

Chemistry for the Non Chemist Workshop Training

Gain a basic understanding of chemistry for your job role

This introductory workshop (based on our popular webinar) will provide you with a basic understanding of some of the most common physicochemical terms used in the prediction of likely exposure routes and hazardous effects; not only for human health but also for environmental fate and effects. What's more, expanding your knowledge of chemistry will help you with the identification of structural alerts, the use of appropriate read across and mechanisms of action.

In this 1.5 day course, expert toxicologist Laura Robinson will teach you how to identify some important hazard properties, such as pH and its link with corrosivity, and important exposure routes, including the use of water solubility and Log Kow for predicting absorption, as well as environmental transport and fate. She will also cover chemical nomenclature and polymers.

Course introduction

Day One

In this half day, we will cover basic atomic structure and chemical bonding and their impact on physicochemical properties. Set exercises will be used during the session to help illustrate key points.

Join us for lunch before the course starts or use the time to travel in the morning.

Day Two

In day two - we will delve into the different types of chemicals (inorganic, organic, polymers, nanomaterials, etc) and learn the IUPAC approach to naming chemicals. Furthermore, we will look at isomerism, functional groups and their impact on chemical reactivity. We will also take a closer look at the different types of physicochemical properties and how an understanding of these can help you identify important properties of chemicals, particularly in relation to exposure and physical hazards. Finally we will cover chemical reactions and some important ones which we encounter more often than we realise. Again throughout the day set exercises will be used to help illustrate key points.

Course leaders



Laura Robinson
Occupational Toxicologist,
Toxicology Consulting Ltd

Laura is a qualified toxicologist and chemist with over ten years' experience in health, safety and environmental issues, as well as chemical compliance.

Laura is an accomplished toxicology trainer, consultant and author of two published books on toxicology. Her third book 'A practical guide to toxicology and human health risk assessment' (John Wiley & Sons) will be published in 2018.

Who should attend?

Professionals within industry, governments, universities and consultants, who want to gain or improve their knowledge of chemical risk assessment.

Day 1 - Tuesday 4 December 2018

12:15 Course Registration over lunch

13:15 **PART I: Atomic structure, chemical binding and categories of chemical**

- Introduction
- Atomic structure, atomic mass & number, electron shells, isotopes & the periodic table
- Chemical bonding: Covalent (including polar covalent), ionic and metallic bonding & their properties
- Electronegativity and polar bonds/molecules (including their impact on physicochemical properties, such as boiling point)
- Set exercises will be used throughout this session

16:45 Close of day



Day 2 - Wednesday 5 December 2018

09:30 **PART II: Chemical identity**

- Substance type – Mono-constituent, multi-constituent substances, UVCB, Nanomaterials, impurities
- Polymers (the polymerisation process, addition, condensation polymers, classification of polymers)
- Chemical identification (IUPAC naming, EC number, CAS number and EINECS)
- Mixtures and articles

10:30 Refreshment break

10:45 **Chemical nomenclature (Organic, inorganic)**

- Molecular and structural formula
- Isomerism (structural, optical, geometric)
- Functional groups (including use as structural alerts)

Set exercises will be used throughout this session

12:15 Lunch

13:15 **PART III: Physicochemical properties -and how they can be used**

- States of matter
- Boiling point and melting point
- Vapour pressure & volatility
- Density and specific gravity
- Water solubility
- Octanol water partition coefficient
- pH and pKa
- Viscosity
- How physicochemical properties can be used to help likely human and 'environmental' exposures

Set exercises will be used throughout this session

14:45 Refreshment break

15:00 **PART IV: Chemistry in action**

- Chemical reactions and equations
- Hydrolysis
- Oxidation reactions (with examples from metabolism)
- Acid – base (neutralisation) reactions
- Flashpoint and flammability
- Explosives

Set exercises will be used throughout this session

16:30 Questions and close of day

Prices

Full price	- £1180 (+VAT)
Early bird price - if booked before 19 October 2018	- £1080 (+VAT)
CW Subscriber price	- £1130.00 (+VAT)
Early bird CW Subscriber price - if booked before 19 October 2018	- £1030 (+VAT)

Payment options:

- Invoice payable by bank transfer, credit card or cheque made payable to CW Research Ltd
- Online using our secure order form

Payment must be made before the training course starts

Three ways to register

w <https://events.chemicalwatch.com/67241/chemistry-for-the-non-chemist>

e events@chemicalwatch.com

t +44 (0)1743 818 293

Location

London

Event times

Day one

4 December 2018, 12:15 - 16:45

Day two

5 December 2018, 09:30 - 16:30

CW+ **ChemicalRiskManager** | eLearning

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