Compliance & Validation Services

Presents a 4-Day (In-Person) Training Course on:

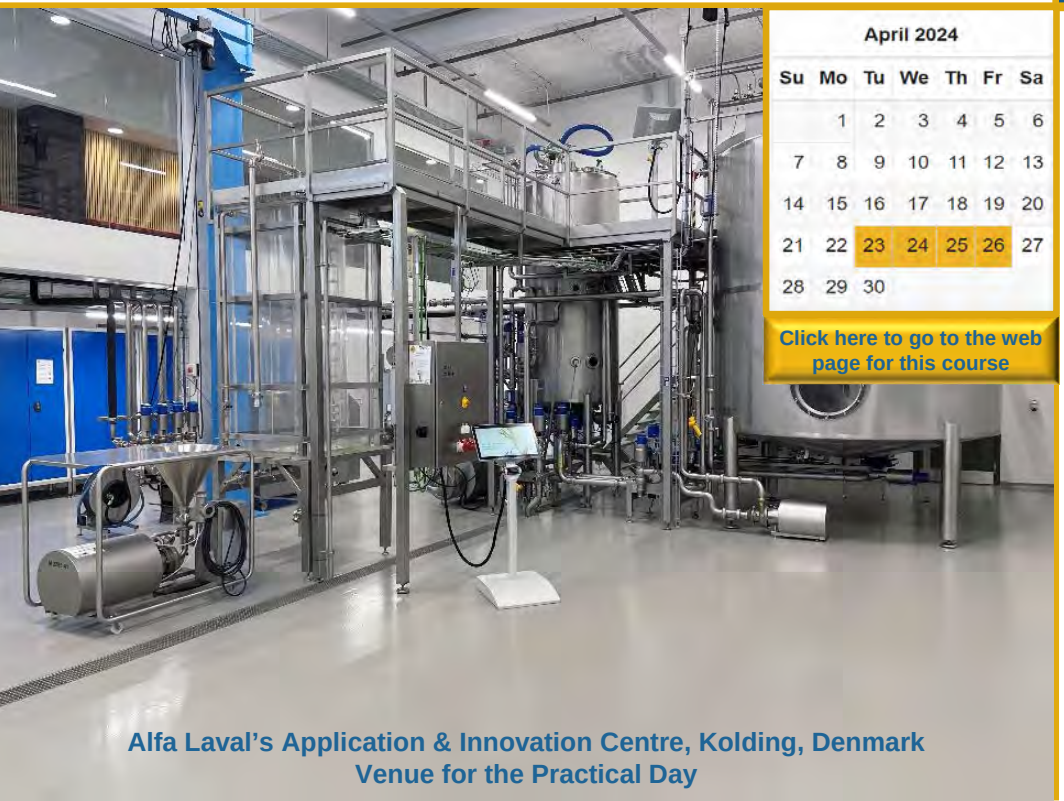
Cleaning & Cleaning Validation

(Includes a Practical Day - 25 April)

23, 24, 25 & 26 April 2024

Comwell Kolding Hotel, Jutland, Denmark

Photo courtesy of Alfa Laval
Click here to visit their website



Alfa Laval's Application & Innovation Centre, Kolding, Denmark
Venue for the Practical Day

April 2024

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Click here to go to the web page for this course

The Cleaning Process:

- Types of cleaning action involved in cleaning processes
- Chemistry of the cleaning process, optimising cleaning processes and the use/evaluation of cleaning agents
- Design of equipment for ease of cleaning (includes hygienic engineering principles):
  - Clean-in-place (CIP) systems
  - Clean-out-of-place (COP) systems
  - Spray device technology – types available and a comparison of performance
- Cleaning of biopharmaceutical plant – real life case studies
- Resolving cleaning issues that may arise in practice

Cleaning Validation:

