



Presented by
Management Forum

Metered Dose Inhaler (MDI) Technology

27-28 April 2026
+ 7-8 October 2026

A comprehensive overview of MDIs including development, manufacture, regulation and market potential



Format:
Live online



CPD:
12 hours for your records



Certificate of completion

Course overview

Dive into the world of metered-dose inhaler (MDI) technology with this interactive and insightful course designed to cover its past, present, and importantly the future, of MDIs. Whether you're new to the field or seeking a valuable refresher, this course offers a deep understanding of why MDIs have been and continue to be, a key delivery platform for the treatment of respiratory diseases, why and how MDIs work and the economic, regulatory and environmental pressures driving change in MDI technology.

You'll gain clarity on how these environmental, regulatory, and economic pressures are driving MDI development, manufacturing processes, intellectual property, equipment choices, and quality standards. With expert-led sessions covering testing and analysis, manufacturing processes and equipment, fault investigation, regulatory expectations in the 2020s and beyond, you'll leave with practical knowledge you can apply right away. Plus, benefit from exercises and workshops and dedicated time for discussions to tackle your specific challenges with a seasoned industry expert.

Benefits of attending

- **Learn** about metered-dose inhaler technology, how and why it works (and sometimes it doesn't!) and how understanding the technology, provides insight in to manufacture, development and testing of MDIs
- **Gain** clarity on the key role that MDI technology has and will play in the global provision of effective healthcare
- **Understand** the ever evolving, regulatory, environmental, and economic pressures shaping the development and manufacturing landscape for MDIs
- **Learn** how to identify issues and root causes, from an extensive portfolio of case histories, as well as having the opportunity to discuss current issues
- **Explore** the regulatory framework, requirements and current best practices, recommended for inhalation product approval

Who should attend

- Respiratory pharma professionals who need to understand MDI technology and its opportunities
- Medical device professionals new to working in the area of MDIs or those who need a refresher
- Development and regulatory professionals, with a development or product portfolio including MDIs, who need an understanding of future demands
- Medical device business development managers
- Respiratory professionals in R&D
- Medical device manufacturers working in the respiratory market

Programme

Day 1

Therapeutic targets

- A brief history of inhalation and MDI therapy
- The lung as a target
- Respiratory diseases
- Systemic delivery
- Therapeutic considerations
- Life limiting Vs Life threatening

Markets past, present and future

- Geographic - Challenges and opportunities
- Disease prevalence
- Economic considerations
- International demand
- Modelling opportunity (what to consider)

MDI Technology

- How and Why MDIs work
- MDI Formulation approaches
- The elements of an MDI
- Key performance characteristics
- MDI Feature/ Functions compared to other dosage forms
- Add-On technologies for MDIs
- Are there limits to MDI technology?

Workshop I

- Ranking of competitive technologies for different opportunities

MDI Manufacture

- Key Process steps (space, services, staff)
- Environment (Controls)
- Equipment (Scale, design, options etc.)
- Process controls & Inspection
- Safety and Quality
- Quality by Design (QbD) approaches
- Manufacturing and cost

Day 2

MDI Testing

- What and when to test
- How to test
- How not to test
- Demonstrating equivalence

Regulation of MDIs

- Legislation
- Regulatory guidance
- Consensus standards
- Pharmacopoeial requirements

Developing an MDI

- The MDI as a drug-device combination product
- Applying Design Controls
- Human Factors & Usability
- Risk management

Workshop II

- SWOT MDI vs multi-dose DPI
- SWOT MDI vs soft mist inhaler

MDIs and the environment

- Inhaler Carbon Footprint
- Environmental pressures on MDIs
- Alternate propellants (Alternate problems?)
- Alternate design approaches
- Recycling - Technical and patient considerations

The future of the MDI

- Summary of the Course
- What opportunities does the future hold?
- Workshop



David Howlett

In 2003 David established PharmaDelivery Solutions Ltd as a specialised consultancy service in the field of drug delivery combination products (especially respiratory) device technology. This has led to involvement in projects with focus in pulmonary, nasal and other delivery routes, with an international client base. Much of the activity of PharmaDelivery Solutions Ltd is focused in the area of development programme support, regulatory GAP analysis and generation of documentation supporting development and test programmes, together with data review and contingency evaluation.

