

# From Cradle to Grave

Tips for managing compliance throughout the entire chemical lifecycle

by Prabhu Natarajan, Julia Tsvetkova and Tamie Webber

**A**s the amount of regulations increase worldwide, companies are being held increasingly responsible for the safety of products they manufacture and/or use in the workplace. Not everyone is aware, however, that environmental, health and safety (EH&S) compliance is required at multiple steps throughout the lifecycle of a hazardous material or chemical, including during research and development, testing, manufacturing, transportation, usage and disposal. If a regulatory compliance program only addresses a portion of the lifecycle it could be insufficient and put companies and their personnel at risk for the dangers, fines and fees associated with non-compliance.

The best way to prevent these potential fines and penalties is to develop and adhere to a comprehensive compliance management program that addresses all phases of the chemical lifecycle — from the cradle to the grave.

## SIMPLIFYING A COMPLEX PROCESS

Developing a comprehensive regulatory compliance management program can be a somewhat daunting process. There are several issues that need to be addressed prior to developing and implementing an effective program, including:

- Do you have an accurate, up-to-date HazMat inventory? This inventory becomes the foundation upon which the company manages other critical data and turns those data into knowledge on the hazards present in each of its facilities.
- Are your employees protected from potentially hazardous materials in the workplace?
- What documents do you need for distribution of products containing ingredients labeled as HazMat?
- What is the best way to ship hazardous materials? How do you properly pack, classify and label these materials?
- What is the impact on the environment?
- Are regulations consistent across the product's target market? Or are there regional regulations that need to be adhered to?

Various government bodies mandate that certain standards be maintained when an organization uses,

stores, transports or disposes of hazardous materials. Many Canadian companies work on both sides of the border or ship materials to the United States. They therefore need to be aware of OSHA's HazCom Standard (29 CFR), which mandates that "the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to employers and employees. This transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, material safety data sheets and employee training."

As AMR Research analyst Simon Jacobson notes: "[EH&S compliance] goes well beyond finished product quality testing against regulated specifications. Firms have to manage the levels of emissions and waste created during the full spectrum of operations throughout the entire lifecycle of their products and facilities, from R&D through transportation to customers — and increasingly to end of life and disposal."

## COMPLIANCE AT EACH PHASE

Identifying, monitoring and complying with these complex and ever-changing regulations and requirements can be overwhelming, especially when combined with the tactical and administrative tasks listed above. Identifying the individual phases of the chemical lifecycle and examining the compliance requirements specific to each phase helps ensure that compliance requirements are met throughout the entire lifecycle.

During the research and development process, access to the latest regulatory data is critical. As new products are developed and formulations are determined, it's essential to know if proposed ingredients are approved for use in target markets. Access to current, accurate and comprehensive global regulatory data during this phase, therefore, is crucial and cannot be overstated.

Manufacturers are especially challenged with regulatory compliance because they have complex internal and external obligations. First and foremost, manufacturers must ensure the safety of their own



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employees and the safety of their products. They are also tasked with providing accurate and reliable information to downstream customers. To facilitate the exchange of accurate information, once a new product is produced, the manufacturer must create a material safety data sheet (MSDS) to help distributors support the regulatory requirements of their markets and fulfill HazCom requirements. Manufacturers also need to ensure that MSDSs are sent to customers in accordance with the regulatory requirements for the jurisdictions in which sales are made.

During this phase, it's recommended that distributors consult their product lists and sales records to ensure that new or updated MSDSs are distributed appropriately among end-users. New MSDSs must be distributed (by mail, email or fax) to customers upon sale and again when any changes are made. This task can be especially time consuming and burdensome; outsourcing the distribution of MSDSs can result in greater cost efficiencies, increased value to downstream end-user customers, improved compliance, reduced risk and protection of the corporate brand.

During transport, a manufacturer must ensure shipments of their products are properly packaged, marked and labeled according to its mode of shipment. It is important to have a clear understanding of the regulations of the countries through which each shipment passes as well. For example, the U.S. Department of Transportation (DOT) requires that all hazardous materials or dangerous goods for transport be appropriately classified, packaged, marked, labeled, placarded and shipped with proper documentation. Failing to comply can result in civil penalties and fines of up to \$32,500 per incident, per day.

Once a product is received by the customer and used on site, a different set of requirements apply. The employer must provide MSDSs and training to its employees, and report on usage to regulatory agencies.

If a company uses hazardous materials, there is also the possibility of a chemical spill. While federal regulations require employees to be trained to properly manage chemical spills, it is the responsibility of an owner to keep employees safe when doing so. Companies can better prepare for a chemical spill and increase the safety of employees during an incident by providing potential first responders with basic information on recognizing different types of spills and how to respond.

Outdated and spilled material must be disposed of according to regulations. One of the critical components of a successful hazardous waste management program is accurately and consistently identifying and classifying items regulated

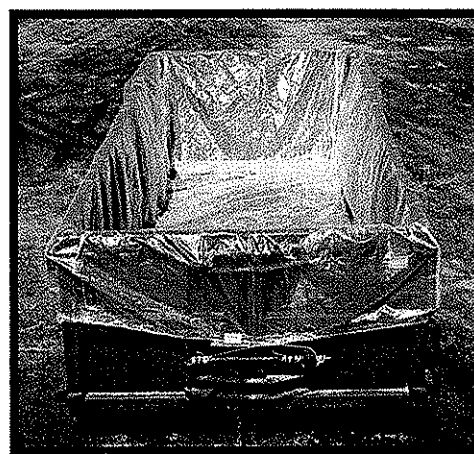
as hazardous waste should they require disposal. Once the hazardous waste items have been identified, processes can be put in place to help ensure the proper handling, storage and disposal of these materials. A comprehensive review of the manufacturer MSDSs, reviewing appropriate federal and provincial/state-specific waste codes, and reviewing descriptions for a customer's products, will help classify hazardous waste.

Most companies have limited staff resources to dedicate to EH&S responsibilities and are unable to ensure regulatory compliance throughout the chemical lifecycle. Working with an outsourced solution provider can greatly simplify the process and facilitate compliance. HMM

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