



**POSTER ABSTRACTS**  
SCHC 2023 Annual Meeting  
Arlington, Virginia

**Impact of AI in Hazard Communication – Challenges and Practical Solutions**

Lynne Kikuta-Oshima and Christina Clements  
Arcadis U.S., Inc.

Advances in Artificial intelligence (AI) are increasing and are rapidly transforming the chemical sector, and hazard communication is one area where AI could have a significant impact. Although the use of AI in hazard communication is still in its early stages, it has the potential to revolutionize the way chemical hazards are identified and communicated. AI can help to make hazard information more accurate, accessible, and understandable, which can help to improve worker safety and protect public health. This poster will review ways AI is being used in hazard communication, some identified limitations, and real-world insights from a test case using AI technology.

**AI and SDS's for Consumers and Workers-What's Possible**

Kathy Malone  
Manguardsystems.com

AI might be able to "translate" Safety Data Sheets into actionable information for the layperson (consumers and workers).

What might this look like?

Perhaps:

- the AI tool extrapolates the SDS data into a usable format
- the AI tool uses/creates an algorithm to assess the quality of the SDS data from 0 to 100 according to objective criteria, possibly user editable
- the AI tool uses rules and/or creates algorithms to use the SDS data it extracted to build pictorial (and text) information about how to use the chemical safely for a default use type and use quantity

The poster will present the experience of exploring several AI tools to assess their suitability for this purpose at this point in time in their development (recognizing it's a rapidly changing environment).



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**Machine Translation (MT) of SDS Phrases – Compliant?**

Douglas J. Strock  
GLTaC, Inc.

The poster presents phrase P280 as translated by four different machine translation engines (Google, Bing, Yandex, and DeepL) in Spanish, Korean, and Simplified Chinese. The accuracy of the translation scoring is based on the number of words in the output that match the regulatory reference as a percentage. Results range from 0% to 95%, with none of the results achieving a 100% score. The phrase, language pairs, and MT engines were chosen as being commonly used and not being overly complex or attempting to intentionally skew the results.

**The Persistence Assessment Tool (PAT): Implementing a Methodology for Data Quality Evaluation and Weight of Evidence in Persistence Assessments**

Craig Thomson  
Ricardo

Chemical persistence plays a key role in determining environmental exposure making it an important component in risk assessment and regulation. Recently, interest in chemical persistence has increased significantly. Persistence assessment in the regulatory context involves comparing chemical degradation half-lives to set criteria for different environmental compartments (water, sediment and soil). Other information is also relevant for assessments (e.g. biodegradation screening tests, non-standard experiments, QSARs, field data, etc), and should be considered following a weight of evidence approach. Implementation challenges remain in persistence assessments, particularly relating to guidance around the evaluation of data quality, and the weight-of-evidence determination. In addition, there are issues for substances whose properties render them difficult to evaluate using standard methods.

To address these challenges, a software tool – the Persistence Assessment Tool (PAT) – has been developed to support the evaluation of persistence under regulatory frameworks such as EU REACH. This tool was developed in conjunction with Concawe and the International Collaboration on Cosmetic Safety. This tool provides clear guidance and structure to evaluate data quality, and a quantitative weight-of-evidence (qWoE) methodology to process the information input and calculate persistence conclusions in line with regulatory guidance. The PAT is applicable to all substance types and provides specific features to account for difficult and complex substances. Various options for customisation of the methodology are included to adapt assessments to specific regulatory frameworks and purposes.

The PAT aims to support robust, consistent and transparent decision-making for persistence assessment. There is a need for stakeholder input to support further validation, consensus-building and uptake of the methodology, and is available to the whole industry free of charge.



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**Improving the Hazard Classification for Combustible Dusts**

Richelle Romanchik  
Environmental Resources Management

In the US, there is only one OSHA category for combustible dust, class 1. Combustible dust should not be brushed off so lightly. There is a wide range of combustibility that is falling underneath this broad umbrella, and should be immediately discerned based on hazard classification, as is the case for the other physical hazards. New classification tiers should be developed that categorize the hazards based on the risk of the combustibility, which is already well defined by NFPA and the IFC. When only one class is available, all dusts, from particulates with very low capabilities of causing an explosion, to particulates that must be handled with extreme caution, are listed the same, but all require very different levels of controls. The company downstream receiving these products or the employee working with this product would have little idea without further research on the correct hazards associated with the product, which could become dangerous. Breaking down this classification into more categories will allow for more precise and accurate communication of the actual hazards, without compromising on safety and hazard controls. When every product is listed as a combustible dust, it becomes a dismissible hazard, and easily ignored.

**Exploring the Features of the New EPI Suite™ Web Models and Applicability Domains Relevant to Environmental Toxicological Risk Assessment**

Mary Kawa<sup>a</sup>, Lauren Cassidy<sup>a</sup>, Laura Morlacci<sup>a</sup>, Wen-Hsiung Lee<sup>b</sup>  
<sup>a</sup> SRC, Inc.  
<sup>b</sup> EPA/OPPT

Module specific enhancements were made to the U.S. Environmental Protection Agency's (EPA) EPI Suite™ graphical user interface (GUI) to facilitate evaluation of each model's domain of applicability and provide data for read-across or analogue selection. The incorporation of Analog Identification Methodology (AIM) fragments is especially important as it allows users to see the robustness of a given estimation model based on the available data sets. By displaying analogues in conjunction with fragment counts, the model user can bridge the uncertainty gap for data-poor chemicals. These updates were made under guidance by the EPA's Office of Pollution Prevention and Toxics (OPPT) which regulates both new and existing industrial chemicals under the Toxic Substances Control Act (TSCA), as amended by the Frank R. Lautenberg Chemical Safety for the 21st Century Act. Given the large number of chemicals submitted each year for PMN evaluation, EPI Suite™ program is one of the key programs used to assist in developing assessments of the hazards and risks of these materials under time constraints. Now, with the newly deployed web version of this software package under development, scientists can convey the logic and rationale of the modeled results and applicability domain considerations with a simple approach.



