

BioRAFT ChemTracker Module

User's Guide

Prepared by BioRAFT Professional Services and University of Pennsylvania EHRS

Contents

BioRAFT ChemTracker Module Introduction	1
About This Guide	1
Contact	1
What Must Be Tracked in the Inventory?.....	2
ChemTracker User Guide	4
Viewing Chemical Inventory	4
Containers	4
Totals.....	5
Adding Inventory	5
Disposing of Chemical Inventory.....	8
Disposing of a Single Container.....	8
Disposing of Multiple Containers	10
Searching for Inventory in other Laboratories	12
Requesting FREE Chemicals from EHRs Surplus Chemicals	13
High-Turnover Containers.....	14

BioRAFT ChemTracker Module Introduction

The BioRAFT ChemTracker module provides a method for tracking chemical inventory with connection to a central database.

About This Guide

The screenshots on this Quick Start Guide are representative of a general BioRAFT site. Each BioRAFT site may differ in terms of specific modules enabled and IT integrations. For specific questions about Penn's instance of BioRAFT, please contact the Chemical Inventory Team at cheminv@ehrs.upenn.edu.

All inventory records entered prior to Summer 2019 were migrated into ChemTracker from the CISProLive Chemical Inventory Program.

Contact

EHR Chemical Inventory Team
cheminv@ehrs.upenn.edu

EHR Customer Service Links:

1. Additional Barcode Requests: <https://ehrs.upenn.edu/health-safety/health-safety-forms/warning-sign-and-label-request-form>
2. Problem Container Form: <https://ehrs.upenn.edu/health-safety/health-safety-forms/chemical-inventory-problem-container-request-form>

What Must Be Tracked in the Inventory?

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.



The *minimum* that must be tracked for each container in your inventory

- Chemical identity
- Container size
- Building and Room number

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.



For information about what these pictograms mean, see the chemical's SDS, or https://www.osha.gov/Publications/HazComm_QuickCard_Pictogram.html

This also includes ALL HAZARDOUS GASES.

Hazardous Gases Include:

Oxygen (> 21%) Hydrogen (> 5%)

Any Concentration of:

Carbon Monoxide	Methane	Nitric Oxide
Chlorine	Fluorine	Boron Trichloride
Ammonia	Propane	Silane
Sulfur Dioxide	Dichlorosilane	Hydrogen Fluoride

Non-Hazardous Gases (that do NOT need to be tracked) Include:

Argon Nitrogen Carbon Dioxide Any inert gas



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



- Chemicals in small quantity that are sold as part of a **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, sand, etc
 - 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.

Remember: You are welcome to track non-hazardous materials in your inventory. Contact EHRS or use the [Problem Container Form](#) on the EHRS website if you cannot find the product in ChemTracker!

ChemTracker User Guide

Viewing Chemical Inventory

From the BioRAFT homepage, open the left side menu to open information relevant to your lab. Click “ChemTracker” to view your current chemical inventory.

If the lab menu is missing, please contact your institution safety and compliance team for assistance in getting your lab added to BioRAFT.

Containers

This page displays every chemical container in your lab’s inventory.

The screenshot shows the ChemTracker interface for the Demuth Lab. The top navigation bar includes 'View', 'Edit', 'ChemTracker', 'Dashboard', 'Members', 'Bio', 'Chem', 'Rad', and 'Training'. The left sidebar menu lists various lab management options. The main content area is titled 'Demuth Lab Chemical Containers' and shows 'Showing 1-25 of 89 results'. A search form is present with fields for 'Chemical Name', 'CAS Number', 'Container ID', 'Physical State', 'Location (Space)', 'Shelf', and 'Chemical Hazards'. The 'Container ID' field is circled in red. Below the search form is a table of chemical containers.

