

Making EH&S compliance a priority throughout the chemical lifecycle

By Kami Blake

In the past, environmental, health and safety (EH&S) compliance performance and/or enterprise risk management programs have been geared toward delivering continuous improvement and/or reducing risk with a compartmentalized approach.

The safety department tended to work-place safety issues, the transportation department ensured the safe and compliant movement of regulated materials, and the regulatory department maintained community and environmental compliance at all agency levels.

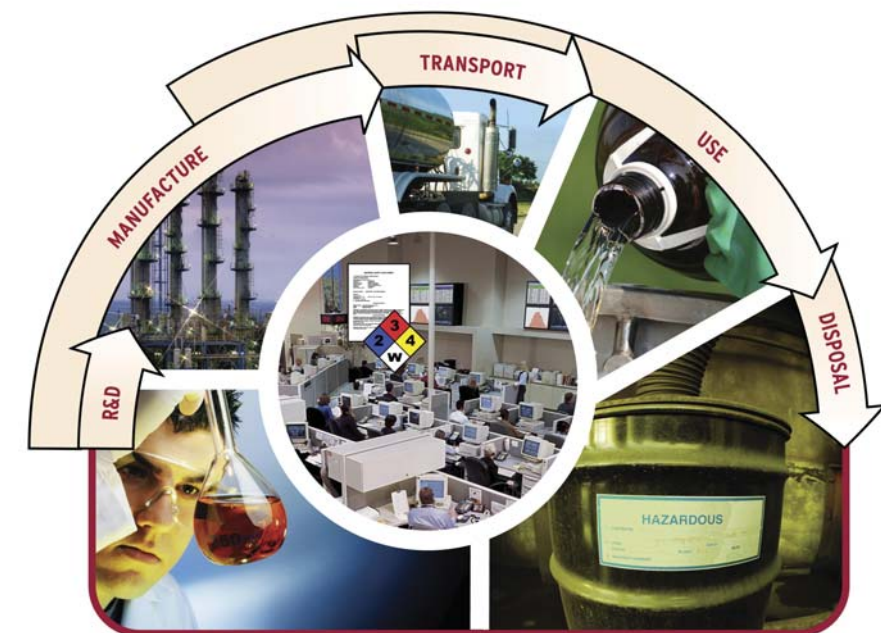
Recently, however, companies that want to deliver sustainable, ongoing improvements in compliance and risk associated with the management of chemicals are taking a full-lifecycle approach to understanding and managing chemical product compliance.

How does a chemist involved in research and development become aware of the impact of transportation regulations on the chemistry of a new product? Not so long ago, an adverse regulatory impact outside his or her area of concentration, well after significant resource and financial investment. However, the advent and adoption of enterprise resource planning (ERP) systems and the power of web-accessible and integrated chemical data, regulatory repositories and EH&S systems tools have made it easier to exchange knowledge and information.

Adding to the diverse and ever-evolving regulatory landscape, the global econ-

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omy continues to introduce new variables into the compliance and risk equation. The cost of non-compliance, or excessive risk, is no longer limited to fines and penalties, nor does it solely affect a small group of technically trained and experienced employees. On the contrary, com-



The chemical lifecycle.

pliance and risk are associated with brand, image and, in the end, customer loyalty.

Breaking down a complex undertaking

As a global compliance or risk professional or business leader charged with corporate leadership in this area, how do you approach it? We suggest looking at three distinct levers: regulatory content and information, compliance tasks and activities, and technology applications and platforms.

How are you currently managing reg-

ulatory content and information across the product lifecycle? What are the activities, tasks and controls you have in place to manage compliance and risks associated with the product you purchase, produce or dispose of? Have you maximized the use of data, platforms, applications

and automation tools to help you complete compliance-related tasks and keep you informed about how you are tracking against a plan?

Finally, as you develop a plan around these levers, have you objectively analyzed which functions need to be managed internally and which capabilities require third-party solutions and expertise?