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

Bethicia Prasek and Rachel Gustin Westerfer  
NexTier Completion Solutions

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.

**Complying with cosmetics regulations - EU and US**

Mary Kerley  
H2 Compliance

Cosmetics manufacturers selling into the EU have already encountered regulatory requirements under Regulation (EC) No 1223/2009, and now will face new regulatory requirements in the US under the Modernization of Cosmetics Regulation Act (MoCRA). Certain elements of MoCRA are in line with current EU requirements, but will require manufacturers to consider new strategies for compliance measures in both the EU and US, including for product labelling and safety evaluation. This poster will review the similarities and differences between EC No. 1223/2009 and MoCRA requirements, as well as recommend strategies for collecting and managing information relevant to global compliance for cosmetic manufacturers.



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**A Comparison Between Brazil and Canada GHS Revision 7 Update**

Abel Ferreira and Raissa Havens  
UL Solutions

As countries around the world work on developing safety measures for their workplace, hazard communication is an extremely important topic. Looking into strengthening the global chemical hazard communication, the UN GHS provides a model for classification of chemicals by types of hazard: health, physical, and environmental. Focusing on the Americas, many countries have implemented GHS elements into their chemical management framework and while some are adopting GHS for the first time, such as Peru a few months ago, other countries, such as Brazil, Canada, and the United States, are trying to align their Hazard communication with more recent versions of the Purple Book.

The focus of this poster is on two countries that have recently adopted GHS Revision 7 and portions of Revision 8: Brazil in July of 2023 and Canada via the HPR in January 2023. Brazil had previously implemented GHS Revision 4 and later in 2019, an amendment on the classification criteria regarding the cut-off values, to align this portion specifically to Revision 7. Canada was previously on Revision 5. With Revision 7 been adopted for both countries, there are updates that companies should be aware of. This poster aims to provide a comparison between the countries and the GHS Purple Book, highlighting any differences that may exist.

Changes on definitions, the hazard classification criteria, disclosure rules, hazard statements and precautionary statements as well as Safety Data Sheet sections will be pointed out.

Finally, a description of when the Brazilian and Canadian regulations will go into effect and QR codes to each respective regulation online, so attendees can bookmark them and go into more details, so they can be better equipped for an effective decision-making process.



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**China "One Enterprise, One Product, One Code" policy and South Korea MSDS Submission**

Lucy Wang  
CIRS Group

China "One Enterprise, One Product, One Code" Policy

On January 5, 2022, the State Council Safety Production Committee of China issued the "National Plan for Centralized Governance of Hazardous Chemical Safety Risks," which propelled the implementation of the new hazardous chemical registration system and the "One Enterprise, One Product, One Code" policy. It aims to enhance safety management and prevent accidents. The Ministry of Emergency Management leads the digital upgrade of the chemical registration system, facilitating standardized labeling. Each registered chemical gets a unique QR code for information exchange. This initiative promotes comprehensive lifecycle management and introduces a potential proxy system for overseas exporters.

Korea MSDS Submission

The Ministry of Employment and Labor in South Korea introduced modifications to the Occupational Safety and Health Act in 2019. This led to the enforcement of (Material) Safety Data Sheet/(M)SDS requirements from January 16, 2021. The regulation is applicable to manufacturers and importers of hazardous chemicals within Korea, necessitating the submission of (M)SDS to the ministry before production or import. The transition period caters to those previously compliant under the former K-OSHA Act. The submission process involves a tiered deadline system based on production or import volumes. Non-Korean manufacturers can designate a local representative for SDS submission. Clear guidelines are provided for CBI protection application, including applicant details and hazardous classification.



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**Road Map for Turning Hazardous Waste into a New Product**

Bridget Fine, Lisa Marie Nespoli, Dave Wagner, Brian Karlovich, Laura McDonough, Josh Staniscia  
Covestro LLC

Covestro LLC spends over \$17 million annually on disposal of hazardous waste materials generated at its U.S. facilities (not counting former RFM). Just because the waste is hazardous doesn't mean it can't be reused as a substitute for another material in a new market or product application.

The intricacy of the waste rules is a significant hurdle, as laws and regulations are complex. Proposals to reuse Covestro's hazardous waste in a product would reach our desks only to have complexities of the regulatory process grind ideas to a halt. So, we studied the regulatory process and created a road map for Covestro to promote ideas to reuse the waste and accelerate the process to making it happen.

How's it work? Colleague/customer has an idea to reuse/recycle hazardous waste for use in a product. Proposal comes to PSRA, with information from BE, counsel from LIPC; PSRA evaluates the proposed use. The road map echoes the federal rules' focus on making sure the reuse/recycling endeavor is legitimate which involves a detailed examination of the entity using the end product. PSRA must also confirm/document the use of the new material in its proposed application and that it supports the conditions required in the regulations. A major aspect is the documentation check where PSRA needs to understand the product/application and ensure proper documentation of our customer and their intention.

Our new road map makes it easier for colleagues and customers to make their hazardous waste reuse ideas a reality while facilitating Covestro's drive to circularity.