

Leading Analytical Instrumentation



Laboratory Instrumentation
Process Solutions
Installation
Support
Service

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Metrohm in Australia and New Zealand

Metrohm Australia and Metrohm New Zealand were incorporated in January 2018 in Australia and New Zealand. Formerly known as MEP Instruments (founded in 1999), the company serves the scientific industry in the region with first class products and services.

Represented in all major cities we aim to exceed your expectations when it comes to instrument quality, technical advice and strong after sales support.

Metrohm Australia and Metrohm New Zealand are proud to represent world-leading companies and their advanced technologies.

The Metrohm Group

Metrohm is one of the world's most trusted manufacturers of high-precision instruments for chemical analysis. Metrohm was founded in 1943 by engineer Bertold Suhner in Herisau, Switzerland.

Today, Metrohm is present in more than 80 countries with our own subsidiaries and exclusive distributors.

Headquartered in Herisau, Switzerland, the Metrohm Group also includes Metrohm Process Analytics and Metrohm Autolab, manufacturers of online analysers and instruments for electrochemical research, respectively.

Comprehensive solutions for chemical analysis

Metrohm systems for chemical analysis: We are the global market leader in analytical instruments for titration. Instruments for ion chromatography, voltammetry, conductivity, and stability measurement make our portfolio for ion analysis complete. Near-infrared and Raman spectroscopy is another, strongly growing segment of our portfolio.

We cater to both: the laboratory and the production floor

Process Analysers for automated analysis with titration, colorimetry, and ion-selective measurements

The techniques and methods for laboratory analysis are also available for automated in-process analysis.

Metrohm Process Analytics has created a wide range of solutions covering any needs in a variety of industries. The Metrohm Process Analytics brand embodies Metrohm's expertise in lab chemistry and Metrohm Process Analytics's decades of know-how in process analysis.

Analysers for electrochemical research

Metrohm Autolab and Metrohm Dropsens manufacture instruments for electrochemical research.

Raman spectroscopy

Metrohm Raman, based in Laramie, Wyoming (USA), develops and produces handheld Raman spectrometers which include novel, portable instruments for materials identification and verification.

The Metrohm Foundation

In today's fast-moving global economy, companies and brands are bought and sold on short notice – with unpredictable consequences for customers as well as employees. This won't happen to Metrohm. We have been owned by the Metrohm Foundation since 1982. The Metrohm Foundation, which does not have any influence on the company's business operations, sponsors students in the natural sciences, supports charitable and philanthropic purposes and, above all, safeguards the independence of the Metrohm company.



Retsch

Since 1915 Retsch has developed consistently within the fields of solids homogenisation and sieve analysis. Its unparalleled product lines have won Retsch the position of world leader in the market of milling and sieving equipment.

Retsch Technology

Based on the experience and know-how of the parent company Retsch GmbH and in cooperation with partners Jenoptik and Horiba, Retsch Technology offer highly innovative instruments for particle size and shape analysis.



BioSystems S.A. Food Quality

Spain-based BioSystems develops food quality equipment for enology and general food testing and provides a comprehensive array of top quality reagents for high interest parameters.

OMNIS - Titration for the future

Faster, safer, easier, smarter



Metrohm has reinvented titration: Discover OMNIS.

OMNIS is Metrohm's new, fully integrated titration system that caters to the needs of today's laboratories.

With OMNIS, Metrohm has gone beyond just creating a new titrator. They have put your requirements and your laboratory in the focus to develop a titration solution that simply offers more: faster results, more safety, more convenience, more efficiency – in short: performance on a whole new level.



A system with no limits

The OMNIS analysis platform is completely modular. This means that you can start with a system meeting your current needs. If the number of samples or analyses increase, you can easily install additional workstations, racks, measuring interfaces, burets, stirrers, pumps and other accessories.



Choose your control:
Touchscreen or OMNIS
software.



OMNIS Sample Robot L
Pick&Place with one pump
module, one Pick&Place
module with one Rod Stirrer
and 16 x 120 mL racks, from
above.

Titration on a whole new level

Fully integrated titration system



FASTER!

Get four times the output with OMNIS.

OMNIS is capable of performing four fully automated analyses at the same time. And when free capacities are identified, instead of being idle, the system continues with the subsequent analyses – automatically!

What's new

- Choose your control: Touchscreen or OMNIS software.
- Control OMNIS from everywhere
- Superior precision: buret with 100,000 increments per cylinder.
- "My Place": Personalise your user interface!
- Free your time: Automate measurement of up to 175 samples!
- Small footprint: Use your lab bench efficiently!
- System ready? Look for the green light!
- Fast reagent exchange: Just a matter of seconds!

SAFER!

Make your lab safer with 3S adapter technology.

We have made chemical handling easier and safer. The result is our patented Liquid Adapter with 3S Technology. 3S stands for:

- **Safe chemical handling**
Just snap the adapter onto the bottle cap and avoid contact with the bottle contents.
- **Secure information transfer**
The RFID chip in the bottle cap provides all relevant information on the content in the bottle.
- **Smart connection**
The reagent data is automatically transmitted to the titration system.

EASIER!

Truly intelligent, easy-to-use software

Experience a software solution designed for the future: intuitive, easy-to-use, and intelligent. Graphical representations of hardware components, drag-&-drop functionality, and context-sensitive operation make your work in the lab as easy and efficient as possible.

User guidance tailored to the users:

The OMNIS software is based on concepts, processes, and requirements of chemical laboratories. It thus offers an unparalleled user experience:

- Visual status indicators
- Alerts, system checks, and suggestions
- Freedom in editing templates for methods, processes, commands, etc.

SMARTER!

Modular concept: Add what you need when you need it

Expand your system as you go. Start with a single OMNIS titrator and add titration and dosing modules when needed. By including additional measuring interfaces and burets, you can have up to five different applications ready for use – even in parallel.

If sample throughput is increasing, add an OMNIS Sample Robot for fully automated titration. Thanks to modular work stations, racks, and pumps, OMNIS is capable of analysing four samples in parallel.

For titration online or at-line, check out page 15



Titration at its best

Intuitive, intelligent, sophisticated



Titrand – the proven workhorse

The 906/907 can perform SET, MET, DET, KFT and STAT titrations, as well as Ion Concentration Measurement. A sophisticated control algorithm, combined with the increased volume resolution of the Intelligent Exchange Units, guarantees highly precise results.

Touch control or mouse click?

Whether you operate the Titrand with touch control or via PC and mouse, appearance and operation are practically identical. The system's operator guidance is exemplary.

Intelligent dosing

The Titrand automatically reads from its chip all the data that it needs to carry out the titration properly (type of reagent, titer, last titer determination and much more).

Titration systems à la carte



Thermometric Titration

Thermometric titration is a very versatile determination method and an ideal complement to potentiometric titration. Suitable for any reaction that produces a sufficiently large temperature change in the sample solution.

- Ultrafast
- One sensor only for all applications

916 Ti-Touch reduced to the max!

The 916 Ti-Touch comes with a complete package system for Oil, Food/Wine and Salt/Chloride analysis.

- Maximum system integration, in-built colour touch-pad screen
- Uses patented Dosino technology
- Paperless PDF reports
- Direct connection to intranet and LIMS

Automation at the highest level

From titration to complex liquid handling



Automate your liquid handling tasks

The efficient Robotic USB Sample Processor XL carries out complex laboratory automation tasks in combination with a Titrand. When used with the revolutionary 786 Swing Heads its capacity can be increased, e.g. up to 100 samples of 75 mL each.