Chemical Name	CAS #	State	Amount	Unit	Location	Container ID		
1,1,3,3 - Tetraethoxypropane	122-31-6	Liquid	25.00000000	ml	Burchard Research Facility - 182	C-20036881	Edit	Remove
1,10-Phenanthroline monohydrate	5144-89-8	Solid	5.00000000	g	Burchard Research Facility - 158	C-20036883	Edit	Remove
1,2-Dibromo-3-chloropropane	96-12-8	Liquid	155.00000000	ml	Burchard Research Facility - 354	C-20036859	Edit	Remove
1,4-Dioxane	123-91-1	Liquid	500.00000000	ml	Burchard Research Facility - 160	C-01118592	Edit	Remove
1,4-Dioxane	123-91-1	Liquid	1.00000000	l	Burchard Research Facility - 159	C-20036888	Edit	Remove

Note: You can search for a specific record by clicking in **Container ID** and scanning or typing a barcode number.

Totals

This page adds up the total amount of each chemical in your laboratory's inventory. The "Display Units" dropdown allows you to change the units for the table (i.e., display in grams).

ChemTracker | Add Inventory | **Totals** | Dashboard | Members | Bio | Chem | Rad | Training

Demuth Lab

- » View Lab Profile
- » ChemTracker
- » Compliance Dashboard
- » Manage Members
- » Send Lab Message
- » Bio Summary
- » Chem Summary
- » Rad Summary
- » Rad Request
- » Rad Waste Pickup
- » Self Inspections
- » Manage Lab Forms
- + Research Tools
- + Training
- + Equipment
- + My Account

Demuth Lab Chemical Totals Showing 1-25 of 73 results

Chemical Name: CAS Number: Building:

Physical State: Location (Space):

Chemical Hazards: **Display units:**

Chemical Name	CAS #	State	Amount	Units	Total Containers
1,1,3,3 - Tetraethoxypropane	122-31-6	Liquid	0.03	L	1
1,10-Phenanthroline monohydrate	5144-89-8	Solid	0.01	kg	1
1,2-Dibromo-3-chloropropane	96-12-8	Liquid	0.16	L	1
1,4-Dioxane	123-91-1	Liquid	1.75	L	3
1,4-Phenylene diisothiocyanate	4044-65-9	Solid	0.10	kg	1
1-Butanol	71-36-3	Liquid	0.05	L	1
1-Octanesulfonic acid_sodium salt	5324-84-5	Solid	0.03	kg	1
1-Octanethiol	111-88-6	Liquid	0.05	L	1
2,2,2-Trifluoroethanol	75-89-8	Liquid	0.13	L	1
2,3-Dichloropropene	78-88-6	Liquid	2.33	L	3

Adding Inventory

To add new inventory, click "Add Inventory" from the ChemTracker page. Start typing the chemical name, CAS number or Product Number of the chemical you are adding to search the central database.

View | Edit | **Add Inventory** | Totals | Bulk Edit | Dashboard | Members

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

Add Chemicals to Passante Lab

Look Up Chemical Name or CAS Number

Chemical: *

Chemical Name CAS Number Product Name or Number

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

Location (space):

Amount:

Units:

Container Count:

Container Status: *

Unique Container ID:

» Additional Details

Controlled Substance?

EHR recommends a CAS Number or Product Number search to find the appropriate chemical record.

Select the chemical from the dropdown list, then select the room number (from the “**Location (space)**” dropdown) where this container will be stored. If the space you are looking for is not listed, please contact cheminv@ehrs.upenn.edu to get your lab added to the space.

Note: Specific location information (bench, cabinet, FLSC, refrigerator, etc) is added later.

The screenshot shows the 'Add Chemicals to Passante Lab' form in the ChemTracker application. The form is titled 'Add Chemicals to Passante Lab' and includes a search bar for 'Look Up Chemical Name or CAS Number'. The search results show 'Chloroform (Liquid)' selected. Below the search bar are radio buttons for 'Chemical Name', 'CAS Number', and 'Product Name or Number'. The 'Location (space)' dropdown is set to '-- Select --'. The 'Amount' field is empty. The 'Units' dropdown is set to '-- Select --'. The 'Container Count' is set to '1'. The 'Container Status' is set to 'Normal'. The 'Unique Container ID' field is empty. There is a checkbox for 'Controlled Substance?' and two buttons: 'Submit' and 'Add Another'.

