Professional Safety
JOURNAL OF THE AMERICAN SOCIETY OF SAFETY ENGINEERS

Best

HazCom Inventory: Worth Another Look

By Michael Beckel and Jess Kraus

HazCom begins with an accurate, up-to-date inventory of the pure chemicals, mixtures and products within the workplace.

Sure, OSHA's Hazard Communication (HazCom) standard is important—vitally important to a firm's chemical safety program. But why revisit this fundamental program now? After all, it has probably been integrated into the safety program for so long that most employees believe that it has been around for generations. However, the results of a recent evaluation conducted point to a systemic failure to recognize the significance of the most basic element of HazCom —the hazardous materials inventory.

3E Co. analyzed HazMat inventories of 300 companies representing various sizes and business areas. More than one million products and 10,000 separate site inventories were reviewed. The outcome was clear. Inadequate HazMat inventory is pervasive and the consequences are likely impairing efforts to maximize employee safety, meet regulatory requirements and contain costs associated with chemical safety.

Why is the HazMat inventory so important? HazCom begins with an accurate, up-to-date inventory of the pure chemicals, mixtures and products within the workplace. The inventory is the foundation on which other critical data are managed and turns that data into knowledge regarding hazards present in a facility. When applied on geographical, functional and hierarchical levels, this knowledge leads to better business decisions.

The Inventory

How Often

The frequency with which the inventory is reviewed depends on the size of the business and number of locations/departments that contain HazMat, the sophistication of purchasing and approval processes and the expected turnover of hazardous materials. Ideally, an annual inventory should be conducted by the person responsible for the inventory within each specific location/department. Unfortunately, the time-consuming nature of inventory activities can prove to be a challenge. Under these conditions, outsourcing the task may be a viable alternative for collecting an inclusive inventory.

Thereafter, each new purchase or disposal should be tracked and the inventory modified throughout the year. Inventories from separate locations within a firm should be rolled into a corporate-level inventory for analysis and to ensure consistency in process.

If no inventory program is in place, the first step is to conduct a full inventory. This single step will

improve the quality of SH&E programs and enhance cost control. Plan a refresher inventory at the beginning of the following year to validate any assumptions made about chemical use and turnover. This refresher should include one full inventory from a "bellwether" site within the organization and a "what's new" report from all other locations. If there is more than 20-percent change from the previous year, either in the number of hazardous chemicals and products or in total quantity of HazMat, conduct another full inventory at every site.

What Data to Record

At a minimum, for each product or chemical, record its location, label name, manufacturer's name, and any part number or description assigned by the manufacturer. These basic data match the item to an MSDS, which can provide the critical data needed for reporting and employee safety. To maximize environmental reporting value, container size and quantity of the material on hand should also be recorded.

Problems

During the inventory, unlabeled or illegibly labeled containers may be found. Record these items in a separate discrepancy document with their specific location and description, then physically flag the items with stickers or labels that are easily visible. Review the discrepancy document at the end of the process to determine corrective actions, such as relabeling or removal of products.

Completing the Picture

Once the inventory is complete, a company can begin to add value to each record by associating other data, documents or records with each inventory item; and enhance this information with onsite SH&E staff or outside resources to help employees use and interpret the data. This is an important step in seeing the whole picture.

MSDS

Associate each item in the HazMat inventory with a manufacturer-specific MSDS and keep the inventory list and MSDS available for easy access by employees. MSDS provide vital information for exposure control and specific characteristics of the chemicals in a product or mixture. Many companies maintain the inventory list and corresponding MSDS in hard copy or electronic file indefinitely to meet OSHA's exposure recordkeeping requirements. As products change, MSDS must be updated to reflect current manufacturer's data; a process for acquiring new or updated MSDS is also needed.

Hazard Rating

Assign each item in the inventory a National Fire Protection Assn. (NFPA) and/or Hazardous Materials Identification System (HMIS) rating and classify the item for the modes of transport used. The NFPA system for identifying the hazards of a chemical was developed with the needs of fire protection agencies in mind. These ratings may be used to determine product storage requirements and fire code quantity limits. In addition, the local fire department may require a site to provide NFPA ratings for products disclosed on chemical inventory reports.

The HMIS rating is a labeling system developed by the National Paint and Coating Assn. to aid in quick identification of the hazards associated with each HazMat product. HMIS is closely associated with the hazard identification and labeling requirements of OSHA's HazCom standard. Inventory items should also receive a classification based on how products are shipped, whether by ground, air or vessel. Each

The inventory is the foundation on which other critical data are managed and turns that data into knowledge regarding hazards present in a facility.

Best Practices continued on page 50

from page 49

mode requires a different classification based on the container size and quantity of the chemicals being transported.

Shipping

Each item transported by truck, boat, railcar or plane must have several pieces of data associated with it. Hazardous materials ("dangerous goods" in international regulations) offered for transport must be appropriately classified, packaged, marked, labeled and placarded, and appropriate shipping documentation must be provided. Classification involves identifying the transportation hazards associated with the inventory in accordance with either domestic or international air and/or marine requirements.

The Evaluation

What can be inferred from an evaluation of industrial and commercial chemical inventories? One may conclude that with so many companies maintaining chemical inventories so poorly, a company that does it properly gains a significant strategic advantage. When analyzed, the size and diversity of hazardous products within an organization is almost always a surprise. SH&E staff and managers often have not seen the whole picture and the result is misguided programs, misleading reporting, insufficient training and poor decision making. Some of the key points extrapolated from analysis of a subsample of the studied population include:

Phantom Products

On average, 33 percent of the products that were listed on the inventory did not exist in the actual workplace. The products or chemicals had been depleted or discarded, and the inventory had not been updated. While this is certainly better than not identifying all relevant hazardous products on the inventory, it means that the average company is incurring additional cost to maintain and track phantom product MSDS.

The 50/50 Rule

In the average HazMat inventory, 50 percent of the items listed have no associated supporting data, such as an MSDS, quantities, storage locations and container data. Of the items that have supporting information, 50 percent of the information is out of date. In essence, the average company is making decisions related to use, storage, disposal and reporting of hazardous materials with only 25 percent of the information they need.

Nothing in Common

The evaluation also compared inventories from different locations, sites or departments within the same organization. Only 12 percent of the items listed on inventories were uniform from site to site, inventory to inventory. This reinforces the fact that HazMat is site-specific; and that the use of a "master" inventory based on a single location can lead to inaccurate reporting and decision making.

Change Is the Only Constant

Of the inventories reviewed, 90 percent changed at least monthly. Products were used or discarded, new materials were ordered, product shifted from one site to another—all of which affect site-specific inventories and related reporting.

Conclusion

An accurate inventory can greatly enhance SH&E program effectiveness. By focusing efforts on gathering and analyzing the right information, a company can control the costs inherent in tracking, storing, shipping and disposing of hazardous materials, while also protecting workers and the public and improving compliance status. It all starts with a solid hazardous materials inventory, and it is worth the investment.

Michael Beckel is a safety engineer with 3E Co., Carlsbad, CA. He is an associate member of ASSE's San Diego Chapter. Beckel is also a member of the Society for Chemical Hazard Communication's OSHA Alliance Committee. Jess Kraus is founder of 3E Co. and president of 3E Solutions, Carlsbad, CA. Learn more about 3E's MSDS, HazMat and SH&E compliance services at www.3ecompany.com.