Newsletter
LPD Lab Services
TEL: +44 (0)1254 676 074
One-Stop Shop for Industrial Process Problem Solving, Consulting and Routine Analysis

Welcome to the February 2025 edition of LPD Lab Services Newsletter

LPD Lab Services are the experts in materials, chemicals, technical engineering and scientific problem solving for products and manufacturing processes across all sectors within Quality Assessment, Facilities, Manufacturing, Engineering, Product and Process Development and Research. LPD Lab Services develop innovative and practical analytical solutions, as well as bespoke testing methods for in-process manufacturing, finished products and field failure, plus help develop new production processes, products and materials. Staff pride themselves resolving some fascinating and complex technical problems from across diverse product ranges and sectors of industry. The laboratory offers pragmatic scientific and engineering solutions, with timely response times and clear communications, which are all core to the company's business model.

This Edition at LPD Lab Services:

Wet Chemistry Techniques: A Timeless Approach to Precision and Accuracy

In today's rapidly evolving world of analytical chemistry, the term 'wet chemistry' might seem like a throwback to an earlier era of scientific discovery. However, despite the rise of modern instrumentation and techniques, classical wet chemistry methods continue to be highly valued for their accuracy, precision and versatility, as well as efficiency.

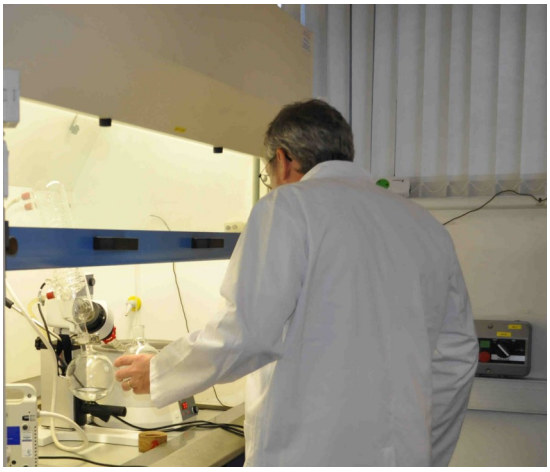
Wet chemistry refers to a collection of laboratory techniques that involve chemical reactions in liquid solutions. Unlike instrumental methods, which rely on sophisticated electronic and mechanical devices, wet chemistry typically involves reactions that can be observed and quantified by visual, colorimetric, or gravimetric means. These methods are often used for the analysis of specific components within a sample, allowing for a deep understanding of its chemical composition.

The key techniques in classical wet chemistry, and just a small part of what is offered at LPD Lab Services is titration, gravimetric analysis, precipitation reactions, colorimetry, and spectrophotometry. Titration is one of the most widely used wet chemistry methods and is discussed in a little more detail further on in this newsletter.

Why Classical Wet Chemistry Techniques Still Matter

Despite the advent of advanced instrumentation such as mass spectrometers and chromatographs, classical wet chemistry methods remain relevant for several reasons:

- Cost-Effective: Many wet chemistry techniques require minimal equipment and resources, making them accessible for both large and small laboratories. They are often more affordable than sophisticated analytical instruments.
- High Precision: Techniques like gravimetric analysis and titration are renowned for their accuracy and are often used as reference methods in validating new instrumental techniques
- No Need for Expensive Instruments: In many cases, wet chemistry techniques are ideal when expensive, high-tech instruments are unavailable or unnecessary for a given analysis.
- Flexibility: Classical wet chemistry can be adapted for a wide range of sample types and analysis needs. Whether in environmental monitoring, pharmaceuticals, food safety, process quality control, or forensic science, wet chemistry techniques can be customised to suit the specific requirements of different fields.



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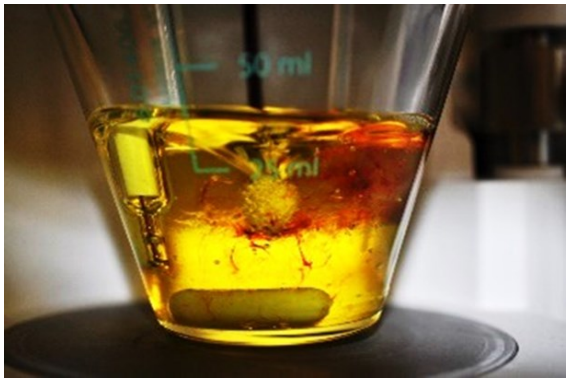
Titration / Titrimetric Analysis

The modern titration methods are useful techniques as they have several benefits over other analytical techniques, such as short analysis completion times and selective analyte analysis. Experienced analytical chemists at LPD Lab Services have designed in-house titrimetric methods to accurately measure the contents of water, acidity, alkalinity and selective free chloride. The application range of titrimetry spans multiple industries from construction and aerospace, to wastewater treatment and food analysis. The range of equipment at LPD Lab Services, knowledge of its chemists and management staff, allows the lab to be versatile in meeting its client's needs.



UKAS Methods

LPD Lab Services has held UKAS accreditation for almost 20 years. UKAS is the national accreditation body in the UK for labs; recognised by the government to assess organisations that provide certification, testing, inspection and calibration services. UKAS accreditation is an internationally recognised symbol of competence, ensuring that labs operate in line with global standards. Achieving UKAS accreditation is a rigorous process that assures customers that the lab's services are trustworthy, impartial, confidential and capable of producing reliable results.

The lab has several key measurements that are part of the UKAS scope. These include: These include:

Pb in Paint Measurements

Paint samples are weighed and acid digested to liberate any lead (Pb) that they may contain. This solution is then tested against certified reference standards for lead content on our Varian 55B AAS machine.

pH and conductivity

pH and conductivity of solutions can be measured with our accredited methods. pH is a measure of how acidic or basic a fluid is. It is normally represented on a scale of 0 to 14, with 7 being neutral. The conductivity of a solution is a measure of how well it conducts electricity. It is also a way to determine the concentration of ions in a solution and is often used to assess water quality.

UKAS TESTING
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