

# BioRAFT ChemTracker Module User's Guide

**Prepared by BioRAFT Professional Services and University of Pennsylvania EHRS**

Log-in to ChemTracker with your Pennkey at  
<https://penn.bioraft.com>

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# BioRAFT ChemTracker Module Introduction

The BioRAFT ChemTracker module provides a method for tracking chemical inventory with connection to a central database that provides easily accessible links to hazard data.

## Contact the Chemical Inventory Team

EHRs Chemical Inventory Team  
[cheminv@ehrs.upenn.edu](mailto:cheminv@ehrs.upenn.edu)

### *EHRs Customer Service Links:*

General Information about Penn's Chemical Inventory Program:

<https://ehrs.upenn.edu/health-safety/lab-safety/chemical-inventory-program>

Barcode Sticker Requests (Free):

<https://ehrs.upenn.edu/health-safety/health-safety-forms/warning-sign-and-label-request-form>

Problem Container Form (For chemicals not found in database):

<https://ehrs.upenn.edu/policies-resources/chemical-inventory-problem-container-request-form>

Request Changes to BioRAFT Lab Locations (Spaces)

<https://ehrs.upenn.edu/health-safety/lab-safety/laboratory-inspection-program/request-changes-bioraft-lab-locations-spaces>

Chemical Inventory Tip Sheets:

*See Resources for ChemTracker Users*

<https://ehrs.upenn.edu/health-safety/lab-safety/chemical-inventory-program/resources-chemtracker-users>

Request Search of Chemical Inventories on Campus (Borrow Chemicals):

<https://ehrs.upenn.edu/health-safety/health-safety-forms/chemical-borrow-request>

# What Must Be Tracked in the Inventory?

## Hazardous Chemicals

You must track inventory of any research chemicals that are **physical, environmental, or health hazards**. This includes all solvents and other flammables, reactive substances, corrosives, irritants, toxics, etc.

Examples of the new GHS hazard pictograms and the older CHIP hazard pictograms are shown below.

If a manufacturer has labeled a chemical container with one or more of these symbols, the chemical must be tracked in your inventory.



Older chemical containers may not be labeled according to current standards. Some containers that do not have these hazard pictures are still hazardous and must be tracked in your inventory. If you're not sure, contact [cheminv@ehrs.upenn.edu](mailto:cheminv@ehrs.upenn.edu) to ask!



For information about what these pictograms mean, see the chemical's SDS, or see <https://www.osha.gov/sites/default/files/publications/OSHA3491QuickCardPictogram.pdf>.

## Tracking Hazardous Gases

**ALL HAZARDOUS GASES must be tracked in your inventory.**

See Reference Chart: Common Gas Cylinder

Volumes/Weights (click [here](#) for link) for information about cylinder sizes.

**Hazardous Gases** Include any gas that is:

- Flammable
- Corrosive
- Toxic
- Oxidizing
- Or otherwise hazardous per the SDS



Common examples of hazardous gases include:

Ammonia  
Boron trichloride  
Carbon monoxide  
Chlorine  
Dichlorosilane

Fluorine  
Hydrogen ( $\geq 5\%$ )  
Hydrogen fluoride  
Methane  
Nitric oxide

Oxygen ( $> 20\%$ )  
Propane  
Silane  
Sulfur-dioxide

**Inert (non-hazardous) gases do not need to be tracked.**



Examples of inert gases include:

Argon  
Carbon dioxide  
Nitrogen  
Helium

## Exempt Chemicals

Below are some examples of containers that **do not** need to be tracked in the inventory system:

- Chemicals in small quantity (< 10 mL) that are sold as part of a **kit** and stored within the kit.
- **Stock solutions** and other mixtures of chemicals that were prepared in your lab and/or transferred into a new container (such as **wash bottles** of solvents).
- **Household products** such as Clorox, Windex, baking soda, paints, etc.
- Products with **no chemical hazards**, such as:

Growth media  
Agar/Agarose

Amino acids  
Sodium chloride

Glass beads  
Glucose, sucrose,  
starch, etc.



These are just a few examples. If you're not sure whether a material is hazardous, check if the container has a hazard warning on the label. If you are still unsure, inquire at [cheminv@ehrs.upenn.edu](mailto:cheminv@ehrs.upenn.edu). **Remember: You are welcome to track non-hazardous materials in your inventory.**

## Viewing and Editing Your Chemical Inventory

### All containers

Follow these instructions using color-coded circles to access your chemical inventory.

From the BioRAFT homepage, expand the left side menu to view information relevant to your lab. Click the “**ChemTracker**” **dropdown menu** on the left side of the BioRAFT page to view your lab's chemical inventory.



This page displays every chemical container in your lab's inventory. Upon opening the page, you are brought to the "Filters" widget where search filters are displayed on screen.

You can search for a specific record by clicking in **Container IDs** field and scanning or typing a barcode number. To access this field, click on the “**Show Advanced Filters**” button.

ChemTracker | Add Inventory | Totals | Bulk Edit | Reconciliation

### View Passante Lab (inactive) Inventory

Displaying 1 - 0 of 0 results

Download (?) Filters 0 Settings Expand

| Chemical Name        | CAS Number           | Chemical Synonym     |
|----------------------|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> | <input type="text"/> |

Spaces

Show Advanced Filters Clear All

**ChemTracker** | [Add Inventory](#) | [Totals](#) | [Bulk Edit](#) | [Reconciliation](#)

## View Passante Lab (inactive) Inventory

Displaying 1 - 0 of 0 results

Download (?)
Filters 0
Settings
Expand

|                          |  |   |
|--------------------------|--|---|
| Chemical Name            | CAS Number   | Chemical Synonym                              |
| <input type="text"/>     | <input type="text"/>   | <input type="text"/>                          |
| Spaces                   | Physical State   | Last Updated After (?)                        |
| <input type="text"/>     | <input type="text"/>   | <input type="text"/>                          |
| Last Updated Before      | Product Name   | Container Expires After                       |
| <input type="text"/>     | <input type="text"/>   | <input type="text"/>                          |
| Container Expires Before | Chemical Hazards   | Database Linkage Status (?)                   |
| <input type="text"/>     | <input type="text"/>   | <input type="text"/>                          |
| Storage Group            | Bench  | Shelf   |
| <input type="text"/>     | <input type="text"/>   | <input type="text"/>                          |
| Specific Location Note   | <div> <div>Container IDs</div> <div>Comma-delimited (or one per line) list of Container IDs</div> <div> <input type="checkbox"/> Starts With </div> </div> | <input type="checkbox"/> Controlled Substance |
| <input type="text"/>     | Notes  |   |
| <input type="text"/>     | <input type="text"/>   |   |

☐ Only Removed Containers

You can also use the other filters on this page to view or search for a subset of your containers.

