Continuous education

Using modelling tools for chemical risk assessment: predicting the unpredictable

November 9th and 10th 2020

Lausanne, Switzerland

unisanté
Centre universitaire de médecine générale et santé publique · Lausanne

EPFL

TOXpro

THE IMPACT OF REACH ON SWITZERLAND AND THE CHALLENGES RAISED BY MODELLING TOOLS TO ASSESS EXPOSURE TO CHEMICAL AGENTS

Context

Swiss companies exporting to the EEA must evaluate the risk of their chemicals on the environment and human health, according to REACH legislation.

REACH obliges European manufacturers and importers to establish exposure scenarios for substances that are manufactured or imported into the European Economic Area (EEA) in quantities of 10 tones/year or more.

The European Chemicals Agency (ECHA) recommends several models for assessing exposure to chemicals in the workplace. However, these models vary in complexity and accuracy. In many exposure situations, it is difficult to choose which model to use. Which model is the most adequate for a substance and given conditions? Different models lead to different results, which later may result in different, potentially dangerous, risk conclusions and health consequences.

With the financial support of the State secretariat of Economic Affairs (SECO) and the Swiss Center for Applied Human Toxicology (SCAHT), the Department of Occupational and Environmental Health of Unisanté has developed the TREXMO tool to facilitate the REACH implementation process in Switzerland.

Objectives of the training

In this context, the Occupational Health and Environment Department of Unisanté, the Ecole Polytechnique Fédérale de Lausanne (EPFL), and the occupational hygiene company TOXPro, have set up a two-day-training to support companies in their efforts to comply with REACH directives regarding the chemical risk assessment.

Through role-playing and exercises encouraging the use of different tools, this training intends to:

- Explain the REACH regulatory framework
- Become familiar with the modelling tools
- Provide an approach on how to select an appropriate tool for a given set of exposure conditions
- Better interpret results generated by exposure assessment models

Scientific comity and trainers

Vincent Perret, Toxicologist, Occupational Hygienist certified SSHT, TOXPro
After several years working for the Geneva cantonal authorities and for the chemical industry, Vincent PERRET co-founded in 2010 TOXpro SA in Carouge (Geneva), a company specialized in supporting companies in the field of occupational hygiene and industrial toxicology.

Jean-Michel Poffet, Occupational Hygienist, certified SSHT, EPFL
Trained as a biologist with a specialization in environmental protection and industrial hygiene, Jean-Michel Poffet worked for ten years as a consultant between Geneva and St. Gallen. He joined the EPFL's safety department in 2002, where he was called upon to respond to a wide range of issues, in particular chemical risks, noise and ergonomics. His work increasingly includes the metrology of pollutants in the professional environment.

Dr. Nenad Savic, Researcher, Occupational Health and Environment Department, Unisanté
After obtaining his MSc in Chemistry, Nenad earns a PhD degree at the Unisanté university centre. He works on a research/IT project funded by the Swiss Centre for Applied Toxicology and the Secretariat for Economic Affairs (SECO) focused on improving existing solutions and developing more advanced ones for chemical risk assessment under REACH. Its work led to the development of TREXMO, a tool that facilitates the use of different exposure models, and TREXMO Plus, a machine learning chemical exposure model.

Prof. David Vernez, Professor in Occupational Hygiene, Head of Occupational Health and Environment Department, Unisanté
Since his thesis on exposure assessment and his Ph.D. in technical sciences in the field of risk analysis and methodology, David Vernez has made risk assessment his area of expertise. His research and teaching work focus on the assessment of occupational exposure to physical and chemical agents. He is a member of numerous Swiss and European expert committees in the field of risk assessment, metrology and exposure limit values related to chemical pollutants.

Day 1

November 9th 2020

Objectives

- Understanding REACH requirements for exposure assessment
- Getting familiar with the different tools for estimating exposure to chemicals
- Understanding how models work, their strengths and weaknesses
- Building and implementing an exposure situation in the different modelling tools

Lecturers

David Vernez, Unisanté; Vincent Perret, ToxPro; Jean-Michel Poffet, EPFL; Nenad Savic, Unisanté

With the participation of Virpii Vaananen from the European chemicals agency (ECHA), and Urs Schlüter from the Federal institute for occupational safety and health (BAuA)

Target audience

All persons involved in REACH compliance: company managers, site managers, HSE managers, regulatory affairs managers, production managers, technical managers, R&D managers, toxicologists, occupational hygienists, safety engineers/ managers.

