronic safety data sheets must be kept on a computer that is readily accessible to all researchers.
- Lab personnel on the Storrs and Depot campuses (excluding the Chemistry Building at Storrs) may use the **Vertére Lab Inventory Management Software** to meet the safety data sheet requirement as long as they can access them during inspections.

E. WORKPLACE HAZARD ASSESSMENT FORM

- Every laboratory is required to complete a **Workplace Hazard Assessment**.
- A copy of the Workplace Hazard Assessment form must be readily available in the lab and another copy must be provided to EHS.
- Lab personnel must update the form whenever operations in the lab change or warrant the use of new personal protective equipment.

F. LABORATORY SAFETY INFORMATION CARDS

- An **Emergency Laboratory Information Card** must be completed and present on the exterior of the lab near the entry door.
- A **Laboratory Safety Information Card** must be completed and present on the interior of the lab near the entry door.
- Cards must be updated when changes to laboratory personnel and/or locations of safety-related documentation occur.

G. LAB-SPECIFIC STANDARD OPERATING PROCEDURES

- Lab-specific standard operating procedures (LSOP) are required for work involving **aqua regia solutions, hydrofluoric acid, piranha solutions, pyrophoric chemicals**, and other **hazardous procedures** that fall outside the guidelines of the Chemical Hygiene Plan.
- Principal investigators or lab managers must review and sign lab-specific standard operating procedures.
- The LSOP must be as stringent as the criteria in the **Chemical Hygiene Plan** and indicate the procedures, work practices, hazard controls, personal protective equipment, spill and accident procedures, first aid procedures, waste management procedures, and decontamination procedures that lab personnel must follow.

VIII. PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) for the eyes, face, hands, head, body, and feet must be of safe design and construction for the work to be performed, fit properly, and be used and maintained in a sanitary and reliable condition. If several types of PPE are worn together, they must be compatible. The principal investigator or lab manager of the work area shall be responsible to assure the adequacy, including proper maintenance and sanitation, of such equipment. EHS will evaluate the following criteria during lab inspections regarding PPE:

A. REQUIREMENTS

- Personal protective equipment, as specified in the lab's **Workplace Hazard Assessment Form**, must be present and worn in active lab areas.
- Lab personnel must wear ANSI Z87.1-certified eyewear, clothing that covers the legs, and closed-toed footwear, at a minimum, while working in labs with hazardous chemicals.
- Chemical splash goggles with indirect ventilation or no ventilation are recommended when handling corrosive and other hazardous chemicals, nonhazardous liquids over 60°C (140°F), and chemicals whose ability to cause damage or injury to the eyes is unknown.
- Lab personnel must ensure that the gloves, indicated in the safety data sheet or other relevant information source, are compatible with the substances being handled.
- Flame-resistant lab coats are required for work with pyrophoric chemicals.
- Lab coats are required for work with hydrofluoric acid, piranha solutions, aqua regia solutions, and other hazardous procedures specified by the principal investigator or lab manager. EHS recommends lab coats for all work in labs with hazardous chemicals.
- Sandals, flip-flops, clogs, or other footwear that expose the front, top, side or back of the feet are not allowed.

B. RESPIRATORS

- Lab personnel required to use respirators, including filtering facepiece respirators (e.g., dust masks), must be trained in their proper use, inspection, maintenance, and must receive a medical evaluation and fit test prior to use.
- Lab personnel who use dust masks voluntarily in labs may only do so when:
 1. The use of the dust mask is not required by the principal investigator or laboratory manager;
 2. The dust mask is used for comfort purposes only and not to protect the health of the worker;
 3. The principal investigator or laboratory manager determines that such dust mask use will not in itself create a hazard; and
 4. Selection, maintenance, and training requirements are met.
- Lab personnel wearing respirators must remain compliant with all aspects outlined in the **Respirator Program**.

IX. FUME HOODS

Fume hoods are ventilated enclosures used to contain gases, vapors, and fumes. Lab personnel must use fume hoods to minimize exposure to hazardous chemicals. EHS tests fume hoods annually and will evaluate the following criteria during inspections.