You can sort your inventory or filtered results by clicking on the **arrows** next to most of the column headings.



| Chemical Name ↓   | CAS Number ↑ | State ↑ | Amount ↑ | Units ↑ |
|---|--------------|---------|----------|---------|
| <a href="#">Methylglyoxal solution</a>                        | 78-98-8      | Liquid  | 25       | ml      |
| <a href="#">"Bromoacetic acid" as BROMOACETIC ACID, solid</a> | 79-08-3      | Solid   | 100      | g       |
| <a href="#">((4R,5R)-(+)-O-[1-BENZYL- 0.1G</a>                | 880262-16-8  | Solid   | 100      | mg      |

To edit a record, click on the “Edit” link:

| Chemical Name ↓                        | CAS Number ↑ | State ↑ | Amount ↑ | Units ↑ | Location ↑                                 | Container ID ↑         | Edit                 | Remove                 |
|--|--------------|---------|----------|---------|--|------------------------|----------------------|------------------------|
| <a href="#">Methylglyoxal solution</a> | 78-98-8      | Liquid  | 25       | ml      | <a href="#">Smilow Center - TRC09-176A</a> | <a href="#">183736</a> | <a href="#">Edit</a> | <a href="#">Remove</a> |

To find the “Edit” link, you will need to use the scrollbar at the bottom of the inventory table, near the page select numbers, to scroll to view additional headings.

<

>

« first

< previous

1

2

3

4

5

6

7

8

9

...

next >

last »

| Chemical Name ▲ | CAS #             | State           | Amount        | Units           | Location     | Container ID           | Edit              | Remove           | Bench         | Shelf           |
|-----------------|-------------------|-----------------|---------------|-----------------|--------------|------------------------|-------------------|------------------|---------------|-----------------|
|                 |                   |                 |               |                 |              |                        |                   |                  |               |                 |
| ation           | Container ID      | Edit            | Remove        | Bench           | Shelf        | Specific Location Note | Date Last Changed | Submission Date  | Date Received | Expiration Date |
|                 |                   |                 |               |                 |              |                        |                   |                  |               |                 |
| e on            | Date Last Changed | Submission Date | Date Received | Expiration Date | Manufacturer | Product Name           | Product Number    | Container Status | Notes         |                 |
|                 |                   |                 |               |                 |              |                        |                   |                  |               |                 |

Clicking on the “Settings” widget at the top right of your inventory will **allow you to show/hide each column** by checking/unchecking the box to the left of the column header. You can also click and drag on the **8 dots** to the right of the column header to **reorder the columns**. A “⊗” symbol will replace your cursor, but dragging will function as designed.

## View Passante Lab (inactive) Inventory

Displaying 1 - 1 of 1 results

Download (?)
Filters 0
Settings
Expand

*You can uncheck columns to hide them, and drag to rearrange.*

| ✓ Chemical Name            | ✓ CAS Number | ✓ State | ✓ Amount | ✓ Unit |
|----------------------------|--------------|---------|----------|--------|
| <a href="#">Acemetacin</a> | 53164-05-9   | Solid   | 2        | l      |

For a **full screen view** of your chemical inventory, click “Expand” at the top right of your inventory:

### View Passante Lab (inactive) Inventory

Displaying 1 - 0 of 0 results

Download (?)
Filters 0
Settings
Expand

To **export** your data outside of the system, click “Download” at the top left of your inventory. Note that changes to inventory can only be made inside of ChemTracker and cannot be submitted via spreadsheet export/import unless explicitly prompted by the Chemical Inventory Team.

### View Passante Lab (inactive) Inventory

Displaying 1 - 0 of 0 results

Download (?)
Filters 0
Settings
Expand

## Searching for Chemicals Outside of Your Lab

You will be able to see all chemical containers within **your lab's** inventory. You will not be able to search for chemicals in other labs' inventories. The EHRS Chemical Inventory Team can help you locate chemicals in other labs across campus.

Search “Chemical Borrow Request” on the [EHRS website](#) to find our Chemical Borrow Request webform (also linked [here](#)) to submit your search request. Remember that all chemical sharing is voluntary and requires the permission of the lab that owns the chemical as well as the approval of the PI for the lab that wishes to borrow or adopt the chemical. If you adopt the chemical into your lab from another lab, be sure that they remove the chemical from their inventory and that you add the chemical to yours.

## Totals

Click on the **“Totals” link** to view the aggregate amount of each chemical in your lab's inventory. Notice that the total number of containers of each chemical is shown on the right side.

Tip: The **“Display Units” dropdown** allows you to change the units for the table (i.e., display in grams).

ChemTracker | Add Inventory | **Totals** | Bulk Edit | Find Other Chemicals

### Passante Lab Chemical Totals

Showing 1-14 of 14 results

Filters

Chemical Name:  CAS Number:  Building:

Physical State:  Location (Space):

