GHS Compliance: Challenges and Solutions

Identifying, collecting and communicating information on the hazards posed by chemicals remains a major issue for global companies, one that can be more easily handled via reclassifications using GHS-compliant labels and material safety data sheets.

Every multinational corporation faces numerous challenges when it comes to compliance with the multiplicity of laws and regulations that apply in each region or sovereign state. This is especially true with chemical companies/manufacturers, where compliance data originates in disparate systems across the enterprise.

Modifications to existing regulations, or adoption of new laws, can profoundly impact a corporation’s data management system and for many companies, compliance is an organization-wide transformational initiative. One of the most daunting aspects is the volume of additional chemical data companies are now required to collect, track and report in material safety data sheets (MSDS). An MSDS is nothing but a document that contains information about the potential health and environmental hazards. MSDS are prepared by the supplier or manufacturer of the product and are intended to state the hazards of the product and how to use it safely.

Many chemicals, no doubt, pose hazards to humans and to the environment, from initial production through final disposal. As a result of globalization, chemicals are routinely used by people worldwide who speak different languages, write in different alphabets and come from different living conditions and educational backgrounds. In some countries, a chemical may be classified as hazardous, while in others it is not.

For decades, identifying, collecting and communicating information on the hazards posed by chemicals has been a major issue for local, national, regional and international authorities. Different jurisdictions developed distinct chemical classification systems that had merits within their local areas, but sometimes created confusion at wider levels. The United Nations took on the task of developing a universal method of chemical labeling and hazard warnings for the use, transport and disposal of chemicals. The result is the Globally Harmonized System of Classification and Labeling of Chemicals, or GHS.

This white paper offers our perspective on GHS and highlights the importance of reclassifications to improve safety and global compliance with chemical handling and communications practices using GHS-compliant labels and safety data sheets.
More than 65 countries are in the process of adopting GHS, which offers a voluntary set of “building blocks” that each country can adopt as it sees fit. It establishes classification criteria for physical, health and environmental hazards, along with associated hazard communication elements, notably pictograms, signal words and hazard statements for use on labels and on MSDS. In a nutshell, it is an international plan that will codify the classification, labeling and communication of chemical hazards across the board. In the GHS context, harmonized means standardized. For example, this means consumers in country A will have access to and hopefully understand the same information about chemicals and products as those in Country B. The ultimate goal of GHS is to avoid confusion and to inform safety.

Connecting GHS and HCS

The Occupational Safety and Health Act of 1970 established the Occupational Safety and Health Administration (OSHA) within the U.S. Department of Labor. The original act included language to the effect that employees should be apprised of all hazards to which they are exposed on the job. In the early 1980s, OSHA implemented this instruction by enacting the Hazard Communication Standard (HCS) as 29 CFR 1910.1200. HCS became effective in 1986. A fundamental premise of HCS is that employees who may be exposed to hazardous chemicals in the workplace have a right to know about the hazards and how to protect themselves. For this reason, HCS is sometimes referred to as the “worker right-to-know legislation,” or more often just as the “right-to-know law.”

Although the original HCS applied only to the manufacturing industry, subsequent court challenges have modified the scope of the law so that today HCS applies to nearly all sectors of the workforce.

HCS is now aligned with GHS. This will provide a common and coherent approach to classifying chemicals and communicating hazard information on labels and safety data sheets. Once implemented, the revised standard will improve the quality and consistency of hazard information in the workplace, making it safer by providing workers with easily understandable information on appropriate handling and safe use of hazardous chemicals. This update will also help reduce trade barriers and result in productivity improvements for businesses that regularly handle, store and use hazardous chemicals while providing cost savings for businesses that periodically update safety data sheets and labels for chemicals covered under HCS. GHS classification and communication elements are the program’s foundational elements, which ensure the safe use of chemicals (as depicted in Figure 1).
GHS Impacts: Updates for Existing SDS and Labels

GHS adoption affects nearly every player in the chemical lifecycle, with special responsibilities for chemical manufacturers and employers who handle, use and store hazardous materials. Chemical manufacturers must reclassify their chemicals using GHS standardized classification criteria as well as produce GHS-compliant labels and safety data sheets (SDS).

GHS includes two key elements:

- **Harmonized criteria for classifying substances and mixtures** according to their health, environmental and physical hazards.

- **Harmonized hazard communication elements**, including requirements for labeling and SDS.

As corporations expand globally, creating compliant documents that meet agency requirements is more of a challenge. In fact, GHS requires companies worldwide to change their SDS and labels to provide the appropriate signal words, pictograms and hazard and precautionary statements to convey the hazards to users (see Figure 2). The GHS standard definition for labeling is as follows: “Label means an appropriate group of written, printed or graphic information elements concerning a hazardous product, selected as relevant to the target sector(s), that is affixed to, printed on or attached to GHS requires companies worldwide to change their SDS and labels to provide the appropriate signal words, pictograms and hazard and precautionary statements to convey the hazards to users.

