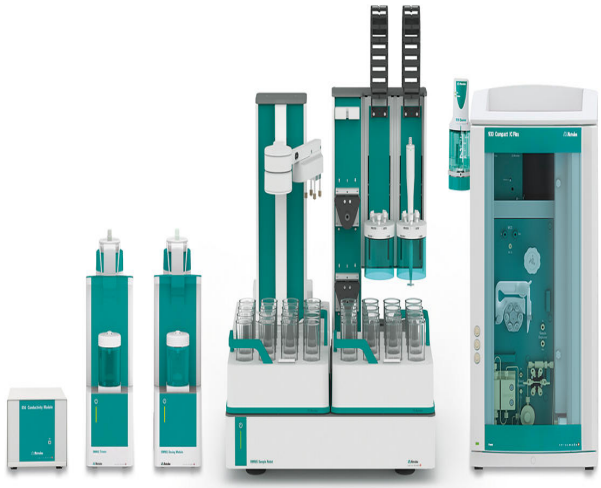

TitrIC flex I – The basic hyphenated system for IC and titration

TitrIC flex I

TitrIC flex I – the basic system

Fully automated system for direct measurement of temperature, conductivity, and pH value; the titrimetric determination of p value, m value, calcium, and magnesium, and the determination of anions using ion chromatography following Inline Ultrafiltration.

The system consists of the 856 Conductivity Module, three 800 Dosinos, Rod Stirrer "Sample Robot", OMNIS Titrator, OMNIS Dosing Module, OMNIS Sample Robot S, and 930 Compact IC Flex Oven/SeS/PP/Deg with sequential suppression, and an IC conductivity detector. The system is operated using the OMNIS and MagIC Net software packages.

TitrIC flex – the power pack for ion analysis.

Below, the accessories are grouped into Scope of delivery and Optional accessories.
Please keep this printout at hand for ordering replacement material.
These lists may be subject to change.

Scope of delivery TitrIC flex I

Order Number	Description	Quantity
2.1001.0210	**OMNIS Advanced Titrator without stirrer** Innovative, modular potentiometric OMNIS Titrator for endpoint titration and equivalence point titration (monotonic/dynamic). Thanks to 3S Liquid Adapter technology, handling chemicals is safer than ever before. The titrator can be freely configured with measuring modules and cylinder units and can have a stirrer added as needed. If required, the OMNIS Advanced Titrator can be additionally equipped for parallel titration with a corresponding software function license. – Control via PC or local network – Connection option for up to four additional titration or dosing modules for additional applications or auxiliary solutions – Can be supplemented with magnetic stirrer and/or rod stirrer – Various cylinder sizes available: 5, 10, 20 or 50 mL – Liquid Adapter with 3S technology: Safe handling of chemicals, automatic transfer of the original reagent data from the manufacturer Measuring modes and software options: – Endpoint titration: "Basic" function license – Endpoint and equivalence point titration (monotonic /dynamic): "Advanced" function license – Endpoint and equivalence point titration (monotonic /dynamic) with parallel titration: "Professional" function license	1 PCS

2.1003.0010

OMNIS Dosing Module without stirrer 1 PCS

Dosing module for connection to an OMNIS Titrator for extending the system to include an additional buret for titration/dosing. Can be supplemented with one magnetic stirrer or rod stirrer for use as separate titration stand. Freely selectable cylinder unit with 5, 10, 20 or 50 mL.

2.1006.0010

OMNIS Rod Stirrer Sample Robot 1 PCS

Rod stirrer with permanently mounted cable (2.5 m) for direct connection to the OMNIS Sample Robot.

2.1014.0010

Pick&Place module 2 PCS

Module for installation in the module plate of the Pick&Place of the OMNIS Sample Robot. This workstation takes up the sample beaker for the analysis. Used sensors are cleaned or parked in the storage beaker of the Pick&Place module between analyses. If stirring is required during the analysis, then a separate rod stirrer must be used for this workstation.