Program (modifications may occur)

Risk and exposure assessment processes in REACH: **08h30 - 10h30**

- Overview of REACH legal framework and main protocols
  By Virpi Vaananen, ECHA
- Roles and responsibilities in the supply chain with a focus on exposure assessment
  By Urs Schlüter, BAuA

Chemical risk exposure assessment models **10h45 - 12h30**

- Theoretical background and concept of the exposure models
  (EASE, EMKG-EXPO-TOOL, Metals' EASE (MEASE), ECETOC TRAv3, Stoffenmanager® , Advanced REACH Tool (ART)

Lunch break

Workshop: using different exposure models **13h45 - 15h15**

- Exposure situation coding
- Similarities and differences in coding a same situation in different models
- Exposure results interpretation

Wrap-up and key message: comparing models' performance **15h30 - 17h00**

- Advantages and limitations of REACH models

Day 2

November 10th 2020

Objectives

- Knowing how to choose the right model according to the exposure situation
- Being able to evaluate the relevance of different models and the reliability of the generated results
- Learning how to pre-set an exposure situation with a model
- Using the TREXMO tool (meta-analysis)

Lecturers

Nenad Savic, Unisanté; David Vernez, Unisanté; Vincent Perret, ToxPro; Jean-Michel Poffet, EPFL

Target audience

All persons involved in chemical risk exposure assessment: HSE managers, toxicologists, occupational hygienists, safety engineers.

Program (modifications may occur)

Implementing occupational exposure assessment: challenges and limits — **08h30 - 09h15**

- Strengths and weaknesses of models
- Understanding inter-model variability

TREXMO: what is that? — **09h15 - 10h00**

- How-to-use demonstration

Workshop: practicing with TREXMO — **10h15 - 12h00**

- Evaluation exercise on real exposure situations:
  EASE, EMKG-EXPO-TOOL, Metals' EASE (MEASE), ECETOC TRAv3, Stoffenmanager® Advanced REACH Tool (ART)

Lunch break

A meta-model to refine exposure prediction — **13h15 - 14h00**

- Machine learning as a new approach in chemical risk assessment
- TREXMO Plus : main features and advantages over a traditional concept

Workshop: discovering TREXMO Plus through practical exercises — **14h00 – 15h30**

Wrap-up and key message: feedback exchange — **16h00 - 16h30**

GENERAL CONDITIONS

TARGET AUDIENCE

The training is intended for all persons involved in REACH compliance: company managers, site managers, HSE managers, regulatory affairs managers, production managers, technical managers, R&D managers, toxicologists, occupational hygienists, safety managers, occupational physicians and any member of staff of the occupational health and safety services.

PRE-REQUISITE

Participants should master the principles of chemical risk assessment, know metrological data and their use in a regulatory context, as well as the regulatory thresholds. It is recommended to attend the first day before following the second day.

LANGUAGE

The training is given in English.

LOCATION

Unisanté, Occupational Health and Environment Department
Route de la Corniche 2, 1066 Epalinges, Suisse

REGISTRATION

Registrations are made using the online form. By confirming your registration, you agree to abide by these general conditions.

Fee

1,800 Swiss francs (excl. VAT) for the two-day-training. Documentation, meals and coffee breaks are included in the registration fee. It is possible to register for one day only; the fee for one day is CHF 900.00 excluding VAT.
Payments must be made at least 10 days before the course starts, using the payment slip attached to the confirmation of registration.

Cancelation

No refunds will be made for cancellations made less than seven days before the course. However, it is possible to be replaced by a colleague.
The training takes place from 10 registered participants. The number of participants is limited to 25 on day 1 and to 15 on day 2. Registration fees will be refunded only if the organization comity decides to cancel the training.

ACCREDITATION

This training is recognized by the Swiss Society of Occupational Hygiene and the Swiss Society of Occupational Medicine and provides 8 credits.

For any further information, please contact:
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