

# *Karl Fischer*

Moisture Analysis is of vital importance in assessing the quality of Raw Materials, In Process Control Samples and Finished Products. The Karl Fischer titration is the most widely used and universally applicable method for determining water content. The importance of this titration is underlined by the fact that it has been adopted both as an ASTM and DIN method as well as being incorporated in pharmacopoeias. Karl Fischer Analysis has proved to be of value for measuring the water content of a multitude of substances such as chemicals, foodstuffs, technical products and natural materials.

To ensure the correct result is obtained in Karl Fischer Measurement, all of the following issues need to be considered

- Method Validation
- Reagent Type
- Calibration
- Care & Maintenance
- Sample Preparation
- Instrument Validation
- Fitness for Purpose
- Burette Accuracy
- Control Parameters
- Sample Handling
- Side Reactions
- Solvent Types

Both the seminar and the workshop will deal with all these issues enabling participants to see at first hand the correct procedures to enable valid and accurate measurement to be carried out in a cost effective manner.

The seminar will cover how you can put all the issues raised into effect in your own laboratory. Both the seminars and workshops will be presented by a team of contributors with extensive experience in all aspects of Karl Fischer.

## *C O N T E N T*

### ◆ Theory of Karl Fischer

Methods of Water Detection, Method Evaluation, The Chemistry of Karl Fischer, Role of pH, GLP, The One and Two Component Systems, Sample Handling, Titre Determination.

### ◆ Liquids for Karl Fischer

Reagent Selection, Solvents, Choice of Standard, Stability, Accuracy, Uncertainty, Storage, Traceability.

### ◆ Validation & Calibration of the System

Linearity, Sensitivity, Limit of Detection, Ruggedness, Accuracy, Determination of Uncertainty, Care and Maintenance.

### ◆ Standardisation of the KF System

Documentation, Control Standards, Logbook Entries, Statistics, Calculation of Results, Parameters, Loss on Drying, Sample Preparation.

### ◆ Quality of the Analytical Result

Traceability, Accuracy, Uncertainty of Measurement, Calibration: The unbroken chain, Comparability, Primary Standards, Certified Reference Materials, Quality Control, Sampling Procedure.

### ◆ Applications

Samples at Elevated Temperature, Oil Samples, Use of an Oven, Running a Blank, Diluting your Sample in a Dry Solvent, Changing the Solvent, Solvent Mixtures, Effects of pH.

*Personnel*  
Quality Analysts  
Chemists  
Lab Supervisors  
Technicians  
Process Engineers  
Managers  
R & D Chemists  
Analytical R & D



## Karl Fischer Seminar & Workshop

### Programme

10.00	Introduction
10.20	Quality of the Analytical Result
10.40	Theory of Karl Fischer
11.10	Special Applications
11.40	Coffee
11.45	Workshop 1. Groups A, B, & C A- Validation & Calibration of System B- Standardisation/Type of Standard C- Special Applications
12.35	Reagents, Standards & Solvents for Karl Fischer Titration
1.00	Lunch
2.00	Workshop 2. Groups A, B & C to rotate
2.45	Workshop 3. Groups A, B & C to rotate
3.30	Conclusion and Questionnaire to be completed