A. FUME HOOD OPERATION

- EHS places green stickers on fume hoods running between 80-120 linear feet per minute to indicate the hood is functioning properly for worker protection.
- EHS places yellow stickers on fume hoods running between 60-79 linear feet per minute or 121-150 linear feet per minute to indicate the hood is not functioning at optimal airflow for worker protection and should only be used with small quantities of low hazard chemicals.
- EHS places red stickers on fume hoods running less than 60 linear feet per minute or greater than 150 linear feet to minute to indicate lab personnel should not use the fume hoods.
- EHS initiates work orders through Facilities Operations for all fume hoods that receive yellow or red stickers.

B. FUME HOOD USAGE AND STORAGE

- Fume hood sashes must remain below 18 inches when in use.
- Fume hood sashes must remain closed when not in use.
- All apparatus and chemicals must be located at least six inches back from the front face of the hood.
- Horizontal sliding sash panels must be aligned to form a barrier between chemicals and lab personnel (i.e., lab personnel must not work in between open panels).
- Storage of chemicals in fume hoods is prohibited. Only chemicals and equipment required for research or teaching should be present in fume hoods.
- Hoods cannot be used to volatilize chemicals or wastes (i.e., allow chemicals to evaporate).
- Slots in the hood baffles must remain free of obstructions.
- Electrical outlets and power strips are not allowed inside the hood. All equipment cords must be run to outlets outside of the hood.
- Storage of hazardous waste in fume hoods is not allowed, unless venting is required to prevent pressure build-up (e.g., piranha solutions, aqua regia solutions, etc.).
- Large equipment (e.g., a centrifuge) must be elevated at least two inches off the base of the hood interior.
- Fume hoods must remain uncluttered to allow proper airflow.

X. CHEMICAL MANAGEMENT

Lab personnel must use, manage, and store hazardous chemicals properly to ensure worker safety. EHS will evaluate the following criteria regarding chemical management during inspections.

A. CHEMICAL LABELING

- Every chemical and sample, whether hazardous or not, must have a label.
- The identity of the chemical and applicable hazard warning(s) must be shown on the label.
- Labels must be legible, permanently displayed, and written in English.
- Boxes or racks containing multiple small vials in the same solvent (e.g., ethanol) must have a label with specific chemical names and applicable hazard warning(s) on the outside of the box or rack.

B. EMPTY CONTAINER MANAGEMENT

- Empty chemical bottles containing acutely hazardous wastes (i.e., chemicals on the EPA's **P-List**) must be disposed of as hazardous waste through EHS.
- Lab personnel at the Storrs and Depot campuses in the **Laboratory Chemical Inventory Program** must dispose of chemical barcodes through the **Vertére Lab Inventory Management Software** when containers become empty.
- Lab personnel in the Chemistry Building at the Storrs campus must bring empty containers to the Chemistry Stockroom so chemical barcodes can be removed from the **Vertére Lab Inventory Management Software**.
- Lab personnel must deface or remove labels on empty containers prior to reuse or disposal.
- Caps on empty chemical containers must be removed prior to disposal.
- Uncontaminated glassware (empty or broken) must be discarded into puncture-proof containers.

C. CHEMICAL STORAGE NEAR SINKS/FLOOR DRAINS

- Hazardous chemicals are not allowed to be stored near sinks or floor drains without secondary containment.
- Secondary containment bins must be compatible with the chemicals inside and able to contain 110% of the volume of the largest container.

D. CHEMICAL COMPATIBILITY

- Chemicals must be segregated based on hazard class (i.e., inorganic acids, organic acids, inorganic bases, organic bases, flammables, oxidizers, toxics, etc.).
- Alphabetical storage commonly does not segregate incompatible chemicals.
- Refer to the Chemical Hygiene Plan, safety data sheets, and the [Chemical Health and Safety webpage](#) for further information on chemical compatibility and segregation.