786 Swing Heads are true masters of precision

- They move pipetting tips to microtitre plates with millimetre accuracy or take up disposable filters
- High sample volumes
- High numbers of samples
- Working in parallel
- Automated liquid handling
- Automated pipetting, diluting
- Karl Fischer automation
- Automatic sample preparation
- Up to two external titration stations

Customised automation systems



Space saving automation

All-in-one 855 Titrosampler

The 855 Robotic Titrosampler is an automated titrator that combines the highest quality standards in titration:

- Based on the Titrand technology
- With top performance automation
- 40% less lab space
- Unique and outstanding
- Easy to handle and user friendly

Karl Fischer moisture analysis

Moisture determination from ppm to 100%

915 KF Ti-Touch KF titration reduced to the max!

The 915 KF Ti-Touch is the Karl Fischer version of Metrohm's stand-alone titrator for routine analysis. In this titrator the buret, stirrer, dosing system and operation module are cased in a single, compact unit. This is not only handy but also saves valuable benchspace.

- Contact-free reagent exchange
- USB Interface for printer, USB stick or barcode reader
- Direct access to intranet and LIMS
- Paperless PDF reports
- Colour touch-pad screen control with data storage



Karl Fischer automation and software solutions



KF automation system 851 with 874 Oven Sample Processor

The 851 KF Coulometer is perfect for large sample throughput. Together with the 874 Oven Sample Processor, it combines exceptionally well with the proven reliability of Metrohm sample changers.

Coulometric water determination: reliably and accurately

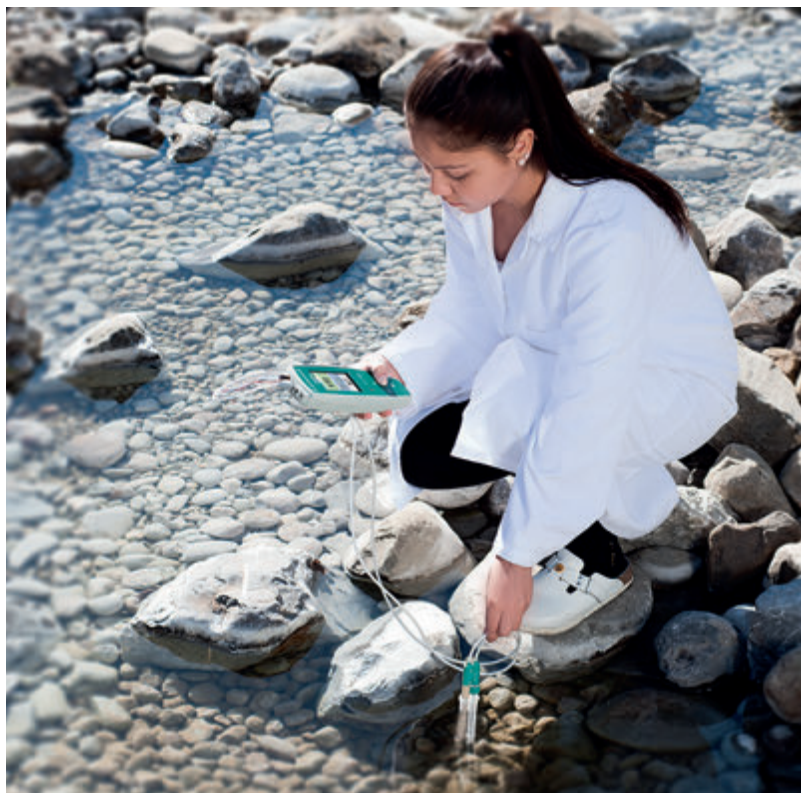


With the 917 Coulometer teaming up with the 915 KF Ti-Touch, Metrohm is now offering a compact, easy-to-use, and reliable titrator for any water content.

Like its volumetric counterpart, the 917 Coulometer is operated via an integrated touch-screen control unit and is capable of analysing water concentrations down to 0.001%. And to make operation even easier, the titrator will start the determination automatically when you add the sample.

pH, Ion and Conductivity Meters

Precision tools for everyday



Metrohm pH and ion meters designed for field, laboratory and plant

«Two-in-one» – for indoors and outdoors

These new Metrohm meters are «two in one»: precision instruments for measurements in the laboratory and robust companions for mobile use in the field and at the process line. Optional battery operation makes the new meters independent of a power grid. They can even be recharged on the road on the cigarette lighter with the use of an adapter.

Measuring on two channels at once

Parallel measurement of pH and conductivity with the 914 pH/Conductometer, parallel recording of two pH values with the 913 pH Meter. Moreover, both versions indicate the temperature(s) of the sample(s).

912 Conductometer, 913 pH Meter, 914 pH/Conductometer

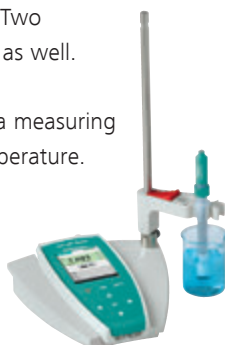


The **914 pH/Conductometer** shows you at a glance the pH value, the conductivity, and two temperature values. As a result of the two separate measuring inputs, conductivity and pH value can be measured in parallel, even in the same beaker.

With the **913 pH Meter**, you can measure two pH values and two temperature values simultaneously. Two separate measuring inputs are available here as well.

The **912 Conductometer** is equipped with a measuring input for conductivity, TDS, salinity, and temperature.

All versions of the new meters are equipped with a large colour display.



Electrode selection and maintenance

Maintenance and Care

The ABC of electrode care – get precise results and a long lifetime of your electrodes. Order your free DVD copy!

The **Metrosensor Catalogue** guides you to the right electrode for your application, explains how a Metrosensor is made and introduces the theoretical fundamentals. It is free to order. Call us.

pH, Conductivity, Redox, Ion Selective Electrodes

Unsurpassed Swiss quality and service life

Application	Specifics	Electrode
Universal	Standard laboratory, various samples, pH 0...14, T = 0...100 °C	Unitrode
Water	Demineralised, drinking and sea water, weakly buffered solutions	Aquatrode Plus
Waste water	General	Unitrode
	Sulphide-containing waste water	Profitrode
Soil samples	Surface measurement or aqueous suspensions	Flat Membrane
Agricultural, cultivation of plants	Culture media, small volume samples	Biotrode
	Fertilisers	Unitrode
	Liquid manure	Profitrode
	Nutrient solutions	Viscotrode
	Protein-containing solutions	Porotrode
Food, stimulants	General	Unitrode
	Protein-containing food, beer	Porotrode
	Penetration measurement (dough, cheese, meat)	Spearhead
	Drinking water	Aquatrode Plus
	Juices, wine, spirits	Unitrode
Pharma industry	Creams, liquid formulations, medicinal syrup, mouthwash, raw materials	Viscotrode
	Dialysis solutions, urine	Unitrode
	Gastric juice, serum, small volume samples	Biotrode
Biology	Infusion solutions	Aquatrode Plus
	Protein-containing solutions	Porotrode
Cosmetics	Shampoos, emulsions, shower gels, mouth rinse, perfumes	Viscotrode
	Make-up	Microelectrode
	Skin (surface measurement)	Flat Membrane
Detergents, surfactants	General	Viscotrode
	Samples with pH >10	Profitrode
Leather, paper, textile industry	Bleaching & dye baths	Profitrode
	Dampening solutions (offset printing), glues	Unitrode
	Leather, paper, textiles (surface measurement)	Flat Membrane
	Washing liquors	Viscotrode
Paints, lacquers, solvents	Dye baths, ink, wood stain, lacquers	Profitrode
	Dispersions, emulsions, resins, suspensions	Unitrode
	Paint (surface)	Flat Membrane
	Non-aqueous, polar solvents	Solvotrode
Electroplating, metal processing	General	Profitrode
	Acidic electroplating baths	Unitrode
	Cutting oil emulsions	Viscotrode
	Etching baths containing fluoride/hydrofluoric acid	Sb Electrode
Special applications	Concentrated acids	Profitrode
	Photographic baths	Profitrode
	Emulsions, suspensions, dispersions	Unitrode
	Samples at pH >12	Unitrode
	Temperature 50...80 °C	Unitrode
	Temperature 80...100 °C	Unitrode
	Ion-deficient solutions, weakly buffered solutions	Unitrode (Idrolyte)
	Non-aqueous, polar solvents	Solvotrode
	Penetration measurement	Spearhead
	Protein-containing solutions	Porotrode
	Small volume samples	Biotrode
	Surface measurements	Flat Membrane
Beverages	Wines, beers and soft drinks	Vinotrode

Sensors for all applications

Metrohm is a leading manufacturer of a variety of sensors. From pH, ion-selective electrodes, Redox, photometric, thermometric and conductometric, Metrohm offers a full range of sensors for practically every application.

