

## EXPOSURE SCENARIOS IN THE SUPPLY CHAIN

Communicating safe handling of chemicals for humans and the environment

### SAFE HANDLING OF REGISTERED SUBSTANCES

A number of substances registered under REACH require the development of an Exposure Scenario (ES). An ES explains how to handle the substance safely with regard to human health and the environment. The information must be:

- consistent with the information in the Chemical Safety Report (CSR) portion of the REACH registration
- communicated throughout the supply chain in an extended Safety Data Sheet (eSDS)

The elaboration of the ES and preparation of the eSDS pose significant challenges to manufacturers and importing companies as well as operators in the supply chain such as formulators. Handling mixtures of substances with different exposure scenarios from more suppliers only adds to the complexity.

### ELABORATE EXPOSURE ASSESSMENTS AND EXPOSURE SCENARIOS

Applying our toxicology knowledge of chemical substances and their effect on humans and the environment, we can help registrants compile data and elaborate on exposure assessments and ESs. For elaboration of an exposure assessment, we will use our experience with most kinds of industries and continuously-updated software tools to:

- gather information on uses and conditions of uses
- estimate exposures to workers, consumers and the environment (for example, by using CHESAR, a chemical safety assessment and reporting tool)
- prepare safety assessments
- set up relevant ESs
- document the exposure assessment in the CSR
- translate the technical ES from the CSR into an easily understandable ES to be communicated throughout the supply chain



*We ensure the development of easily understood ESs to be communicated throughout the supply chain. @shutterstock.com/g/kadmy*

### CLIENT

Registrants and all downstream users in the supply chain, especially formulators and end users of chemicals

### CHALLENGE

- When preparing safe instructions for use, formulators must handle a large variety of substances, products and uses
- To prepare extended Safety Data sheets (eSDS), one must be able to check compliance and adjust exposure scenarios

### SOLUTION

We know the regulatory requirements and possess in-depth knowledge of toxicology and exposure, which makes us a strong and trustworthy partner. EScreator is our software tool for preparing exposure scenarios for substances and mixtures, particularly developed to assist formulators and other downstream users

### VALUE

- Ensures compliance with REACH requirements on communication responsibilities
- Ensures the development of easily understood ESs
- Enables scaling of ESs to support safe handling beyond stated preconditions
- Identifies critical substances based on derived no-effect level (DNEL) and acute toxicity estimate (ATE) values, or the classification, labelling and packaging (CLP) regulation
- Allows you to adjust recommended use conditions to your needs

## SCALE AND CONSOLIDATE EXPOSURE SCENARIOS

EScreator is our stand-alone software tool in the form of an intelligent and advanced spreadsheet. It is designed to assist downstream users, in particular, with the implementation of exposure scenarios. We developed EScreator to assist any user of chemicals in determining whether the way they use chemicals is safe and in compliance with the ES received for ingoing substances.

Moreover, EScreator helps formulators revise and modify ESs for their raw materials into consolidated documents for their products. For a demonstration of EScreator, please contact us for more information.

### Exposure tools

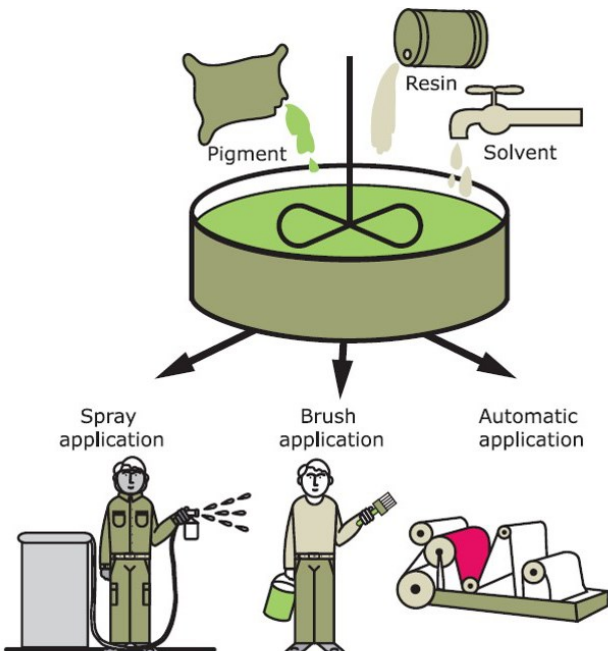
EScreator includes the following embedded software tools to estimate human or environmental exposure: EUSES, Ecetoc, EKMG, StoffenManager, and ConsExpo.

### Scaling

With EScreator you can extrapolate or interpolate ES information to actual use conditions – and check if use is safe at conditions different from those given in the ES.

## ES FOR MIXTURES

Under REACH, there are no formal requirements to prepare an ES for mixtures. However, as a downstream user, you are obligated to communicate information on safe use of mixtures by including either relevant ESs or relevant information for mixtures in the SDS. As mixtures may contain several substances with ESs, this can be a complicated and time-consuming task.



Our software tool EScreator can be used to calculate if an application is safe when using exposure scenario data from substances for a mixture. An illustrated example here is for paint used by different types of users.  
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For more information, visit: [www.tox.dhigroup.com](http://www.tox.dhigroup.com)



We have developed EScreator as a software tool for preparing exposure scenarios for substances and mixtures. © shutterstock.com/g/endomat

## DIFFERENT CUSTOMERS – DIFFERENT NEEDS

Technical ESs are required as part of the CSR in the REACH registration if the substance is classified and manufactured or imported at a tonnage of more than 10 tonnes per year by the registrant. When preparing ESs, all specific uses and related conditions need to be considered. In addition to the technical ES, various types of ESs and ES-related documents exist, including:

- Downstream User CSR: A downstream user chemicals safety report (DU CSR) prepared by the downstream user based on his own safety assessment and documentation
- Consolidated ES: All ESs for substances in a mixture combined into one ES
- Harmonised ES: ESs for different substances, harmonised to cover the same use conditions
- Extended SDS: SDS with attached ES or with integrated information from the ES
- Instructions: Consumers will not receive an ES, however, they may receive instructions on how to handle a chemical

With our combination of extensive regulatory knowledge and environmental and toxicological expertise, we can facilitate communication throughout the supply chain and assist you with:

- developing a structured approach to elaborate relevant information from the CSR into a communicative ES
- ensuring consistency between CSRs and eSDSs
- preparing ESs for mixtures
- preparing CSRs for downstream user and submitting reports
- developing training for preparing ESs tailored to the specific needs of the company