E. CORROSIVE STORAGE

- Corrosive liquids must be stored below eye level.
- Acids must be stored separately from bases.
- Inorganic acids must be stored separately from organic acids.
- Corrosives should be stored in a corrosive storage cabinet and kept away from incompatible materials.
- Glacial acetic acid, formic acid and other organic, flammable acids must be stored with the flammable chemicals. Protect acetic acid from freezing and store above 17°C (63°F).
- Nitric acid is a strong oxidizer and must never be stored with flammable, organic liquids (e.g., glacial acetic acid) or organic solids (e.g., wood). It should be stored alone in a designated cabinet. At a minimum, it must be stored in a plastic secondary containment bin with other inorganic, compatible acids.
- Perchloric acid should be stored alone in a dedicated corrosive storage cabinet away from organic materials. It must not be stored on wooden shelves or with paper shelf liners. At a minimum, perchloric acid must be stored in a separate plastic secondary containment bin with other inorganic, compatible acids.

F. FLAMMABLE STORAGE

- Flammable chemicals should be stored in a rated flammable storage cabinet, flammable or explosion-proof refrigerator, or safety can when not in use.
- Dispensing of flammable liquids from 5-gallon containers must take place in a chemical fume hood or an area with adequate ventilation to limit the accumulation of flammable vapors.
- Dispensing pumps must be tightly sealed to the container to prevent the release of flammable or other hazardous vapors.
- No more than ten gallons of flammable liquids can be stored outside of a rated flammable storage cabinet.

- Storage cabinets of flammable liquids must be labeled with a sign indicating “Flammable - Keep Fire Away.”
- Flammables must not be stored near electrical outlets, vacuum pumps, or other ignition sources.
- Refrigerators used to store flammable liquids must be designed for flammable or explosive storage and be properly labeled.
- Flammable liquids stored in rated flammable storage cabinets shall not exceed fifty-five gallons, unless approved by EHS and the UConn Fire Department.
- Flammable liquids must be stored separately from strong oxidizers, corrosives, and other incompatible materials.
- Additional information on the safe use of flammable liquids can be found in the standard operating procedures for [Flammable Liquids](#).

G. COMPRESSED GAS CYLINDERS

- Every compressed gas cylinder must be secured to a wall or lab bench with a chain, strap, or cable around the upper third of the cylinder to support the weight of the cylinder.
- Cylinders must be fastened individually (not ganged) in a well-ventilated area.
- A cylinder cap or regulator valve must always be in place.
- Every cylinder must be properly labeled and positioned so that the label can be easily read.
- Cylinder valves must be accessible.
- Cylinders must be kept away from ignition sources.
- Incompatible gases in storage must be located in separate areas at least twenty feet apart.
- Oxygen cylinders must be stored at least twenty feet from flammable gas cylinders or separated by a firewall at least five feet high with a 30-minute fire rating.
- Empty and full cylinders must be stored in separate areas.
- No more than one backup cylinder per compressed gas may be stored in the laboratory.

H. CRYOGENIC LIQUIDS

- Cryogenic liquids must be stored in well-ventilated areas (i.e., avoid closets, cold rooms, and other locations with little or no ventilation).
- Pressure relief valves are required for tanks, dewars, and other vessels where cryogenic liquids are stored.
- Appropriate personal protective equipment (e.g., cryogenic gloves, face shields, etc.) indicated in the Workplace Hazard Assessment must be present in labs with cryogenic liquids.

I. PEROXIDE-FORMING CHEMICALS

- Lab personnel must date each peroxide-forming chemical with the date the bottle is received into the lab and the date the bottle was first opened.
- Peroxide-forming chemicals must be tested for peroxides or disposed of after the expiration date. Peroxide test dates must be written on the bottle.
- Containers that are being refilled from larger stocks (i.e., from a chemical stockroom) must be dated when the container in the stockroom was opened.
- Peroxide-forming chemicals must be stored away from strong oxidizers, reducing agents, and other incompatible chemicals.
- Additional information on the safe use of peroxide-forming chemicals can be found in the standard operating procedures for [Peroxide-Forming Compounds](#).

