

WHITE PAPER

On-Site Chemicals: Do You Know Your Exposure?



Do You Know Your Exposure?

It begins with chemical inventory and ends with chemical intelligence.

Millions of workers across hundreds of thousands of U.S. facilities are potentially exposed to hazardous chemicals each day. It's surprising how little most employers know about the chemicals they have onpremise. This paper explores the necessity, the benefits and the process required to conduct a chemical inventory at your facility to maintain OSHA compliance and keep employees safe.

Way back in 1976, a Congressional committee reviewing “chemical dangers in the workplace” reported that the threat posed by toxic substances to the health of workers caused **an estimated 390,000 illnesses every year.** Today, 650,000 hazardous chemical products used in the United States and according to the [U.S. Department of Labor Occupational Safety and Health Administration \(OSHA\)](#), **as many as 50,000 workers die annually from occupational diseases,** including those linked to long-term chemical exposure.

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Additional Regulation

Since 2012, the OSHA Hazard Communication Standard (HCS) has been aligned with the United Nations' Globally Harmonized System (GHS)—a worldwide system for standardizing chemical classification and labeling. The initial U.S. transition deadline was June 1, 2016, by which time all employers using hazardous chemicals were required to be fully compliant with GHS-aligned labeling and Safety Data Sheets (SDS).

In 2024, OSHA issued a final rule aligning HCS with GHS Revision 7, introducing new requirements for SDS, labels, and hazard classification. Employers must now comply with updated deadlines to revise substance and mixture SDS, workplace labels, written HazCom programs, and employee training.

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Although OSHA's HCS states that employees have both a need and a right to know the identities and hazards of the chemicals they are exposed to when working, companies will be surprised to know the majority of their SDS are not current and compliant.

HSI experts in on-site inventory have found that **on average ONLY 40% of chemicals match the SDS records on site.** Over time, new chemicals have come on-site without a corresponding SDS, chemicals are no longer being used but the SDS hasn't been removed or the manufacturer has published an updated SDS. All these factors mean an out of date and non-compliant SDS "binder".

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How Can You Comply When You Don't Know Which Chemicals are on Premise?

Challenge:

Today's workers have the right to know what chemicals they're being exposed to and what the hazards are.

For today's employers, this means they are required to provide an inventory of hazardous chemicals, HazCom and GHS training, a written HazCom plan, GHS-compliant chemical labels and an SDS for each chemical on site.

Though many companies are successful at putting a HazCom compliance program in place, they fall short in maintaining up-to-date compliance due to the lack of inventory controls. Neglecting to track purchasing data to maintain an accurate chemical inventory simply makes achieving 100% compliance impossible, thereby potentially exposing employees to dangerous situations.

Solution:

An on-site chemical inventory is the first and most important step for any business to get a true understanding of all its existing chemicals.

By conducting a comprehensive chemical inventory, you'll discover which chemicals are on site so you can accurately determine which need new SDS documentation and what documentation should be archived for safe keeping.

No wasting time maintaining documents for chemicals you no longer have, and no cluttering up your active SDS collections with unnecessary documents.

Benefits:

With accurate chemical inventories you can comfortably meet regulatory compliance, reduce your liability by actively archiving chemicals not in use and identify hazardous workstations, enabling you to provide targeted trainings to specific employees working in those areas.

You'll now have the data required to develop an integrated chemical tracking system; allowing you to marry an SDS to each material, create GHS-compliant labels and generate accurate hazardous chemical lists.



Conducting an Effective Chemical Inventory

Once you decide to conduct a chemical inventory, you'll want to determine who's the best fit for the job. You can do it yourself or hire someone to do it for you. Just be sure to employ a dedicated team. Regardless of who you select, there are a few key process components you'll want to utilize to achieve all the benefits of your inventory effort.