Chemical Hazards:  **Display units:**

| Chemical Name ▼   | CAS #     | State  | Amount | Units | Total Containers |
|---|-----------|--------|--------|-------|------------------|
| <a href="#">Acetone</a>   | 67-64-1   | Liquid | 4.00   | L     | 1                |
| <a href="#">Acetonitrile</a>  | 75-05-8   | Liquid | 4.10   | L     | 2                |
| <a href="#">Chloroform</a>  | 67-66-3   | Liquid | 12.00  | L     | 3                |
| <a href="#">Ethyl alcohol</a>   | 64-17-5   | Liquid | 1.89   | L     | 4                |
| <a href="#">Ethyl ether</a>   | 60-29-7   | Liquid | 20.00  | L     | 2                |
| <a href="#">Formaldehyde buffered aqueous solution, 3-20 wt. % in H2O</a> |           | Liquid | 0.19   | L     | 1                |
| <a href="#">Formaldehyde, 37% solution with 10-15% methanol</a>           |           | Liquid | 4.00   | L     | 1                |
| <a href="#">Formic acid</a>   | 64-18-6   | Liquid | 2.00   | L     | 4                |
| <a href="#">Hexaethylene glycol monodecyl ether</a>                       | 5168-89-8 | Liquid | 0.95   | L     | 1                |
| <a href="#">Hydrazine, anhydrous</a>                                      | 302-01-2  | Liquid | 39.60  | L     | 4                |
| <a href="#">Hydrofluoric acid aqueous solution, 71-75%</a>                | 7664-39-3 | Liquid | 16.00  | L     | 4                |
| <a href="#">Microposit 1400 series photoresist</a>                        |           | Liquid | 0.47   | L     | 1                |
| <a href="#">Mixture of Nitric acid (90%) and Hydrofluoric acid (10%)</a>  |           | Liquid | 4.00   | L     | 1                |
| <a href="#">Water</a>   | 7732-18-5 | Liquid | 113.27 | L     | 1                |

## Adding New Inventory

### Chemical Look-Up

To add new inventory, click **“Add Inventory”** from the ChemTracker page.

|   |   |   |
|---|---|---|
| <p><b>Chemical Name</b><br/><u>Best for</u><br/>When CAS or Product number is not available or is not found</p> <p><u>Tip</u><br/>As you continue to type, the list of options in the dropdown menu will change; keep an eye out for your chemical in the list as you type.</p> | <p><b>CAS Number</b><br/><u>Best for</u><br/>Pure substances (not mixtures, solutions, or specialty products)</p> <p><u>Tip</u><br/>Requires hyphens.</p> | <p><b>Product Name/Number</b><br/><u>Best for</u><br/>Mixtures, solutions, or specialty products</p> <p><u>Tip</u><br/>May or may not require punctuation (e.g. hyphens and commas), try both ways if needed.</p> |
|---|---|---|

Select your **search criteria** (Chemical Name, CAS Number, or Product Name/Number) Start typing the chemical name, CAS Number or Product Name/Number of the chemical you are adding.

A list of options will appear based on your search. If there are no results, see the section of this manual regarding **Chemicals Not Found in Database**.



#### Add Chemicals to EHRS Environmental Health Group

Chemical

By  CAS Number Product Name/Number

☐ Search for chemicals by name

Manufacturer:

Location (Space):

-- Please select an option --

Amount:

Units:

-- Select --

Container Status: \* ⓘ

Normal

Unique Container ID: ⓘ

Container Count: ⓘ

1

Additional Details

☐ Controlled Substance?

Create

Create and Add Another

Select the chemical from the dropdown list.

Then select the room number (from the **“Location (space)” dropdown**) to specify where this container will be stored.

If the space you are looking for is not listed, please use the [Request Changes to BioRAFT Lab Locations Webform](#) to have it added.

**Note:** Selections must be made with the mouse. Selecting a chemical with the Arrow keys and Enter/Return key does not open the Amount, Unit, etc. fields for editing.

**Note:** Sub-location information (bench, cabinet, FLSC, refrigerator, etc.) is added later. See [Adding Additional Details](#) for more information.

## Chemicals Not Found in Database

If the database does not have the chemical you are searching for, the dropdown will show **“None of the above.”**

*Select “none of the above” only after you have searched by chemical name, CAS Number, and Product Name/Number, and you still do not see the correct chemical on the list.*

## Add Chemicals to EHRs Environmental Health Group

### Chemical

By ☐ Name ☐ CAS Number ☐ Product Name/Number

☐ None of the above  
--None of the above--

When you choose “—none of the above—”, ChemTracker **may suggest unlinked chemical records that match your search**. If one of these looks correct, select it and continue adding your container to your inventory.

## Add Chemicals to EHRs Environmental Health Group

### Chemical

By ☐ Name ☐ CAS Number ☐ Product Name/Number

☐ --None of the above-- ✓

 Match found.

Manufacturer:

☐

The following are results manually entered by users and not verified in the database. Adding a chemical not matched to the database has consequences for accuracy of regulatory reports.

☐ --None of the above--

[Return to chemical search](#)

[Continue](#)

If you still do not see a match, this means that BioRAFT does not recognize the material and has no safety information as a result. Please contact the EHRs Chemical Inventory Team using the [Problem-Container Form](#). EHRs will create the chemical record for you and manually add safety information.

## Required Fields

The following fields **must** be completed when entering new chemicals to your inventory:

- Location (space)
- Unique Container ID (6-Digit EHRS Barcode Number)

***Please be aware that ChemTracker does not require you to fill these fields before pressing submit. If you click submit without entering any one of these fields, it will display as blank in ChemTracker. Please avoid omitting this information to prevent the need for EHRS to address this missing information through routine audits and findings in lab inspections.***

### Chemical

By Name CAS Number Product Name/Number

Acetone (Liquid) - 67-64-1 ×

Selected from [20 matches](#). [Search unlinked chemicals?](#)

**Manufacturer:**

**Location (Space):**

Chemistry Laboratories- 1973 Wng - 424 ▼

**Amount: \***

4

**Units: \***

L ▼

**Container Status: \*** ?

Normal ▼

**Unique Container ID:** ?

6-digit EHRS barcode #

**Container Count:** ?

1

## Specifying Container Size (Amount and Units)

The size of the container (amount and units) **must** be specified.

Enter the amount, then select the units from the dropdown.