XI. REGULATED WASTE

Hazardous and other regulated wastes must be managed in compliance with regulations of the Environmental Protection Agency (EPA) and the Connecticut Department of Energy and Environmental Protection (DEEP). EHS will evaluate the following criteria regarding waste management during inspections.

A. HAZARDOUS WASTE LABELING

- All hazardous chemical wastes must be labeled with the words “Hazardous Waste” and full chemical names. Chemical symbols or abbreviations are not allowed on hazardous waste stickers or tags.
- All labels must be legible and prominently displayed on the container.
- Properly labeled hazardous waste stickers or tags must be fastened to each waste container from the moment the first drop of waste is added.
- Hazardous waste containers with more than one chemical must list chemical contents by percentages. Percentages must equal 100%.
- Biological or radioactive wastes must not be labeled with hazardous waste stickers or tags. Refer to [EHS Regulated Waste Management webpage](#) for proper disposal of biological and radioactive wastes.

B. HAZARDOUS WASTE CONTAINER MANAGEMENT

- Hazardous waste containers must be in good condition and have tight-fitting caps or lids. Corks, Parafilm paper, aluminum foil and other non-secure sealants are not allowed.
- Funnels are not allowed to be present in hazardous waste containers unless directly adding or removing waste from the container.
- Every hazardous waste container must contain compatible chemicals. Questions regarding chemical compatibility should be referred to EHS.
- Eco-funnels, or similar equivalents, with closed lids should be used when generating wastes that are being continuously generated (e.g., HPLC wastes). Secondary containment bins that contain at least 110% of the volume of the largest waste container are required for hazardous wastes that are continuously generated.
- Eco-funnels may only be used if they are tightly sealed after each use to prevent spillage. If the Eco-Funnels cannot be tightly sealed (e.g., broken latch, degraded gasket, or the funnel cannot be tightly sealed to the waste container, etc.) they may not be used.
- A **Chemical Waste Pick-Up Request Form** must be submitted for full containers.

C. HAZARDOUS WASTE STORAGE

- Hazardous chemical waste is required to be stored near a green “Satellite Accumulation Area” sign and kept in the same laboratory where it was generated. Storage of hazardous wastes in labs across hallways or in adjacent labs is prohibited.
- Laboratories may only accumulate as much as fifty-five gallons of hazardous waste or one quart of acutely hazardous waste (**P-Listed Waste**) at any one time.
- Incompatible wastes must not be stored next to each other. Multiple storage locations are permissible to separate incompatible wastes.
- Secondary containment bins that can contain at least 110% of the volume of the largest container stored are recommended for the segregation of incompatible waste containers.

D. BIOMEDICAL WASTE MANAGEMENT

- The vendor provided **biomedical waste box/bag units** must be appropriately constructed, and filled with primary waste containers (i.e., properly labeled, sealed bags and sharps containers).
- Biomedical waste boxes must not exceed forty pounds.
- No liquids, hazardous chemical waste, or radioactive waste are allowed in biomedical waste box-bag units

- Sharps, including needles, scalpel blades, hypodermic needles, empty syringes (with or without needles), pipette tips, razor blades, broken glass or plastic, or anything that would puncture a plastic bag, must be placed into a sharps container.
- Sharps must never exceed the fill line on the container.

XII. HOUSEKEEPING AND PERSONAL HYGIENE

Laboratories must be kept clean, orderly and in a sanitary condition. EHS will evaluate the following criteria regarding housekeeping and personal hygiene in labs.

- Chemicals must be stored in appropriate cabinets or designated storage rooms when not in use.
- Chemicals must be properly labeled and kept in closed containers.
- Cabinets, lab benches, and bench tops must be kept clean, orderly, and in sanitary condition.
- Access to spill kits, first aid kits, and other safety equipment must remain unobstructed.
- Aisles and corridors must be free of tripping hazards.
- Exit access routes must be at least twenty-eight inches wide at all points.
- Unused or defective equipment should be removed from labs.
- Unused, off-specification or expired chemicals should be disposed of through EHS.
- Eating, drinking, chewing gum, applying cosmetics, handling contact lenses, or smoking is not allowed in active lab areas.
- Refrigerators used for laboratory purposes are not to be used for food storage. Personal food storage areas must be labeled and located outside of active lab areas.
- Microwaves used for laboratory purposes are not to be used to heat food. Microwaves used for personal use must be labeled and located outside of active lab areas.
- Food-related products and equipment used for research must be properly labeled.

