



Compliance & Validation Services

Presents a 3-Day Live Online Training Course on:

# Temperature Controlled Storage & Transportation of Pharmaceuticals (Includes Cold Chain)

20, 21 & 22 May 2025

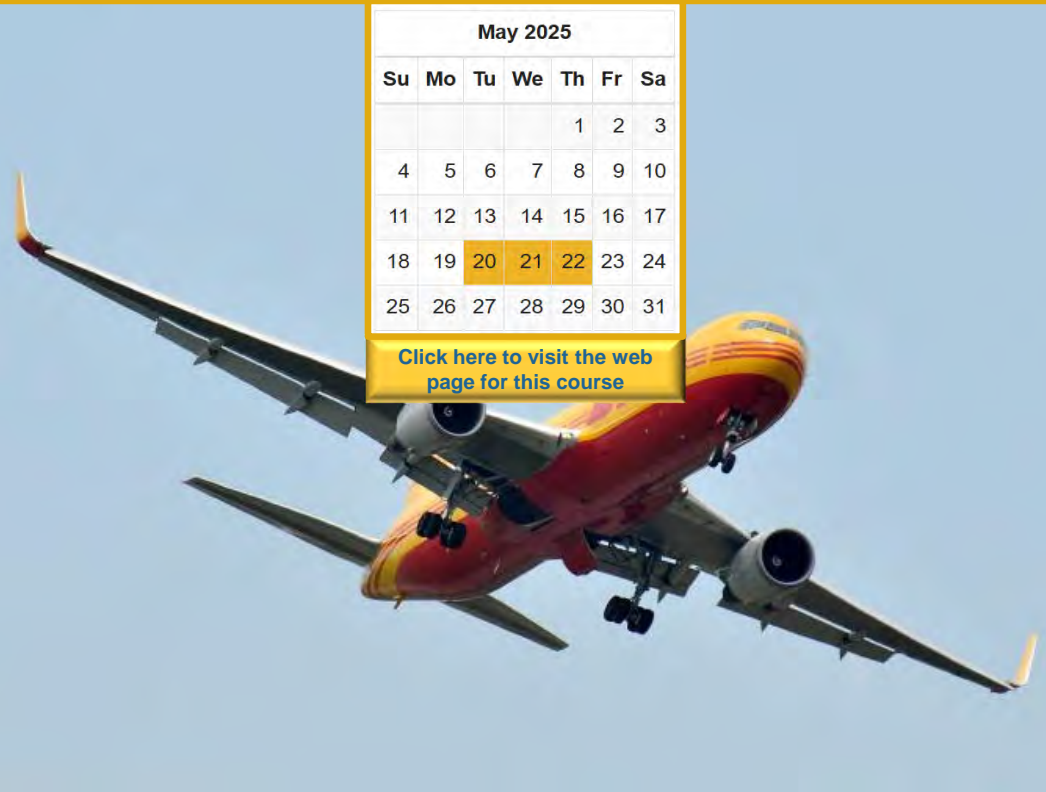
Live Online Training Course



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Click on the image if you wish to visit their web-site

May 2025						
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[Click here to visit the web page for this course](#)



## Fridges, Freezers, Incubators, Cold Stores, Environmental Chambers, Controlled Temperature Warehouses, Passive Shipping Systems, Active Containers and Vehicles System Design:

- Importance of understanding your operating environments
- Importance of getting your requirements correct (URS) and understanding regulatory guidance
- Examples of systems/equipment available and comparison of performance
- Designing systems that will reliably perform correctly (reducing risk by good design)
- Equipment selection and explaining how systems operate
- Monitoring and mapping equipment, including latest technology
- Analysing risk and mitigating/reducing it by design and correct equipment selection

### Qualification:

- Checking and testing required at various stages of qualification (e.g. DQ, IQ, OQ and PQ)
- Sensor/data logger selection and number and location of sensors (risk assessments and example location/placement maps) and relating instrument uncertainty to acceptance criteria
- Duration of studies for various systems and examples of approaches used, including requirements for empty and loaded state mapping (OQ & PQ)
- Reviewing alarm range, monitoring probe positions, control set points and monitoring/mapping data correlation against qualification data
- Data management and report writing
- Approach for mapping of existing facilities (includes facility risk assessments)

### Operation:

- On-going Risk Management, Continuous Improvement and performance review
- Managing change and requalification requirements,
- Reuse of transit containers and monitors (management and inspection requirements)
- Evaluating and reporting the temperature data and applying good data management
- Managing non-conformance and the use of Mean Kinetic Temperature (MKT)