**When adding a gas cylinder to your inventory, you must add the amount as a specific volume.**

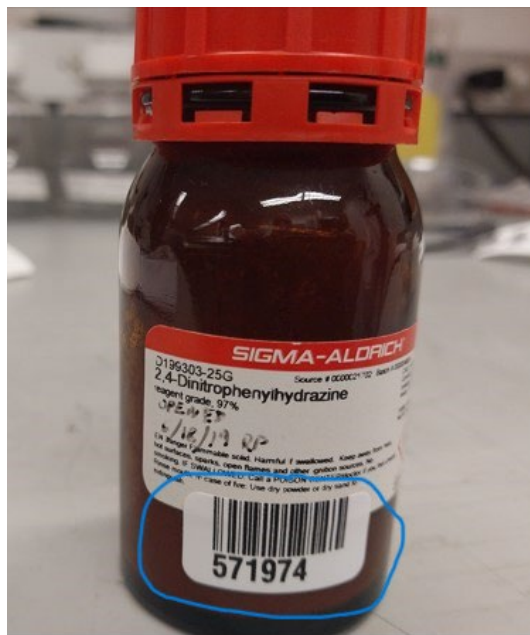
**Do NOT use the unit designations *cylinder large*, *cylinder medium*, *cylinder small*.**

Consult Reference Chart: Common Gas Cylinder Volumes/Weights (click [here](#) for link) for common gas cylinder volumes. If you do not see your cylinder in the Reference Chart, contact the [Chemical Inventory Team](#) to ask what amount and unit to use.



## Unique Container ID (6-Digit EHRS Barcode Number)

All containers of hazardous materials are required to be labeled with 6-digit EHRS-provided barcode labels; see example below.



To request additional quantities of barcode labels, use the form on the EHRS website:  
[Warning Sign and Label Request Form](#).  
*(Inventory Barcode requests are at the bottom of the form)*



## Using a Barcode Scanner

Click in the “**Unique Container ID**” field and either 1) **type** the 6-digit EHRs barcode number from the provided label, or 2) **scan** the barcode in using your **barcode scanner**:



A red arrow points from the scanner to the Unique Container ID field.

Amount: \*

Units: \*

Container Status: \* ?

**Unique Container ID:** ?

Container Count: ?

**If this field is left blank, the system auto-generates a unique ID number beginning with “C-” which will not correspond to the barcode label on the container and will make it difficult to identify the container in the future.** If you notice this has occurred, you can edit the barcode number after the container is created. See Section 3: Viewing and Editing your Chemical Inventory for instructions on how to do this (click [here](#) for link).

### *Look out for this!*

Some barcode scanners are programmed to immediately “enter” after they scan. If yours does this, your container will be automatically submitted to the inventory when you scan the barcode. You’ll know this happens if the screen jumps to the “Chemical Inventory Recently Added” table at the bottom of the page.

If you still want to add additional details such as location specifics, expiration dates, or notes, just click the “**edit**” link and continue editing the container record.

If you do not need to enter additional details, your container entry is complete.



Chemical Inventory Recently Added

| Chemical Name               | CAS #   | State  | Amount | Location                               | Container ID             | Edit                 | Remove                 |
|-----------------------------|---------|--------|--------|--|--------------------------|----------------------|------------------------|
| <a href="#">Acetone 99%</a> | 67-64-1 | Liquid | 4 l    | <a href="#">Annenberg Center - 001</a> | <a href="#">23456789</a> | <a href="#">Edit</a> | <a href="#">Remove</a> |



## Creating Multiple New Containers

If you have more than 1 identical container, select the appropriate “**Container Count.**” You will only need to scan the *first* EHRS-provided barcode. The system will automatically generate the rest of the sequential “**Container IDs.**” You must still affix the corresponding labels to each container.

**Amount: \***

**Units: \***

**Container Status: \* ?**

**Unique Container ID: ?**

**Container Count: ?**

For example, if you are adding 24 containers of “Ethanol 200 Proof” with barcode IDs 600001-600024, enter 24 into the “Container Count” field and 600001 into the “Unique Container ID” field before submitting. ChemTracker will add 24 of these containers and increment the barcode ID as it does.

### *Assigning location within room (sub-location)*

More detailed location information (refrigerators, benches, shelves, etc.) can be added in the “[Additional Details](#)” section, accessed by clicking the associated dropdown menu (see below).

## Adding Additional Details

The “**Bench**” location field is only *required* for Flammable Liquids Storage Cabinets (FLSCs) and Acid Cabinets (ACs) in the high-rise biomedical buildings:

Stellar-Chance  
John Morgan  
Anat-Chem  
CRB

Johnson  
BRB  
Smilow

South Tower  
  
Perelman Center for  
Advanced Medicine

In all other locations, this field is optional.

If you *want* to specify sub-locations take note:

Additional location information should be added first to the “**Bench**” section, then the “**Shelf**” section, then the “**Specific Location Note**” section, getting more specific in that order.

For example, if you have a container in Bin B, on the Top Shelf of Acid Cabinet 3, fill in the **Bench**, **Shelf**, and **Specific Location Note** fields as:

**Additional Details**

Lot Number: ?

Chemical Owner:

-- Please select an option -- ▾

Bench:

Shelf:

Bench:

Shelf:

Specific Location Note:

*Look out for this!*

The “Bench” field is free-form text; therefore, if the name of a location is entered differently for the same location, it will create a new sub-location name.

There is no alert to tell you whether you are entering a new sub-location name, and no option to select from existing sub-locations within the room.

Inconsistencies in sub-location names can lead to difficulties in locating containers and in EHRS reporting.

To help avoid errors, common sub-location names have been standardized by EHRS. Use these abbreviations for chemical storage cabinets:

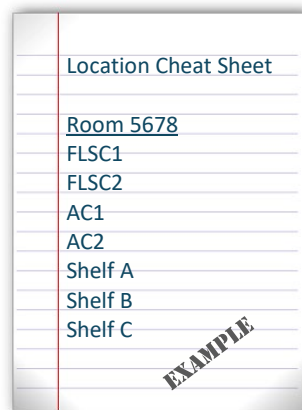
Flammable Cabinet → FLSC

Acid Cabinet → AC

Base Cabinet → BC

**Tip:** If your lab has multiple chemical storage cabinets of the same type or any sub-location names that are more specific or complex, you should create a “**cheat sheet**” for lab members to reference when entering container information.

Don't forget to label your cabinets and shelves with the names, too!



# Disposing of Chemical Inventory

## Disposing of a Single Container

First, access your lab's chemical inventory viewing screen. See "Viewing and Editing your Lab's Chemical Inventory" (click [here](#) for link) for detailed instructions.

