

Improving the environmental assessment of complex composition substances and mixtures for Chemicals Management

Hugo Waeterschoot, Daniel Salvito, Robert Diderich, Romanas Cesnaitis

May 11, 11:05 - 12:45, Copper Hall

Chemical safety assessment (CSA) is a stepwise approach which includes hazard (including PBT) and exposure assessments. The fundamental principles of various steps of CSA's are well established in several regulatory systems across the globe. However, the CSA of substances of complex composition like Multi-Component Substances (MCSs) or substances of Unknown Variable Composition and Biological substances (UVCBs)) present unique assessment challenges. Several international regulatory chemicals assessment schemes (like e.g., REACH in the EU, DSL in Canada, or TSCA in the US), have highlighted the complexities and uncertainties related to the registration, characterization, hazard, exposure, fate and consequently the outcome of the risk assessment of these materials. Moreover, while scientific progress has been made in assessing these common substances, there is a clear societal and regulatory need for the further development of scientific assessment methodologies given the implementation of the traditional steps of CSA are not possible without specific adaptations of existing "classical" methodologies. To ensure that these substances can be handled and used safely, there are many different aspects which need to be considered, in particular: substance identification, assessment methodologies and risk management. The identification of the substance is a first and critical step in each of the regulatory systems. Subsequently, different approaches and methodologies are needed for various chemical management schemes whether voluntary systems or for regulatory approaches like REACH for these complex composition substances (e.g. the assessment of combined exposure and combined toxicity). The purpose of this session is to present and report on recent scientific work and progress made on strategies to assess, for example, the environmental combined toxicity (e.g. for metals and inorganics), Cumulative Environmental Risk Assessment (for Personal Care products and for petroleum substances), strategies for the assessment of Natural Complex Substances (NCS), PBT assessment of complex substances by ECHA, or defining characteristics for organic UVCBs (OECD). Furthermore, there is a need to explore how their risk assessment outcome can subsequently be used for risk management to achieve the international goals of the UN-SAICM (Strategic Approach to International Chemicals management). In this session we aim at attracting industry, academia and regulators presenting recent and new scientific approaches and case studies on different type of complex composition chemicals' safety assessment approaches that can be used in the decision making and for chemicals managements. Keywords: regulatory chemical safety assessment, environmental risk assessment, substances with complex composition, combined effects