With key compliance and risk levers identified, what implementation and activation strategies can be deployed to accommodate businesses of varying sizes and complexities? With answers to these questions in hand, it may be time to view the totality of your EH&S activities from a chemical lifecycle perspective.

Applying the levers to the lifecycle: R&D

R&D and formulation laboratories are well positioned to make the biggest impact on going green, and may receive the least attention from a compliance or risk professional. Scientists and engineers working in R&D can be made aware of global regulatory requirements and chemical characteristics (e.g., toxicological or eco-toxicological data) through

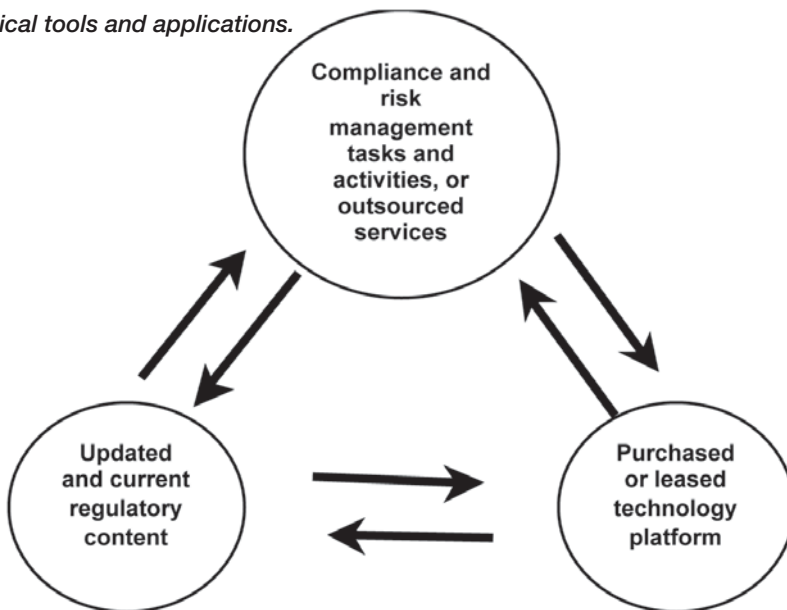
commercial data aggregators.

However, the challenge is to identify solution providers that offer more than just a compilation of regulatory text and can distill regulatory information into normalized content that can be integrated into platforms and tools. Generating and maintaining such data in-house can be highly inefficient.

Typical tools and applications can include laboratory information management systems, formulation systems, and recipe management systems. Access to safety data sheet (SDS) authoring systems may also be required to create and review draft SDS for the developmental formulations.

Key challenges in this phase include having appropriate chemical sourcing practices, chemicals and samples inventory management, employee training in proper handling and disposal, providing sufficient 24/7/365 support in the event of an incident, and management of SDS for sourced materials. Often the sheer volume of chemicals and sample materials involved in this phase can make this an administrative challenge without adding value.

Typical tools and applications.



Applying the levers to the lifecycle: Manufacturing

Compliance performance improvement and risk management in the manufacturing phase of the chemical lifecycle involve many variables. Key measures include process, employee and workplace safety requirements. As manufacturers are also chemical (raw material) users, the

importance of regulatory content applies equally to the manufacturing function. Additional critical content requirements in this phase include product marketability requirements.

Key enabling technology platforms and applications include SDS authoring, SDS distribution, chemical inventory

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management and the associated SDS management, the safe and compliant transport of regulated materials, regulatory reporting, and may also include hazardous waste management systems.

Product-level and compliance-related tasks and activities include accurate and regularly updated inventory of chemicals, employee training, communication of product information to other stakeholders, regulatory reporting to government agencies on chemical-related activities, proper preparation of materials for safe transportation, appropriate measures for waste management, minimization and reclamation.