- Get a database in place (using [chemical management software](#)) to capture and maintain your findings.
- Collect, scan, and store all SDS electronically.
- Tackle the inventory in a logical pattern; complete one room at a time and work from top-to bottom, left-to-right.
- Include fields in your database to capture information necessary to track down any missing SDS, consisting of:
 - Product number
 - Manufacturer's name
 - Manufacturer's phone number
 - Manufacturer's website URL
- Include fields in your database to capture qualitative location data on each chemical, consisting of:
 - Building location
 - Room location
 - Cabinet and/or shelf locations
- Include fields in your database to capture quantitative data on each chemical, consisting of:
 - Container type
 - Unit of measure
 - On-hand inventory count
 - User supplied data such as classifications, part numbers, etc.

Many companies make the mistake of **not capturing the detailed quantitative AND qualitative data sets** mentioned above that provide the necessary information to proactively conduct reporting requiring aggregate chemical information, such as Tier II reports.

What Can You Do with an Accurate Chemical Inventory?

A current and accurate chemical inventory enables you to be prepared to confidently:

- 1** Curate an accurate library of up-to-date SDS.
- 2** Ensure GHS-compliant labels are created and adhered to each chemical container.
- 3** Know the exact location and quantity of all your on-site chemicals.
- 4** Implement Environmental Health & Safety best practices for chemical management.
- 5** Know on-demand what to do in case of exposure to protect all employees.
- 6** Archive any unnecessary, pre existing SDS while maintaining access to the records in the event they are needed as proof for protection during a lawsuit.
- 7** Properly dispose of any unnecessary or expired chemicals.
- 8** Identify hazards and assess their associated risks.
- 9** Know which employees require special safety training for highly dangerous chemicals.
- 10** Manage chemical exposure to reduce exposures and prevent illnesses.
- 11** Proactively manage your HazCom plan (i.e. update your list of hazardous chemicals).
- 12** Generate your EPCRA Section 311/312 Tier II report and initiate other reports that require threshold analysis (i.e. Department of Homeland Security's Chemical Facility Anti-Terrorism Standards, CFATS report)

In the Case of Emergency:

Data at Your Fingertips

When you have completed your chemical inventory, you will have accurate and up-to-date records containing the names, quantities, and locations of all your company's chemicals. After you label all your chemicals, you'll have instant access to safety information on every chemical container at your facility—hazard information, as well as protective measures. And, after you acquire corresponding SDS, filing your EPCRA 311/312 Tier II report will provide first responders and environment cleanup personnel the critical information needed to safely and effectively perform their jobs.

It's equally important to maintain an accurate ongoing record—because people use, move, buy, receive, transport, and dispose of chemicals daily. Therefore, implementing an approval process for incoming chemicals is crucial to preserving dominion over your data.



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Considerations for Hiring an Expert

Conducting and maintaining accurate inventories requires significant time and internal processes. **When dedicated resources are not readily available, the result is poor compliance, potential health hazards, and often inaccurate reporting.**

The primary reason that regulatory compliance is lacking in most businesses is that quantitative inventory data is rarely tied to other chemical data, like data sheets, purchase history and employee exposure. Many companies fall short in maintaining compliance even after an inventory takes place due to the lack of proper inventory controls, which is why conducting regular inventories to get back on track can be critical as well.

For companies that don't have dedicated inventory personnel available, it's often a better option to [hire an experienced team](#) to conduct the initial and subsequent annual on-site chemical inventories.

Recommended Outsourced Inventory Team Requirements

1. Technicians have security clearance and have passed background checks.
2. They are experienced – having completed chemical inventories across industries, in multiple facility types.
3. Technicians utilize equipment to automatically correlate chemicals to existing SDS on the fly.
4. They do NOT use spreadsheets.
5. Technicians who use spreadsheets and not an integrated application, introduce the risk of creating errors when matching materials to SDS and drastically increase the time it takes to perform an audit. This ultimately comes down to having a more expensive audit with less value and puts employees at greater risk. When employee safety is at play, being as efficient as possible is key.

“During emergency situations and after catastrophic events or chemical spills, it is extremely important to determine quickly the location of the most dangerous chemicals on premise. Accurate data is vital.”