XIII. SPRINKLER SYSTEM CLEARANCE

Sprinkler systems must have adequate vertical clearance from materials stored below to allow discharge to overlap and pre-wet combustibles to contain a fire. EHS will evaluate the following criteria regarding sprinkler system clearance in labs.

- An 18-inch clearance zone must be maintained beneath fire sprinkler systems.
- The 18-inch vertical clearance requirement is treated as a horizontal plane throughout the lab. Lab personnel must store all materials below this horizontal plane.

XIV. EYEWASH STATIONS AND SAFETY SHOWERS

Eyewash stations and safety showers are required where a person's eyes or body may be exposed to corrosive materials. EHS will evaluate the following criteria regarding eyewash stations and safety showers in labs.

- Labs that contain corrosive materials must have an eyewash station and safety shower located within a ten second walk.
- Eyewash stations and safety showers must be located on the same floor as the hazard.
- Locations of eyewash stations and safety showers must be well lit and identified with a highly visible sign.
- Eyewash stations and safety showers must deliver tepid flushing fluids with a temperature range of 60–100°F.
- Lab personnel must activate eyewash stations weekly to ensure proper function.
- Eyewash stations must remain unobstructed and must be positioned at least six inches from the wall or nearest obstruction.
- The water flow from eyewashes must be high enough to allow users to hold both eyes open while rinsing.
- Spray heads on eyewashes must have covers for protection from airborne contaminants.
- Safety showers must remain unobstructed and be evaluated annually by Facilities Operations or a contracted vendor to ensure proper function.
- No obstructions shall be located within sixteen inches from the center of the spray pattern of the emergency shower facility (i.e., a 32-inch clearance zone).

XV. ELECTRICAL SAFETY

EHS will evaluate the following criteria regarding electrical safety in labs.

- All electrical equipment must be plugged into dedicated wall outlets.
- Equipment with damaged or defective cords or plugs (i.e. worn, twisted, frayed, abraded, corroded or missing ground prongs) must be taken out of service or repaired by a qualified person as defined in the [UConn Electrical Safety Program](#).
- Two-prong outlets are prohibited; all receptacle outlets must have three prongs.
- Flammable materials, corrosive chemicals and organic solvents must be stored away from electrical cords and equipment.
- Electrical panels and disconnect switches must remain unobstructed.

- Extension cords are only approved for temporary use. In certain cases, a qualified person should install a new electrical outlet in lieu of an existing extension cord.
- Extension cords must not run across aisles or corridors where they might be damaged or create a tripping hazard.
- Extension cords must not run through doors, walls, partitions, under rugs, or above dropped ceilings.
- Electrical cords must always be plugged in outside of a fume hood. No relocatable power taps (a.k.a. power strips) or extension cords may be used inside of the fume hood.
- Relocatable power taps should only be used to energize digital and computer equipment. They must not be tied in knots, suspended, draped overhead, or attached to walls.
- Relocatable power taps and extension cords must not be connected in series.
- Additional information on electrical safety can be found in the [Electrical Safety Program](#).

XVI. CONTROLLED SUBSTANCES

EHS will inspect the laboratories of principal investigators and lab managers who manage controlled substances to ensure compliance with the regulations of the Drug Enforcement Administration (DEA) and Connecticut Department of Consumer Protection (CT-DCP). Lab personnel managing controlled substances must comply with all requirements in the [Controlled Substances Policy](#) and complete *Controlled Substances Training* through [HuskySMS](#). The following criteria will be evaluated during inspections for labs with controlled substances.