The “**Container Status**” is default set to “*Normal*.” This designation means that other lab groups will be able to view that your lab has this chemical; **you are NOT required to share the chemical with another lab**. By designating a container “*Hidden*,” the container will not appear in other lab’s inventory searches. Designating a container “*Surplus*” denotes it is available for anyone to use.

All containers of hazardous materials are required to be labeled with EHRS-provided labels. Click in the “**Unique Container ID**” field and type or scan a barcode from the provided labels. *If this field is left blank, the system auto-generates a unique ID number, which will not correspond to a barcode label on the container and will make it difficult to identify the container in the future.*

If you select a “**Container Count**” greater than 1, you only need to scan 1 EHRS-provided barcode. The system will automatically generate the requisite sequential “**Container IDs.**”

If your lab has run out of barcode labels, submit a request for more on the [Warning Sign and Label Request Form](#).

More detailed location information (refrigerators, benches, shelves, etc.) can be added in the “**Additional Details**” section. *All additional location information should be added to the “**Bench**” section.* Adding location information to the other fields will lead to difficulties in searching the inventory by location.

All containers moved from CISPro have the sublocation information added to the “**Bench**” section.

The “**Bench**” field is free-form fillable text and therefore if a sublocation name is entered differently it will create a new sublocation. BioRaft does **NOT** alert users when a sublocation name is entered differently or incorrectly. Inconsistencies in sublocation names can lead to difficulties in locating containers and in EHRS reporting.

The screenshot shows the 'Add Chemicals to Passante Lab' form in ChemTracker. The 'Additional Details' section is expanded, and the 'Bench' field is highlighted with a red box. Other fields in the 'Additional Details' section include 'Shelf', 'Specific Location Note', 'Manufacturer', 'Product Name', 'Product Number', 'Date Received', 'Expiration Date', 'Purchase Order', and 'Notes'. Red 'X' marks are placed over the 'Shelf' and 'Specific Location Note' fields, indicating that these fields should not be used for location information. The 'Unique Container ID' field is also visible at the top of the form.

Several sublocation names have been standardized by EHRS.

Flammable Cabinet → FLSC
Acid Cabinet → AC
Base Cabinet → BC

These name changes have been standardized across campus.

Disposing of Chemical Inventory

Disposing of a Single Container

Select “**ChemTracker**” and enter the Container ID to find the chemical of interest and click Submit.

The screenshot shows the ChemTracker web application interface. At the top, there are navigation tabs: View, Edit, ChemTracker, Dashboard, and Members. Below these, there are links for ChemTracker, Add Inventory, Totals, and Bulk Edit. The main heading is "Passante Lab Chemical Containers" with a subtext "Showing 1-17 of 17 results".

Below the heading is a "Filters" section with various input fields and dropdown menus:

- Chemical Name: [Text Input]
- CAS Number: [Text Input]
- Chemical Hazards: [Dropdown Menu: -- Select Hazards(s) --]
- Chemical Synonym: [Text Input]
- Database Linkage Status: [Dropdown Menu]
- Controlled Substance? [Checkbox]
- Physical State: [Dropdown Menu: -- Select State(s) --]
- Location (Space): [Dropdown Menu: -- Select Location(s) --]
- Bench: [Text Input]
- Shelf: [Text Input]
- Specific Location Note: [Text Input]
- Last Updated After: [Text Input]
- Last Updated Before: [Text Input]

Below the filters is a "Container IDs:" section with a large text input area. A red box highlights this input area. Below the input area is a small text label: "Comma-delimited (or one per line) list of Container IDs". A "Submit" button is located at the bottom right of the filters section.

Below the filters is a table with the following columns: Chemical Name, CAS #, State, Amount, Units, Location, Container ID, Edit, Remove, Bench, Shelf.