*HSI Director of Operations and
Authoring Services*

Why is Digital Data Better?

More Effective Chemical Management

Your EHS team is not the only group of people within your organization who are going to want access to your chemical inventory data. **Having up-to-date digital data about the quantities and locations of the chemicals in your organization make it easier for you to SHARE information across the organization, with external regulatory agencies, and with emergency personnel.**

Using a cloud-based [chemical management system](#) provides instant access to this data, drastically reducing liabilities and increasing data that's easily dissectable for reporting and analysis. Cost savings and operational efficiencies also multiply when you can easily feed digital inventory data into other systems such as Purchase & Procurement, Human Resource Management, Emergency Medical and Waste Management systems, and SAP systems that manage business operations and customer relations.

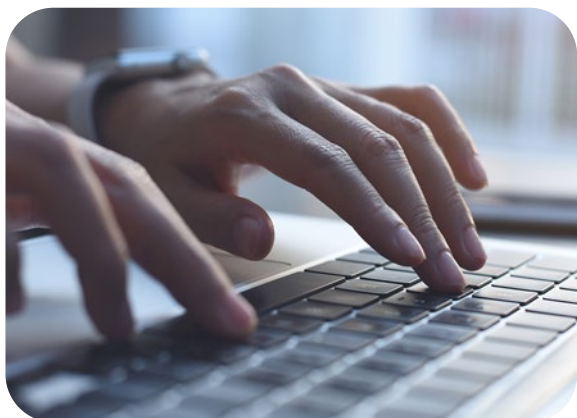
If you're interested in maximizing your chemical inventory data collection, sharing and analysis capabilities, hiring an expert that specializes in chemical management software AND inventory services is the way to go.

Having up-to-date digital data about the quantities and locations of the chemicals in your organization make it easier for you to **SHARE information** across the organization, with external regulatory agencies and with emergency personnel.



Recommended Chemical Management System and Inventory Vendor Requirements

Choose an enterprise-level digital inventory and chemical management system that:



- Is easy to access, use, and learn to ensure user adoption
- Seamlessly integrates with other systems, such as purchasing, operations and accounts payable through an enterprise API
- Generates reports of all on-premise hazardous chemicals sorted by name, location, CAS number, formula, etc.
- Includes a powerful search engine so chemicals can be documented and located by very specific physical locations
- Enables control over incoming chemicals from point of entry through an automated chemical approval process
- Includes hand-held, mobile technology that can upload inventory data on location in near real-time into a highly organized inventory record
- Utilizes features like barcode labeling and tracking
- Has a robust chemical approval process to monitor and track new materials that are brought on-site

Upping Your Chemical Intelligence Quotient

Rather than pushing to sell more chemicals, today's savvy chemical suppliers are profiting more by helping customers manage chemicals over their entire life cycle, improve inventory management, and reduce chemical use and waste.

End-to-end cloud-based chemical management solutions are playing an essential role in supporting intelligent chemical management across industries. **With a system in place, visibility of crucial chemical information is easily provided to employees, OSHA and first responders; all contributing to the ability to limit liabilities and manage public perceptions during instances of chemical spills and unwanted exposure.** More importantly, these systems are arming companies with the tools needed to be proactive stewards of their local communities.

[Contact us](#) if you have any questions about HSI's Chemical Management System.

About HSI



HSI is your single-source partner for EHS, Compliance, and Professional Development solutions. HSI provides integrated e-learning content, training solutions, and cloud-based software designed to enable your business to improve safety, operations, and employee development. Across all industries, HSI helps safety managers, and technical employees, human resources, first responders, and operational leaders train and develop their workforce, keep workers safe, and meet regulatory and operational compliance requirements. HSI's focus is on training, software, and services for safety and compliance, workforce development, industrial skills, and emergency care. HSI is a unique partner that offers a suite of cloud-based software solutions including learning management, safety management, chemical SDS management, and more, integrated with content and training so businesses can not only monitor and manage multiple workflows in one system, but train employees via one partner.

For more information, visit [hsi.com](https://www.hsi.com)