From here, either scroll through your inventory or use filters to find the container you are looking for. Entering the **Container ID** is recommended for quick lookup of one chemical container.

Click "**Remove**" and then click "**Remove**" again in the following pop-up window to confirm.

ChemTracker | Add Inventory | Totals | Bulk Edit | Reconciliation

### View EHRS Example Lab Inventory

Displaying 1 - 5 of 5 results

Download ? Filters 0 Settings Expand

Chemical Name

CAS Number

Chemical Synonym

Spaces

Chemical Owner ?

Physical State

Last Updated After ?

Last Updated Before

Product Name

Container Expires After

Container Expires Before

Chemical Hazards

Database Linkage Status ?

Storage Group

Bench

Shelf

Specific Location Note

☐ Controlled Substance

☐ Only Removed Containers

Notes

Container IDs

Comma-delimited (or one per line) list of Container IDs

☐ Starts With

Hide Advanced Filters

Clear All

Last Updated After ? Last Updated Before

Are you sure you want to delete container 600025?

Cancel Remove

## Disposing of Multiple Containers (and Bulk Edit)

The bulk edit function is valuable for editing or deleting many records all together. Click **“Bulk Edit”** from your lab's ChemTracker menu.

You can scan multiple barcodes into the Container ID box (one per line) or use the filters to search for the containers you want to remove or edit. Unlike on the main inventory viewing page, you must click on the **“Submit”** button in the Filters section to apply filters.

Select the containers of interest (a “Select All” checkbox is also available), then click **“Edit selected containers”** in the bottom right corner. From there, indicate the changes you would like to make.

ChemTracker | Add Inventory | Totals **Bulk Edit** | Reconciliation

### Select Chemical Containers

This page enables editing or deleting of many chemical containers at once. Use the filters below to find the containers you would like to change. Once you have selected the desired containers, click "Edit selected container" at the bottom of the page. From there, changes to all the selected containers may be made.

Filters

Chemical Name:  CAS Number:  Chemical Hazards:

Chemical Synonym:  Database Linkage Status:

Physical State:  Bench:  Shelf:

Notes:  Last Changed After:  Last Changed Before:

Container IDs (up to 1000):

Comma-delimited list of Container IDs

**Submit**

Show  entries

Showing 1 to 5 of 5 entries

Search:

| <input type="checkbox"/> Select All | Chemical Name | CAS #   | Amount | Unit | Location                  | Bench              | Shelf | Last Changed |
|-------------------------------------|---------------|---------|--------|------|---------------------------|--------------------|-------|--------------|
| <input type="checkbox"/>            | Acetone       | 67-64-1 | 4      | l    | Mod V EHRS Building - 226 | test temp chemical |       | 3/15/2024    |
| <input type="checkbox"/>            | Acetone       | 67-64-1 | 4      | l    | Mod V EHRS Building - 226 | test temp chemical |       | 3/15/2024    |

|                                     |               |           |   |   |   |                    |  |           |
|-------------------------------------|---------------|-----------|---|---|---|--------------------|--|-----------|
| <input checked="" type="checkbox"/> | Acetone       | 67-64-1   | 4 | l | Mod V EHRS Building - 226               | test temp chemical |  | 3/15/2024 |
| <input checked="" type="checkbox"/> | CleanCell M   | 1310-58-3 | 2 | l | Mod V EHRS Building - Missing Chemicals |                    |  | 3/15/2024 |
| <input type="checkbox"/>            | Thimerosal    | 54-64-8   | 1 | g | Mod V EHRS Building - 229               | test temp chemical |  | 3/15/2024 |
| <input type="checkbox"/>            | WASH 1 BUFFER |           | 1 | l | Mod V EHRS Building - Missing Chemicals |                    |  | 3/15/2024 |

Showing 1 to 5 of 5 entries

**3 total containers selected.**

**Edit selected containers**

To **dispose** of the containers, click “**Remove all selected**”.

Once a container is disposed of, the barcode is also disposed of and cannot be used again.

Bulk edits to **Location (space)**, **Amounts**, **Units** and **Bench** can also be made in **Bulk Edit**.

Once the changes are complete, click “Apply changes” and follow the prompts to complete.

Any changes made here will be applied to all the containers and overwrite existing data for those containers (such as replacing the existing notes). These changes cannot be bulk undone. However, single container records can be edited individually.

If a field is left blank on the edit page, the existing information in that field will be preserved for all records being edited.

ChemTracker | Add Inventory | Totals | **Bulk Edit** | Reconciliation

### Edit All Selected Containers

This page enables editing or deleting of many chemical containers at once. Use the filters below to find the containers you would like to change. Once you have selected the desired containers, click “Edit selected container” at the bottom of the page. From there, changes to all the selected containers may be made.

3 total containers selected.

Any changes made below will be applied to all of the chemical containers selected to modify. Any data entered for these fields will **overwrite** data currently existing for these chemical containers. Leaving a field blank means the original values for that field are kept.

**Chemical**

Look Up Chemical Name or CAS Number:

☒ Chemical Name ☐ CAS Number ☐ Product Name or Number

Start typing the chemical name to find the chemical in the database.

**Location (space):**  
  
 Select a group to pick a space

**Chemical Owner:**  
  
 Select a group to pick a chemical owner

**Amount:**

**Units:**

**Bench:**

**Shelf:**

**Specific Location Note:**

**Expiration Date:**  
  
 Format: 2024-03-15

**Product Name:**

**Container Status:** \*

**Lot Number:**

**Notes:**

These changes cannot be undone in bulk.