- The Metrosensor Long Life reference system for pH and combined metal probes allows the system to last longer and to reduce blockage of the electrode diaphragm.
- Full range of analogue and digital interface probes with the new iTrode and iConnect
- With the correct adapter Metrosensors can be connected to non-Metrohm systems. Request the free adapter to take advantage of Metrohm electrodes.
- Quality Swiss Made products

ADAPTERS
for non-Metrohm
instruments
available



The whole world of Ion Chromatography

Compact intelligence for ion chromatography



940 Professional IC Vario

The amazing 940 Professional IC Vario system stands for maximum flexibility combined with most easy operation and perfect reliability.

930 Compact IC Flex

The outstanding 930 Compact IC Flex is the ion chromatograph of choice for routine analysis developed with a focus on the requirements of contract laboratories and QC laboratories in all kinds of industries. Rugged design, perfect ease of use and outstanding system reliability are key features of the 930 Compact IC Flex.

Configure your personal IC

Metrohm's online configurator for the 940 Professional IC Vario system and the 930 Compact IC Flex allows you to put together your customised IC system.



UV-Vis detection

The flow path of Metrohm's IC instruments is completely metal-free. Thus, not only the standard anions and cations, but also transition metal ions and various organic substances can be detected without any problem. Even in complex matrices, e.g. biological samples, good detection limits can be achieved on the basis of the specific absorption properties of many analytes.

Amperometric detection

Typical applications include the determination of inorganic anions, such as cyanide, sulphide, nitrite, sulphite or iodide; carbohydrates, such as mono-, di- and polysaccharides, amino-sugars, sugar alcohols and sugar acids; and organic compounds, such as phenols or vitamins.



Eco IC: Get started in the world of ion chromatography

Discover Eco IC, an ion chromatography system that focuses on the essentials while not compromising on quality, robustness, and reliability.

Eco IC has been developed to enable more users to benefit from this technique.

Whether you need to perform routine water analysis or you're looking for an instrument for higher education, Eco IC comes with all the components you need. In addition, you can also save time and reduce work by getting an automated system.

Metrohm Inline Sample Preparation (MISP)

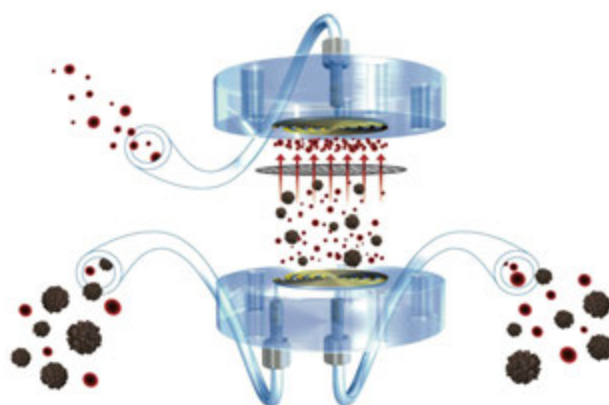
For difficult sample matrices



Metrohm Inline Sample Preparation (MISP) puts an end to manual sample preparation for ion chromatography.

MISP stands for methods developed by Metrohm that allow you to fully automate the preparation of even the most challenging samples.

Not only will you increase sample throughput but also improve accuracy and reproducibility of analyses and results.



Metrohm Inline Sample Preparation techniques:

- Inline Ultrafiltration
- Inline Dialysis
- Inline Dilution
- Inline Extraction
- Partial Loop Injection
- Inline Matrix Elimination
- Inline Neutralisation
- Inline Cation Removal
- Inline Preconcentration

Combustion IC

Analyse solids and viscous samples

Combustion IC at a glance:

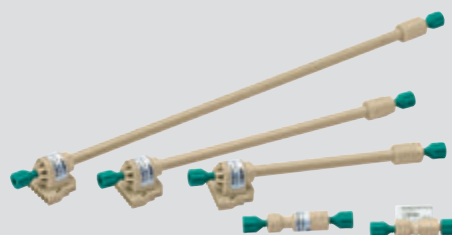
- Fully automatic sample preparation for solids and liquids during sample delivery and subsequent ion chromatographic analysis
- Simultaneous determination of sulfur and halogens
- Differentiated determination of the concentrations of various halogens
- Material tests with regard to halogen-free products (RoHS)
- High sample throughput
- High precision and accuracy



Column selection for standard test methods

Meeting global standards in IC is now easy.

Metrohm columns are built and developed to meet compliance requirements. Metrohm application chemists remain at the forefront of science and research where new simplified and enhanced methods are being developed.



Trace analysis with Voltammetry

The versatile all-rounder for research, teaching and industry



884 Professional VA

Analysis of heavy metals: total concentration...

For specific applications where the cost of AAS or ICP is prohibitive, voltammetry can accomplish metal analysis with equivalent or even higher sensitivities. Only small quantities of reagents and pure nitrogen are required.

... and speciation!

With voltammetry it is also possible to differentiate between varying oxidation states of metal ions, or between free and bound metal species. This information can be used to assess biological availability and toxicity of heavy metals, making voltammetry an essential technique in environmental analysis.

High ion concentrations? No problem with VA!

Voltammetry is ideally suited for the analysis of:

- Water, waste water and sea water
- Salts and pure chemicals
- Electroplating baths
- Foodstuffs

894 Professional CVS

Cyclic Voltammetry Stripping (CVS)

The 894 Professional CVS stands out for its unique flexibility. Due to the system's entirely modular design, it can be expanded and upgraded at any time with additional units such as dosing devices, pumps and sample changers.

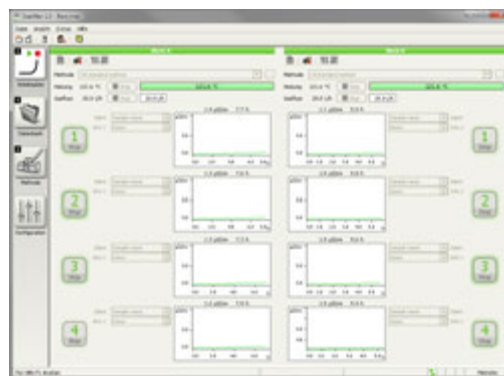
Standardised stability measurement

Easy and automatic



Oxidative stability of fats and oils

The determination of the oxidation stability of edible oils and fats is the classical application for the 892 Rancimat. The "induction time" that is measured characterises the resistance of oils and fats to oxidation. The term Oil Stability Index (OSI) is also commonly used. The Rancimat method is incorporated in standards such as AOCS Cd 12b-92 and ISO 6886. This technique replaces the complicated Active Oxygen Method.