- Key international regulations and guidance and their impact on what we do
- Establishing limits for maximum allowable levels of carryover (large molecule [biopharmaceutical residues], small molecule compounds and cleaning agents)
  - Incorporating Annex 15, EMA Guidance (including the latest EMA Questions and Answers) on Health Based Exposure Limits (HBELs)
- Using a matrix approach to multi-product non-dedicated plant cleaning validation
  - Saving time and effort by focusing on the worst case materials/residues
- Review and comparison of methods used for sampling and detecting/quantifying residues
- Application, method development and qualification/validation of analytical techniques for quantifying residues, including Total Organic Carbon (TOC) (sampling and analysis)
- Spray device coverage verification – demonstrating all internal surfaces can be 'wetted'
- Risk assessments and determining the level of testing required from the level of risk to product quality/patient safety
- Key validation considerations and validation documentation requirements
- Alternative technology – avoiding the need for cleaning validation, e.g. disposables

Practical Day (25 April 2024):

- Spray device technology and fluid dynamics
- Riboflavin coverage demonstration and demonstrating the effectiveness of different types of spray devices for removing a range of residues
- Swabbing and the use of TOC to determine residue levels

Course Summary: Cleaning & Cleaning Validation - 23, 24, 25 & 26 April 2024 - In-Person Training Course - Comwell Kolding Hotel, Denmark

This course provides delegates with an in-depth appreciation of key design features of pharmaceutical and biopharmaceutical manufacturing equipment/systems to enable 'easy', effective cleaning (usually a far greater challenge than the validation). It also provides a detailed understanding of the approach to validating cleaning processes. This includes the fundamental understanding of material carryover (contamination) mechanisms and how this is pivotal to setting appropriate limits for acceptable levels of carryover (maximum allowable carryover [MACO] limits) from one product to another. The course also covers areas such as applicable regulatory rules & guidelines; demonstration of spray device coverage; methods for calculating MACO for large/small molecule compounds & cleaning agents); methods for sampling/detecting/quantifying residues (key considerations); inclusion of clean/dirty hold times in the validation study; the use of a matrix approach to multi-product non-dedicated equipment; cleaning process monitoring/review and maintaining the validated state. To help consolidate learning, presentations will be supplemented by case studies and workshops. This course incorporates a Practical Day, which will be held at Alfa Laval's Application & Innovation Centre, Kolding, Denmark (transport included) and will help strengthen learning from the first 2-days of the of hotel based training. During this day, delegates will be presented with information on the dynamics of fluid flow in cleaning applications. There will be demonstrations of how coverage can be verified (using Riboflavin). Further demonstrations will show how different types of spray devices perform when cleaning a challenging residue. Swabbing and TOC analysis will also be covered. Delegates will be provided with a 3-slide per page printed binder upon arrival on Day 1 and PDF versions of the slides will be sent out by email to each delegate after the course. Day-time meals and refreshments, together with a course dinner, held on the evening of Day 1 (Tuesday 23 April 2024), are included in the overall package.

Presenters

Mike James, Training Director, Compliance & Validation Services Limited.: Mike has nearly 30 years experience in the pharmaceutical industry, working in a variety of compliance and validation roles. His experience includes preparation and delivery of national/client-based validation training courses, hands-on validation work, validation project management and regulatory compliance consultancy. Previously, Mike spent four years as the Site Validation Manager for GlaxoSmithKline (GSK) at Speke, where he was responsible for all site validation activities, including the development and maintenance of the Site Validation Programme. Before moving to the pharmaceutical industry he spent 15 years as an industry chemist.

John Welbourn, Consultancy Director, Compliance & Validation Services Limited: A validation professional with over 30 years experience, John has been responsible for the management and execution of validation projects for many major pharmaceutical companies. He has broad experience in the qualification of equipment, utilities and computerised systems, and thermal mapping to support storage conditions. He has presented at conferences in the UK, Europe and the US and has authored several articles on various aspects of validation. John has contributed to The University of Manchester's, Pharmaceutical Engineering Advanced Training (PEAT) Course and Dublin Institute of Technology's (DIT) MSc. course in Pharmaceutical Process Validation.