A. RECORDKEEPING

- Usage records for stock solutions and working solutions must be complete and properly executed in Binder 1.
- The DEA registration certificate must be up-to-date and present in Section 1 of Binder 2.
- The CT-DCP registration certificate must be up-to-date and present in Section 1 of Binder 2.
- Annual inventory records must be complete, properly executed, and available in Section 2 of Binder 2.
- Receipt records for controlled substances must be present and available in Section 3 of Binder 2.
- Receipt records for Schedule I and II controlled substances must be maintained separately from Schedules III-V.
- Receipt records must be annotated by the registrant or authorized worker with a signature and the date the controlled substances were received.

- Lab Worker Authorization Forms must be complete, properly executed, and available in Section 4 of Binder 2.
- Records of Surrender or Disposal Forms must be complete, properly executed, and available in Section 5 of Binder 2.
- Inspection reports from DEA or CT-DCP must be available in Section 6 of Binder 2.
- Protocols (i.e., the first page and applicable pages involving controlled substances) must be available in Section 7 of Binder 2.
- Completed usage records from Binder 1 must be available in Section 8 of Binder 2.
- A copy of the regulations provided by CT-DCP must be available in Section 9 of Binder 2.

B. MANAGEMENT, STORAGE, AND SECURITY

- Lab doors where controlled substances are stored must remain locked.
- Storage devices must only be accessible to authorized personnel.
- Safes for Schedule I and II controlled substances must be compliant and remain locked.
- Storage devices for Schedule III, IV, or V controlled substances must be compliant and remain locked.
- Controlled substances in secondary containers (e.g., vials) must be labeled with chemical names and hazard classes.
- No additional chemicals can be stored with controlled substances in storage devices.
- Expired controlled substances must be separated from non-expired controlled substances within the approved storage device and be labeled as “expired.”

XVII. ADDITIONAL CRITERIA

EHS reserves the right to cite laboratories for unsafe work practices and/or conditions that fall outside of the listed inspection criteria. Outside contractors or other groups within EHS may be consulted when further expertise is required to achieve safe working conditions.

APPENDIX A. LABORATORY SAFETY SELF-INSPECTION CHECKLIST

LABORATORY SAFETY SELF-INSPECTION CHECKLIST			
Documentation	Yes	No	NA
1. Has Lab Safety and Chemical Waste Management training been completed by all lab personnel in the last year?			
2. Is the Chemical Hygiene Plan present and compliant?			
3. Is the chemical inventory accessible and compliant?			
4. Are safety data sheets (SDSs) accessible and compliant?			
5. Is the Workplace Hazard Assessment present and compliant?			
6. Are the "Emergency Laboratory Information" and "Laboratory Safety Information" cards present and compliant?			
7. Are lab-specific standard operating procedures present and compliant?			
Personal Protective Equipment (PPE)	Yes	No	NA
1. Is appropriate PPE available and worn by lab personnel?			
2. Is PPE maintained in a sanitary and reliable condition?			
Fume Hoods	Yes	No	NA
1. Are fume hoods operating properly?			
2. Is storage in fume hoods minimized?			
3. Are fume hood sashes closed when not in use?			
4. Are chemicals and equipment at least six inches back from the sash?			
Chemical Management	Yes	No	NA
1. Are chemical containers, including non-hazardous chemicals, clearly labeled with chemical name(s) and hazard class (if applicable)?			
2. Are labels on empty chemical containers for reuse/disposal removed or defaced?			
3. Are hazardous chemicals used near sinks stored in secondary containment?			
4. Are chemicals stored by compatibility and hazard class?			
5. Are corrosives stored by compatibility and hazard class?			
6. Are corrosives stored below eye level (approximately five feet)?			
7. Are flammables managed properly?			
8. Are peroxide-forming chemicals dated upon receipt and when first opened?			
9. Are peroxide-forming chemicals disposed of before the expiration date?			
Compressed Gas Cylinders and Cryogenics	Yes	No	NA
1. Are gas cylinders stored upright and secured from tipping?			

