UCONN
LABORATORY
CHEMICAL
INVENTORY
PROGRAM

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Laboratory Chemical Inventory Program

I. Introduction

The Laboratory Chemical Inventory Program (LCIP) is designed to create and maintain an accurate inventory of chemicals in research and teaching and laboratories at the UConn Storrs and Depot campuses. Environmental Health and Safety (EHS) uses the Vertère Inventory Management System to administer the program. The LCIP is designed to meet compliance with the requirements in the University Chemical Hygiene Plan and Health and Safety Policy.

II. Scope and Applicability

This program applies to Central Stores Chemical Receiving Staff, principal investigators, laboratory/facility managers, lab workers, chemical purchasers/fiscal officers, students and other individuals delivering, purchasing, or working in laboratories with chemicals at the UConn Storrs and Depot campuses. This program excludes the Chemistry Department which maintains its own chemical inventory system through Verteré.

The inventory includes all chemicals delivered to laboratories with the exception of buffers, cleaning products, compressed gases, drugs, microbiology media (e.g., agars, broths, serums, yeasts, etc.), solutions prepared on-site, radioisotopes, and test kits.

III. Definitions

- **Central Receiving Area**- offices or areas within buildings where chemical packages are delivered by Central Stores and signed for by University personnel.

- **Hazardous chemical**- any chemical which is classified as a physical hazard, a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.

- **Health Hazard**- means a chemical that 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; carcinogenity;
reproductive toxicity; specific target organ toxicity (single or repeated exposure); or aspiration hazard.

- **Laboratory**- a facility where small quantities of hazardous chemicals are handled, mixed or transferred on a non-production basis.

- **Lab Personnel**- department heads, principal investigators, laboratory/facility managers, lab workers, and other individuals assigned by UConn to perform specific duties in laboratories where hazardous chemicals are used or stored. This does not include maintenance, custodial, or other workers not actively engaged in laboratory activities.

- **Physical Hazard**- 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 (gas, liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; in contact with water emits flammable gas; or combustible dust.

**IV. Roles and Responsibilities**

The *Laboratory Chemical Inventory Program* requires compliance from multiple departments and individuals to generate an accurate chemical inventory. The responsibilities of each group involved with the program are outlined below:

**A. Central Stores- Chemical Receiving Staff**

- Completes *Hazard Communication* and *Personal Protective Equipment* training through EHS prior to involvement with the *Laboratory Chemical Inventory Program*.
- Inspects chemical packages prior to acceptance.
- Rejects packages with signs of leaks, odors, or other damage.
- Contacts the principal investigator, laboratory/facility manager, or other lab personnel if chemicals were damaged and unable to be delivered.
- Generates barcodes through the Vertére Inventory Management System.
- Affixes barcodes to the chemicals to be delivered or exterior packaging (if applicable).
- Delivers chemicals to the locations listed on the packing slips on the same day as received, unless circumstances prevent same-day delivery (e.g., severe weather, late delivery to Central Stores, lab personnel unavailable, etc.).
- Follows all guidelines in the Central Stores standard operating procedure for the barcoding, handling and transport of chemicals.
B. Environmental Health and Safety (EHS)

- Maintains and manages the Vertére Inventory Management System.
- Provides Hazard Communication and Personal Protective Equipment training to Central Stores staff involved in the program.
- Grants access to principal investigators, laboratory/facility managers, and other lab personnel to view their inventories online through Vertére upon request.

C. Lab Personnel

- Follows the steps for ordering chemicals through HuskyBuy or Procurement Cards (ProCards) to ensure chemicals are barcoded by Central Stores prior to use.
- Places chemical orders separately from orders for laboratory supplies/non-chemical purchases.
- Ensures chemical orders identify the receiving address as:
  
  CS Chem, 3 Discovery Drive, U-6114, Storrs, CT 06269-6114

- Verifies that chemicals are delivered to the correct location(s).
- Contacts EHS if barcoded materials are relocated to another location.
- Provides barcode numbers to EHS (ehs@uconn.edu, FAX 860-486-1106, or Unit 4097) when containers are empty.
- Reorders chemicals from vendors when leaking or damaged chemicals arrived at Central Stores and were unable to be delivered.
- Disposes of empty containers properly.

D. Purchasers/Fiscal Officers

- Trains lab personnel on the proper procedures for placing chemical requisitions.
- Ensures all chemical orders identify the receiving address as:
  
  CS Chem, 3 Discovery Drive, U-6114, Storrs, CT 06269-6114

- Confirms chemical orders are placed separately from orders for laboratory supplies/non-chemical purchases.
- Denies approval to chemical orders that fail to identify the CS Chem receiving address.
V. Purchasing Laboratory Chemicals

A. HuskyBuy

Laboratory chemicals, excluding buffers, cleaning products, compressed gases, drugs, microbiology media (e.g., agars, broths, serums, yeasts, etc.), solutions prepared on-site, radioisotopes, and test kits, purchased through the HuskyBuy must list the following information to be barcoded for the Laboratory Chemical Inventory Program:

1. CS Chem address (auto-populated upon selection);
2. Principal investigator’s or lab/facility manager’s name;
3. Building abbreviation; and
4. Room number.