Jamie Thompson, Independent Consultant & Validation Specialist: Jamie is currently in a laboratory equipment validation role, where he is validating an extensive range of laboratory analytical/test equipment. Up to recently he was a Specialist at Sievers TOC analysers (part of GE) and the use of TOC analysis for Ultra-Pure Water Systems and Cleaning Validation. Previous to this, Jamie spent over 10 years working in an analytical chemistry role for major pharmaceutical manufacturers (GSK and Pfizer). These roles involved raw material/finished product testing relating to pharmaceutical and bio-pharmaceutical manufacturing and specifically, chemistry testing of high purity water systems and cleaning validation samples. Other areas of Jamie's experience include working with site-wide systems such as SAP, Trackwise, laboratory information systems (LIMS), failure investigations and change control. Jamie has a Masters in Chemistry**.**

Peter Whyment, Independent Consultant *(Virtual presentations):* Peter has worked in the Biopharmaceutical Manufacturing Industry for over 30 years and has a wealth of knowledge/expertise in the area of process validation. During his time in industry he has worked in Quality Control Laboratories, Analytical Development and as a senior scientist in a Manufacturing, Science & Technology function, Peter has overseen the successful technical transfer or commercial manufacturing of several biotechnology processes, including Insulin and growth hormone products.

Who Should Attend

This course provides essential knowledge/learning for anyone involved in any aspect of biopharmaceutical and pharmaceutical equipment cleaning and validation. Target disciplines include engineering (including equipment designers), production (management, supervisors and process operators), technical support, validation, quality assurance and quality control.

On leaving this course delegates will: have a better understanding of the applicable regulatory rules and guidance and other pertinent international standards/guides; have a clear understanding of the fundamental principles and current industry practice related to cleaning and cleaning validation; have a sound understanding of the equipment design principles for ease of cleaning; be able to calculate limits and develop a supporting rationale for maximum allowable carryover of a wide range of residues; have many practical 'real-life' examples of how cleaning and cleaning validation is actually carried out in industry; be able to apply and share their new knowledge; improve their individual effectiveness; and look back on an enjoyable experience.

Venue

Comwell Kolding Hotel: Set beside Marielund Forest, just 0.6 mi from Kolding Train Station.The hotel has a sauna and indoor pool.

Address: Skovbrynet 1, 6000 Kolding, Denmark
Tel: +45 76 34 11 00
Website link: https://comwell.com/en/hoteller/comwell-hotel-kolding

Click here to view Hotel's location (Google Maps)

Click here to visit the Hotel's website

The main travel options for people flying to Denmark are:

- Flights to Copenhagen Airport (CPH) followed by a 2 hour 20 minute train journey from Copenhagen Central Station to Kolding (Delegates are advised to pre-book their train tickets – direct trains from CPH Airport are available, but are less frequent)
- Flights to Billund Airport followed by a 40 minute taxi journey to the Comwell Kolding Hotel

Delegates are kindly requested to arrange their own accommodation. Course fees are £3,100.00 (GBP) per delegate. Accommodation is NOT included in the course fees.

(See Page 5 for further details on fees/bookings)

Cleaning & Cleaning Validation – Classroom Presentations Programme - Comwell Kolding Hotel, Denmark:

Registration (08:45 to 09:00 Berlin/Amsterdam Time) - Delegates arrive at the meeting room and sign the attendance register

Day 1 (Tuesday 23 April 2024)

Start: 09:00

Introduction to Cleaning and Cleaning Validation *[Mike James]:*

- Reasons for cleaning
- Types of cleaning action and the chemistry involved
- Optimising cleaning processes, including the use/optimisation of cleaning agents
- Importance of assessing all cross-contamination risks
- Key terminology and definitions involved
- Importance of effective cleaning processes and procedures
- Overview of key Regulations & Guidance

