TRAINING COURSE

How to Troubleshoot HPLC

[Total Learning time = 5 hours]

Learn how to find solutions for problems encountered when running HPLC analysis by diagnosing symptoms and implementing appropriate preventative measures.

Learning Objectives:

1. Understand how HPLC works and the role of each component in a HPLC system.
2. Understand how problems can arise in the individual components of a HPLC system.
3. Implement measures which prevent problems occurring.
4. Diagnose and resolve problems associated with HPLC.

The course will enable you to go back to your lab with a full understanding of why problems may arise with your HPLC system and give you the skills and knowledge to both prevent and resolve those problems.

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.

The open enrolment option is delivered as a 1 day 'virtual' live online training event which is delivered over a 6 hour period, from 9am to 3pm, including breaks. There is an optional additional session from 3:15pm to 4:15pm where the trainer is available to answer questions, if desired.

The time zone is typically based on GMT (UTC) from November to March, and BST (UTC+1) from April to October.

The agenda is provided on (page 3) and the full schedule of dates is available on the MTS website, click here.

The in-house option may be delivered either in the live online format or in a classroom based format at your site. In-house training may include customisation to meet specific requirements.

This course is suitable for:

Those who have experience of using HPLC and now want to develop their skills further and prevent and troubleshoot problems.

For example:

- Analytical chemists in industry (the course is not specific to a particular industry)
- Researchers who need to use HPLC

Included in the course fees:

- Comprehensive course hand-outs - The training book is provided as an electronic copy (pdf) for both live online and classroom based options.
- Certificate of Attendance
- Optional post training assessment (accessed in e-MTS, our learning management system) which leads to a Certificate of Training.
- Access to training materials 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
Live Online Training Option

Timings (approximate)	Content
0900 to 1030	Overview of the HPLC system and how it works: Mobile phase – Solvents used for HPLC; strong and weak solvents for reversed phase and normal phase HPLC; use of buffers in mobile phase and the importance of pH control; isocratic and gradient mobile phase methods; preparation of mobile phases; premixing and online mixing compared.
1030 to 1045	*Refreshment break*
1045 to 1130	Mobile phase continued Mobile phase mixers – Low pressure and high pressure systems. Vacuum degasser – Mode of operation. Pumps – Reciprocating single piston pump design; pump seals and check valves; typical pump pressures and flow rates. Injectors – Preparation of test solutions; vials used for HPLC; six port injection valve design; typical injection volumes.
1230 to 1315	*Lunch*
1315 to 1500	Columns – Parameters used to describe columns, e.g., bonded phase, particle size, dimensions, etc.; Compression fittings for connecting columns and other parts of the HPLC system; guard columns and cartridges. Detectors – Detection techniques are reviewed with emphasis on UV detection. Common problems & preventative measures
1500 to 1515	*Refreshment break*
1515 to 1615	*Optional session* Q&A