## ChemTracker Barcode Scanout Sign

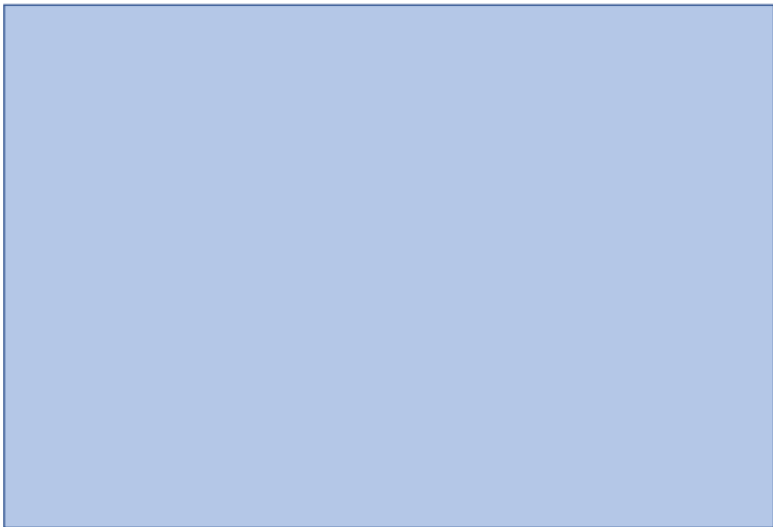

Lab members can remove barcode stickers off empty containers and place them on the sign pictured below. The individual(s) in charge of keeping ChemTracker up to date would then have all the empty barcodes right in one place to bulk delete them from the system. The scanout sign can be printed from our [“Resources for ChemTracker Users”](#) page.


### Finish a chemical container with a barcode?

**Remove and stick the barcode or write the number below**

\_\_\_\_\_ will remove the container from the lab's  
**Chemtracker Chemical Inventory** (EHRS requirement)

LAB Name: \_\_\_\_\_





**PennEHRS**  
Environmental Health & Radiation Safety

## Reactivating Deleted Records

If you accidentally remove a record from ChemTracker, you may reactivate the container by performing the following steps:

Navigate to your lab's chemical inventory viewing screen. If on the Bulk Edit or Add Inventory screen, click the “ChemTracker” tab at the top. See Section 3: “Viewing and Editing you Lab's Chemical Inventory” (click [here](#) for link) for detailed instructions from other locations in BioRAFT.

- Click on “**Show Advanced Filters.**”

The screenshot shows a filter interface with three input fields at the top: 'Chemical Name', 'CAS Number', and 'Chemical Synonym'. Below these is a 'Spaces' dropdown menu. At the bottom left, the 'Show Advanced Filters' button is circled in red. At the bottom right is a 'Clear All' button.

- Then select “**Only Removed Containers.**”

The screenshot shows a filter interface with three input fields at the top: 'Shelf', 'Specific Location Note', and 'Container IDs'. Below these is a checkbox labeled 'Controlled Substance' and a checkbox labeled 'Only Removed Containers', which is circled in red. At the bottom left is a 'Hide Advanced Filters' button. At the bottom right is a 'Clear All' button.

- Click on the **Container ID link** for the record you'd like to reactivate:

| Chemical Name ↓                | State ↑ | Amount ↑ | Units ↑ | Location ↑   | Container ID           |
|--------------------------------|---------|----------|---------|--|------------------------|
| <a href="#">(+)-Propanolol</a> | Solid   | 1        | lbs     | <a href="#">Singh Nanotechnology Center - 143 - Chem Storage</a> | <a href="#">418250</a> |



- Click “Edit” to access the reactivation feature:

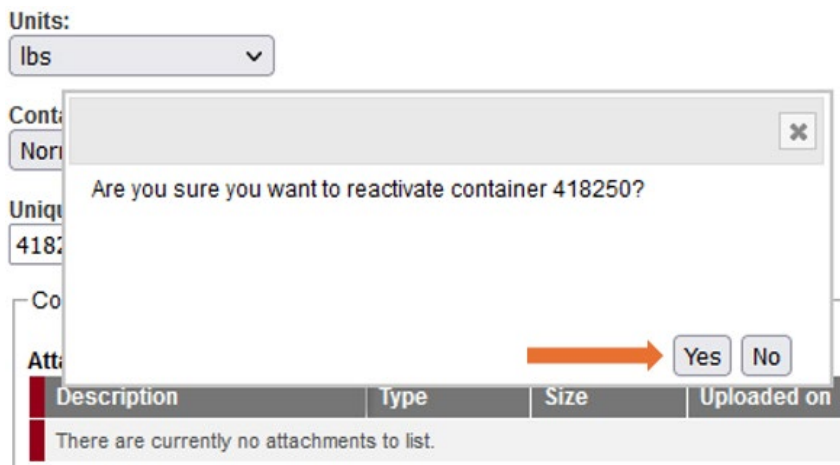


## Container 418250 of (+)-Propanolol

- Click “Reactivate” at the bottom of the screen:

 A screenshot of the 'Edit Chemical Container' form. At the top, there are 'View' and 'Edit' tabs. The form title is 'Edit Chemical Container'. Below it is a search bar with the text 'Look Up Chemical Name or CAS Number'. The search results show '(+)-Propanolol (Solid)' selected. There are radio buttons for 'Chemical Name' (selected), 'CAS Number', and 'Product Name or Number'. Below the search bar is a text input field with the placeholder 'Start typing the chemical name to find the chemical in the database.' The 'Location (space):' dropdown is set to 'Singh Nanotechnology Center - 143 - Chem Storage' with a 'Reset' link. The 'Amount:' field is '1.00000000'. The 'Units:' dropdown is 'lbs'. The 'Container Status:' dropdown is 'Normal'. The 'Unique Container ID:' field is '418250'. Below this is a 'Container Attachments' section with a table of 'Attached Files' (Description, Type, Size, Uploaded on, Remove) and a 'Browse...' button. At the bottom, there is a checkbox for 'Controlled Substance?' and three buttons: 'Update', 'Reactivate' (highlighted with a red box), and 'Cancel'.

Click “Yes” on the pop-up window that appears:



## Managing High-Turnover Containers (not available in all buildings)

**THIS METHOD MAY NOT BE USED FOR FLAMMABLE LIQUIDS IN HIGH-RISE BIOMEDICAL LABORATORY BUILDINGS** (*Smilow (including Perelman Center for Advanced Medicine and South Tower), BRB, Johnson, CRB, JMB, Anatomy-Chemistry, and Stellar Chance*). Those buildings are required to track individual containers of all flammable liquids!

Some labs have a high turnover of certain commodity chemicals, especially solvents. If you keep a stock of these chemicals—and the quantity is consistent—you may wish to have a *representative* inventory of those containers.