LABORATORY SAFETY SELF-INSPECTION CHECKLIST

2. Are gas cylinder valve caps in place when not in use?			
3. Are cylinders stored by hazard class and chemical compatibility?			
4. Are toxic, flammable, or corrosive gases used in fume hoods/gas cabinet?			
5. Are compressed gases and cryogenic liquids dispensed in areas with good ventilation?			
6. Are cryogenic Dewars vented or have pressure relief devices?			
Hazardous Waste Management	Yes	No	NA
1. Are hazardous waste containers labeled with the words "Hazardous Waste" and full chemical names (i.e., no abbreviations)?			
2. Are hazardous waste containers in good condition and kept closed except during use (no funnels)?			
3. Are hazardous wastes stored at or near Satellite Accumulation Area?			
4. Do storage areas contain less than 1 quart of acutely hazardous waste and less than 55 gallons of hazardous waste?			
5. Are biohazard box-bag units and sharps containers managed properly?			
Housekeeping	Yes	No	NA
1. Are floors dry and free of slip hazards; bench tops and hoods organized and clean?			
2. Is there evidence of food or drink in active laboratory areas?			
3. Are food products and food-related equipment (e.g., refrigerators, microwaves, etc.) used for research labeled properly?			
4. Are aisles, passageways, and exits clear and unobstructed?			
5. Are materials stored at least eighteen inches below sprinkler heads?			
Eyewash and Safety Showers	Yes	No	NA
1. Are eyewash stations unobstructed and evaluated weekly?			
2. Are eyewash unit and safety showers within 10 seconds of corrosive chemicals?			
3. Is a 32-inch clearance zone maintained around all safety showers and evaluated annually?			
Electrical Safety	Yes	No	NA
1. Are electrical cords in good condition?			
2. Are electrical cords being use near flammable or corrosive chemicals?			
3. Are circuit breaker panels and emergency switches unobstructed?			
4. Are relocatable power taps only energizing digital and computer equipment?			
5. Are extension cords not plugged into other extension cords or relocatable power taps?			

APPENDIX B. REGULATED WASTE SELF-INSPECTION CHECKLIST

REGULATED WASTE SELF-INSPECTION CHECKLIST			
Hazardous Waste	Yes	No	NA
1. Are hazardous wastes labeled with an appropriate sticker or tag?			
2. Do hazardous waste labels contain legible, full chemical names (i.e., no abbreviations)?			
3. Do hazardous wastes with more than one chemical list the percentage of each chemical in the container and add up to 100%?			
4. Are hazardous wastes listed on the label compatible?			
5. Are hazardous waste containers segregated by hazard class?			
6. Are hazardous waste containers in good condition, compatible with the wastes, and kept closed?			
7. Are hazardous waste containers stored at or near a satellite accumulation area sign?			
8. Are continuously generated hazardous waste containers (e.g., HPLC) stored in secondary containment bins?			
Biomedical Waste	Yes	No	NA
1. Are biomedical waste box/bag units properly constructed and filled with labeled sharps containers and sealed bags?			
2. Do sharps containers hold appropriate materials and not exceed the fill line?			

APPENDIX C. CONTROLLED SUBSTANCES SELF-INSPECTION CHECKLIST

CONTROLLED SUBSTANCES SELF-INSPECTION CHECKLIST			
Recordkeeping	Yes	No	NA
1. Are usage record(s) compliant?			
2. Is the federal controlled substance registration compliant?			
3. Is the state controlled substance registration compliant?			
4. Is the annual inventory compliant?			
5. Are the receipt record(s) compliant?			
6. Are receipt record(s) for Schedule I and/or II maintained separately?			
7. Are receipt records annotated with a signature and date of receipt?			
8. Is the Lab Worker Authorization Form compliant?			
Management, Storage and Security	Yes	No	NA
1. Is the controlled substances storage area secure?			
2. Is the safe for schedule I and/or II controlled substances locked and compliant?			
3. Is the security device for schedules III-V controlled substances locked and compliant?			
4. Are controlled substances labeled appropriately?			
5. Are expired controlled substances separated from non-expired controlled substances in the storage device?			