

General Product Catalogue



Metrohm Group



Established in 1943, the Metrohm Group today includes the following brands

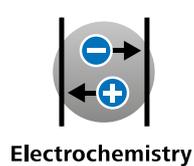
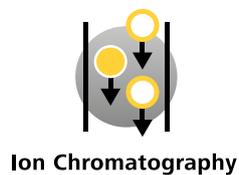
- Metrohm: Specialized in ion analysis (Titration, Karl Fischer, Ion Chromatography, Polarography, Rancidity)
- Metrohm Process Analytics: Specialized in online and at-line industrial analysis
- Metrohm Autolab: Specialized in electrochemistry (Potentiostats, Galvanostats)
- Metrohm NIR Systems: Specialized in near infrared spectroscopy
- Metrohm Raman: Specialized in Raman spectroscopy
- Metrohm Dropsens: Specialized in screen printed electrodes and spectroelectrochemistry

In 1982, the 3 founders of Metrohm donated their shares to the Metrohm Foundation without any financial compensation. Profits realized by Metrohm are therefore invested in:

- The development of new products
- Support for cultural projects, education and development aid
- The maintenance and development of local employment

The Metrohm Group has:

- Two production sites in Switzerland, two in Netherlands, one in Spain & one in US
- 30% in the R&D Workforce
- 2600 employees worldwide
- Active presence in 90 countries
- 45 subsidiaries



POTENTIOMETRIC TITRATORS

Intuitive, Intelligent & Efficient

At Metrohm, we don't just sell titrators. We provide titration solutions.

We offer systems as sophisticated or as straightforward as you need them. Titrator, accessories, electrodes, sample changers, and software - all from a single source.



A comprehensive range



Eco Titrator: Reliably Affordable

- Compact, robust titrator
- High precision & accurate results
- Convenient, intuitive operation
- GLP-compliant reporting and documentation



Eco Dosimat: Easy and Straightforward Dosing

- Precise dosing of any volume
- Manual titrations
- Preparation of ion standards
- Controlled dosing with specified dosing rate



Titrando: High End Potentiometric Titrator

- Full traceability & compliance (FDA 21 CFR Part 11, GLP, GMP)
- Improved convenience through iTrodes, Dosino & tiamo software
- Extensive Automation options



Titratherm: Thermometric Titrator

- The ideal complement to potentiometric titration
- Measures temperature change
- Ease of use: no sensor calibration or maintenance
- One sensor for all applications
- Titration within seconds



Ti-Touch: Compact Potentiometric Titrator

- Stand-alone titrator with all components integrated
- Integration into LIMS via Ethernet
- Precise & safe handling of chemicals
- Compliant with FDA 21 CFR Part 11 regulations

OMNIS - The high performance titration platform for your laboratory

OMNIS is the answer to the growing challenges of the labs - the functions that you have dreamed of has come true.

- FASTER - Up to four analyses simultaneously
- SAFER - 3S - safe, secure, smart
- EASIER - Truly intelligent software
- SMARTER - Modular concept
- MORE - Space-saving and clever
- Expand your system as you grow
- Control OMNIS from anywhere via global network



AUTOMATE YOUR TITRATIONS

Sample preparation, analysis & data storage

Full automation

High sample throughput, tedious and repetitive manual work & ever-increasing time pressure. Metrohm offers flexible & expandable automation options.



Auto Samplers

- Small, medium, or large: sample changers for any requirements
- Flexible rinsing options & sample racks
- Preconfigured systems that suit your application
- Superior reproducibility and accuracy



Sample Preparation

- Versatile, fully automatic sample preparation
- Pipetting, dilution, homogenization & more
- Customize to your procedure
- Saves time by automating routine tasks



Smart Dosing Elements

- Intelligent Exchange or Dosing units
- High burette resolution
- Safe reagent handling
- Complete traceability
- Easy to manage & maintain



Liquid Handling

- Accurate and reproducible liquid handling
- Pipetting, transferring, diluting, dosing, or dispensing
- Stand alone or PC controlled models



Softwares

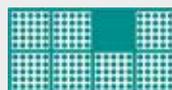
- Full control of titration processes, devices & data
- Ease to use, flexible & provides high data security
- Powerful data management
- Compliant with GMP, GLP & FDA requirements



Electrodes

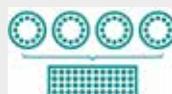
- Broad range of electrodes
- Greatest precision & ease of care
- Digital/Intelligent electrodes error free
- Monitoring functions

OMNIS - High end automation



Save time:

Manage up to 175 samples



Small footprint:

Optimize the space on your table



Faster:

Perform 4 titrations in parallel

KARL FISCHER TITRATORS

Discover how our products can help you solve your analytical challenges:

- Volumetric Karl Fischer instruments for high water contents
- Coulometers for low water contents
- Sample preparation with the Karl Fischer oven method
- Automation options, and more
- Option of systems with compliance to regulatory norms



KF Titrande

- Accurate determination of any water content (ppm to % levels)
- Operation with tiemo software for full compliance
- Coulometers with automatic start of titration and reagent exchange
- Volumetric titrators with intelligent dosing elements



Eco KF

- Volumetric titrators for moisture determination in samples
- It is highly sensitive, simple, & fast
- Excellent price/performance ratio
- GLP-compliant reporting and documentation



KF Ti-Touch

- Stand-alone titrators with all components integrated
- Precise and safe handling of KF reagent thanks to Dosino technology & integrated pump
- Compact & space saving systems



KF Combined Systems

- Combine volumetric & coulometric techniques on one system
- Versatile: touch control or software-controlled
- Adaptable: automated sample preparation possible



KF Sample Preparation

- Oven sample preparation for insoluble substances or samples that give side reactions
- Homogenizer for solid samples
- Flexible automation options



KF Gas Analyzer

- Water determination in liquefied & permanent gases
- Straightforward, fully automated & software control
- Complete system integrated into one housing - Robust & safe
- Analysis of natural gas, LPG, refrigerants, petrochemicals, etc.



With OMNIS, Karl Fischer titration is safer than ever

- Contact with toxic reagents and solvents is eliminated thanks to 3S Liquid
- Adapter
- All reagents contained in a closed system
- Used reagent discarded automatically
- It starts the titration automatically
- Automatic titration cell filling and emptying

ION CHROMATOGRAPHY

Models for routine analysis & analytical development

Professional 940 Vario multi channel, Compact 930 single channel, Eco IC.

10 year
spare part warranty +

10 year
anion suppressor
warranty +



Configure your channels:

- Number of analysis channels
- Detection modes:
 - Conductivity detector
 - UV / Visible detector
 - Electrochemical detector
 - MS, ICP, ICP-MS coupling
- Isocratic or Gradient elution mode
- Column Oven
- Chemical or Sequential suppressor
- Standard bore or microbore column
- Automatic eluent preparation

- Detector sensitivity and performance of chemical suppressors
- Robust with low maintenance costs and 10-year warranty on the anion suppressor
- User-friendly MagIC Net software with CFR 21 part 11 and its unique intelligent methods

Automated Sampler - Higher throughput

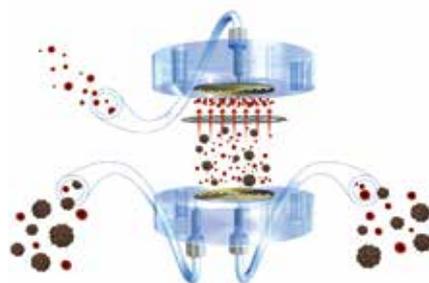
Automate your ion chromatography analysis with our autosamplers. Capacities range from a few samples to well over 200 and from volumes of a few microliters to half a liter. Auto samplers like 919 and 858 Robotic USB sampler



Automated multi-channel analysis: anions and cations with one autosampler. If you need to analyze anions and cations in parallel, your Metrohm ion chromatographs may share a single autosampler for higher throughput.

Metrohm Inline Sample Preparation (MISP)

These techniques are the key to fully automated sample analysis by ion chromatography. The samples are delivered into the system with an autosampler, subjected to one of the Metrohm Inline Sample Preparation techniques, and are then injected directly into an IC system. E.g. Inline Dilution, Inline Dialysis, Intelligent Partial loop Injection, Inline Extraction, etc.



A filtration membrane separates the ultrafiltration cell. On one side, the sample is carried through at a high flow rate. On the other side, some of the sample is drawn off through the membrane and transported to the injection valve.

pH/ CONDUCTIVITY/ DO METERS

Precision tools for every day



Robust instruments: for mobile and laboratory use

With a 912/913/914 pH/DO/Conductometer systems, you get ease of use coupled with convenience:

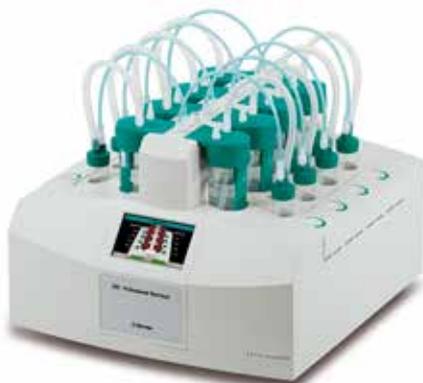
- A large color display with backlight
- Have two measurement results displayed simultaneously
- Integrated sensor quality check
- Apply time-controlled and drift-controlled measurements
- Ergonomic design for single-hand use
- Dust- and waterproof (IP67-rated)
- Perform measurements for hours thanks to the powerful built-in lithium polymer battery
- Recharge the battery using any 5 V USB power adapter or a 12 V socket in a car

856 Conductivity & 867 pH module for customised pH, ion and conductivity measurement

With the 856 Conductivity Module and 867 pH Module, you can build your own, customized solution - whether you are analyzing large sample loads or multiple parameters, or you want to enjoy full freedom when it comes to method programming and applications.

The modules combine the highest level of flexibility and technical comfort with modern measuring technology and are fully FDA-compliant.

Compatible with the Titrando series.



STABILITY MEASUREMENT

Rancimat & Thermomat

Stability measuring instruments that allow you to perform automated accelerated aging tests for:

- Natural oils & fats, Fat containing foods & cosmetics
- Biodiesels (EN 15751) and Diester (EN 14112)
- Polyvinylchloride (PVC) (NF182)

Stabnet Software:

- Storage of results, reprocessing
- Compliant FDA CFR 21 part 11

VOLTAMMETRY (VA/CVS)

884 Professional VA - The versatile instrument for research, education & industry



VIVANet Software:

- Dedicated software that gives you full control
- Ensures data security & processing capability

Trace metal analysis by Voltammetry or polarography

- Measure down to ppb/ppt
- Speciation between different oxidation states of metal ions
- Ability to analyze samples with high ionic concentration

Suitable for:

- Water, effluents and seawater
- Salts, pure chemicals
- Galvanic baths
- Foodstuff

CVS (Cyclic Voltammetric Stripping) technique allows the determination of additives organic in galvanic baths such as:

- Acid copper baths
- Tin-lead baths and tin baths
- Alkaline baths of zinc

946 Portable VA Analyzer - Mobile heavy metal analysis

Determine the trace levels of arsenic, mercury and copper in ground water.

- Full mobility: perform your analysis anywhere and get results quickly
- Simple handling: low maintenance sensor and accessories included
- Accurate results: detect traces of heavy metals



ELECTROCHEMISTRY FOR RESEARCH

VIONIC powered by INTELLO:

Superior specifications including $\pm 6A$ current, $\pm 50V$ compliance voltage and EIS upto 10MHz

Metrohm Autolab:

Modular potentiostat/galvanostat instruments

- Modular design for any experimental requirement
- Wide measurable range of current and potential
- Designed to interface to any external instrument
- Flexible software control
- Complete range of accessories



Metrohm Dropsens:

Compact & portable potentiostat/galvanostat instruments

- Small and portable
- Intuitive and easy-to-use software
- Covering all main electrochemical techniques
- Full set of accessories included
- Connectivity through digital and analog I/O ports and Bluetooth



NIR SPECTROSCOPY

Metrohm NIRSystems - Vis-NIR Spectroscopy Lab Analyzers



Metrohm NIRS lab analyzers enable you to perform routine analysis quickly & with confidence - without requiring sample preparation or additional reagents & yielding results in less than a minute. Combining visual (Vis) & near-infrared (NIR) spectroscopy, these analyzers are capable of performing qualitative analysis of various materials & quantitative analysis of a number of physical & chemical parameters in one run.

Depending on your requirements, you can choose between:

- DS2500 Analyzers: Compact system for solid samples e.g. slurries/pastes
- DS2500 Analyzers: Compact system for liquid samples



Vision Air Routine: simple graphical interface for routine analysis
Vision Air Manager: powerful and intuitive interface for setting spectrometers

- Full compliance with 21CFR Part 11
- Client / server version available

RAMAN SPECTROSCOPY

MIRA: Metrohm Instant Raman Analyzer

MIRA analyzers detect the chemical identity and verify quality of your products with convenient with one hand operation and you can analyze samples in a few seconds anywhere - in the factory, field or in the lab.

