

# Creating & Managing a Chemical Inventory System

A Whitepaper  
by  
Sam Hyde,  
Field Chemist



# Creating and Managing a Chemical Inventory System

By Sam Hyde, Field Chemist

A chemical inventory system is, as the name suggests, a program to track products and their locations throughout a given site. Managing an effective and accurate chemical inventory system is a crucial part of any robust environmental health and safety program. Whether it is a healthcare, academic, or commercial research setting, an investment in a strong inventory program will pay dividends in safety, compliance, and cost management. However, a considerable amount of time must be invested on the front end to fully realize these benefits. This whitepaper discusses the important issues to consider when developing a chemical inventory program, and the benefits that a robust program brings.



## Program Vision

First, it is imperative to have someone in a strong leadership role as an executive champion when implementing a chemical inventory system. This person, or group of people, should be familiar with the diverse requirements of researchers, lab support staff, logistics managers, purchasing, information technology, and compliance officers at the facility. This leadership is important because chemical inventory sits at the intersection of these groups and a commitment will be needed from all involved. The inventory program should be researched and developed with input from all stakeholders prior to implementation. It is often tedious to nail down all of these issues beforehand, and of course no program survives intact from planning to implementation, but a half-hearted program provides no real benefit and can be a drain on time and resources.

There are several key issues that need to be decided before any system is put in place.

1. Program goals
2. Program scope

## Program Goal

Outlining the vision of the chemical inventory system is extremely important to gain organizational buy-in. Then, defining the goal(s) of your inventory program is crucial.

- Do you want a system that enables safety personnel to generate reports of all hazardous chemicals in the building by laboratory?
- Would you like end users to be able to search for chemicals by individual cabinet, shelf, or bin?

The more specific the goals and scope of the program are, the more effectively a system can be tailored to suit your needs. It is easy to lose sight of the forest through the trees. The best way to avoid this is to have a concrete idea of the lifetime of a chemical in the facility. From receiving, it will be logged into the system and delivered to a certain location. It may be moved from place to place. It will eventually be emptied and logged out of the system. How will this best be managed? Keeping an eye on the practical side of the system is absolutely essential. After all, even the most ambitious program can fall flat if it is impractical in everyday use.

## Program Scope

Then, there is the scope of the inventory program. Do you want to inventory:

- flammable solvents?
- all hazardous chemicals?
- all chemicals coming into the facility?
- kits, which often contain many small bottles?
- buffer solutions?
- only stock chemicals?
- working solutions?

The answers to these questions will depend on your program goals and the practical limitations you face.

## Program Implementation

After there is a solid plan for the goals and implementation of the program, it is time to make it happen. The first place to apply the program is at the point of entry to the facility. Train your logistics staff on whatever specific system you are using, and have them begin tagging every chemical that comes through the door on a daily basis. This train and tag system has dual benefits. One, personnel will familiarize themselves with the system through regular exposure and can quickly spot any glaring problems. Two, this ensures that nothing slips through untagged as existing onsite chemicals are addressed.

Once certain that all new chemicals have been added and tagged, begin going through the facility laboratory by laboratory (or even bench by bench) and tagging everything that falls within the scope of the program. This process will start slowly, but will speed up as the database grows. Make sure that lab personnel have been trained (or at least made aware of) the program. Let them know their duties regarding logging empty containers out of the system. Once the chemical inventory program is in place, the bulk of the work will be complete. Proper maintenance, however, is another issue.

**Consistency  
is the key to  
a successful  
chemical  
inventory  
program.**

## Program Maintenance

Consistency is the key to a successful chemical inventory program. Train existing staff well, and train new hires on the program as part of orientation. Have a single format for all data entry of new chemicals. This is especially important for personnel in charge of data entry and chemical delivery. If they are all on the same page, the rest will largely take care of itself. To ensure the integrity of the database, you need to limit access to it. One good solution is to create different tiers of access to the system. Give everyone read-only access, while providing write privileges to logistics personnel or a few well-trained users.

Keeping the inventory updated daily is essential. Make sure that the system is updated daily to reflect new chemicals coming in and empty bottles going out. This will give you a better read on what is in the building at any given time. No matter how good the program is there will inevitably be containers that slip through the cracks. Be certain to complete a reconciliation project on a regular cycle. Go through the facility, lab by lab, and verify that each bottle is tagged and in its proper place. This may sound tedious, but if the data are maintained well it is a virtually painless process.

## Chemical Inventory Program Benefits

If chemical inventory systems are so difficult to set up properly, tedious to maintain, and take personnel away from other things that demand their attention, why are they so popular? We all know that it is a best management practice to have a solid grasp on the chemicals that are in your facility. But what tangible benefits does a good chemical inventory program bring?

### 1. Compliance Tool

A good chemical inventory program is absolutely invaluable from a compliance standpoint. Federal, state, and local laws create complex and overlapping web of permits, licenses, and regulations, many of which depend on substances in use in your facility. For example, your local fire department has issued your organization a permit to store a certain quantity of flammable liquids in each fire control zone of your facility. With a good chemical inventory program, you will know the quantities of flammables in each space and can ensure they are not above the regulated amount. If the fire officials show up for an unannounced inspection, you can instantly generate a report detailing the exact quantity and location of all flammables in the facility. This has saved you a major headache at least, and a serious fine and loss of your permit at most. Regulatory groups as diverse as fire departments, water resources management authorities, state and federal environmental protection agencies, quality control organizations like the Federal Drug Administration, Department of Homeland Security and even the Drug Enforcement Administration are all concerned about what you are keeping onsite. Shouldn't you be?

### 2. Cost Savings

An even more immediate benefit of a strong chemical inventory program is that of cost savings. Anyone in the facility can instantly find out how much of any given chemical is onsite. Logistics personnel can search before they order more of something. Researchers can instantly find out if there is a bottle of a required chemical in the building before purchasing a new one. Researchers can then take the exact amount they need, instead of buying some, using a little bit, and putting the bottle on the shelf to gather dust. A good chemical inventory system is a virtual chemical stockroom spanning the entire facility. It eliminates redundancy and prevents different labs from maintaining parallel inventories. This offers savings in two ways. Researchers will find what they need from other labs rather than ordering their own stocks, which reduces total purchases. Just as important, however, are the reduced disposal costs. How many times have you had to schedule a lab cleanout because a researcher left the company, leaving all of her half-full stock chemicals behind? With a good chemical inventory program, chemicals can be used communally and far fewer of them will go unused until they expire and must be disposed of.

## Summary

Creating and managing a chemical inventory is not particularly easy. It requires commitment and planning beforehand and a strong presence to maintain the program and train the personnel involved. However, the payoffs, in the form of cost savings, regulatory compliance, and safety are well worth the investment.



## ABOUT TRIUMVIRATE ENVIRONMENTAL'S CHEMICAL INVENTORY PROGRAM

Triumvirate Environmental is not a software company, but rather offers the services to assist in developing a customized, site-specific chemical inventory program and helping to maintain the system. Triumvirate's staff is versed in many different chemical inventory systems that are on the market today.

Triumvirate's expertise is in helping to define an organization's needs, assisting with systems creation, implementing the system, conducting an initial inventory, performing chemical segregation and bar-coding, and providing ongoing chemical reconciliation.



800.966.9282

[triumvirate.com](http://triumvirate.com)

SERVING NEW ENGLAND TO THE SOUTH-ATLANTIC