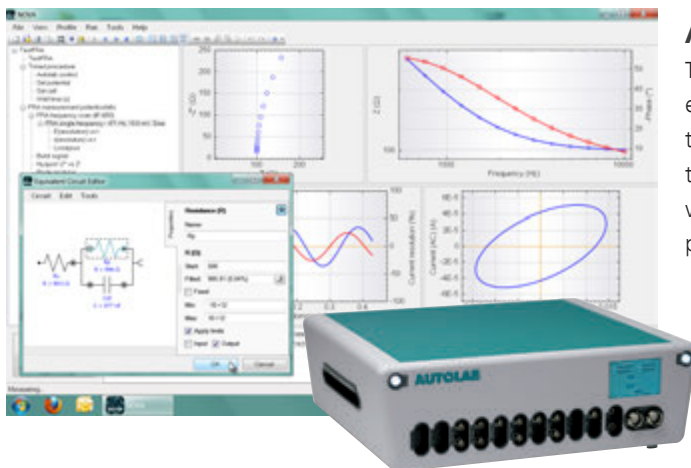


StabNet – Modern software for stability measurement

StabNet is the modern and user-friendly software for carrying out stability measurements and archiving the measurement data. The characteristic features of StabNet are its ease of use and flexibility.

Potentiostats

Developed for electrochemists by electrochemists



Autolab NOVA software

The next-generation NOVA software package supports all electrochemical measurement techniques, offering accurately-timed sequences of commands and powerful data analysis tools. NOVA is designed for multi-tasking and collaboration, with automatic database storage of all measurements and potentiostat settings.

Autolab potentiostats

Autolab potentiostats and galvanostats offer a range of current outputs from 100 mA to 2 A and compliance voltages from 10 V to 100 V. The new Multi Autolab can control up to 12 independent channels. The capabilities of Autolab PGSTAT's can be extended with additional modules, e.g.

- Electrochemical Impedance Spectroscopy
- Bipotentiostat and sensor electrode array
- Current boosters (10 A & 20 A)
- pA current amplification for microelectrodes
- Ultrafast (sub- μ s) electrochemistry

Metrohm Dropsens

Spectroelectrochemical measurements: one integrated solution



Combine electrochemistry and UV-Vis, Vis-NIR, or Raman spectroscopy in one measurement. These instruments consist of a bipotentiostat/ galvanostat combined with a spectrometer and a light source. They are available in various detection range versions.

Spectroelectrochemistry is a useful technique used for investigating and identifying electroactive species and redox reactions products. It can be applied in various research fields, such as:

- New materials characterisation
- Photochemical energy conversion
- Photovoltaic cell
- Analytical chemistry

We offer an integrated solution for this type of measurement: instrumentation, dedicated software, and accessories.

Compact performance: Screen-printed and interdigitated electrodes



Screen-printed electrodes

Fast, inexpensive, reliable, and versatile – this is what characterises our screen-printed and interdigitated electrodes.

Discover how you can boost your research with screen-printed electrodes: They allow you to perform a large number of experiments with low volumes of reactive or sample and without electrode pretreatment or maintenance.

In addition, we supply interdigitated electrodes for impedance or conductivity measurements and for (bio)sensor development.

We offer a large variety of materials and configurations, so that you can find the best electrodes for your research requirements.

Process Analysis

Laboratory analysis in the process environment



ADI 2045 Process Analyser

Combining Metrohm's knowledge in laboratory analysis and Process Analytics's experience in process control instrumentation, the ADI 2045 can perform nearly every ON-line or AT-line wet chemical analysis in the most difficult environments.

Its unique modular design makes it possible to adapt the analyser to the specific needs of the application. Multi-parameter and multi-stream analyses are easily implemented as well as communication with other devices.

Titration

- Acid/Base
- Argentometric
- Colorimetric
- Complexometric
- Iodometric
- Karl Fischer
- Precipitative
- Redox
- Thermometric Titration

ISE Ion-Selective Electrodes

- Analysis of most common anions and cations

Voltammetric Heavy Metal Analyser

- Analysis of heavy metals in highly ionic solutions

Differential Absorbance Colorimetry

- Analysing heavy metals in most demanding sample matrices



Chemical species analysed on-line

Acetic Acid	Bromide	Cyanide, Free/	Hydrofluoric	Manganese	Phosphate	TBC
Acidity	Calcium	Total/WAD	Acid	Mercaptane	Phosphate, Total	Tetrafluoroborate
Acrylaldehyde	Carbonate	Dithionite	Hydroxylamine	Mercury	Phosphoric Acid	Thiocyanate
Alkalinity	Caustic	EDTA	Hypochlorite	Metaborate	Phthalic Acid	Tin
Aluminium	Chlorate	Fatty Acid	Hypophosphite	Nickel	Pickling Bath	Titanium
Ammonia	Chloride	Fluoride	Indigo	Nitrate	Solutions	TMAH
Aniline	Chlorine, Free/	Formaldehyde	Iodide	Nitrite	Silica	Urea
Anion-Active-	Total	Glucose	Iron (II) & (III)	Nitric Acid	Silver	Water, Karl
Detergent	Chlorine dioxide	Glycerol	Lactic Acid	Nitrogen, Total	Sodium	Fischer
Arsenic	Chromium	Heavy Metals	Leuco Indigo	Oleum	Sulphate	Zinc
Ascorbic Acid	Citric Acid	(Cd, Cu, Pb,	Liquors: white,	P & M number	Sulphide	
Bayer Liquor	Cobalt	Zn, etc)	green, black	Peracetic Acid	Sulphite	
Blended Acid	Chemical-	Hydrazine	Lime	Peroxide	Sulphonic Acid	
Boric Acid	Oxygen-Demand	Hydrochloric	Lithium	Persulphate	Sulphuric Acid	
Brine (Ca & Mg)	Copper	Acid	Magnesium	Phenol	Surfactant	

Continuous monitoring of online processes

From single stream to complex multiple parameters

2035 Process Analyser: versatile

The 2035 Process Analyser family is designed with versatility in mind. This series comes in three different configurations – potentiometric, photometric, and thermometric – which can also be combined with additional measuring techniques such as pH and conductivity. Modularity of the wet part of the 2035 Process Analyser means there is an analyser configuration for any challenge.

- Safe operation in harsh environments with ingress protection IP66
- Greater accuracy with precision buret dosing technology
- Automatic calibration with proven auto-dilution technique



NIRS XDS Process Analysers

Based on NIR XDS technology, the NIRS XDS Process Analyser belongs to the next generation of process analysers for real-time analysis. Nondestructive, accurate measurements are performed wherever a product is moving, for instance, above a conveyor belt, web, or sheet.

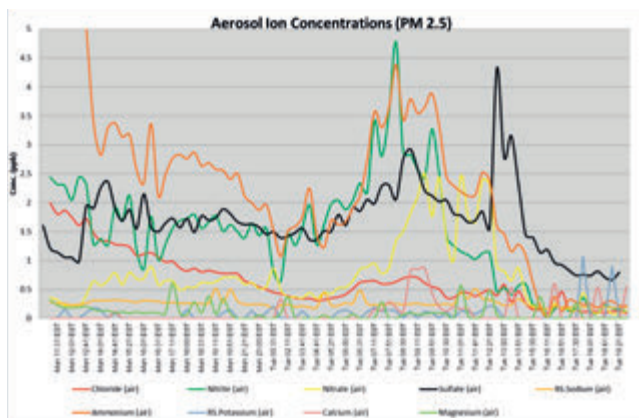
- Nondestructive inline near-infrared (NIR) analysis of solid and liquid products
- Noncontact reflectance measurement directly in the product line, e.g., conveyor belts
- Different fiber-optic probes for different requirement

For laboratory and field
NIR please see page 19



Monitor for aerosols and gases in ambient air

Environmental surveillance



Continuous measurements of aerosols in Sydney, NSW.