2.1016.0110

Peristaltic (4-channel) pump module 1 PCS

Module for installation in the module plate of the Pick&Place of the OMNIS Sample Robot. This workstation is equipped with two rinsing pumps and two aspiration pumps each. They are used to clean the sensors in two Pick&Place modules and to empty the sample beaker after the analysis before it is placed back in the rack once again.

2.800.0010

800 Dosino (cable: 1.5 m) 3 PCS

The 800 Dosino is a drive with write/read hardware for intelligent dosing units. With permanently attached cable (length 1.5 m).

2.850.9010

IC Conductivity Detector 1 PCS

Compact and intelligent high performance conductivity detector for intelligent IC instruments. Outstanding temperature stability, the complete signal processing within the protected detector block and the latest generation of DSP – Digital Signal Processing – guarantee the highest precision of the measurement. No change of measuring ranges (not even automatic ones) is required, due to the dynamic working range.

2.856.0010

856 Conductivity Module 1 PCS

Conductivity measuring module as supplement to an existing Titrando system or "stand-alone" in combination with a 900 Touch Control. With the 856 Conductivity Module, not only conductivity and temperature can be determined, but also TDS and salinity. It supports state-of-the-art conductivity measuring cells, i.e. 5-ring measuring cells.

The Conductivity Module is equipped with two USB interfaces for connecting printers, barcode readers, or sample changers and four MSB interfaces for stirrers or Dosinos.
For use with OMNIS Software, tiamo software, or Touch Control unit. Compliance with GMP/GLP and FDA regulations such as 21 CFR Part 11, if required.

2.930.2560

930 Compact IC Flex Oven/SeS/PP/Deg 1 PCS

The 930 Compact IC Flex Oven/SeS/PP/Deg is the intelligent Compact IC instrument with column oven, sequential suppression, peristaltic pump for suppressor regeneration and built-in degasser. The instrument can be used with any separation and detection methods.

Typical areas of application:
– Anion or cation determinations with sequential suppression and conductivity detection

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6.00202.300

dAquatrode Plus with Pt1000 1 PCS

Digital, combined pH electrode for OMNIS, with integrated Pt1000 temperature sensor, for pH measurements /titrations in ion-deficient aqueous media (e.g., drinking water, process water). This electrode shows a very short response time in these samples.
The fixed ground-joint diaphragm is insensitive to contamination.
When c(KCl) = 3 mol/L is used as bridge electrolyte, storage in storage solution is recommended.
The bridge electrolyte can be easily replaced with a chloride-free electrolyte (e.g., potassium nitrate c(KNO_3) = 1 mol/L (6.2310.010)). Storage in the bridge electrolyte used.
dTrodes can be used on OMNIS Titrators.

6.00502.300

Combined dCa ISE 1 PCS

Digital, combined calcium-selective electrode for OMNIS.
This ISE is suitable for:

– Ion measurements of Ca^{2+} in aqueous solutions
– Complexometric (back) titrations (e.g., determination of water hardness)

Thanks to a robust/break-proof plastic shaft made of propylene and an impact protection for the polymer membrane, this sensor is mechanically very resistant.
The reference electrolyte used is c(KCl) = 3 mol/L.
dTrodes can be used on OMNIS Titrators.

6.02100.010

Measuring module digital 2 PCS

Digital measurement channel for one OMNIS Titrator or Titration Module for the connection of digital "dTrodes" electrodes.

6.02102.020

Cable MDL PL/SO 1 m 1 PCS

Connecting cable for OMNIS instruments with MDL connector (1 m)

6.02104.310

Electrode cable plug-in head Q / plug P, 1.5 m 2 PCS

Cable for connecting a dTrode (plug-in head Q) to the digital measuring module from OMNIS.