This live, online training course covers typical life-cycle approaches to the design, qualification and operation of temperature-controlled storage and transportation systems, facilities and equipment. Systems, facilities and equipment have been placed into logical groups and attendees will be taken through their respective life-cycle (design, qualification/validation and operation). The course aims to cover the common and latest systems involved in the storage and transportation of drug products. It includes detailed information concerning how to map internal conditions across the spectrum of storage and transportation conditions used in the pharmaceutical industry. Also covered, are the wide range of instrumentation available for monitoring and mapping and how the placement of monitoring probes can be linked to/integrated into the mapping exercises undertaken as part of the validation life-cycle. The potential adjustment of upper and lower limits for storage conditions, to allow for instrument uncertainty, will be covered as part of the instrumentation presentation. The course will also focus on operational considerations for each system/facility/equipment group, covering areas such as ongoing risk management, continuous improvement, data reporting/management and dealing with non-conformance, e.g. temperature excursions. There will be multiple interactive exercises to break up the presentation material and reinforce learning throughout the course.

### 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.



**Richard Peck, Managing Director, RP Pharma Consulting Ltd:**

Richard has worked in the Life Sciences industry for over 20 years, and has spent the past 15 within the temperature-controlled supply-chain sector. In this time, he has worked for several major pharmaceutical companies including GSK, Wyeth and AstraZeneca, and a start-up Biotech, Clover Biopharmaceuticals. He also spent a number of years working for several leading suppliers of both single-use and reusable passive temperature-controlled shipping systems, and datalogging technologies. Richard provides consulting services and training on all aspects of Good Distribution Practice (GDP), storage & transportation qualification including thermal mapping, and is an active Responsible Person (RP).



**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.

### Who Should Attend

Individuals to benefit from attending this course include anyone involved in the management, operation, engineering, quality assurance and validation of fridges, freezers, cold stores, cold boxes, incubators, warehouses/intermediate storage facilities and temperature-controlled vehicles / temperature-controlled shipping systems. The course will also benefit people involved in distribution management of pharmaceutical products/materials. On leaving the course attendees will: be equipped with the latest regulation and guidelines; have a broad and detailed understanding of the design, construction and qualification of storage and distribution systems; be able to apply and share their new knowledge; improve their individual effectiveness; and hopefully look back on an interesting and enjoyable experience.

### Online System & Course Fees

We use industry standard online meetings software platforms to run our live online training courses. Once we have received your booking, you will be contacted by email with details on how to join each day of the course. Please note that we do not record our courses.