MARGA for autonomous operation

With MARGA, gas and aerosol composition of ambient air can be measured simultaneously and continuously.

The whole MARGA system runs autonomously, generating aerosol and gas concentrations every hour, only requiring user intervention once per week to supply new solutions.

The sensitivity of the ion chromatographs is sufficient to reach detection limits below 0.1 µg/m³ with an air sampling flow rate of 1 m³/h.

The MARGA is available with 1 or 2 sample boxes, the latter allowing simultaneous sampling of two different aerosol sizes, for example PM 2.5 and PM 10.

- Continuous monitoring with hourly results
- Results on the composition of gases and aerosols
- Remote access and data transfer
- One week unattended operation
- Smart software with security and validation levels
- Quality assurance of the measurement with internal standard ion chromatography

Turnkey solutions

Economical and guaranteed

Monitoring continuous sample streams maybe necessary and more economical than lab solutions. Our Metrohm – Process Analytics specialists have developed and implemented numerous systems worldwide covering an extensive range of applications for the determination from µg/L to g/L levels.

Metrohm provides simple one sample preconditioning to complex turnkey solutions including shelter. Contact our engineers to discuss your needs.



Sample preconditioning units for liquids, solids and gases:

More often than not, samples need to be preconditioned before they can be sent into the analyser.

- Filtration and settling (e.g. slurry)
- Extraction, stripping, distillation
- Cooling and heating
- Dilutions and reactors
- Grinding and dissolving (powder)
- Mixing

Construction materials

- Stainless steel (SS316), hastelloys, teflon, Viton, PP etc.

Ingress protection

- IP65 and IP66

Shelters

- Cooling and/or heating
- Drainage of waste to sewage
- Service table, tap, sink etc.
- Lighting
- Power backup systems

RAMAN spectroscopy

MIRA Metrohm Instant Raman Analysers



Near-infrared spectroscopy is a simple, quick, nondestructive technique.

Metrohm Instant Raman Analysers (Mira) are robust and reliable portable spectrometers for material identification and verification.

These instruments combine ease of use with maximum safety and provide results within seconds. Using ORS, Mira systems yield highly reliable results, giving you more confidence in your measurements.

We offer two versions of Mira Analyzers:

Mira M-3 (pharma): instrument for material verification compliant with FDA 21 CFR Part 11

Mira DS (defense and security): instrument for the identification of illicit and hazardous substances



Mira M-3 for raw material verification

Barely larger than a smartphone the Mira M-3 is one of the fastest and most compact Raman spectrometers on the market.

With the Mira M-3, you will be able to ensure smooth and efficient processes, as you will get a reliable "Pass" or "Fail" result in 15 to 20 seconds on average. The instrument and dedicated MiraCal 3.0 software is compliant with 21 CFR Part 11 regulations, making the Mira M-3 the ideal instrument for material verification in regulated industries.



Mira DS: identify illicit and hazardous materials

In defense and security professions, identifying whether a substance you're dealing with is dangerous can make all the difference.

To help you stay safe, we have developed the new Mira DS. This instrument allows you to identify explosives and illicit substances in the field, quickly and safely.



Wide range of applications, even for temperature-sensitive samples

- Chemical
- Explosives
- Food
- Forensic
- Gems stones
- Minerals
- Narcotics
- Pharmaceutical
- Polymers
- Security
- Defense forces
- Law enforcement

Vis-NIR spectroscopy laboratory analysers

Control at the speed of light

Near-infrared spectroscopy is a simple, quick, nondestructive technique.

Metrohm NIRS lab analysers enable you to perform routine analysis quickly and with confidence – without requiring sample preparation or additional reagents and yielding results in less than a minute.

Combining visual (Vis) and near-infrared (NIR) spectroscopy, these analysers are capable of performing qualitative analysis of various materials and quantitative analysis of a number of physical and chemical parameters in one run.

Depending on your requirements, you can choose between two analyser series:

- XDS Analysers: Modular system for maximum flexibility for all sample types
- DS2500 Analysers: Compact system for solid samples (slurries/pastes as an option)



Liquids, solids, powders, tablets, pastes ... Deal with any sample



Liquid samples

The NIRS XDS RapidLiquid Analyser enables rapid, precise analyses of liquid formulations and substances. Precise measurement results at the push of a button make the NIRS XDS RapidLiquid Analyser an equally reliable and simple solution for quality monitoring in laboratories and processes.



Solid samples

The NIRS XDS RapidContent Analyser enables rapid, nondestructive analyses of solid powders, coarser granulates, pellets or flakes. Composition or material identification testing is performed either in the laboratory or at-line, on samples contained in their original packaging, bags or vials.



Slurries and pastes

The NIRS DS2500 Analyser is the tried and tested, low-cost solution for the routine analysis of both solid and liquid samples along the entire production chain. Its robust design makes the NIRS DS2500 Analyser resistant to dust, moisture, vibrations, and temperature fluctuations, which means that it is eminently suited for use in harsh production environments.



Tablets and capsules

The NIRS XDS MasterLab Analyser enables the rapid, nondestructive analyses of solid-state dosage forms such as tablets, capsules, film-coated tablets, gel tablets and gel capsules for manufacturers in the pharmaceuticals industry. Solids in vials can also be analysed with the NIRS XDS MasterLab Analyser.



For Metrohm NIRSystems Process Analysers see page 16

Sieve analysis

Taking a close look at quality



Sieve with the highest precision for accurate results

RETSCH sieve shakers and test sieves are the key to easy, rapid, reproducible and, above all, accurate analyses.

- Manufactured in accordance with ISO 3310-1 or ASTM E11
- One piece construction
- Unique, fully automatic production process and optical inspection
- Superior product quality
- Full traceability ensured with clear and precise laser-engraved labelling

RETSCH's test sieves are available in a range of frame sizes: 200 mm, 203 mm (8"), as well as smaller (100 mm and 150 mm) and larger (305 mm, 400 mm and 450 mm) sizes.

Stocked in Australia:

The most commonly requested sieves are held on stock in Australia for your convenience.



AS 200 Jet for powders

Air-jet sieving for fine powders that tend to agglomerate is considerably faster than vibration sieving, yet gentle on the material by air dispersion of the powder.



