

eLEARNING COURSE

Metals and Inorganic Metal Compounds in Toxicology and Ecotoxicology

Understand how the toxicity and management of metals can impact our lives



How will this course teach me about metals toxicity and management?

This course has been written by experts in the industry with a vested interest in ensuring the widespread knowledge of the toxicity, management and impact metals can have in our lives.

What will be covered?

- Natural background and essentiality
- Bioavailability
- Data handling (quality, relevance, aggregation) and read-across
- Inhalation toxicology
- Genotoxicity/carcinogenicity
- Assessment of man via the environment exposure
- The role of materials flow and diffuse source assessments to determine regional and continental risk

Who is this course for?

- Regulatory authorities in charge of evaluating metals in different chemicals management systems (hazard identification, exposure assessment, risk assessment, risk management)
- Professionals in the field of environmental science, particularly those working with decision-makers in the public or private sectors
- Industry persons in charge with environmental regulations related to metals, including new recruits needing training on metals science
- R&D
- Anyone interested in metals toxicology

Key benefits of taking this eLearning course

Informative, convenient & easy to use

- Valuable training written by leading experts from Eurometaux, Arche Consulting and the International Council on Metals and Mining (ICMM).
- The course is easy to “pick up where you left off” – enabling you to study at your own pace
- Runs on PC, Mac, tablet and smartphone – allowing you to study at work, from home or on the go, fitting your training conveniently around your busy schedule
- No travel required – making it a time-efficient training resource that keeps your and your team’s travel commitments and expenses down.

Appeals to a wide range of learning styles

- Designed for multiple learning styles – our courses include image, text, interactive elements, video and audio to ensure all learning styles are catered for
- An extensive glossary of terms – helping you decipher key terminology
- Course note handouts – to supplement the content, and to help you revise the material on- and offline

Measurable outcomes

- Self-assessment quiz questions – helping you measure whether you’ve met the learning objectives for each section of the course, giving instant feedback on your progress

Affordable learning

- Low per-trainee prices and attractive group rates ensure you maximise returns on your training budget
- Initial single place cost: **€450 (£440/\$530)**
- Members receive a **€50 discount**

For group rates for multiple trainees please email us for a quote at: cw.sales@chemicalwatch.com or call us on +44 (0)1743 818 292

Modules

After completing the modules in this eLearning course, you will be able to:

MODULE 1: NATURAL BACKGROUND AND ESSENTIALITY

- Recognise that metals are naturally occurring substances that warrant a specific approach to take this into account
- Distinguish the differences between essential and non-essential metals
- Describe how processes, such as adaptation and acclimation, work and may affect the environmental risk assessment of metals
- Explain how essentiality affect the shape of the dose-response for human health risk assessment

MODULE 2: BIOAVAILABILITY

- Explain that metals are naturally occurring substances that warrant a specific approach to take these metal specificities into account
- Define the key concepts governing the bioavailability of metals in the environment
- Describe how bioavailability data can be generated and used for human health
- Summarise the different tools available to assess bioavailability.

MODULE 3: DATA HANDLING (QUALITY, RELEVANCE, AGGREGATION) AND READ-ACROSS

- Outline how to assess the quality of ecotoxicity data
- Define the metal specific attention points that should be considered
- Explain how data can be aggregated and used to derive safe thresholds, and data gaps filled using read-across approaches

MODULE 4: INHALATION TOXICOLOGY

- Explain the importance of the inhalation exposure route for metals and the type of effects that can occur
- List aspects to consider when assessing inhalation exposure
- Outline how absorption after inhalation (for systemic effects) can be assessed

MODULE 5: GENOTOXICITY/CARCINOGENICITY

- Outline the key definitions for the genotoxicity/mutagenicity activity of metals
- Discuss how metals can cause genotoxicity/mutagenicity
- Describe the different tests available to assess genotoxicity/mutagenicity
- Explain where metal specificities may occur in mechanisms of action and in testing strategies

- Define the link with carcinogenicity and the importance of a possible threshold for metals.

MODULE 6: ASSESSMENT OF MAN VIA THE ENVIRONMENT EXPOSURE

- Outline the scope and elements covered in a Man to Environment assessment
- Describe the current default Tier 1 approach should only be considered a first tier screening assessment
- Discuss which areas and tiered approaches can be used to improve the MvE assessment for metals and inorganic substances

MODULE 7: THE ROLE OF MATERIALS FLOW AND DIFFUSE SOURCE ASSESSMENTS

- Explain the importance of documenting the materials flow in identifying and quantifying emission sources in risk assessment
- Recall where metals in the environment come from, and the differences between point source, diffuse and fugitive emissions
- Outline the factors determining the diffuse emissions from metals in products
- Describe the importance for risk management of assessing the contribution of the different sources of metals to environmental exposure



£400

Essential members get 15% and advanced members get 20% discount
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