Chemical Name	CAS #	State	Amount	Units	Location	Container ID	Edit	Remove	Bench	Shelf
Acetone 99%	67-64-1	Liquid	4	l	Annenberg Center - 001	23456789	Edit	Remove	FLSC1	
Acetonitrile	75-05-8	Liquid	100	ml	Annenberg Center - 002	C-20000077	Edit	Remove		
Acetonitrile	75-05-8	Liquid	4	l	Annenberg Center - 001	C-20000003	Edit	Remove		

Click "Remove".

ChemTracker | Add Inventory | Totals | Bulk Edit

Passante Lab Chemical Containers

Showing 1-1 of 1 results

Filters

Chemical Name: CAS Number: Chemical Hazards: -- Select Hazards(s) --

Chemical Synonym: Database Linkage Status: Controlled Substance?

Physical State: -- Select State(s) -- Location (Space): -- Select Location(s) --

Bench: Shelf: Specific Location Note:

Last Updated After: Last Updated Before:

Container IDs:
C-20000077

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

Submit

Chemical Name	CAS #	State	Amount	Units	Location	Container ID	Edit	Remove	Bench	Shelf	St. Lc. No.
Acetonitrile	75-05-8	Liquid	100	ml	Annenberg Center - 002	C-20000077	Edit	Remove			

Select "Yes."

ChemTracker | Add Inventory | Totals | Bulk Edit

Passante Lab Chemical Containers

Showing 1-1 of 1 results

Filters

Chemical Name: CAS Number: Chemical Hazards: -- Select Hazards(s) --

Chemical Synonym: Database Linkage Status: Controlled Substance?

Physical State: -- Select State(s) -- Location (Space): -- Select Location(s) --

Bench: Shelf: Specific Location Note:

Last Updated After: Last Updated Before:

Are you sure you want to delete container C-20000077?

Yes No

Submit

Chemical Name	CAS #	State	Amount	Units	Location	Container ID	Edit	Remove	Bench	Shelf	St. Lc. No.
Acetonitrile	75-05-8	Liquid	100	ml	Annenberg Center - 002	C-20000077	Edit	Remove			

[Add Chemical Inventory](#)

Disposing of Multiple Containers

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

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

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.

Chemical Name: CAS Number: Chemical Hazards:

Location (Space): Physical State: Last Changed Between:

Bench: Shelf: Notes:

Container IDs (up to 1000):

Submit

Showing 1 to 181 of 181 entries

Show entries Search:

Select All	Chemical Name	CAS #	Amount	Unit	Location	Bench	Shelf	Last Changed
<input type="checkbox"/>	(-)-Deoxyephedrine	33817-09-3	10	g	Burchard Research Facility - 673			11/29/2018
<input type="checkbox"/>	1,1,3,3 - Tetraethoxypropane	122-31-6	10	ml	Burchard Research Facility - 182			11/30/2018

Select the relevant search parameters and select the desired containers. 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** | Find Other Chemicals

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.

Chemical Name: CAS Number: Chemical Hazards:

Location (Space): Physical State: Last Changed Between:

Bench: Shelf: Notes:

Container IDs (up to 1000):

Submit

Showing 1 to 3 of 3 entries

Show entries Search:

Select All	Chemical Name	CAS #	Amount	Unit	Location	Bench	Shelf	Last Changed
<input checked="" type="checkbox"/>	(-)-Deoxyephedrine	33817-09-3	10	g	Burchard Research Facility - 673			11/29/2018
<input checked="" type="checkbox"/>	1,1,3,3 - Tetraethoxypropane	122-31-6	10	ml	Burchard Research Facility - 182			11/30/2018
<input checked="" type="checkbox"/>	Ethylenediaminetetraacetic acid	60-00-4	50	g	Burchard Research Facility - 377			12/4/2018

Showing 1 to 3 of 3 entries

3 total containers selected.

Edit selected containers

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

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

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.

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): **Burchard Research Facility - 158**

Select a group to pick a space

Amount:

Units:

Bench:

Shelf:

Specific Location Note:

Expiration Date:

Format: 2018-12-07

Notes:

These changes cannot be undone in bulk.

Once a container is disposed, the barcode is also disposed 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 indicated 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.