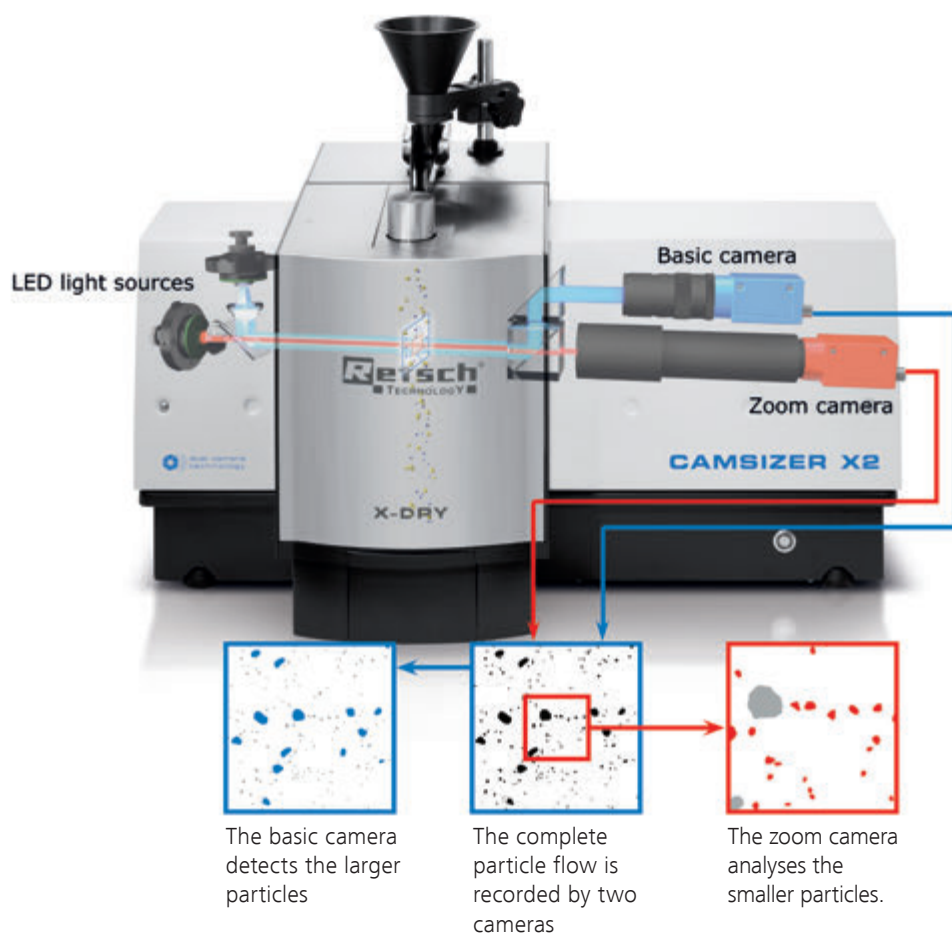
Sieving with a 3-D effect

The patented electromagnetic drive of the AS 200, 300 and 450 produces a 3-D throwing motion for optimal use of the open sieve area.

- For dry and wet sieving
- Control, evaluation and documentation with EasySieve® software

Particle size and shape analysis

Because size does matter



Digital dynamic image processing with the CAMSIZER P4 and the CAMSIZER X2

Measuring principle

The CAMSIZER family of dynamic image analysis instruments are based on the proven, patented two-camera system. Depending on the particle size and the degree of agglomeration, either the CAMSIZER P4 or alternatively the CAMSIZER X2 represent the optimum solution for your particular sample and analytical requirements. The Camsizer is also available as automated process analyser.



Camsizer X2

- 0.8 µm to 8 mm
- Gravity dispersion
- Air pressure dispersion
- Fine and agglomerated particles
- Wet dispersion

Camsizer P4

- 20 µm to 30 mm
- Pourable bulk materials
- Unattended operation with Auto Sampler option
- On-Line version available

Typical applications

- Abrasives
- Catalysts
- Chemicals
- Coal/coke
- Coffee
- Construction materials
- Fertilisers
- Food granulates
- Glass/ceramics
- Metal powders/silicon granulates
- Pesticides
- Pharmaceutical pellets
- Plastic granulates
- Proppants
- Refractory materials
- Salt/sugar
- Sand
- Washing powder
- Wood chips

Perfect sample preparation

Essential for reproducible analysis

Solutions for size reduction and homogenisation: milling, grinding and cutting

Reliable and accurate analysis can only be guaranteed after reproducible sample preparation. The aim of sample preparation being to turning a laboratory sample into a representative part sample with homogeneous analytical fineness.

RETSCH offers a comprehensive range of the most modern mills and crushers for coarse, fine and ultra-fine size reduction of almost any material. The choice of grinding tools and accessories not only ensures contamination-free preparation of a wide range of materials but also the adaptation to the individual requirements of different applications.



Cutting Mills

The Cutting Mills SM 100, 200 & 300 are used for preliminary size reduction by cutting and shearing of soft, medium-hard, elastic and fibrous materials. They are suitable for temperature-sensitive samples.

Mixer Mills

The RETSCH Mixer Mills, MM 200 & 400, are used for size reduction and pulverisation of hard, medium-hard and brittle samples as well as for soft, elastic or fibrous materials.

- Wet and low temperature grinding (MM 400)
- Ideal for cell and DNA-RNA extraction

Assisting

Dividing, feeding, drying and pelletising samples



Retsch Assisting

RETSCH assisting instruments optimise and support sample preparation. They provide reproducible processes with greater efficiency and are characterised by their ease of handling.

- **Sample Dividers:**
essential for the exact and representative division of pourable bulk goods in the laboratory
- **Vibratory Feeders**
for uniform and continuous feeding
- **Pellet Presses**
for preparation for XRF analysis
- **Fluid Bed Dryer**
for gentle drying and dispensing
- **Ultrasonic Baths**
for cleaning (test sieves, grinding tools) and degassing

Perfect sample preparation

Essential for perfect analysis



Rotor Mills

The Rotor Mill series includes ultra-centrifugal mills (ZM 200 and Cyclone TWISTER), rotor beater mills (SR 300) and cross beater mills (SK 300). Suitable for the preliminary and fine size reduction of soft, fibrous and also hard materials.



Knife Mills

In food or nutritional laboratories, in chemical or biological research institutes – GRINDOMIX Knife Mills, GM 200 & 300, provide size reduction and homogenisation of food and feed materials, meeting and exceeding all special laboratory and analytical requirements. They process substances with a high water, oil or fat content just as quickly and reliably as dry, fibrous, soft, elastic or medium-hard products.

Retsch XL: industrial and process

Big crushers, grinders, testing and assiting equipment

The XL models of ball mills, vibratory disc mills and sample dividers provide a substantially higher throughput than the laboratory scale equipment. The portfolio also includes a range of testing equipment to determine the Bond Grinding Indices

RETSCH's XL items are ideally suited for the coal, steel, and mining industries which until now could only be served with laboratory instruments for small sample volumes.



Photometric analysers for food and beverage analysis

Food and wine analysis made easy



BioSystems Food Quality and Enology Solutions

BioSystems offers food producers and winemakers a unique analytical system: BioSystems solutions consist of a line of dedicated photometric instruments and a complete line of reagents for food analysis and wine laboratories.

The Enology system provides the greatest amount of information throughout the winemaking process.

Food Safety reagents detect high interest parameters in food and feed industry related to labelling, toxins, additives, sugars and many others.



Y15

Easily and effectively automate analyses to ensure top quality with the Y15 photometric analyser.

Y15 is a smart investment. Together with Biosystems line of reagents, the system optimizes the use of laboratory resources. A complete, turnkey system that ensures first-class performance.



Y350

BioSystems Y350 semiautomatic analyser was specifically designed to meet the needs of enologists and food producers, while also optimising reagent consumption and minimising maintenance.



