



**POSTER ABSTRACTS**  
SCHC Annual Meeting 2022  
Arlington, Virginia

**Building a Strategy to Make the Most of GHS Updates**

Lynne Kikuta-Oshima and Christina Clements  
Arcadis

The update to OSHA's Hazard Communication Standard (HCS) includes new and expanded health hazard classes and categories, updates to safety data sheets and labels, and more expansive toxicological information. This proposed rule will have an effective date one month following publication in the Federal Register. The newest revision of the GHS Purple Book was published in 2021 under revision 9. The next revision is expected to be published in 2023. In addition, other countries may adopt or implement new revisions of the GHS Purple Book. All these changes may present the opportunity to implement revisions across many geographies. To maintain compliance, manufacturers and importers of hazardous chemicals need to get started now to implement a plan to reach GHS compliance by the mandated deadline(s). This poster will highlight ways to prepare, while maintaining compliance, by staging implementation of the changes and building a strategy to maximize efficiency during multiple GHS implementations. We will look at what organizations should be preparing for to manage any regulatory risk they may be facing and concepts to optimize and streamline business strategy.

**Hazard Conclusion: Development, Documentation, and Confidence**

Ari S. Lewis and Charlotte M. Marsh  
Gradient

Regulatory agencies and companies are increasingly committed to characterizing and communicating chemical hazards to workers and the general public. Hazard assessment underlies several important compliance actions, including the generation health-protective safety data sheets, the protection of confidential business information, and various government submissions (e.g., chemical registrations). Hazard assessment is also key for companies' efforts to make supply chains "greener" and develop internal standards that limit potential human health and environmental risks.

This poster will cover some of the key steps needed to arrive at a scientifically supportable hazard conclusion. These steps include a reliable and robust set of toxicity information resources, a comprehensive protocol for documenting and recording toxicity information, and developing a weight-of evidence statement if toxicity data are conflicting. We also introduce an approach for assigning a confidence ratings to assessments. Together, sound hazard assessment and an understanding of confidence in those assessments, can serve as basis for understanding data gaps and uncertainties about chemicals in a company's portfolio. While building and maintaining a hazard assessment program requires significant toxicological, chemistry, and IT resources, such programs can ensure that company understand their vulnerabilities and can make informed decisions about chemical management.



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**Challenges of New Corporate Sustainability and Environmental Objectives in a Rapidly Changing Regulatory Landscape**

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Communicating chemical hazards has gone beyond simple GHS and SDS metrics. Providing environmental and sustainability information beyond what is required for SDSs has taken on more of a chemical hazard communication's professional's role than ever before.

Working within legal agreements, building vendor relationships, and working with your company's Product Development and Purchasing departments to obtain needed information from the vendor early on are all techniques which can improve this process. Utilizing other sources of environmental and sustainability metrics is worthwhile in order to demonstrate worth which isn't always easily defined or trusted if generated internally.

Official/standardized programs such as ISO programs can help standardize, but companies are also bringing their own metrics into the mix. One of the larger issues is how far outside of the product scope a company can control and should include in its reporting.

This poster highlights these and other tactics garnered from experience plus recent engagement with new initiatives which can be used to obtain information, improve communications with other departments, and increase confidence that your company is providing the most relevant and most up-to-date metrics when providing sustainability information related to chemical products.



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**Endocrine Disruptors the New Hazard Classification in the CLP Regulation – Are you Ready?**

Kelsey Squelch and Martina Schneider, PhD  
UL Solutions

Endocrine disruptors are commonly found in plastic packaging, electronics, textiles, air fresheners, toys, cosmetics, and detergents. Endocrine disruptors are chemicals that can interfere with the hormonal systems in humans and other species. This leads to a wide variety of possible effects many of which are only seen after an extended period of exposure, such as reproductive effects, cancer, chronic health conditions such as diabetes, and other effects. Endocrine disruptors are currently regulated under the existing REACH and BPR legislation in the EU. In 2021, the EU released a proposal to include Endocrine disruptors as a new hazard classification to the CLP regulation. This poster will give an overview of the proposed new hazard classes as well as a brief look at existing requirements in the EU for Endocrine disruptors.

