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.

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

Contact the Chemical Inventory Team
EHRS Chemical Inventory Team
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
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.

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](https://www.osha.gov/Publications/HazComm_QuickCard_Pictogram.html)
Tracking Hazardous Gases

ALL HAZARDOUS GASES must be tracked in your inventory. See Appendix A for information about cylinder sizes.

**Hazardous Gases** Include any gas that is:
- Flammable
- Corrosive
- Toxic
- Oxidizing

Common examples of hazardous gases include:

Ammonia
Boron trichloride
Carbon monoxide
Chlorine
Dichlorosilane

Fluorine
Hydrogen (> 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 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
  - Amino acids
  - Glass beads, sand, etc.
  - Agar/Agarose
  - Sodium chloride
  - 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.
Viewing Your Chemical Inventory

All containers
From the BioRAFT homepage, expand the left side menu to view information relevant to your lab.

Click the “ChemTracker” tab to view your lab’s chemical inventory.

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

You can search for a specific record by clicking in Container ID and scanning or typing a barcode number.
Notice that you can scroll back and forth to view more headings for your list of containers.

You can view a subset of your containers by using the filters at the top of the ChemTracker page, and you can sort the results by clicking on any heading title that is underlined.

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 lab’s inventories.

The EHRS Chemical Inventory Team can help you locate chemicals in our EHRS Surplus Inventory or in other labs across campus.

Use the webform on the EHRS website 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.

Search “Chemical Surplus or Borrow Request” on the EHRS website or use the URL below to locate this webform:

https://ehrs.upenn.edu/health-safety/health-safety-forms/chemical-surplus-or-borrow-request
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.

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

Chemical Look-Up

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

Select your search criteria (Chemical Name, CAS Number, or Product Name or Number). The default is “Chemical Name”, but EHRS recommends a CAS Number or Product Number search.

Start typing the chemical name, CAS number or Product 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.

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.

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If the database does not have the chemical you are searching for, the dropdown will show “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.

If you still do not see a match, the EHRS Chemical Inventory Team will create a chemical record for you. Submit your request through the Problem Container Form on the EHRS website.
Specifying Amount

The size of the container must be specified.

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

When adding a gas 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 Appendix A in this manual for common gas cylinder volumes. If you do not see your cylinder in Appendix A, contact the Chemical Inventory Team to ask what amount and unit to use.

Container Status

Attention! As of August 2019, the ability to view other lab’s inventory records has been disabled. No containers will be visible to other labs regardless of the container status.

Normal
This is the default container status. This designation means that other lab groups will be able to view that your lab has this chemical and the container location; you are NOT required to share the chemical with another lab.

Hidden
By designating a container “Hidden,” the container will not appear in other lab’s inventory searches.

Surplus
Designating a container “Surplus” denotes that it is available for anyone to use.
Unique Container ID (Barcode Number)

All containers of hazardous materials are required to be labeled with EHRS-provided barcode labels.

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)

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 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.

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

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.
Adding Additional Details

Assigning location within room

More detailed location information (refrigerators, benches, shelves, etc.) can be added in the “Additional Details” section. (EHRS does not require you to specify locations below the room-level)

If you want to specify sub-locations take note:
All additional location information should be added to the “Bench” section.

Adding location information to the other fields will lead to difficulties in searching for inventory by location.

Look out for this!
The “Bench” field is free-form text; therefore, if the name of a location is entered differently for different locations, 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.

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!

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

Then click “Remove”, and click “yes” to confirm.
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.

Click “Edit selected containers” in the bottom right corner. From there, indicate the changes you would like to make.
To **dispose** of the containers, click “**Delete all selected**”.

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

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.

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 when empty:

- EHRS would create five representative containers in your ChemTracker inventory. (Starting with the letters “HT”)
- 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.
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.

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

High-turnover inventories will be checked by Inventory Team members periodically to ensure accuracy.
Appendix A: Gas Cylinders

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

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

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.