



GC Method Development

For the experienced chromatographer, this course provides a step-by-step approach to method development. The course includes all of the crucial aspects of method development including; Column dimensions, phase type, inlet type and operating conditions, detector settings and optimisation along with sample preparation regimes.

Each aspect is discussed in detail supplemented by a host of real world separation examples and tutorial exercises to aid understanding.

Course Contents

Objectives

- Establishing method objectives
- Literature searching
- What is known?
- What needs to be known?

Sample Preparation

- Sample clean up
- Analyte extraction
- Solvent selection
- Optimising for sample type / application

Inlet, and Flow Rate Parameters

- The effect of split ratio of peak shape and quantitative Accuracy
- Investigating oven initial temperature
- Conversion into a splitless method
- Optimising purge on time
- Carrier gas choice and flow rate optimisation (van Deemter & Golay treatment)

Choosing a Column & Temperature

- Choosing the correct phase
- Effects of column geometry
- Solute stationary phase interactions
- Isothermal vs. Gradient operation
- Theory and development of Temperature gradients

Optimisation Strategies

- Measuring and Optimising
- Capacity factor, Efficiency, Resolution, Selectivity
- Resolution equation
- Developing effective methods
- Example method developments

Putting it all together!

- Developing a method for the separation of a complex mixture of compounds from scratch.



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