Y25

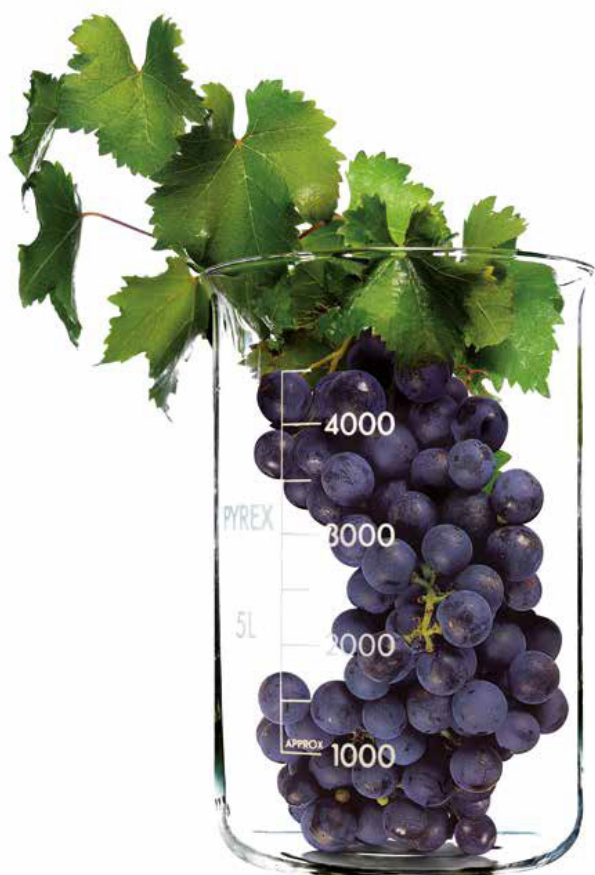
This automatic analyser provides comprehensive information during the food and winemaking process.

Enology reagents

Essential for perfect wine analysis

These chemical reagents are made up of several components that interact with the analyte present in the sample, so generating a chemical reaction.

Enzymatic reagents consist of several components such as enzymes, substrates and cofactors that interact with the analyte in the sample to generate a biochemical reaction. The resulting material properties are qualified and quantified spectrometrically.



Calibrators & controls
Multitest calibrators
Sulfite control
Wine controls

Immunoassays
Egg
Histamine High Sensitivity
Milk
Ochratoxin-A

Chemical
Anthocyanins
Calcium-Eno
Catechins
Color
Copper
Free Sulfite
Iron-Eno
Polyphenols
Primary Aminic Nitrogen
Tartaric Acid
Total Acidity (pH 7)
Total Sulfite

Enzymatic	
Acetaldehyde	Glycerol
Acetic Acid	Histamine Enzymatic
Ammonium	L-Glutamic Acid
Ascorbic Acid	L-Lactic Acid
Carbon Dioxide (CO ₂)	Malic Acid
Citric Acid	Potassium-Eno
D-Lactic Acid	Pyruvic Acid
Gluconic Acid	Sucrose - Glucose - Fructose
Glucose-Fructose	



In conjunction with the reagent line, the Biosystems analysers make it possible to monitor the entire vinification process. The system adjusts to the various sample types that the enologist needs to analyse.

Food Quality

Food safety



Histamine

Biogenic amines are produced by microorganism action on amino acids present in foods. The substances cause some odors and can trigger adverse effects for health at high concentrations. Histamine – a biogenic amine present in fish, wine and cheese – is the result of bacterial decarboxylation of histidine, an amino acid which causes headaches, vasodilation and increased temperature at high concentrations, an effect also known as histamine shock.

The histamine kits provide efficient histamine testing in a variety of matrices, using different formats (rapid tests, ELISA & enzymatic kits).



Histamine	
Histamine Enzymatic	Histamine Fast
Histamine High Sensitivity	Histamine Rapid Test

Mycotoxin

Mycotoxins are toxins produced by fungi from the Fusarium, Aspergillus and Penicillium genera. These molds colonise a wide variety of products, such as cereals, nuts, dried fruits, grapes, coffee and cocoa, and have carcinogenic or neurotoxic effects.

ELISA kits and rapid tests to determine mycotoxins are a rapid, efficient tool to analyse the presence of these substances at the levels required by the legislation and have been validated in various matrices.



	Mycotoxin	
Mycotoxin ELISA	Aflatoxin B1	Deoxynivalenol (DON)
	Aflatoxin B1 Sensitive	Fumonisin
	Total Aflatoxin	Ochratoxin A
	Aflatoxin M1 Fast	T-2 Toxin
	Aflatoxin M1 Sensitive	Zearalenone
Mycotoxin Rapid Test	Aflatoxin B1	Ochratoxin A in wine
	Total Aflatoxin	Zearalenone
	Ochratoxin A	Deoxynivalenol (DON)

Gluten

Gluten is the protein portion of various cereal grains (wheat, rye, barley and oats). Continuous consumption by people affected by celiac disease will cause the condition to worsen and become chronic.

The ELISA Sandwich kit is used to determine the substance in various raw materials and finished products quickly and efficiently. The rapid kits are used to detect gluten on surfaces and in foods and include all items needed for on-site gluten testing, in accordance with current legislation.



	Gluten	
Gluten ELISA	Gluten Sandwich (Gliadin)	
Gluten R5 Rapid Test	Gluten R5 Flow Through (Food)	Gluten R5 Flow Through (Surface)

Food Quality

Food safety



Allergens

Food allergens are protein substances from different sources that can cause mild-to-severe immune reactions when consumed by sensitive individuals, even at low concentrations. It is estimated that 2% to 4% of adults and 6% of children have some kind of food allergy, a trend on the rise in recent years.

The ELISA allergen test kits are a rapid, efficient tool for analysing the presence of these substances at very low concentrations, due to the specificity of antigen-antibody binding reactions.

Rapid tests also detect the presence of these substances in a fast and reliable way (screening).



	Allergens	
Allergens ELISA	Milk (β -lactoglobulin)	Lupine
	Milk (Casein)	Hazelnut
	Milk Total	Peanut
	Egg White	Walnut
	Ovalbumin	Pistachio
	Lysozyme	Mustard
	Fish	Sesame
	Crustaceans (Tropomyosin)	Soy 96
	Almond	Coconut
	Cashew	
Allergens Rapid Test	Milk	Almond
	Egg White	Hazelnut
	Fish	Peanut
	Crustaceans	Mustard
	Soy	



Enzymatic & chemical reagents

Enzymatic and chemical reagents are simple and efficient means to determine substances in food and beverages through photometry.

BioSystems reagents identify sugars, organic acids, additives, cations and other components in food and beverages, for process control, quality control and nutritional parameter determination.

By-products generated by microorganisms such as lactic acid, acetic acid, ethanol or histamine are easily controlled and monitored rapidly and efficiently.



	Reagents	
Sugar	D-Glucose/D-Fructose	Sucrose/Total Sugar
Organic Acids	D-Lactic Acid	Tartaric Acid
	L-Lactic Acid	Citric Acid
	L-Malic Acid	Ascorbic Acid
	Acetic Acid	Pyruvic Acid
	Gluconic Acid	
Sulfites	Total Sulfite	Free Sulfite
Nitrogenate Substances	Primary Amino Nitrogen	Ammonia
Cations	Iron	Copper
	Calcium	Potassium
Other Parameters	Acetaldehyde	Polyphenols (Folin-Ciocalteu)
	Glycerol	Histamine
	Colour (Red wines)	
Controls	Wine Control (White)	Sulfites Control
	Wine Control (Red)	
Multicalibrator	Enological	

Metrohm Service – experts by your side

Our engineers are qualified to maintain your instruments



Instruments that are serviced on a regular basis fail less frequently, provide more accurate results and, put simply, perform better.

Our Service Engineers have received extensive factory training and are authorised to service, diagnose and repair your systems.

The tools they use are specially designed to pinpoint even the slightest deviance from manufacturer specifications, so they can return it to factory-new operation.

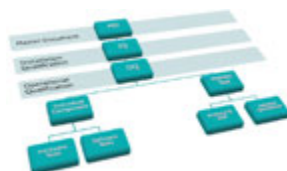
Metrohm Remote Support



The advantages of Metrohm Remote Support are obvious.

With our remote service, you will get help directly and precisely when you need it. You can use your valuable time more efficiently and reduce downtime on your analysis system to a minimum. Metrohm Remote Support is available for all systems that are controlled by PC-software. All you need to benefit from our new service is an internet connection.