Equipment Design/Construction For Ease of Cleaning *[John Welbourn]:*

- General design considerations, e.g. reducing cleaning effort by combining equipment functionality
- Clean in place (CIP)
  - Cleaning fluid generation (local and remote)
  - Disadvantages and advantages
  - Fluid paths (3 general types)
  - Spray devices
- Clean out of place (COP)
- Hygienic design:
  - General principals to prevent biofilm and/or material build-up, e.g. minimising crevices and ensuring drainability
  - Surface finishes, welds, gaskets and seals
  - Fittings, instrumentation and valves
- Importance of turbulence when cleaning internal surfaces, e.g. Pipe-work fluid flow rates

Managing Rouging Issues *[John Welbourn]:*

- What is rouge?
- Consequences of detecting its presence in our equipment.
- How does it form and where does it come from?
- How do we detect it?
- How can we minimize its formation?
- How can we remove it?

Finish: 17:00
18:30 to 21:30: Drinks Reception & Course Dinner

Day 2 (Wednesday 24 April 2024)

Start: 09:00

Cleaning Validation – Verification and Monitoring Analytical Methods & Detection Rationale *[Jamie Thompson]:*

- Cleaning validation history and links to key regulations
- Analytical methods and instrumentation (specific and non-specific)
  - How they work
  - Advantages and disadvantages
  - Limitations
- Factors for selecting the 'worst case' compound for multi-product equipment, taking into account
  - Analytical method/detection technique and the cleaning process
  - Cleaning agents and excipients
- Calculation of limits using the proposed analytical method/technique, e.g. Total Organic Carbon (TOC)
- Analytical method development, method validation and instrument qualification
- Swabbing, swab recovery studies and training the swabbers

Overview of Methods Used For Sampling and Detecting Residues *[Mike James]:*

- Visual inspection (including its use with other methods)
- Swabbing and rinse water sampling (includes combination use)
- Direct surface analysis, e.g. Fourier Transform Near Infrared Laboratory based determination methods
- On location testing options (at line)
- In-line methods (within process systems)

Demonstrating Spray Device Coverage *[John Welbourn]:*

- Why, when and where is it carried out
- Safety issues associated with the testing
- Testing materials and equipment required
- Example testing procedures used
- Real life examples of problems that can be uncovered
- How can time and costs be reduced?
  - e.g. Bracketing – When can this be used?
  - e.g. Perform test prior to installation

See following page for Day 3
Practical Day - Thursday 25 April 2024

Finish: 17:00

Day 4 (Friday 26 April 2024)

Start: 08:30

Establishing Maximum Allowable Carryover (MACO) for Pharmaceutical Products, Active Pharmaceutical Ingredients, Chemical Intermediates, Clinical Material and Cleaning Agents *[Mike James]:*

- Material carryover mechanisms and the importance of making the correct assumptions (fundamental to limit calculations)
  - How, equipment design issues and impact the mechanism of material carryover
- Current industry standards and guidelines used to calculate limits
  - Using the Annex 15, EMA Guidance on Health Based Exposure Limits (HBELs) and EMA Q & As on HBELs as a guide for establishing MACO
  - Use of LD50s (or not) and NOEL/NOAEL values
  - Conversion of MACO to swab area limits
  - PDA and ISPE guidance also covered
- Workshop on calculating limits

Matrix Approach to Cleaning Validation for Multi-Product Non-Dedicated Plant *[Mike James]:*

- Selection of marker compounds using attributes such as toxicity, solubility and potency
- Gathering of data and formulating matrices
- Advantages and Disadvantages of using a matrix approach
- Incorporation of clean and dirty hold times and what this entails
- Worked example

Detecting/Quantifying Protein Residues and Establishing Limits for Biopharmaceutical Residues, Bioburden and Endotoxin Levels *[Peter Whyment]:*

- Objective of a cleaning regime
- Types of residues remaining after cleaning and the types of test methods used
- Specific and non-specific methods and their advantages and disadvantages
- Methods of choice – Past and present
- Recommendations for the swab type to use
- Analytical methodology and validation
- Most commonly used methods for protein residues (BCA versus TOC)
- Visibly clean inspection and factors affecting it
- Setting the limits (Including Bioburden and endotoxin levels)