6.02107.000

Network cable, 1 m 1 PCS

Network cable (1 m) for connecting one OMNIS instrument to an Ethernet Router, Ethernet Switch or local network

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6.02107.010

Network cable, 2 m 1 PCS

Network cable (2 m) for connecting one OMNIS instrument to an Ethernet Router, Ethernet Switch or local network

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6.03001.210

Cylinder unit OMNIS 10 mL 1 PCS

Intelligent 10 mL cylinder unit for an OMNIS Titrator, Titration Module or Dosing Module. Includes dosing tubing and antidiffusion tip.

6.03001.220

Cylinder unit OMNIS 20 mL 1 PCS

Intelligent 20 mL cylinder unit for an OMNIS Titrator, Titration Module or Dosing Module. Includes dosing tubing and antidiffusion tip.

6.06000.000

OMNIS
A WHOLE NEW LEVEL OF PERFORMANCE

OMNIS Software storage device 1 PCS

License-based PC program for controlling complex OMNIS analysis systems.
– Sample-oriented operating procedures with numerous templates
– Graphical method editor with numerous templates
– Clearly organized and professional sample lists
– Management of instruments, work systems, sensors, solutions
– Dialog languages: German, English, Chinese

6.0915.100

5-ring conductivity measuring cell c = 0.7 cm-1 with Pt1000 (fixed cable) 1 PCS

5-ring conductivity measuring cell with cell constant c = 0.7 cm^{-1} (guide value), with integrated Pt1000 temperature sensor and with fixed cable (1.2 m) for connecting to an 856 Conductivity Module.
This sensor is suitable for measurements of medium conductivities, e.g., in:
– drinking water
– surface water
– wastewater

6.1543.040

Micro tip M6 thread 1 PCS

Forming a complete 6.1539.000 micro-burette tip together with 6.1805.160 capillary tubing and 6.1446.030 ball stopper

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6.1618.020

Thread adapter S 40 to GL 45 1 PCS

Adapter for bottles with S40 thread (Merck...) to GL45.

6.1805.030

FEP tubing / M6 / 150 cm 3 PCS

With light and kink protection

6.1805.110

FEP tubing / M6 / 80 cm 2 PCS

With light and kink protection

6.1805.120

FEP tubing / M6 / 100 cm 1 PCS

With light and kink protection

6.1808.040

Thread adapter M6 outer / M8 inner 1 PCS

Outer thread M6, inner thread M8.

6.1808.280

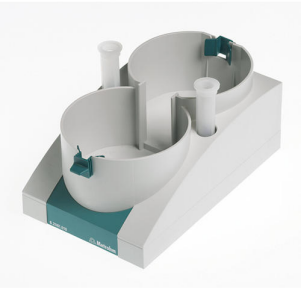
Adapter 807 Dosing Unit Port 4, M6 inner 1 PCS

Adapter for using Port 4 of the 807 dosing Unit for connection with an FEP tubing / M6.

6.2061.010

Bottle holder for Dosinos 1 PCS

Bottle holder for up to two Dosinos, mounted on 1 L reagent bottles.



6.2065.000

Stacking frame for 846 Dosing Interface, 856 Conductivity Module, 867 pH Module 1 PCS

For fixing the Reagent Organizer on top of the Dosing Interface

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6.2134.040

RS-232 DB9 - IBM-PC(DB9) connecting cable 1 PCS

For the Metrohm RS-232 interface - PC connection. For Titrinos, Titrino plus and 756, 831 KF Coulometer, RS-232 /USB Box

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6.2148.050

USB/RS-232 Converter for 900 Touch Control 2 PCS

Extends the 900 Touch Control by an RS-232 interface for the connection of e.g. balance.

6.2151.000

Cable USB A – mini-DIN 8-pin 1 PCS

Controller cable

6.2744.080

M6 thread / UNF 10/32 adapter 1 PCS

With M6 outer thread. For IC instruments.

6.2755.000

Tubing cartridge 1 PCS

For the peristaltic pumps of IC instruments. Contact pressure adjustable.