The step-by-step procedure for ordering laboratory chemicals through HuskyBuy is provided through the Purchasing Department.

B. Procurement Cards

Laboratory chemicals being purchased for the Storrs and Depot campuses (with the exception of the Chemistry Department) should be ordered through HuskyBuy to ensure the accuracy of the Laboratory Chemical Inventory Program. When circumstances do not allow purchases through HuskyBuy, laboratory chemicals ordered on Procurement Cards (Pro-Cards) must identify CS Chem as the receiving address. When placing orders via Pro-Card, the information below must be provided:

CS Chem
Attn: Principal Investigator’s Name
Building and Room Number
3 Discovery Dr. Unit 6114
Storrs, CT 06269-6114

VI. Chemical Processing, Delivery, and Management

Laboratory chemicals ordered through the HuskyBuy Evolution or through a Procurement Card will be delivered to Central Stores for barcoding. Central Stores will follow the steps below during processing and delivery of the chemicals to the labs. Once barcoded chemicals have been delivered to laboratories or central receiving areas, lab personnel are responsible for proper management and disposal.
A. Processing- Central Stores

1. Packages containing laboratory chemicals identified by Department of Transportation (DOT) labels and markings must be inspected upon arrival at Central Stores for leaks, odors, or other signs of damage. Packages with signs of damage will not be accepted.
2. Central Stores must contact the individual that placed the order if a damaged package is identified and unable to be delivered.
3. Packages with no signs of damage will be moved by trained employees to the Central Stores-Chemical Receiving Area for barcoding.
4. Trained employees will enter applicable information (e.g., chemical name, manufacturer, CAS Number, product number, etc.) for each chemical into the Vertére Inventory Management System and generate barcodes.
5. Barcodes will be affixed directly to each chemical container by trained employees wearing appropriate personal protective equipment.
6. Central Stores employees will not open packages stored in dry ice or with inner protective packaging designed to ensure chemical integrity. For chemicals stored in dry ice or with inner protective packaging, barcodes will be attached to the exterior packaging with instructions for researchers to affix the barcodes to the inner container upon opening.
7. Chemicals that are not stored in dry ice or with inner protective packaging will be resealed in their original packaging by Central Stores after barcodes have been affixed.
8. Chemical packages will be moved and secured on trucks for delivery to labs.

B. Delivery- Central Stores

1. Central Stores will place copies of the packing slips for each chemical in the compartment next to the driver-side door of the delivery truck prior to transport.
2. Packages containing barcoded chemicals will be delivered to the location on the packing slip. Packages containing dry ice will be delivered directly to the end user.
3. Central Stores will include a notice on each chemical package listing the investigator, building, room number, barcode number and instructions for researcher compliance. A copy of the notice is displayed below:
4. Central Stores will receive a signature from the individual receiving the package(s).
5. Receipts of delivery confirmation will be returned to Central Stores.

C. Management- Lab Personnel

Once chemicals arrive in laboratories, lab personnel are responsible for:

1. Affixing barcodes to chemical containers stored in dry ice or with inner protective packaging upon opening.
2. Notifying Central Stores (860-486-6297) or EHS (860-486-3613) if the barcode location or recipient is incorrect.
3. Contacting EHS if the barcoded materials are relocated to another laboratory or building.

VII. Disposal

Lab personnel are responsible for contacting EHS (ehs@uconn.edu, FAX 860-486-1106, or Unit 4097) with barcode number(s) when containers are empty. EHS will remove the empty containers from the online inventory once barcodes are received. Any hazardous chemicals remaining in bottles must be managed as hazardous waste and be disposed of through EHS. Empty chemical containers must be managed based on the chemical(s) originally present in the container.
A. Acutely Hazardous Chemicals

Empty containers of P-listed chemicals must be properly labeled as hazardous waste and be discarded through EHS. Wastes that fall on the P-List include only those products that contain the listed constituent as the sole active ingredient. Some P-listed chemicals commonly found in labs include osmium tetroxide, sodium azide, potassium cyanide, 2,4-dinitrophenol, and arsenic trioxide. Prior to disposal of any empty container, lab personnel must determine if the empty container is listed on the EPA’s P-List.

B. Non-Acutely Hazardous Chemicals

All empty containers, not identified on the P-List, must meet the following four criteria prior to disposal in the regular trash:

1. All waste must be removed using practices commonly employed to remove materials from the container (e.g., pouring, pumping, and aspirating);

2. No more than 2.5 centimeters (one inch) of residue may remain on the bottom of the container or inner liner;

3. No more than 3% by weight of the total capacity of the container may remain in the container or inner liner; and

4. The empty container must not have a residual, noxious odor.

If all four criteria are met, the caps on the empty containers must be removed and the chemical name(s) must be crossed out/defaced before the containers can be disposed of in the regular trash, lab glass, or other suitable waste receptacle.