David has over 35 years experience in the development, industrialization and approval of inhalation drug delivery systems, combination products and medical devices.

PharmaDelivery Solutions Ltd has provided input ranging from GAP analysis and comment to complete remedial implementation in areas including

- Design Control
- Risk Management
- Materials strategies
- Regulatory documentation
- Technical reviews and opinion

In addition to activities supporting commercial organizations, David has been involved in the following roles;

Honorary Teaching Fellow in the School of Pharmacy and Pharmaceutical Sciences at the University of Manchester and is author/ tutor for the Pharmaceutical Industry Advanced Training (PIAT) MSc module on Inhalation dosage forms.

A UK national expert representing the British Standards Institute on ISO TC84 developing new international standards for pulmonary and nasal delivery devices syringes and catheters.

David has also worked with the United Nations and various national governments to develop and establish transition strategies from the use of CFC in Metered Dose Inhalers and to secure appropriate budgets from the Multi-lateral fund for the implementation of the Montreal Protocol in emerging markets around the world.

Course dates

27-28 April 2026

Live online

09:30-17:00 **UK (London)** (UTC+01)

Course code 16141

GBP **1,299** ~~1,499~~

EUR **1,819** ~~2,099~~

USD **2,087** ~~2,399~~

Until 23 Mar

7-8 October 2026

Live online

09:30-17:00 **UK (London)** (UTC+01)

Course code 16400

GBP **1,299** ~~1,499~~

EUR **1,819** ~~2,099~~

USD **2,087** ~~2,399~~

Until 02 Sep

How to book



Online:

ipi.academy/2415

Alternatively contact us to book, or if you have any queries:



Email:

info@ipiacademy.com



Phone:

[+44 \(0\)20 7749 4749](tel:+442077494749)

Discounts

- Booking more than one delegate on any one date qualifies for a **30% discount** on the second and subsequent places.
- Most events qualify for an **early booking discount** prior to 6 weeks before the course date. Be sure to check on our website, where the latest discounts will be shown.

Further information

Fee

The fee includes all meals and refreshments for the duration of the course (for venue-based courses) and a complete set of course materials (provided electronically). If you have any particular requirements, please advise customer services when booking.

Please note

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Terms and conditions

The rest of our terms, the event cancellation policy and the terms and conditions are on our website, please visit ipi.academy/content/terms-and-conditions

Reviews



The material was very informative and presented by David in a way that was easy to understand, with good diagrams and analogies that helped with the understanding. Good balance of the technical aspects, history and options for the future.



Simon Barton
Director - Device CoE
AstraZeneca
Feb 26 2024



Mr. David has an amazing teaching skill, making complex content accessible (even for a non-native speaker as I am).



Victor Panzeri
R&D Analyst
Eurofarma Laboratórios SA
Mar 27 2023



I was hoping for further improvement of my understanding of the matter of inhalational drugs, especially MDI, and this expectation was fully met. The speakers had superb knowledge of the subject, vast experience and a great sense of humour.



Robin Boehm
Team Leader Regulatory Submissions - New Products
STADA Arzneimittel AG
Sep 18 2019



In general good for content and presentation.



Celestino Ronchi
President
Delim Cosmetics & Pharma s.r.l.
Feb 20 2019

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ALEKSANDRA BEER

Tel: +44 (0)20 7749 4749

Email:

inhouse@ipiacademy.com



YESIM NURKO

Tel: +44 (0)20 7749 4749

Email:

inhouse@ipiacademy.com



Harry ALTAMONT

Tel: +44 (0)20 7749 4749

Email:

inhouse@ipiacademy.com



IPI Academy

IPI Academy is a training initiative of Falconbury and Management Forum; leading providers of industry training for over 30 years, based in the UK.

10-12 Rivington Street
London EC2A 3DU

ipi.academy

Tel: +44 (0)20 7749 4749

Email: info@ipiacademy.com