MSDS vs. SDS

<table>
<thead>
<tr>
<th>MSDS Sections</th>
<th>SDS Sections</th>
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<tbody>
<tr>
<td>1. Product and company ID</td>
<td>1. Product and company ID</td>
</tr>
<tr>
<td>2. Hazards identification</td>
<td>2. Hazards identification</td>
</tr>
<tr>
<td>3. Ingredients information</td>
<td>3. Ingredients information</td>
</tr>
<tr>
<td>4. First aid measures</td>
<td>4. First aid measures</td>
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<tr>
<td>5. Fire fighting measures</td>
<td>5. Fire fighting measures</td>
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<tr>
<td>6. Accidental release measures</td>
<td>6. Accidental release measures</td>
</tr>
<tr>
<td>7. Handling and storage</td>
<td>7. Handling and storage</td>
</tr>
<tr>
<td>8. Physical and chemical properties</td>
<td>8. Physical and chemical properties</td>
</tr>
<tr>
<td>10. Stability and reactivity</td>
<td>10. Stability and reactivity</td>
</tr>
<tr>
<td>11. Toxicological information</td>
<td>11. Toxicological information</td>
</tr>
<tr>
<td>12. Other information</td>
<td>12. Ecological information</td>
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<tr>
<td>13. Disposal considerations</td>
<td></td>
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<tr>
<td>14. Transportation information</td>
<td></td>
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<tr>
<td>15. Regulatory information</td>
<td></td>
</tr>
<tr>
<td>16. Other information</td>
<td></td>
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</table>

Figure 2

Sample GHS SDS Pictograms

Environment

Flame

Health Hazard

Figure 3

MSDS vs. SDS
immediate container of a hazardous product, or to the outside packaging of a hazardous product.”

Most organizations use traditional MSDS for hazardous substances that are accounted for in their chemical inventory. Under alignment with GHS, SDS remain the backbone of HCS compliance. They do, however, get a name and formatting change. GHS drops the M from MSDS and calls them SDS. More importantly, SDS have a standardized 16-section format with a required ordering of sections to more finely describe and communicate safety hazards and responses.

Figure 3 (previous page) offers a snapshot that compares and contrasts the traditional MSDS with the GHS-style SDS.

The shift to GHS-style SDS responds to the need for a consistent format for a safety data sheet that more easily informs exposed employees and emergency responders to important, need-to-know information on hazardous chemicals.

Continuous compliance with the latest GHS regulation amendments may be a moving target but it is critical to the competitiveness of global chemical makers. As a result, every company must take a unique approach to MSDS authoring that provides flexibility to create global-, regional- or agency-compliant documents. This is of paramount importance to achieve legal compliance in all key global markets.

Benefits of GHS

Key benefits of incorporating GHS include:

- Reduced time and costs involved in meeting multiple regulations for SDS and labels.
- Improved comprehension of health and environmental hazards.
- Facilitation of trade by removing barriers created by various health and safety requirements.

More than 65 countries are in the process of adopting or have already adopted GHS; more countries, no doubt, will follow suit. The deadline - by the end of 2015 - may seem a long way off. But factoring in the changes to the chemical classifications, GHS SDS and labels, compliance is likely to come sooner than later. By acting now, there should be plenty of time for manufacturers, distributors and employers to transition safely and efficiently to GHS compliance.

Looking Forward

As technology advances, especially in the software arena, the significant numbers of online tools available to ensure MSDS compliance is more than adequate. Nevertheless, keeping up with dynamic complexities of global chemical compliance can easily become a daunting task. Companies should possess the ability to analyze the effect on IT processes and have the agility to respond to these impacts with viable solutions.

These IT processes should envision and facilitate a single system for generating SDS around the world. Taking this approach will improve SDS consistency since one core set of data would be used for all SDS. This would minimize the impacts on reviewing the GHS classifications and SDS contents.

Quick Take

Making GHS Adherence Real

We are currently assisting a U.S. multinational conglomerate with operations in more than 65 countries and global sales of more than $25 billion on GHS and SDS compliance. Since our client has a huge footprint and its products are sold in more than 100 countries, GHS adaptation is of paramount importance.

As the company’s technology partner, we have successfully consolidated and implemented GHS and ensured compliant SDS for a significant number of countries. In this project, we have fine-tuned numerous IT processes, which reduced operational latency and facilitated a smooth transition from MSDS to GHS-compliant SDS. Our IT process improvements and systems integration effort greatly reduced the overall cost associated with such a large transformational project. This company is now well positioned to easily incorporate GHS across the globe to seamlessly facilitate its business.
Footnotes

References
• https://www.osha.gov/.
• https://www.osha.gov/dsg/hazcom/.

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