Biopharmaceutical Plant Cleaning (Real Life Example) *[Peter Whyment]:*

- Cleaning challenges
- Equipment design for ease of cleaning
- Issues and problem resolution
- Overview of qualification work involved
- Alternative technology (Disposables) – Avoiding cleaning validation

Key Cleaning Validation Considerations *[Mike James]:*

- Summary of areas covered over previous presentations
- Using risk assessments to determine the level and depth of testing required
- Documentation requirements (plans, protocols and reports)
- Effectively managing deviations that may arise
- Importance of ensuring that CV is a confirmation exercise and not part of development

Maintaining the Validated State *[Mike James]:*

- Change Management
- Typical changes that impact on cleaning and cleaning validation
- Routine cleaning effectiveness monitoring
- Periodic cleaning validation monitoring, effective cleaning validation review and when to revalidate
- Ongoing operational considerations – handling incidents

Course End: 16:30

Day 3 - Practical Demonstrations of Cleaning Technology - Thursday 26 April 2024 - Application & Innovation Centre - Transport provided

During the Practical Day, delegates will get the opportunity to see tank cleaning technology actually working in real time, using full scale vessels pipework/valves, instrumentation and spray devices. They will see and hear how different spray devices perform under typical conditions in real life. The demonstrations will also show how static, rotary spray and rotary jet head devices perform, when faced with the challenge of yogurt residues. A practical demonstration of Riboflavin coverage verification will be included, together with a presentation on cleaning technology/fluid dynamics. There will be a demonstration of under agitator cleaning, a demonstration of water break-free cleanliness tests, swabbing demonstrations and TOC determinations (using a TOC instrument). Complimentary meals, refreshments and transport from and to the Comwell Kolding Hotel will be provided.

Day 3 – Practical Day Programme (Thursday 25 April 2024 - 08:00 to 17:00)

Time	Activity
08:00	Transfer from Comwell Kolding Hotel to Alfa Laval (AL).
08:15	Welcome meeting at AL's Training Centre - General introductions
08:45	Demonstration of various types of spray devices using the Perspex Demo Unit
09:00	Riboflavin solution make-up, fluorescein test solution and introduction to UV Lamps
09:30	Application of Riboflavin and fluoresceine solutions to 2B, Electro Polished and Damaged (weld seams, scratches, dents) test plates
10:30	Coffee Break
10:45	Riboflavin spray device coverage test using 3 different spray devices
12:00	Presentation by fluid dynamics expert on Hygienic Design
12:30	Demonstration of Advisim 3D Model (Virtual Cleaning Simulation)
12:45	Lunch in Alfa Laval Site Restaurant
13:30	Factory Tour
14:15	Test Plate - Yoghurt trials with 3 different spray devices
15:00	Water Break Free Coupon Test - Clean 2B, Clean Electro-polished and Dirty Coupon
15:15	PlusClean® - Demonstration of under agitator cleaning
15:30	Coffee Break
15:45	TOC Swabbing Demonstration with Jamie Thompson – Supported by Insatech representative (TOC instruments).
16:30	Closing Remarks/Feedback walk through to Site reception
16:45	Transfer form Alfa Laval to the Comwell Kolding Hotel

Alfa Laval's Application & Innovation Centre, Kolding, Denmark
Venue for the Practical Day

Additional Information

PPE: Personal protective equipment, including safety shoes, will be provided, but delegates are allowed to bring their own safety footwear if they so wish.

Factory Address: Alfa Laval Kolding A/S, Albuen 31, DK-6000 Kolding, Denmark.

Click here to view Factory location (Google Maps)

BOOKING DETAILS: Cleaning & Cleaning Validation - 23, 24, 25 & 26 April 2024 - In-Person Training Course - Comwell Kolding Hotel, Denmark

How to book on this course:

- The simplest and quickest way is to book online. Please click on the link below to visit the web page for this course, or
- Print out this page, complete the form below by hand and return by fax, email or post.

