

TRAINING COURSE

How to Develop HPLC Methods – Part 1

Learn how to select appropriate method conditions and perform suitable investigative experiments to obtain a set of method parameters which enables the desired separation for mixtures of analytes. In doing so you will learn how HPLC methods work even if you never need to develop a new method. The course will enable you to take a strategic approach to developing HPLC methods with an understanding of the factors which can be adjusted to manipulate the retention time of analytes.

Learning Objectives:

You will be able to:

1. Define the objectives for the development of a HPLC analytical method.
2. Effectively assess all the available relevant information relating to the desired method, e.g. pKa of the analyte.
3. Select and prepare a suitable sample or samples to be used for the method development.
4. Select suitable scouting conditions to find a suitable column and mobile phase system.
5. Optimise the chromatographic conditions to result in the best possible separation.

This course focuses on reversed phase mode separations.

Attendees are invited to bring along any real life examples that they would like advice on during the training. These may be discussed during group exercises, or, where intellectual property is an issue, privately with the trainer.

Delivery options for this course:

This course is available either as an open enrolment option, where anyone can book onto the course, or as an in-house option where the course is run for employees in a specific company (this may include customisation to meet specific requirements).

In both cases the delivery may be by live online training, where the trainer delivers the course remotely using the internet, or in a classroom based setting, where the trainer and attendees are together in the same room.

The full schedule for open enrolment courses and more information on both these

delivery options is available on the [MTS website](#).

This course is suitable for:

Those who have experience of running HPLC methods and now want to learn how to develop new methods or just to understand how they work.

Included in the course fees:

- Comprehensive course hand-outs - The training book is provided as a hard copy for both live online and classroom based options. For live online training, the book is posted to the attendee prior to the event.
- Certificate of Attendance
- Optional post training assessment (accessed in e-MTS) which leads to a Certificate of Training.
- Access to training materials via e-MTS – For live online training, all course materials are accessed through e-MTS. For classroom based courses, the post training assessment and useful resources are accessed via e-MTS.
- Post training support – Attendees can contact the trainer with questions that may occur when they apply their learning to real life situations.

Course Agenda & Outline

This is a one day course. The agenda for the live online training option is provided. The time zone is typically based on GMT (UTC) from November to March, and BST (UTC+1) from April to October. For in-house training it is based on customer preference. The course runs from 09:00 to 15:00 but there is an optional additional session from 15:15 to 16:15 where the trainer is available to answer questions.

Course Agenda & Outline – Live Online Training Option

Timings (approximate)	Content
0900 to 1030	Introductions Common strategies for method development Introduction to 5 step strategy Step 1: Setting suitable objectives for method development
1030 to 1045	<i>Refreshment break</i>
1045 to 1130	Step 2: Assessing all available information e.g., Molecular structure, size, polarity, pKa, etc. Step 3: Selecting suitable samples for method development
1230 to 1315	<i>Lunch</i>
1315 to 1500	Step 4: Performing scouting experiments to select suitable initial conditions Stationary phase and mobile phase selection Step 5: Optimising the method to define method parameters which achieve the desired separation
1500 to 1515	<i>Refreshment break</i>
1515 to 1615	<i>Optional session</i> Q&A

TRAINING COURSE

How to Develop HPLC Methods – Part 2 (for Challenging Separations)

Learn how to implement strategies to achieve satisfactory separation for ‘complex’ samples and to find solutions for difficult HPLC separations in order to develop robust and fit for purpose HPLC methods.

Although designed as a follow-up to the course ‘*How to Develop HPLC Methods – Part 1*’, it is not a prerequisite. This course is suitable for learners who feel confident that they are familiar with all the content detailed for the course ‘*How to Develop HPLC Methods – Part 1*’.

Learning Objectives:

You will be able to:

1. Understand why some separations can be challenging and identify potential problem separations.
2. Apply strategies to achieve satisfactory separations for ‘complex’ samples with respect to:
 - ✓ Optimising gradient methods,
 - ✓ Sample preparation,
 - ✓ Detection methods,
 - ✓ Retaining very polar analytes,
 - ✓ Selecting columns,

This course focuses on reversed phase mode separations.

Attendees are invited to bring along any real life examples that they would like advice on during the training. These may be discussed during group exercises, or, where intellectual property is an issue, privately with the trainer.

Delivery options for this course:

This course is available either as an open enrolment option, where anyone can book onto the course, or as an in-house option where the course is run for employees in a specific company (this may include customisation to meet specific requirements).

In both cases the delivery may be by live online training, where the trainer delivers the

course remotely using the internet, or in a classroom based setting, where the trainer and attendees are together in the same room.

The full schedule for open enrolment courses and more information on both these delivery options is available on the [MTS website](#).

This course is suitable for:

This one day course is ideal for those who have experience of developing HPLC methods but want to increase their knowledge to deal with more challenging separations.

Included in the course fees:

- Comprehensive course hand-outs - The training book is provided as a hard copy for both live online and classroom based options. For live online training, the book is posted to the attendee prior to the event.
- Certificate of Attendance
- Optional post training assessment (accessed in e-MTS) which leads to a Certificate of Training.
- Access to training materials via e-MTS – For live online training, all course materials are accessed through e-MTS. For classroom based courses, the post training assessment and useful resources are accessed via e-MTS.
- Post training support – Attendees can contact the trainer with questions that may occur when they apply their learning to real life situations.

Course Agenda & Outline

This is a one day course. The agenda for the live online training option is provided. The time zone is typically based on GMT (UTC) from November to March, and BST (UTC+1) from April to October. For in-house training it is based on customer preference. The course runs from 09:00 to 15:00 but there is an optional additional session from 15:15 to 16:15 where the trainer is available to answer questions.

Course Agenda & Outline – Live Online Training Option

Timings (approximate)	Content
0900 to 1030	Introductions Review of a 5-step strategy for HPLC method development with particular attention to reasons why some separations are 'challenging'
<i>1030 to 1045</i>	<i>Refreshment break</i>
1045 to 1130	Separation Theory Method development objectives: Strategies for maximising resolution in HPLC using retention factor, k' , selectivity, α , and efficiency, N . Optimising Gradient Methods Sample Preparation A general approach to sample preparation is provided with considerations regarding the most suitable technique.
<i>1230 to 1315</i>	<i>Lunch</i>
1315 to 1500	Detection Techniques Retaining Very Polar Analytes Selecting Columns
<i>1500 to 1515</i>	<i>Refreshment break</i>
1515 to 1615	<i>Optional session</i> Q&A