6.3032.220

807 Dosing Unit 20 mL 1 PCS

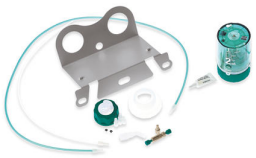
807 Dosing Unit with integrated data chip with 20 mL glass cylinder and light protection, mountable to a reagent bottle with ISO/DIN GL 45 glass thread. FEP tubing connection, antidiffusion tip.

6.3032.250

807 Dosing Unit 50 mL 1 PCS

807 Dosing Unit with integrated data chip with 50 mL glass cylinder and light protection, mountable to a reagent bottle with ISO/DIN GL 45 glass thread. FEP tubing connection, antidiffusion tip.

6.5330.190



IC equipment: Dosino regeneration 1 PCS

Accessory set for the assembly of a Dosino for automatic regeneration of the Metrohm Suppressor Module (MSM).

6.06003.012

OMNIS stand-alone license with 2 instrument licenses 1 PCS

Enables stand-alone operation of the OMNIS Software on a Windows™ computer.
Features:
– The license already includes two OMNIS instrument licenses.
– Must be activated via the Metrohm licensing portal.

6.06002.010

OMNIS Stand-Alone: 1 instrument license 2 PCS

1 instrument license for operating one additional OMNIS instrument in OMNIS Stand-Alone.

The following instruments are supported:
– OMNIS instruments
– Metrohm USB devices
– RS-232 instruments (e.g., balance)

6.05330.010

IC equipment: Inline Ultrafiltration 2 - pull mode 1 PCS

Accessory set for Inline Ultrafiltration 2 - pull mode. For use with the 858 Professional Sample Processor/ 919 IC Autosampler plus.

6.02057.120

Ultrafiltration cell 2 holder, stand-alone 1 PCS

Holder for the 6.02729.110 ultrafiltration cell 2

Optional accessories

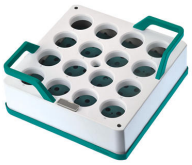
6.2832.000
MSM Rotor A

Suppressor rotor for all IC instruments with MSM (Metrohm Suppressor Module)

6.2842.020
Adapter sleeve, MSM

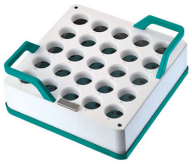
Not only the MSM Rotor A but also the MSM-LC Rotor A can be installed in the rotor housing with the aid of the adapter sleeve.

6.02041.030
OMNIS sample rack, 16 x 120 mL, (PP)



OMNIS sample rack for OMNIS Sample Robot Pick&Place, suitable for 16 sample beakers. The following sample beakers can be used: 6.01400.200, 6.01400.300, 6.01400.303.
Plastic: Polypropylene (PP)

6.02041.040
OMNIS sample rack, 25 x 75 mL, (PP)



OMNIS sample rack for OMNIS Sample Robot Pick&Place, suitable for 25 sample beakers. The following sample beakers can be used: 6.01402.000, 6.01402.003, 6.1459.400.

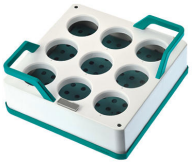
Plastic: Polypropylene (PP)

6.02041.050
OMNIS sample rack, 9 x 150 mL, (PP)

OMNIS sample rack for OMNIS Sample Robot Pick&Place, suitable for 9 sample beakers. The following sample beakers can be used: 150 mL beaker (tall shape and without spout).

Plastic: Polypropylene (PP)

6.02041.010
OMNIS sample rack, 9 x 250 mL, (PP)



OMNIS sample rack for OMNIS Sample Robot Pick&Place, suitable for 9 sample beakers. The following sample beakers can be used: 6.01400.000, 6.01400.003, 6.01400.100.
Plastic: Polypropylene (PP)

6.01402.000
Sample beakers, clear glass, 75 mL, 30 pieces

Sample beakers, clear glass, 75 mL, suitable for 602041040 OMNIS sample rack, 30 pieces

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6.01400.300
Sample beakers, clear glass, 120 mL, 20 pieces

Sample beakers, clear glass, 120 mL, suitable for 602041030 OMNIS sample rack, 20 pieces.