VIII. Emergency Procedures

A. Central Stores

1. Central Stores- Chemical Receiving Area

If a package is delivered to the Central Stores Chemical Receiving Area and shows signs of damage, deterioration, smoke, and/or emits a noxious odor, the following procedure must be carried out:
Table 1. Central Stores Chemical Receiving Area

<table>
<thead>
<tr>
<th>EMERGENCY PROCEDURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Evacuate the room/area.</td>
</tr>
<tr>
<td>2. Close door(s) to the chemical receiving area (if applicable) and call 911.</td>
</tr>
<tr>
<td>3. If safe to do so, post a “NO ENTRY” sign(s) or other warning information on the outside of the door(s) to prevent entry by other employees.</td>
</tr>
<tr>
<td>4. Evacuate the building through the nearest exit. Do not run.</td>
</tr>
<tr>
<td>5. Do not re-enter area until instructed to do so by UCFD or other emergency personnel.</td>
</tr>
<tr>
<td>6. Report the incident to supervisor and EHS (860-486-3613)</td>
</tr>
</tbody>
</table>

2. Central Stores Delivery Truck

If a package found on a Central Stores delivery truck shows signs of damage, deterioration, smoke, and/or emits a noxious odor, the following procedure must be carried out:

Table 2. Delivery Truck

<table>
<thead>
<tr>
<th>EMERGENCY PROCEDURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Turn off ignition, grab copies of the packing slips, evacuate vehicle, and move to a safe distance.</td>
</tr>
<tr>
<td>2. Call 911.</td>
</tr>
<tr>
<td>3. Do not re-enter vehicle until instructed to do so by UCFD or other emergency personnel.</td>
</tr>
<tr>
<td>4. Report the incident to supervisor and EHS (860-486-3613)</td>
</tr>
</tbody>
</table>

B. Central Receiving Area/Laboratory

If a package is delivered to a central receiving area or laboratory and shows signs of damage, deterioration, smoke, and/or emits a noxious odor, the following procedure must be carried out:
Table 3. Central Receiving Area or Laboratory

<table>
<thead>
<tr>
<th>EMERGENCY PROCEDURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Evacuate the room/area.</td>
</tr>
<tr>
<td>2. Close door(s) to the receiving area or laboratory (if applicable) and call 911.</td>
</tr>
<tr>
<td>3. If safe to do so, post a “NO ENTRY” sign(s) or other warning information on the</td>
</tr>
<tr>
<td>outside of the door(s) to prevent entry by other employees.</td>
</tr>
<tr>
<td>4. Evacuate the building through the nearest exit. Do not run.</td>
</tr>
<tr>
<td>5. Do not re-enter area until instructed to do so by UCFD or other emergency</td>
</tr>
<tr>
<td>personnel.</td>
</tr>
<tr>
<td>6. Report the incident to supervisor and EHS (860-486-3613)</td>
</tr>
</tbody>
</table>

IX. First Aid Procedures

The following procedures must be followed by UConn personnel when exposure to a hazardous chemical in transport, delivery or in storage occurs.

Table 4. First Aid Procedures

<table>
<thead>
<tr>
<th>COURSE OF ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Aid- Eyes</td>
</tr>
<tr>
<td>1. Move to the nearest eyewash, forcibly hold eyelids open, and begin flushing</td>
</tr>
<tr>
<td>both eyes.</td>
</tr>
<tr>
<td>2. Remove contact lenses and eyewear (if applicable) while flushing.</td>
</tr>
<tr>
<td>3. Dial 911 or have someone else dial 911.</td>
</tr>
<tr>
<td>4. Keep flushing eyes under the eyewash until emergency personnel arrives.</td>
</tr>
<tr>
<td>5. Report the incident to supervisor and EHS.</td>
</tr>
<tr>
<td>First Aid- Skin</td>
</tr>
<tr>
<td>1. Move to the nearest safety shower, pull shower handle, and flush the affected</td>
</tr>
<tr>
<td>area(s) with water.</td>
</tr>
<tr>
<td>2. Remove contaminated clothing (if applicable) while flushing.</td>
</tr>
<tr>
<td>3. Dial 911 or have someone else dial 911.</td>
</tr>
<tr>
<td>4. Keep rinsing affected area until emergency personnel arrives.</td>
</tr>
<tr>
<td>5. Report the incident to supervisor and EHS.</td>
</tr>
<tr>
<td>First Aid - Inhalation</td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td>1. Move to fresh air.</td>
</tr>
<tr>
<td>2. Dial 911 or have someone else dial 911.</td>
</tr>
<tr>
<td>3. Report the incident to supervisor and EHS.</td>
</tr>
</tbody>
</table>