

Scientific Update | Training Courses 2010



The Design, Development and Scale-Up of Safe Chemical Processes and Operations

Principles and Practice



A 3 day seminar
for chemists and
engineers given by

Chilworth
GLOBAL
The Experts in Process Safety



25 - 27 May 2010

The Winchester Hotel

Winchester, Hampshire, UK

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The Design, Development and Scale-Up of Safe Chemical Processes and Operations Principles and Practice

25 - 27 May 2010 | The Winchester Hotel, Winchester, Hampshire, UK

General Information

The seminar begins with registration at 8:30am on Tuesday 25 May, with the course commencing at 9.00am and finishes at approximately 4.00pm on Thursday 27 May.

The organisers reserve the right to change the published programme of events and course content as circumstances dictate.

Fee

£1521.63 (inc VAT @ 17.5%) including lunch & refreshments, the course dinner on 25 May and comprehensive course manual.

Introduction

Developing safe processes is of paramount importance to any chemical company. Exothermic chemical reactions in batch and semi-batch processes can result in serious injury to people and plant if they get out of control. Results of thermal runaways include violent loss of containment, possibly explosion and the release of flammable or toxic materials to the environment.

Employers are bound by Health & Safety legislation to ensure the safety of their employees and those outside their employment who might be affected by their activities. Chemical manufacturers must therefore be aware of all potential dangers in their processes and take steps to eliminate them. The best approach is to design safety into the process from the start.

Often, the first sign of loss of control over a reaction is a reduction in yield or in the quality of the product. Thus safety, quality and profitability are all interlinked.

This seminar is designed to enhance the awareness of chemists and engineers regarding hazard issues. Utilising the expertise of the chemists and chemical engineers at Chilworth Global and Scientific Update, it will consider hazard control of new chemical processes throughout their development cycle: from early development through to full-scale production. Hazards can often be eliminated by appropriate choice of reagent or synthetic route at the R&D stage. Where this is not possible, techniques exist to quantify the hazards so that robust engineering solutions can be applied in production.

Programme

Tuesday 25 May

- 08:30 Registration
- 09:00 Introduction
- 09:05 The Process Lifecycle
- 09:45 Where hazards arise – a review of reported incidents involving runaway reactions and current legislation
- 10:30 Break**
- 11:00 Techniques for safe process design and optimization
- 12:30 Lunch**
- 13:30 Chemical hazards assessment strategy
- 14:15 Fundamental principles of scale-up and reaction runaway
- 14:45 Workshop problems
- 15:15 Break**
- 15:45 Identification of highly energetic materials
- 16:15 Small scale screening tests for liquids, mixtures and powders
- 16:45 Reaction characterization through calorimetry
- 17:15 Discussion and Close of Day 1
- 19.30 Dinner**

Wednesday 26 May

- 09:00 Reprise of Day 1
- 09:10 Characterization of runaway reactions using adiabatic calorimetry
- 09:40 Case studies
- 10:15 Break**
- 10:35 Flammability issues associated with chemical manufacture (including a brief discussion of electrostatic hazards)
- 12:30 Lunch**
- 13:30 Depart for tour of Chilworth Global Laboratories
- 16:45 Depart Chilworth

Thursday 27 May

- 09:00 Reprise of Day 2
- 09:10 Selection of Safety Measures & Case Study
- 10:15 Break**
- 10:45 Emergency relief venting methodology
- 12:30 Lunch**
- 13:30 Emergency relief venting methodology - continued
- 14:00 Relief system case studies
- 14:45 Break**
- 15:15 Process control considerations (safety critical systems, Safety Instrumented Systems, ISA S84.01/IEC 61508/11, equipment reliability and maintenance)
- 15:50 Summary and conclusions
- 16:00 Finish**

“Excellent course.”
GSK

Chilworth Global

Chilworth Global is an independent company specialising in process safety. They provide a range of services to help industry reduce the risk of hazards in their processes, including consulting advice, incident investigation, laboratory testing, contract research and development and the provision of training courses. Their consulting engineers have practical experience in industry to complement their expertise in process safety.

Chilworth Global has a worldwide client base, with experience helping many leading manufacturers in the chemical and processing industries. The company has its headquarters at Southampton in the UK with other facilities in USA (Princeton, New Jersey), Italy (Milan), France (Lyon), Spain (Valencia), Netherlands, Ireland and India (Delhi, Mumbai and Chennai).

Their senior consulting staff are internationally recognised experts in their fields, who serve on international standards committees and frequently lecture at conferences and seminars.

For further information telephone +44 (0) 23 8076 0722 or email info@chilworth.co.uk

Tutors

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Full Tutor Biographies can be found on our website at www.scientificupdate.co.uk/training/course-tutors

Venue



The Winchester Hotel
Worthy Lane
Winchester
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Tel: +44 1962 709988 www.pedersenhôtels.com/winchester

The hotel is located in the heart of the ancient city of Winchester. The nearest Airport is at Southampton International, which is 11 miles away. Alternatively, Heathrow Airport is 57 miles away. Taxis from Heathrow will cost approximately £72, and approximately £28 from Southampton airport. National Express coach service from Heathrow to Winchester costs approximately £25 for a return journey (and the hotel is situated in very close proximity to the main coach station). Winchester main line station is less than 5 minutes walk away from the hotel.

A limited number of rooms have been reserved at the hotel at the special rate of £105 per night including breakfast and VAT. VAT rate will be increased to 17.5% from 1 January 2010. Further information about reserving your room will be sent to you when you register.

Who Should Attend?

R&D and Process Development Chemists, Chemical Engineers, Managers and anyone whose responsibilities include safety or risk assessment of chemical processes or building safety into chemical process scale-up.

Seminar Objectives

To train chemists and engineers in efficient methods for developing safe, low cost, robust chemical processes in the minimum amount of time

To improve the awareness of chemists on the principles of scale-up and development, in chemical engineering concepts relating to safe plant operation and in the latest techniques for the optimisation of processes

To learn from the experience (and mistakes) of others by examining case studies from industry

What you will leave with ...

The ability to identify any significant sources of hazard in existing processes or development plans

An understanding of the latest techniques for assessing risk, and measuring and quantifying chemical process hazards in the work place

An understanding of the established best practice to reduce the hazard resulting from exothermic reaction systems with a particular emphasis on emergency relief design

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@ £1521.63 (including VAT @ 17.5%)
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For late applications please register on line at www.scientificupdate.co.uk or fax the completed registration form, including credit card payment information.

Venue/Accommodation You will be sent details of how to reserve your accommodation with your event confirmation details.

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