6.01400.200
Sample beakers, plastic (PP), 120 mL, 20 pieces

Sample beakers, plastic (polypropylene, PP), 120 mL, suitable for 602041030 OMNIS sample rack, 20 pieces.

6.01400.000
Sample beakers, clear glass, 250 mL, 10 pieces

Sample beakers, clear glass, 250 mL, suitable for 602041010 OMNIS sample rack, 10 pieces.

6.01400.100
Sample beakers, plastic (PP), 250 mL, 10 pieces

Sample beakers, plastic (polypropylene, PP), 250 mL, suitable for 602041010 OMNIS sample rack, 10 pieces.

6.01404.050
Beaker adapter for 150 mL sample beaker

Beaker adapter for centering the 150 mL sample beaker in the slide of the Pick&Place modules.

6.01404.040
Beaker adapter for OMNIS 75 mL sample beaker

Beaker adapter for centering the 75 mL sample beaker in the slide of the Pick&Place modules

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6.01404.030
Beaker adapter for OMNIS 120 mL sample beaker

Beaker adapter for centering the 120 mL sample beaker in the slide of the Pick&Place modules

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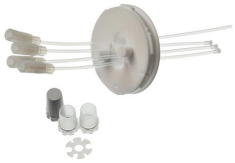
6.01403.030
Titration head 3xNS14 / 4x6.4 mm (P&P)

Titration head with 3 NS14 and 4x 6.4 mm openings for using 120 mL beakers in Pick&Place modules of the OMNIS Sample Robot Pick&Place with two retracted dosing tips. Prepared for being equipped with rinsing and aspiration tubing.

6.01403.040
Titration head 2xNS14 (P&P)



Titration head with 2 NS14 openings for use in Pick&Place modules of the OMNIS Sample Robot Pick&Place with 3 retracted dosing tips. Prepared for being equipped with rinsing nozzles. One aspiration tube is already retracted into the titration head.

6.01403.000
Titration head 6xNS14 / 3xNS9 (P&P)

Titration head with 6 NS14 and 3 NS 9 openings for use in Pick&Place modules of the OMNIS Sample Robot Pick&Place

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6.01403.070
Titration head 3 x NS14 / 4 x 6.4 mm; 4 x dosing tip

Titration head with 3 NS14 and 4 x 6.4 mm openings for using 200 mL PP disposable beakers (6.1459.310) or 150 mL beaker glasses (tall shape, without spout) in Pick&Place modules of the OMNIS Sample Robot Pick&Place with four retracted dosing tips. Prepared for being equipped with rinsing and aspiration tubing.

6.01900.020
Stirring propeller 13 mm ETFE

Stirring propeller 13 mm ETFE with adjustable height for use with Rod Stirrer "Titrator" or Rod Stirrer "Sample Robot"

6.01900.030
Stirring propeller 20 mm ETFE

Stirring propeller, 20 mm, with adjustable height for use with Rod Stirrer "Titrator" or Rod Stirrer "Sample Robot"

6.01900.010
Stirring propeller 30 mm ETFE

Stirring propeller 30 mm ETFE with adjustable height for use with Rod Stirrer "Titrator" or Rod Stirrer "Sample Robot"

6.02601.040
Gripper fingers 28-48 mm

Gripper fingers for OMNIS Sample Robot Pick&Place for gripping sample beakers with an outer diameter of 28 - 48 mm.

6.02601.010
Gripper fingers 43 - 65 mm

Gripper fingers for OMNIS Sample Robot Pick&Place for gripping sample beakers with an outer diameter of 43 to 65 mm.

6.02601.030
Gripper fingers 48-64 mm

Gripper fingers for OMNIS Pick&Place Sample Robot for gripping sample beakers with an outer diameter of 48 - 64 mm.