**Digital Product Passports - EU Regulatory Requirements and US Applications**

Evelyn Ritter and Lily Hogan  
Toxinot

The European Union will be requiring Digital Product Passports (DPP) as part of the EU Green Deal over the next few years. In addition, global and US companies are looking at product passports to help share compliance and sustainability information with their customers, including compliance status, required warnings, warranty and maintenance information, end-of-life disposal options, and more. The information included in product passports can vary widely depending on the stage in the supply chain, for instance, whether a company is a chemicals manufacturer or produces a final consumer good. In addition, the product data needs to be transmitted through all these tiers of the supply chain, which is an important part of the product passport process. The specific requirements are being defined through the regulatory process in the EU, and this poster will share updates on the process so far. In addition, we will review the use of digital product passports for US companies and the benefits for US companies to create a DPP. We will also summarize some of the options in the marketplace for creating a digital product passports.



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**China REACH - Understanding the Obligations of China REACH and China Hazardous Chemical Management**

Chris Ketchum  
CIRS Group USA Inc.

Under China's MEE Order No. 12, issued in 2020, companies must submit new chemical substance registrations for substances not listed in the Inventory of Existing Chemical Substances in China (IECSC). Registrations apply to new substances, substances in mixtures, intermediates, substances intended to be released by articles, and many more. For substances which are listed on the IECSC, but intend to be marketed for usages not listed on existing registration(s), a new use registration shall also be submitted. Manufacturers and importers alike must understand how their role in the supply chain may affect their registration options, as foreign companies must file through a domestic responsible Chinese agent— much like the role of, “only representative,” in the EU. Registration type will vary based upon the annual volume, risk assessment, and polymer of low concern exemption(s).

According to the Measures of Hazardous Chemicals Registration (SAWS Order No. 53), manufacturers and importers of hazardous chemicals to China shall register with the National registration Center of Chemicals (NRCC)— prior to any importation/manufacturing activity. To complete our presentation, we will outline the scope of registration for both hazardous chemicals, while also addressing the post-registration obligations.

**How to Test Your Emergency Response Provider**

Craig Thomson  
Ricardo Energy & Environment

Emergency response services is a critical part of both product compliance (you need the number on your SDS) and also your organisational resilience and risk management. However, we know that too few organisations properly and effectively test their emergency response arrangements within the supply chain, and judge how well these arrangements effectively manage supply chain risks. Whether this is the risk of harm to your customers and logistics suppliers as they move and use your products, the risk of environmental impact during a release, a poor response can have significant financial, legal and reputational impact on the organization. This poster will set out how to determine what good looks like for your own arrangements, set out testing criteria, and arranging a robust test call scenario to evaluate whether these arrangements are meet these criteria.



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**A Comparison of the Content of Early MSDSs, MSDSs under HazCom 1994, and SDSs under HazCom 2012**

Julia K. Diebol, Ph.D., CSP, C.P.S.M., Emily Matys, Ph.D. and Kyle Wilson, M.Sc.  
Exponent, Inc.

With origins in shipyard regulations from the 1960s by the Department of Labor Bureau of Labor Standards, transfer to the Occupational Safety and Health Administration (OSHA) in 1971, expansion under HazCom 1983 and 1994, and alignment with the Globally Harmonized System under HazCom 2012, Safety Data Sheets (SDSs) (formerly Material Safety Data Sheets (MSDSs)) as we know them today have developed considerably over time. Regulations and standards for MSDSs and SDSs during these periods will be explored, describing how each new addition changed the content of these documents and their distribution and use by chemical manufacturers, employers, employees, and others.