Applying the levers to the lifecycle:

Distribution

Distribution-related compliance tasks and requirements can vary broadly, depending on the activities undertaken by the distributor. Non-asset-based distributors are faced with much less complexity than asset-owning distributors. Further, the scope of functions performed, ranging from formulation to blending to re-branding, also has an impact on compliance and risk.

Product marketability and transporta-

tion regulatory content are critical for distribution companies. Technology application enablers include chemical inventory management and associated SDS management and distribution, SDS authoring (e.g., for formulators) and regulatory reporting. Key compliance tasks are comparable to those of manufacturers. To the extent that distributors are also importers of chemicals, they would also have responsibilities associated with registering products with the appropriate governing bodies in the countries to which they are exported.

Applying the levers to the lifecycle:

Transportation

With global supply chains and just-in-time inventory management, any compliance-related friction or disruption in the supply chain can be very expensive. Compliance and risk responsibilities may vary depending on the role of the company in the supply chain. Organizations that serve as the transporter typically have responsibilities to ensure that the product has been prepared for transportation in compliance with national and international regulations and guidelines. Other key roles in the supply chain include op-

erators of transfer and storage facilities.


Regulatory content can ensure that all supply chain management systems are populated with the most current regulatory data for global transportation. Opportunities for increased efficiencies exist in technology applications and platforms, including automation/pre-population of transportation documents, packaging labels and emergency response information.

Significant compliance tasks include the training of employees on the various facets of shipment preparation for transportation by different modes, and the ability to provide classification of transported products, package selection, marking, labeling and placarding. Further, shippers must provide access to 24/7/365 live assistance to address transportation-related incidents and emergencies and provide access to SDS.

Applying the levers to the lifecycle: Usage

Usage includes hazardous material used in the workplace, and the sale of regulated products containing chemicals directly to consumers. Challenges include high turnover of employees in the retail


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sector and a general lack of training and experience with EH&S compliance requirements.

Access to regulatory information at the local level is important, as many local agencies such as fire departments have jurisdiction over chemicals storage, dispensing and handling. Technology and other application platforms include providing immediate access to SDS for employees who may come into contact with chemicals in the workplace, establishing a formal process to review and approve chemicals before introduction into the workplace, and filing the required permits and disclosures associated with chemical storage and handling.

Important tasks and activities include managing the chemical approval process, chemical inventory lists, SDS data and document practices, permits and disclosures, and employee training. Companies also have to be prepared and equipped 24/7/365 to handle workplace incidents that involve chemical spills and accidents.

Applying the levers to the lifecycle: Disposal

Knowledge of waste streams, waste codes and information relevant to waste classification and documentation are critical components. Key platform and application enablers include tools to manage the accumulation, tracking, disposal and reporting on waste. Automation opportunities exist to prepare waste documentation, markings and labels.

Tasks and activities include employee training, site management for proper accumulation, storage and transportation, classification/profiling of waste streams and products, working with pre-qualified waste haulers and disposal companies, and upstream with R&D and manufacturing to support waste minimization/reclamation.

The big picture

A comprehensive view of compliance performance and risk management throughout the chemical lifecycle is important to deliver and sustain ongoing improvement. EH&S process standardization and the application of these processes, along with the ability to leverage organizational data, product-level information and regulatory and chemical content, is the cornerstone of a lifecycle approach.

Does your organization maintain a

formidable EH&S and IT staff capable of mining, interpreting and analyzing data, integrating multiple information sources, producing all required compliance documentation, automating a host of compliance-related activities, and supporting an ongoing effort to ensure all data sources and documents are constantly refreshed with the most current and up-to-date information available? If not, outsourcing may offer the most effective compliance solution.

While technology platforms and ap-

plications may be developed in-house, there are a variety of solutions that can be readily purchased or leased. Evaluate the lifecycle compliance tasks and activities closely to discern activities that are best managed in-house and those that can be most effectively outsourced.

Kami Blake is a Solutions Engineer with the 3E Company. For more information, visit www.3ECompany.com

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