6.02601.020
Gripper fingers 50 - 72 mm

Gripper fingers for OMNIS Sample Robot Pick&Place for gripping sample beakers with an outer diameter of 50 to 72 mm.

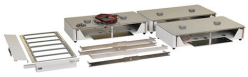
6.05700.000
Consumable Kit OMNIS Gripper

Four slide sleeves and rubber gripper fingers each for replacement on the gripper finger of the OMNIS Sample Robot.

6.05800.000
Upgrade Sample Robot S to M

The set contains all of the components required for upgrading an already existing OMNIS Sample Robot from size S to size M. In addition to the required rack and module bases, all of the required cables, screws and arm extensions are included, as is the function license. As before, the set also contains a drain channel for OMNIS Sample Robot M/L.

6.05800.010
Upgrade Sample Robot S to L



The set contains all of the components required for the upgrade of an already existing OMNIS Sample Robot from size S to size L. In addition to the required rack and module bases, all of the required cables, screws and arm extensions are included, as is the function license. As before, the set also contains a drain channel for OMNIS Sample Robot M/L.

6.05800.020
Upgrade Sample Robot M to L

The set contains all of the components required for the upgrade of an already existing OMNIS Sample Robot from size M to size L. Apart from the required rack and module bases, all the required cables, screws, arm extensions as well as the function license are included.

6.05800.030
Upgrade peristaltic pump module

This set contains all of the components that are required for the upgrade of a peristaltic (2-channel) pump module to a peristaltic (4-channel) pump module in the OMNIS Sample Robot Pick&Place. In addition to the pumps required, all the necessary tubing and canisters are included to equip one additional rinsing pump and one additional aspiration pump each.

6.05700.010
Consumable Kit OMNIS Pump Module (2-channel)

Two pump tubings each and associated press clamps for replacement in the OMNIS pump module. One Consumable Kit can be used for re-equipping two peristaltic pumps of the pump module.

6.05700.250
Consumable Kit OMNIS Gripper for 6.02601.030

Four rubber gripper fingers for replacement on the gripper finger of the OMNIS Sample Robot.

6.02007.010
Lid tray for OMNIS Sample Robot S

Lid tray for assembly on OMNIS pump module or 6.02007.000 dummy panel attachment in the OMNIS Sample Robot S system.

6.05800.070
Lid tray upgrade for OMNIS Sample Robot S to M/L

This set includes a top lid tray for upgrading a Sample Robot S lid tray for use in the OMNIS Sample Robot M or L.

6.02007.020
Lid trays for OMNIS Sample Robot M/L

Lid trays for assembly on OMNIS pump modules or 6.02007.000 blind plate attachments in the OMNIS Sample Robot M or L system.

6.02710.030
Dis-Cover lid for OMNIS 75 mL sample beaker, 25 pieces

Dis-Cover lid for 75 mL 6.01402.000 and 6.01402.003 sample beakers in the OMNIS Sample Robot Pick&Place system.

6.02710.040
Dis-Cover lid for OMNIS 120 mL sample beaker, 16 pieces

Dis-Cover lid for 120 mL 6.01400.200, 6.01400.300 and 6.01400.303 sample beakers in the OMNIS Sample Robot Pick&Place system.

6.02710.050
Dis-Cover lid for OMNIS 250 mL sample beaker, 9 pieces

Dis-Cover lid for 250 mL 6.01400.000, 6.01400.003 and 6.01400.100 sample beakers in the OMNIS Sample Robot Pick&Place system.

6.2061.120
System Connector

Connects an IC module with the footprint of a Professional IC with a Compact IC

2.941.0010
941 Eluent Production Module

The 941 Eluent Production Module enables the automatic production of an eluent. It enables continuous working without manual intervention and guarantees stable retention times. It can be combined with all Metrohm IC instruments and is monitored by MagIC Net.

2.800.0010
800 Dosino (cable: 1.5 m)

The 800 Dosino is a drive with write/read hardware for intelligent dosing units. With permanently attached cable (length 1.5 m).