**Authoring SDS for Pesticides**

Beiyue Shao, PhD  
AMVAC Chemical Corporation

Pesticides are unique chemical products that are associated with stringent regulations due to high toxicity. In addition to registration dossiers and labeling, safety data sheet (SDS) is another useful tool to provide valuable information about chemical hazard and safe handling of pesticides. In the EU, the SDS requirements for pesticides (plant protection products) came from the REACH registration, following the CLP (adopted from GHS) standard just like other hazardous chemicals. In the US, pesticide labels are regulated by EPA under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and exempted from the OSHA HazCom Standard. SDS, on the other hand, must comply with the OSHA HazCom, but at the same time, must not obscure or conflict with the labeling approved by EPA. The inconsistency between EPA and OSHA requirements makes SDS authoring for pesticides challenging. This presentation will compare the classification standard between FIFRA and OSHA HazCom regulations, and discrepancies likely to occur between the FIFRA label and SDS, such as signal word, symbol, hazard statements, precautionary statements, engineering control, PPE, storage and disposal. In addition to regulation differences, these can also be caused by human factors, because pesticide labels and SDS are oftentimes handled by different people, and very likely from different departments. In this poster, we will discuss our workflow to share data and communicate other critical information, ensuring our SDS is accurate, up to date and free of misleading messages.



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**Labels, Labels, Labels...HMIS, NFPA and GHS Labels**

Katie McGee  
Sphera

NFPA and HMIS labels were once very commonly used in the workplace. But then GHS brought formal prescribed label elements that became required once GHS was adopted. These standard label elements reduced the need for these alternate labeling systems in the workplace because labels of hazardous chemicals are required to have certain standardized information. In addition, there was concern that NFPA or HMIS labels along with GHS classifications could cause confusion for employees.

HMIS and NFPA labels can still be used if, in conjunction with other information immediately available to employees, information on all health and physical hazards of the hazardous chemical are provided. Depending on the chemicals used at a facility either NFPA or HMIS systems alone could leave gaps in information so companies may decide it's easier to just go with GHS. With the reduced use of HMIS and NFPA labeling and reliance on software to assign these ratings newer hazard communicators may not be aware of the differences or even be familiar with how to assign these ratings. This poster provides a comparison of the GHS, HMIS and NFPA labels including the purpose of each, how to assign ratings and the gaps compared to GHS.

**GHS Labeling – Dealing with Supply Chain Issues**

Jim Garvic  
Reliance Label Solutions

2022 has been a year like no other as far as supply chain issues, and supplies of pressure sensitive label materials used for chemical labeling have not been spared. From a world-wide pandemic to a paper strike in Finland to Texas winter storms, it seems as though global events have conspired to disrupt supply chains in the U.S. and around the globe. If your company has experienced delays shipping your chemical products because of shortages of GHS labels, Reliance Label Solutions is happy to offer suggestions and recommendations to help you develop proactive strategies that can help your company reduce or eliminate label shortages and lost sales due to label out-of-stocks.



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**Product Labeling Challenges Arise When Frameworks Conflict:  
Human Factors Considerations Illustrated through Recent Glyphosate Developments**

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In March of 2015, the International Agency for Research on Cancer (IARC) classified glyphosate as “probably carcinogenic to humans” (Group 2A). This classification had a cascading effect, prompting litigation involving glyphosate-containing products and regulatory efforts on the part of California’s Office of Environmental Health Hazard Assessment (OEHHA) to put glyphosate on their Proposition 65 list of substances “known to the State to cause cancer.” During this time, the Environmental Protection Agency (EPA) was in the process of reexamining the carcinogenic potential of glyphosate and concluded that glyphosate should be classified as “not likely to be carcinogenic to humans.” In August of 2019, 18 months after a preliminary injunction had been issued blocking enforcement of the California warning requirement for glyphosate, the EPA issued a letter to registrants informing them that the EPA would no longer approve labeling containing California Proposition 65 warnings about the carcinogenic potential of glyphosate because it considered those warnings to be “false and misleading”. Nearly two years later, in rulemaking that is currently ongoing, OEHHA proposed rulemaking to update to the Proposition 65 safe harbor warning language for glyphosate, with the EPA indicating this spring that they found the most recently proposed language acceptable.

Using glyphosate as an example, this poster will explore, from a human factors perspective, challenges that can arise for product labeling when agencies and organizations make varying determinations of carcinogenicity. Concepts such as hazard versus risk, the value of regulatory frameworks and warnings thresholds, and considerations related to warnings overuse will be addressed.