**Course fees are £1,750.00 (GBP) per attendee.**  
(See Page 4 for further details on fees/bookings)



Day 1 (Tuesday 20 May 2025)	Day 2 (Wednesday 21 May 2025)	Day 3 (Thursday 22 May 2025)
<p><b>Start: 08:00 London/Dublin; 09:00 Berlin/Amsterdam (CET)</b></p>	<p><b>Start: 08:00 London/Dublin; 09:00 Berlin/Amsterdam (CET)</b></p>	<p><b>Start: 08:00 London/Dublin; 09:00 Berlin/Amsterdam (CET)</b></p>
<p><b>Introduction to Temperature Controlled Storage &amp; Distribution</b> <i>[Richard Peck]:</i></p> <ul style="list-style-type: none"> <li>• Why do we need to control Storage &amp; Distribution temperature?</li> <li>• Consequences of exceeding temperature limits (upper and lower)</li> <li>• Overview of key regulations and guidance</li> <li>• Understanding your storage/distribution equipment, systems and processes                             <ul style="list-style-type: none"> <li>• The importance of identifying, evaluating, ranking and reducing/mitigating all risks within your manufacturing, storage and distribution chain</li> </ul> </li> <li>• Understanding external climatic challenges for both storage and distribution</li> <li>• Importance of ensuring storage and distribution are integrated into your quality risk management system</li> </ul>	<p><b>Temperature and Relative Humidity Mapping and Monitoring</b> <i>[John Welbourn]:</i></p> <ul style="list-style-type: none"> <li>• Temperature and humidity sensor selection (types available and their relative performance)</li> <li>• Sensor calibration and understanding instrument uncertainty and how/when acceptance criteria should be adjusted based on uncertainty values (also linking data from monitoring/mapping probes to the control probe)</li> <li>• Typical systems used for mapping and permanent monitoring</li> <li>• Different type of systems currently available, e.g. wired or wireless</li> <li>• Advantages and disadvantages of different types of systems</li> <li>• Load monitoring devices</li> </ul>	<p><b>Qualification of Passive Temperature Controlled Transportation</b> <i>[Richard Peck]:</i></p> <ul style="list-style-type: none"> <li>• Typical user requirements</li> <li>• Overview of qualification phases and requirements</li> <li>• Understanding and simulation of environmental challenges using test chambers                             <ul style="list-style-type: none"> <li>• Ambient Temperature Profiles</li> <li>• Shipping lanes</li> </ul> </li> <li>• Stress testing</li> <li>• Temperature studies and sensor locations for thermal OQ testing</li> <li>• Bracketing</li> <li>• Collecting shipping lane data</li> <li>• Simulation modelling</li> </ul>
<p><b>Fridge/Freezer/Incubator/Environmental Chamber Design</b> <i>[Mike James]:</i></p> <ul style="list-style-type: none"> <li>• Importance of getting your requirements correct and the use of risk assessments at an early stage</li> <li>• How refrigeration systems work and how they are utilised in different types of refrigerators/freezers (gravity versus fan ventilated units, ultra low temperature and cryogenic storage systems)</li> <li>• Fridges and freezer selection                             <ul style="list-style-type: none"> <li>• Typical examples of what is available and election criteria</li> <li>• Pros and Cons and risks associated with various types</li> <li>• Risk reduction by design</li> </ul> </li> <li>• Incubator types available, selection criteria and typical performance</li> <li>• Types of environmental chambers (temperature and relative humidity controlled), selection criteria and performance</li> </ul>	<p><b>Passive Shipping 'Box' Demonstration</b> <i>[Richard Peck]:</i></p> <ul style="list-style-type: none"> <li>• Components of different types passive containers</li> <li>• How the packs are assembled and key aspects of the system explained</li> <li>• Addition of monitoring probes</li> </ul>	<p><b>Qualification of Active Temperature Controlled Transportation</b> <i>[Richard Peck]:</i></p> <ul style="list-style-type: none"> <li>• Understanding variable parameters, e.g. climate and transport system complexity</li> <li>• Use of large environmental chambers</li> <li>• Typical qualification testing, including example probe locations</li> <li>• Qualification of temperature-controlled vehicles using a family approach, based on vehicle equivalency, a percentage of mapping studies, in-transit load monitoring and in-transit storage space monitoring</li> <li>• Use of accurate simulation software to support qualification</li> </ul>
<p><b>Design of Medium to Large Cold Stores and Controlled Temperature Warehouses/Stores</b> <i>[Mike James]:</i></p> <ul style="list-style-type: none"> <li>• Specifying requirements and initial risk assessments</li> <li>• Design of modern stores, e.g. the importance of effective air distribution to prevent temperature stratification and risk reduction by good design</li> <li>• Material flow types</li> <li>• Door systems - avoiding infiltration of warm or cold air</li> <li>• Modifications to existing, possibly non-compliant stores (risk reduction)</li> <li>• Challenges/advantages of automated warehouse systems</li> </ul>	<p><b>Qualification/ Validation of fridges, freezers and incubators (small units)</b> <i>[John Welbourn]</i></p> <ul style="list-style-type: none"> <li>• Types of checking and testing required at various stages of qualification, e.g. DQ, IQ, OQ and PQ (+ URS considerations)</li> <li>• Deciding on the type of sensor/data logger to use</li> <li>• Determining the number and location of sensors</li> <li>• Risk assessments and requirements for empty/loaded mapping</li> <li>• Typical sensor location/placement maps and load sensors</li> <li>• Typical tests carried out and example door open challenge test data (interpretation and acceptance criteria)</li> <li>• Mapping study duration (OQ/PQ) - empty and loaded conditions</li> </ul>	<p><b>Operational Considerations for Smaller Units</b> <i>[John Welbourn]:</i></p> <ul style="list-style-type: none"> <li>• On-going RM and continuous improvement</li> <li>• Controls required</li> <li>• Facility (housing the units) and unit maintenance and management</li> <li>• Managing change and requalification requirements</li> <li>• Handling of data and dealing with non-conformance</li> <li>• Performance and qualification reviews/monitoring</li> </ul>
<p><b>Design of Passive Shippers</b> <i>[Richard Peck]:</i></p> <ul style="list-style-type: none"> <li>• The influence of thermodynamics on packaging performance</li> <li>• Modes of heat transfer and how they apply to packaging design</li> <li>• Insulation materials, their properties and performance comparison</li> <li>• Examples of cooling elements and their properties and performance, e.g. phase change materials</li> <li>• Examples of passive shippers (further information, including a practical demonstration will be given on Day 2.</li> </ul>	<p><b>Qualification/ Validation of Warehouses and Large Cold Stores</b> <i>[Mike James]:</i></p> <ul style="list-style-type: none"> <li>• Types of checking and testing required at various stages of qualification, e.g. DQ, IQ, OQ and PQ (+ URS considerations)</li> <li>• Risk assessments</li> <li>• Example sensor location/placement maps</li> <li>• OQ and PQ durations                             <ul style="list-style-type: none"> <li>• Examples of approaches used, including example sensor location maps</li> </ul> </li> <li>• Requirements for empty and loaded state mapping</li> <li>• Alarms, control set points and approaches for installing a permanent monitoring system based on qualification data.</li> <li>• Data management and report writing</li> <li>• Approach for mapping of existing facilities, using a real-life recent example</li> </ul>	<p><b>Operational Considerations for Warehouses and Cold Store Facilities</b> <i>[Mike James]:</i></p> <ul style="list-style-type: none"> <li>• On-going risk management (RM) and continuous improvement</li> <li>• Controls required</li> <li>• Facility/system maintenance and management</li> <li>• Managing change and requalification requirements</li> <li>• Mean Kinetic temperature (MKT) and when it can and when can't be used to support storage conditions</li> </ul>
<p><b>Design of Active Transportation</b> <i>[Richard Peck]:</i></p> <ul style="list-style-type: none"> <li>• Principle types of vehicles, e.g. temperature-controlled vehicles, aircraft (active containers), ships (REEFERs) and rail (active containers)</li> <li>• Insulation, airflow and thermal integrity</li> <li>• Key components and areas of risk, e.g. conductive pathways and poor seals</li> <li>• Monitoring systems: Location of sensors, recording intervals, calibration, and retention of data</li> <li>• Upper/lower temperature limits and alarms (visual, audible, SMS/email alert)</li> </ul>		<p><b>Operational Considerations for Passive and Active Shipping Containers/Vehicles</b> <i>[Richard Peck]:</i></p> <ul style="list-style-type: none"> <li>• Vendor quality management</li> <li>• Managing single use passive systems, e.g. using effective delivery inspection</li> <li>• Storage and conditioning of media</li> <li>• Control of packing time limits and preconditioning of media</li> <li>• Control over winter and summer configurations</li> <li>• Management of shipping lanes and retrieval of transit data</li> <li>• Requalification requirements, e.g. after design change (enhancements)</li> <li>• Trailer/REEFER management (may be part of a family approach)</li> </ul>