ORS (Orbital Raster Scan) technique assures:

- Optimum precision for heterogeneous substances
- Reduced risk of product degradation

Optimal flexibility:

- Unsurpassed ergonomics
- Powerful and intuitive software
- Commercial & user creatable libraries
- Analysis of mixtures
- Convenience of using standard AA batteries



MIRA-P: For the Pharmaceutical industry

- In-built barcode scanner for sample ID & batch numbers
- Quick, simple & Clear result (Pass / Fail)
- Compliant with CFR 21 part 11: audit trail, electronic signatures, access levels & data security

MIRA XTR DS: fluorescence-free material ID For Identify of hazardous & illicit substances

Designed for police, law enforcement authorities, hazmat teams & security professionals. Meets military specifications MILSPEC 810G Ideally suited for safe & rapid analysis of:

- Explosives
- Toxic substances
- Illicit substances
- Precursors & binders



RAMAN SPECTROSCOPY

Portable device: MISA (Metrohm Instant SERS Analyzer)

- This portable trace detection system is for rapid onsite detection of contaminants in food matrices: easy, fast, flexible, and sensitive.
- MISA is dedicated instrument for performing SERS (Surface Enhanced Raman Scattering) measurements
- Customizable applications available for your area of food safety concern



Handheld BWTek devices: Both 785nm & 1064nm NanoRam

- 21CFR Part 11 compliant
- Library of 110 USP pharmaceutical standards included
- Includes a range of sampling adapters

TacticID

- All inclusive handheld analyzer for explosives, hazmat & narcotics
- More than 10,000 chemicals, toxic chemicals, precursors, narcotics, pharmaceuticals, explosives & cutting agents can be detected
- Analysis of mixtures

Portable BWTek devices: i-Raman Series & Special i-Raman Systems

i-Raman Series

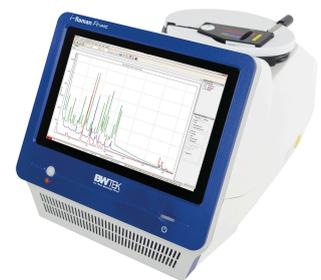
- High quantum efficiency CCD array detector with deeper cooling and high dynamic range. This series includes i-Raman Plus, i-Raman Ex, i-Raman Prime & i-Raman Pro
- BWIQ® Raman data analysis software package provides an intuitive user interface, intelligent algorithms & efficient matrix calculation power, making it easy to use by both expert & novice

Special i-Raman Systems

- 532nm / 785nm laser
- Carbon Raman analyzer for Graphene manufacturers
- STRam to analyze samples through opaque barriers
- QTRam for content uniformity & blend uniformity
- GemRam for the Gem industry



i-Raman Plus



i-Raman Prime



QTRam



GemRam

PROCESS ANALYZERS

The quality of laboratory measurements put online

Metrohm Process Analytics (MPA) has over 40 years of experience in chemical analyzers industry providing analytical instruments that meet any requirements in the process industry. The family of MPA brings laboratory analysis online for continuous monitoring & control. The product range consists of single-parameter analyzers to the most advanced multiparameter



202X Single-parameter

Analyzers for the control of industrial processes by

- Titration
- ISE
- Colorimetry
- Online pH



2035 analyzer

- For Titration, Photometry, Thermometry applications
- Modular wet parts offering greater flexibility
- Additional measuring techniques can be integrated
- Customizable & user-friendly



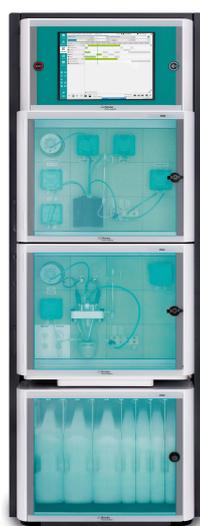
2045TI EX Process Analyzer

- Modular design for maximum flexibility and adaptation to your process requirements
- Explosion proof ideally used in hazardous environments
- IP66/NEMA 4-rated: protection in harsh environments
- EU Directives 94/9/EC (ATEX95)



ADI 2045VA Process Analyzer

- Determine low concentrations of multiple heavy metals e.g. Cu, Zn, As, Cd, Pb and Ni based on the principle of Voltammetric Analysis
- Used for online control of water, wastewater quality & industrial mining processes



2060 IC Process Analyzer

- Customized online ion chromatography monitoring
- Determine several parameters in parallel
- 24/7 unattended operation combined with continuous eluent generation

2060 MARGA M

- Ideal for 24/7 Air Monitoring
- Data collection with a time resolution of 1h to study
- Remote control or touch screen to easily access results, trend graphs, and more.



Near spectroscopy analysis infrared (NIRS)

- Continuous, non-destructive measurements in time real
- Multiplexing capability
- Characterization & quantification of components



2060 MARGA R

- Air monitoring for Research Campaigns
- A dual-channel ion chromatograph (IC) quantifies anions and cations in aerosols



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