Example: At any time, you have a maximum of two 4-liter bottles of 2-propanol and two 4-liter bottles of acetone in your flammable liquids storage cabinet. You empty these at a rate of 1 bottle every week or two, and you don't want to keep entering them into ChemTracker and then marking them as disposed.

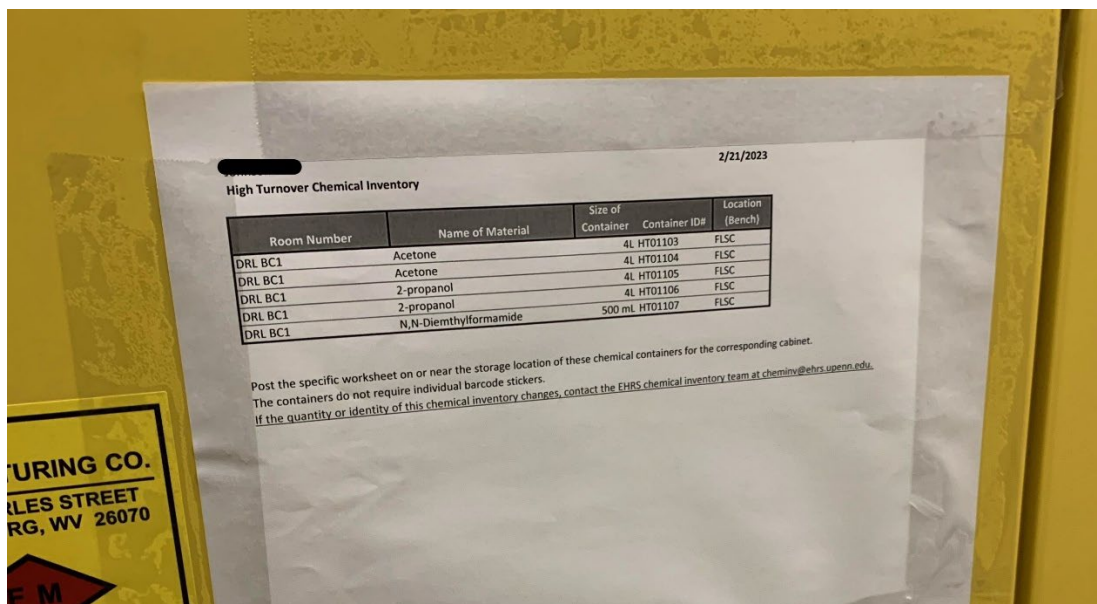


Rather than adding each container to your inventory as you receive it and removing when empty:

- EHRS would create four *representative* containers in your ChemTracker inventory, starting with the letters “HT.”

| Chemical Name              | CAS Number | State  | Amount | Units | Location   | Container ID            | Edit                 | Remove                 | Bench |
|----------------------------|------------|--------|--------|-------|--|-------------------------|----------------------|------------------------|-------|
| <a href="#">2-Propanol</a> | 67-63-0    | Liquid | 4      | l     | <a href="#">David Rittenhouse Laboratory - BC1</a> | <a href="#">HT01105</a> | <a href="#">Edit</a> | <a href="#">Remove</a> | FLSC  |
| <a href="#">2-Propanol</a> | 67-63-0    | Liquid | 4      | l     | <a href="#">David Rittenhouse Laboratory - BC1</a> | <a href="#">HT01106</a> | <a href="#">Edit</a> | <a href="#">Remove</a> | FLSC  |
| <a href="#">Acetone</a>    | 67-64-1    | Liquid | 4      | l     | <a href="#">David Rittenhouse Laboratory - BC1</a> | <a href="#">HT01104</a> | <a href="#">Edit</a> | <a href="#">Remove</a> | FLSC  |
| <a href="#">Acetone</a>    | 67-64-1    | Liquid | 4      | l     | <a href="#">David Rittenhouse Laboratory - BC1</a> | <a href="#">HT01103</a> | <a href="#">Edit</a> | <a href="#">Remove</a> | FLSC  |

- The information and high-turnover barcodes would be on a *sheet of paper* instead of on the bottles.
- The paper is attached to the cabinet where the bottles are stored; see example below.



**Contact the Chemical Inventory Team ([cheminv@ehrs.upenn.edu](mailto:cheminv@ehrs.upenn.edu)) to create container records for these materials.**

Include the following information when contacting the Chemical Inventory Team about High-Turnover containers:

1. The name of the material
2. The volume/amount of *a single container*
3. The number of containers of the above stated size
4. Any additional label information you would like included (for example: grade, vendor, etc.)
5. The location where these materials will be stored (room number AND cabinet name, such as FLSC1, FLSC2, etc.).

**Contact EHRS if you need us to make any changes to your high-turnover inventory.**

High-turnover inventories will be checked by Chemical Inventory Team members periodically to ensure accuracy.

## Lab Moves/Reconciling Your ChemTracker Inventory

If a lab is discarding any containers as part of their lab move/relocation, they are responsible for scanning them out/removing them from their ChemTracker records.

Labs must notify the chemical inventory team ([cheminv@ehrs.upenn.edu](mailto:cheminv@ehrs.upenn.edu)) prior to giving away containers to other labs. The chemical inventory team will provide guidance on how the involved labs can add/remove ChemTracker records, or they can complete the electronic transfer on the labs' behalf.



The chemical inventory team offers a service called “reconciliation” which helps labs to “true-up” inventory records that are believed to be out-of-date due to poor record keeping, poor training, relocation, etc. Contact us at [cheminv@ehrs.upenn.edu](mailto:cheminv@ehrs.upenn.edu) for more information.

If your lab recently moved, the first step would be to submit a [Request Changes to BioRAFT Lab Locations \(spaces\) webform](#).

Next, the chemical inventory team will electronically bulk edit your inventory and send you an export of your inventory on a spreadsheet. You will then annotate on the spreadsheet what has been disposed of and the new locations for your other chemicals. You will then send the spreadsheet back to the chemical inventory team for them to apply the updates you noted.