## How to book on this online training course:

- The simplest and quickest way is to book online. Please visit/return to our web-site, find the online course you are interested in and follow the simple instructions (link included below), 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](mailto:info@candvs.com)

### Alternative Booking Form (<sup>“\*</sup> indicates required fields)

### Booking Terms & Conditions

<b>*Booking Contact Name:</b>		
<b>*Booking Contact E-mail Address:</b>		
<b>*Booking Contact Telephone Number:</b>		
<b>*Company Name &amp; Address:</b>		
<b>*Billing Address</b> <i>(Only complete if different to Company Address)</i>		
<b>*Attendee Information:</b>	<b>Attendee Name(s):</b>	<b>Attendee Email Address:</b>
<b>Company VAT Number (or Sales Tax Number) – *EU Countries Only</b>		
<b>*Method of payment, e.g. card or invoice payment</b>	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.	
<b>Payment Reference (if available)</b>	NOTE: For invoice payments we will need a valid purchase order number to fully confirm the booking.	
<b>* Total Fees Due</b> <b>£1,750 [GBP]</b> per attendee	NOTE: If your finance centre or attendees are based in the United Kingdom (UK), or attendees are booking as private individuals (non-company), the course fee will be subject to an additional 20% UK VAT charge ( <b>£2,100</b> per attendee including UK VAT). For EU Countries where finance centres and attendees are NOT based in the UK, VAT will be ZERO RATED under the reverse charge rule. For non-EU countries and non-EU attendees, VAT is not applicable.	

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

- More than 7 days will qualify for a refund of the course fee paid after the deduction of actual expenses incurred by CVS in connection with the course that the attendee has registered for and there shall be no future liability on the part of either party.
- No refund will be given for cancellations received with less than 7 days' notice.
- Substitutions for registered attendees from the same company 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 attendees 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 attendees. 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 / EEA 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.  
CVS will not provide a refund for an online course if an attendee cannot use the online system, because of local IT restrictions/issues.

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