

## Module 11, Advanced Toxicology

*A deeper dive into the world of toxicology or how chemicals impact humans and why*

**7 and 8 March 2022, 09:15 – 12:45 GMT**

**This training will be delivered, live, online**

This module is an advanced training day in toxicology that follows on from [Module 5](#). At the basic level, we learnt that standard test data can provide us with classification end points. At the advanced level we will also learn the basics of human risk assessment such as how to derive a DNEL/DMEL. An advanced level of understanding in toxicology is required when it comes to understand the toxicological mechanisms leading to different toxicological end points. We also learn about the latest achievements in toxicological testing (in chemico, in vitro and in silico methods).

SDS writers reading data most often deal with data from animal studies, but on occasion data from humans that have been exposed (case studies). What kind of challenges are brought forward in handling data from humans and how is data from animals 'translated' into what is true for humans?

This module is aimed at those with a reasonable technical understanding of toxicology, chemistry and chemical supply classification.

To ensure the most effective training with optimum involvement in participative exercises, there will be a limit of 16 on the number of students. Attendance on this series of modules will ensure that your SDSs meet the increasing expectations of both your customers and the regulators.

### What you will learn

This module follows on from [Module 5](#) and builds on basic principles by considering chronic toxicity studies and important end points such as 'CMR' in more depth. It will also help those reading data to interpret whenever there is a toxicological concern regarding findings in the literature.

- Hazard versus risk
- Basic derivation of DNEL (derived no-effect level) including allometric scaling
- The challenge of handling numerous data, including data from human exposure
- Adverse outcome pathway (AOP)
- Basic introduction to Q(SAR), computer models
- Where to find the data – about sourcing of data from the literature

- There will be opportunities for delegates to discuss personal experiences and ask questions relating to their own specific range of products

### SAMPLE PROGRAMME

#### Session 1/2

- Welcome, introduction to the presentation software and the training, introduction, 'hazard and risk', dose-response relationship, Kilmisch scoring system, toxicokinetics, biotransformation

#### Session 2/3

- Allometric scaling, DNEL derivation, Health hazards (CLP), data sources, use of 'human data'

#### Session 3/4

- Recap acute toxicity tests, in vitro testing (skin, eye), sensitisation in more depth, adverse outcome pathway for skin sensitisation, assessment strategy for respiratory sensitisation, introduction of example substance

#### Session 5

- Target organs (liver, kidney) with example/exercises, endocrine disruptors (thyroid)

#### Session 6/7

- Mutagenicity, mutagenicity testing strategy, carcinogenicity including potency (T25), reproductive toxicity, endocrine disruptors (endocrine system), data for non-testing methods, QSAR/SAR, modelling, read-across, grouping of chemicals



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## Other Modules

The derivation of safe levels and limits for health, such as DNELs, will be covered in more detail in [Module 20, The Extended SDS](#). The area of exposure scenarios and risk characterisation will be covered in [Module 53, Chemical Safety Assessment](#). For details of all courses and dates please see [www.chcs.org.uk/chemical-hazards-training](http://www.chcs.org.uk/chemical-hazards-training).

## Module Tutor

This module will be presented by toxicologist Annette Dock. Annette has over twenty-five years' experience in chemical regulation and assisting companies with compliance. Annette has worked for central authorities in Sweden (National Food Agency, Swedish Work Environment Authority and Swedish Chemicals Agency) before setting up her own business working as an independent consultant.

## Deputy Module Tutor

Lennart Dock studied chemistry and microbiology at Stockholm University and received a PhD in toxicology from Karolinska Institutet (KI) in 1982. After research work at the Department of Toxicology and the Institute of Environmental Medicine he joined the Swedish Chemicals Agency (KemI) in 2002. He worked as a senior adviser at the international unit until 1 July 2021. He managed KemI's international training programme in preventive chemicals control and was the head of the Swedish delegation at the UN Sub-Committee of Experts on the GHS. He served as an adviser to the Swedish government during the EU council negotiations on the CLP regulation. After retirement he continues to work for the agency on an hourly basis.

## Post Brexit

The departure of the UK from the EU does not impact either the importance of a basic knowledge in the area of toxicology, the SDS or the legal requirements. The formatting and content of the SDS follows the UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS) as implemented in the UK.

## Module Presentation

We will deliver this training using an online system, which we have used successfully for other CHCS events and training. There is no charge to delegates for using the software. The licence cost is borne by CHCS.

The sessions will run live, and delegates can interact with the tutor and other delegates using their device microphone. The tutor will use a PowerPoint presentation, just as they would in face-to-face training.

We will provide you with copies of the presentation and all other supporting documentation in advance of the training, by email. We will provide you with a document giving more details about using the software plus some tips for getting the best out of the day.

## Comments From Past Delegates

*"Fantastic development of information presented in Basic Toxicology. Interesting and knowledgeable presenters with great background. Supplementary information with exercise incredibly useful."*

*"Good pace and structure of training. Very helpful to my company's needs."*

*"Complex topics were well explained and make sense"*

*"Particularly enjoyed the discussions on classifications, the group exercise & meeting experts practicing in field"*

Please complete the online Registration Form at [www.chcs.org.uk/event-4486411](http://www.chcs.org.uk/event-4486411). Courses are only available to CHCS Members. If you are not an existing member and would like to join, again, the process is simple and you can complete our online Membership Registration form at: [Join CHCS](#).

Our training courses are £275.00 (+VAT). However, we offer a **discounted price** of only £250 (+VAT) which expires 6 weeks before the date of the course. Please see the online event for more details.

## Your Attention Is Drawn To These Conditions

Delegates can be substituted at any time, subject to payment of membership fee if applicable. However, once booked, the full fee is payable. As this is a limited space training event refunds can only be made if CHCS is notified in advance and is able to successfully re-offer the place to another delegate.

CHCS reserves the right to alter or cancel the programme due to circumstances beyond our control. If CHCS cancels, then refunds will be made.