Searching for Inventory in other Laboratories

These instructions show you how to search for a chemical in your lab, in another lab, and in EHRs Surplus Chemicals.

All containers set to status “Normal” will be viewable a “Find Other Chemicals” search.

You are NOT required to share materials with another lab. See *Adding Inventory section* for more information. Borrowers MUST confirm with a supplying-lab contact that they are permitted to borrow the material.

To search for inventory in another lab, visit your lab’s ChemTracker tab, and click on “Find Other Chemicals”. From here, you can search for a chemical based on any of the filters provided.

The screenshot shows the ChemTracker interface with the 'Find Other Chemicals' search page. A blue arrow points to the 'Find Other Chemicals' button in the top navigation bar. The search form includes the following fields:

- Chemical Name: acetone
- CAS Number: [empty]
- Product Name: [empty]
- Manufacturer: [empty]
- Container ID: [empty]
- Physical State: [dropdown menu]
- Location (Space): [dropdown menu]
- Chemical Hazards: [dropdown menu]
- Surplus:

The search results table is as follows:

Chemical Name	CAS #	Amount	Unit	Group	Container ID	Date Changed
Acetone	67-64-1	4	l	Bagley Lab	C-20001167	8/8/2018
Acetone oxime	127-06-0	10	ml	Bagley Lab	C-20001693	11/6/2018
Acetone oxime	127-06-0	10	ml	Bagley Lab	C-20001692	11/6/2018
Acetylacetone	123-54-6	2	l	Demuth Lab	C-20036846	1/31/2018

Requesting FREE Chemicals from EHRS Surplus Chemicals

To dispose of commercial chemicals that are in their original container (labeled and in good condition) AND are not expired:

- Mark the container as "disposed" in ChemTracker
- Place the upright container in the secondary containment bin in your lab's satellite waste accumulation area.
- Label the container with a waste tag and request an EHRS chemical waste pick-up.

EHRS will remove the container during your waste pick-up. If they determine it is suitable for redistribution, they will add the container to their inventory location: "EHRS SURPLUS CHEMICALS".

When you search for a material in ChemTracker, containers within the EHRS SURPLUS CHEMICALS location are available for request, free of charge!

Request containers by emailing: cheminv@ehrs.upenn.edu

The following information must be provided in your message:

- Chemical Name
- Barcode Number
- Container size
- Name of person making request
- P.I.'s name and email address
- *The name of the ChemTracker Location where you will be storing the chemical: *Building Name & Room Number*

*EHRS will change the container's location and owner in ChemTracker and deliver the chemical to the specified room.

Requests will generally be processed within 1 week.

Notice: EHRS will contact the PI of the lab making the request. The PI must authorize the transfer of the chemical before we can process your order.

High-Turnover Containers

THIS METHOD MAY NOT BE USED FOR FLAMMABLE LIQUIDS IN BIOMEDICAL LABORATORY BUILDINGS. 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.

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






Example: At any time, you have a maximum of five 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 it as you use it.

- EHRD would create five *representative* containers in your ChemTracker inventory.
- The information and high-turnover barcodes would be on a *sheet of paper* instead of on the bottles.
- The paper is attached to the flammable liquids storage cabinet where the bottles are stored.

Example:

Material	Package information	Size	Barcode
Acetone [67-64-1]	Sigma-Adrich Chromsolv for HPLC >99.9%	4 Liter	
Acetone [67-64-1]	Sigma-Adrich Chromsolv for HPLC >99.9%	4 Liter	
Acetone [67-64-1]	Sigma-Adrich Chromsolv for HPLC >99.9%	4 Liter	
Acetone [67-64-1]	Sigma-Adrich Chromsolv for HPLC >99.9%	4 Liter	
Acetone [67-64-1]	Sigma-Adrich Chromsolv for HPLC >99.9%	4 Liter	

Five unique barcode labels

- Now you don't need to add new containers or dispose of empty ones unless your maximum quantity or package-information changes

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 housed

Contact EHRS with any changes to your high-turnover inventory.

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