CLICK HERE TO BOOK ONLINE

Fax: +44 (0)1625 800833 **Tel: +44 (0)1625 500833 or +44 (0)1270 760882** **E-mail: info@candvs.com**

Alternative Booking Form *('*' indicates required fields)*

***Booking Contact Name:**		
***Booking Contact E-mail Address:**		
***Booking Contact Telephone Number:**		
***Company Name & Address:**		
***Billing Address** *(Only complete if different to Company Address)*		
***Delegate Information:** *Please let us know if any delegate has any special dietary requirements by emailing the information to info@candvs.com, or by using the space below.*	**Delegate Name(s):**	**Delegate Email Address:**
Company VAT Number (or Sales Tax Number) – *EU Countries Only		
***Method of payment, e.g. card or invoice payment**		NOTE: For card payments by telephone, please ensure you have entered your telephone number above and we will contact you. Alternatively, call +44 (0)1625 500833 to make your payment.
Payment Reference		NOTE: For invoice payments we will need a valid reference number or purchase order number to fully confirm the booking.
***Total Fees Due** **£3,100 [GBP]** per delegate		NOTE: If your finance centre or delegates are based in the United Kingdom (UK), or delegates are booking as private individuals (non-company), the course fee will be subject to an additional 20% UK VAT charge (**£3,720** per delegate including UK VAT). For EU Countries where finance centres and delegates are NOT based in the UK, VAT will be ZERO RATED under the reverse charge rule. For non-EU countries and non-EU delegates, VAT is not applicable.

Booking Terms & Conditions

Booking Confirmation

Bookings will only be confirmed upon payment by credit card, or in the case of invoice payment (bank transfer), upon receipt of a valid purchase reference number.

Cancellation by Delegates

Cancellation refunds will depend on how long before the course start date the cancellation is received. The following refund structure will apply:

- More than 28 days will incur a cancellation fee of £200 GBP per registration and qualify for a refund of the remaining course fees
- Between 28 days and 14 days notice will qualify for a 75% refund
- Between 14 days and 7 days notice will qualify for a 50% refund
- No refund will be given for cancellations received with less than 7 days notice
- Substitutions for registered delegates will be accepted without notice, but for administration purposes, we kindly ask you to let us know as soon as you can.

Cancellation by CVS

CVS does not issue refunds for delegates unless:

- We have cancelled a course
- We have changed the time, or date of a course

If we do cancel or reschedule an event, CVS is not responsible for any costs incurred by delegates. Only the course fee will be refunded.
Please be assured that we are not in the habit of cancelling events. We only cancel events in exceptional circumstances.

Speaker/Presenter Changes

We reserve the right to change a speaker without notice.

Course Fee & VAT Liability

For the majority of participating countries, VAT will be ZERO rated. However, for companies whose finance centre is based in the United Kingdom (location where invoices are managed) the indicated course fee will be subject to an additional 20% UK VAT charge. Also, anyone booking as a private individual (not through a company) will be charged UK VAT. CVS has to charge this by law.
All participating EU based companies (based on the site location), must provide CVS with a valid VAT/Sales Tax reference number, in order for the booking to be completed. CVS is required by law to collect this information.

Liability

CVS reserve the right to cancel or reschedule any course and/or change presenters.
Please be advised that CVS is not responsible for any airfare and/or hotel penalties or other travel charges that delegates may incur.
CVS does not take responsibility for ensuring the well being of delegates during their travel to and from the venue or at any time during their stay at the residential location. We will however do everything within our power to help ensure delegates remain safe and well during the course and related activities.
Where government intervention, military activities, natural phenomenon, strikes or any other circumstances make it impossible or inadvisable to run the course at the designated time and place, the delegate shall waive any claim for damages or compensation except the amount paid for registration after the deduction of actual expenses incurred by CVS in connection with the course that the delegate has registered for and there shall be no future liability on the part of either party.

CLICK HERE TO VIEW OUR PRIVACY POLICY