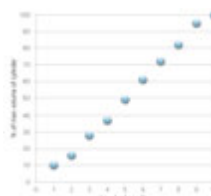
Analytical Instrument Qualification



Play it safe with professional and certified IQ/OQ.

As QA manager in a regulated industry you face strict requirements regarding Analytical Instrument Qualification (AIQ). However, complying with the very latest regulations from the USP, FDA, GAMP, PIC/S, and other regulative authorities at all times is a challenge that takes time and effort. With this in mind, Metrohm have developed services exactly tailored to your needs. You protect yourself against liability while saving valuable time and money that you can spend on other work in your lab.

Calibration of Metrohm dosing & exchange units



Stay on the safe side.

The Dosing Test gives you certainty that your Metrohm buret is dispensing the displayed value. This in turn gives you assurance that you really can rely on your results, and that this will not cause problems during auditing. You will receive the corresponding certificate confirming that your buret continues to comply with the requirements as verified by the test. You know that you can rely 100 percent on the accuracy of your Metrohm buret.

Metrohm Software Care



An investment that pays off

Software maintenance for safer and more productive work. Metrohm Software Care is the perfect supplement to your QualityCare Contract. A system that does not get regular maintenance can become a safety risk and negatively affect both quality and productivity. Regular maintenance guarantees optimal system availability and maximum performance. With Metrohm Software Care you benefit from peak performance of your analysis system, minimise down-time and can all but remove the risk of losing any data.

QualityCare Contracts

Service, certainty and so much more

No matter whether you work for a private company or for a public institution, as a laboratory manager you are required to use your resources as efficiently as possible. Failing equipment is a risk you simply cannot afford.

A QualityCare Contract is your operational insurance card: safeguarding your instrument from failure and giving you peace of mind – from day one and for as long as you have it.

Cost certainty

With a QualityCare Contract costs for maintenance and servicing are fixed and, more importantly, known to you – so you can keep in line with your budget.

Reliable measurement results

A QualityCare Contract means instruments are installed, calibrated and adjusted by trained and authorised Metrohm service professionals to ensure their operational efficiency.

Less risk of failure

Instruments that are serviced regularly fail less frequently and have a longer lifetime than instruments that do not get this care.

Fast repairs

With a QualityCare Contract professional help is just a phone call away. Repairs are always performed by trained and authorised service professionals on a priority basis.

Original manufacturer spare parts

Original spare parts provide the best fit for your instrument and ensure its long lifetime.

Discounted spare parts

With a QualityCare Contract you benefit from discounts on spare parts as specified in your Contract.

Maintain the value of your investment

Regular maintenance increases the service life of your instruments, so you retain the value of your investment.

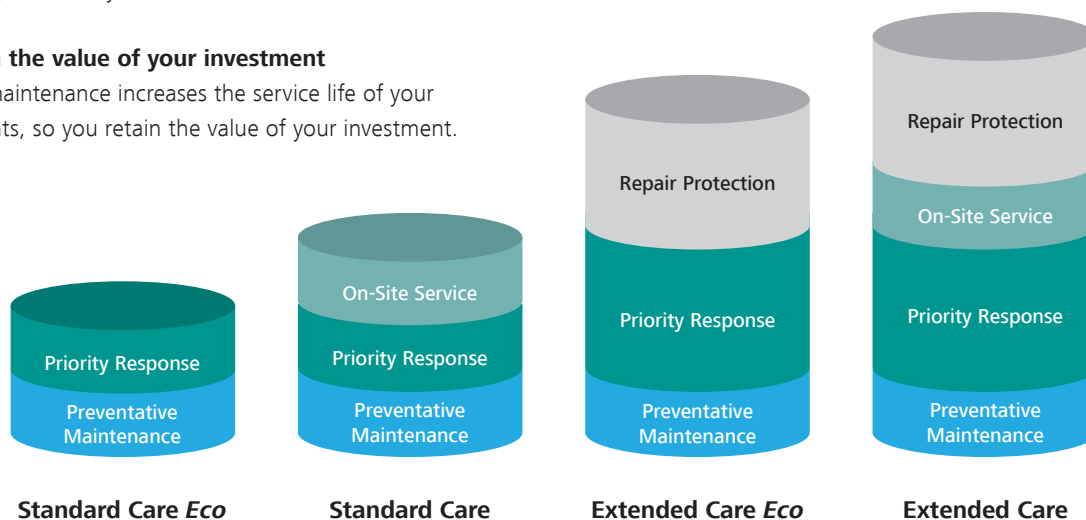


The services offered by Metrohm are geared to your requirements. You can choose from a clearly defined range of QualityCare Contracts, which build on each other in terms of scope and provision.

Preventative maintenance for a long service life

Regular maintenance is key to long-lasting, trouble-free operation of your analytical instruments and accurate measurement results.

That is why all QualityCare Contracts include at least one preventative maintenance check every year. This is carried out by a trained and authorised Metrohm service specialist. They know the hardware and software of your analyser by heart and can advise you on best practices to get the most out of your system.



Lasting partnership

At Metrohm, we do not outsource customer service



In Australia and New Zealand you can tap into the vast knowledge and experience of the world's leading network of scientists using Metrohm's on location support and service.

You benefit from a wide range of support options and services of which many are complimentary.

Whilst you concentrate on optimising your operations Metrohm is at your side to assist with an efficient transfer of know-how. Our commitment helps you to improve and maintain high analytical standards and develop new solutions in the lab and in the field.



Customised training

Contact us directly to arrange training and performance enhancing courses for your laboratory team at your location or at one of Metrohm's laboratories.

Application Bulletins Application Notes

A vast number of application reports, notes and bulletins are available to our customers 24/7 online. They contain concise but precise descriptions of steps and configurations to perform specific analyses to get you started in a flash.

Can't find what you are looking for? Call our experts. They will be happy to suggest a solution for you.

Newsletters & magazines

Many of our newsletters are published online only as our small contribution to a greener environment. Often on a monthly schedule, they cover applications and news related to specific industries such as Food and Beverage, Pharmaceuticals, Mining, Education, Environment and Process applications.

Subscription is free. Visit our website to register.

Printed versions of Analyst Express, Metrohm Information and Retsch – The Sample are distributed free of charge to our customers.

Workshops, seminars, training courses

Metrohm regularly offers seminars covering selected topics in advanced analytical chemistry. These seminars are held by leading national and international authorities at a venue near you.

The seminars are free, but registration is required. Invitations are published in our newsletters and our website.

Training courses are offered covering specific analytical topics and skills. A completion certificate is presented to the participants at the end of the course. Payment of a course is required upon registration. Visit our website for current course programme.

Test before you invest

Application development and testing



Application testing and development laboratory – Sydney, Melbourne & Perth

Metrohm customers can always be certain that the acquired equipment will perform as expected. Analytical results will be accurate, precise and repeatable. We have installed a modern, efficient 120 m² application lab at our headquarters in Gladesville, Sydney and at our Melbourne and Perth premises to best serve our customers.

Unsure if your chosen method will produce the results you anticipate? Test before you buy.

At Metrohm's state-of-the art application lab we provide certainty before you make your final purchase decision. We test for you the desired method for viability and accuracy, develop alternatives and optimise automation projects before you buy.

Fluctuating parameters?

Did some possibly undefined parameters change during operation? Don't let your people tinker too long. Save time and money. Our experts will work it out for you, right here, at our headquarters.

Training

Our application lab is available for expert instruction and training. Contact us for more details and for advance bookings.



Metrohm Australia and Metrohm New Zealand are your expert partners to assist you in resolving your analytical challenges.

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