Another option for labs that have moved or with out-of-date inventories would be for your lab to scan the chemicals that remain in your lab and ask the chemical inventory team to reconcile it remotely for you. Instructions for this are included below:

1. Decide the room(s) where your chemicals will be stored.
2. Create a text document (e.g. in MS Word) or Excel file.
  - a. Type in the name of a storage location to function as a header. Describe a sub-location (e.g. "Fridge A") as part of this header if required or desired. Remember to use names that are consistent with those you are already using in ChemTracker.
  - b. Under the location header, list all the barcode numbers for the container records that you want "moved" to that location. **One barcode number per line.**
    - i. You can easily do this by using your barcode scanner. Just put the cursor where you want the barcode number to go and scan the EHRS inventory barcode sticker that's on the container. The scanner should "type" the

number into the document for you. Some will also press “Enter” to move to the next line automatically.

- c. Repeat this process for each of the locations/sub-locations your chemicals are located in.\*
  - d. Email the chemical inventory team ([cheminv@ehrs.upenn.edu](mailto:cheminv@ehrs.upenn.edu)) your document as an attachment.
3. The chemical inventory team will then process your request and let you know when it's complete.

\*An example of what your document should look like:

Different Sub-location (Bench) Columns

|   | A      | B | C      | D | E      | F | G      | H | I      | J | K      | L | M      | N | O       | P | Q | R                         | S |
|---|--------|---|--------|---|--------|---|--------|---|--------|---|--------|---|--------|---|---------|---|---|---------------------------|---|
| 1 | IN1    |   | IN2    |   | IN3    |   | AC1    |   | AC2    |   | AC3    |   | Fridge |   | Freezer |   |   | IN1 = Inorganic Cabinet 1 |   |
| 2 | 253068 |   | 253063 |   | 143840 |   | 432776 |   | 432801 |   | 518089 |   | 405756 |   | 595297  |   |   | IN2 = Inorganic Cabinet 2 |   |
| 3 | 253191 |   | 253067 |   | 143844 |   | 264916 |   | 518088 |   | 432768 |   | 518229 |   |         |   |   | IN3 = Inorganic Cabinet 3 |   |
| 4 | 253203 |   | 253069 |   | 253115 |   | 518082 |   | 432778 |   | 405931 |   | 253027 |   |         |   |   | AC1 = Acid Cabinet 1      |   |
| 5 | 321754 |   | 253196 |   | 295022 |   | 432791 |   | 432798 |   | 518203 |   | 518228 |   |         |   |   | AC2 = Acid Cabinet 2      |   |
| 6 | 321902 |   | 253197 |   | 295097 |   | 432792 |   | 432802 |   | 432766 |   | 434903 |   |         |   |   | AC3 = Acid Cabinet 3      |   |
| 7 | 321930 |   | 253225 |   | 321795 |   | 432799 |   | 432779 |   | 432787 |   | 518079 |   |         |   |   |                           |   |
| 8 | 321935 |   | 295015 |   | 321931 |   |        |   | 432759 |   | 432767 |   | 434894 |   |         |   |   |                           |   |

Different Tab for Different Location (Room)

Navigation bar: < > ... VLEST Room 435 VLEST Room 419 +

## Reference Chart: Common Gas Cylinder Volumes/Weight

| Gas                            | Cylinder Description                               | Cylinder Size      | Amount | Units |
|--------------------------------|--|--------------------|--------|-------|
| Oxygen Gas (greater than 21%)  |  | Cylinder size 10   | 340    | L     |
| Oxygen Gas (greater than 21%)  |  | Cylinder Size E    | 660    | L     |
| Oxygen Gas (greater than 21%)  | 7 inch x 33 inch                                   | Cylinder Size 80   | 2407   | L     |
| Oxygen Gas (greater than 21%)  | 9 inch x 51 inch                                   | Cylinder Size 200  | 7107   | L     |
| Oxygen Gas (greater than 21%)  | 9 inch x 55 inch                                   | Cylinder size 300  | 9543   | L     |
| Hydrogen Gas (greater than 5%) | 7 inch x 19 inch                                   | Cylinder Size 35   | 878    | L     |
| Hydrogen Gas (greater than 5%) | 7 inch x 33 inch                                   | Cylinder Size 80   | 2095   | L     |
| Hydrogen Gas (greater than 5%) | 9 inch x 51 inch                                   | Cylinder Size 200  | 5578   | L     |
| Hydrogen Gas (greater than 5%) | 9 inch x 55 inch                                   | Cylinder Size 300  | 7391   | L     |
| Carbon Monoxide                |  | Cylinder Size 150A | 400    | L     |
| Carbon Monoxide                | 6 inch x 23 inch                                   | Cylinder Size 10   | 850    | L     |
| Carbon Monoxide                | 7 inch x 33 inch                                   | Cylinder Size 80   | 2000   | L     |
| Carbon Monoxide                | 9 inch x 51 inch                                   | Cylinder Size 200  | 5100   | L     |
| Carbon Monoxide                | 9 inch x 55 inch                                   | Cylinder size 300  | 6800   | L     |
| Methane                        | 7 inch x 19 inch                                   | Cylinder Size 35   | 1132   | L     |
| Methane                        | 7 inch x 33 inch                                   | Cylinder Size 80   | 2831   | L     |
| Methane                        | 9 inch x 51 inch                                   | Cylinder Size 200  | 7400   | L     |
| Methane                        | 9 inch x 55 inch                                   | Cylinder size 300  | 10100  | L     |
| Nitric Oxide                   |  | Cylinder Size 35   | 226    | L     |
| Ammonia                        |  | lecture bottle     | 283    | L     |
| Ammonia                        | 9 inch x 51 inch                                   | Cylinder Size 200  | 5578   | L     |
| Propane Gas                    | Single use Fatboy tank with standard torch fitting |                    | 16.92  | oz    |
| Propane Gas                    | Liquefied Gas                                      |                    | 100    | G     |
| Propane Gas                    | Liquefied Gas                                      |                    | 300    | G     |

Reference the following table to enter the volumes (in liters) or weights of your hazardous gases.

If you do not see the specifications for the gas cylinder you are trying to enter, contact the Chemical Inventory Team, [cheminv@ehrs.upenn.edu](mailto:cheminv@ehrs.upenn.edu).