6.5330.090

IC equipment: Additional eluent on the Eluent Production Module

Accessory set for Eluent Production Module. Contains all parts necessary for expansion by one eluent. The level sensor must be ordered in accordance with the application.

6.2769.110

EMPTY sensor for level sensor for 2 L bottles

This sensor, mounted in the 6.1626.000 bottle attachment, results in the level sensor EMPTY for 2 L bottles. Included are two sensor rods, one aspiration tubing and two holders for fixing the tubing to one of the sensor rods.

6.2301.060

KCl ion standard 250 mL

KCl ion standard (c(ion) = 0.1000 +/-0.0005 mol/L), can also be used as standard solution for conductometry 12.87 mS/cm (25 ° C).

6.2307.100
Buffer solution pH 4 (500 mL)

Ready-to-use buffer solution pH = 4 (25 °C), colored, with closure seal

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6.2307.110
Buffer solution pH 7 (500 mL)

Ready-to-use buffer solution pH = 7 (25 °C), colored, with closure seal

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6.2307.120
Buffer solution pH 9 (500 mL)

Ready-to-use buffer solution pH = 9 (25 °C), colorless, with closure seal

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6.2325.000
pHit kit

Maintenance kit for pH electrodes
The kit contains:
– 50 mL cleaning solution
– 50 mL 3M KCl solution
– 50 mL storage solution
– 2 Storage vessels
– Instructions for use

6.1608.030

Round glass bottle / 1000 mL / GL 45

6.5330.150

IC equipment: Dose-in Gradient Anions

Accessory set for assembling the Dose-in Gradient for anion analyses.

6.6059.422

MagIC Net 4.2 Professional: 1 license

Professional chromatography software from Metrohm for controlling all intelligent Professional IC systems, Compact IC systems and their peripherals, all detectors and the various Auto samplers, 800 Dosino, 771 Compact Interface, etc. The software permits checks, data acquisition, data evaluation and data monitoring as well as report generation of ion chromatographic analyses.

Graphical user interface for routine operations, extensive database programs, method development, configuration and manual control panel; very flexible user management, efficient database operations, extensive data export functions, individually configurable report generator, control and monitoring of all system components and the chromatography results.

MagIC Net Professional complies fully with FDA Regulation 21 CFR Part 11 as well as GLP.

MagIC Net is available in 15 dialog languages: German, English, Chinese, Traditional Chinese, French, Italian, Spanish, Portuguese, Bulgarian, Czech, Hungarian, Japanese, Korean, Russian, Slovakian

With this version, the graphic user interface has been modernized, which improves, among other things, the scaling and sharpness of the user interface on 4K monitors.

1 license

The installation and documents are supplied on a USB flash drive.

6.6059.423
MagIC Net 4.2 Multi: 3 licenses

Client/server-compatible chromatography software from Metrohm for controlling all intelligent Professional IC systems, Compact IC systems and their peripherals, all detectors and the various Autosamplers, 800 Dosino, 771 Compact Interface, etc.
The software permits checks, data acquisition, data evaluation and data monitoring as well as report generation of ion chromatographic analyses.
Data and method are centrally stored on a Server.

Graphical user interface for routine operations, extensive database programs, method development, configuration and manual control panel; very flexible user management, efficient database operations, extensive data export functions, individually configurable report generator, control and monitoring of all system components and the chromatography results.
MagIC Net Multi complies fully with FDA Regulation 21 CFR Part 11 as well as with GLP.
MagIC Net is available in 15 dialog languages: German, English, Chinese, Traditional Chinese, French, Italian, Spanish, Portuguese, Bulgarian, Czech, Hungarian, Japanese, Korean, Russian, Slovakian
With this version, the graphic user interface has been modernized, which improves, among other things, the scaling and sharpness of the user interface on 4K monitors.
Performance for client/server systems with servers outside the in-house company network has been improved.
Client/server version with 3 licenses