OMNIS Solvent Module

2.1009.0010

Product manual

8.1009.8002EN / v5 / 2025-06-30

Metrohm

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This documentation is an original document.

This documentation has been prepared with great care. However, errors can never be entirely ruled out. Please send comments regarding possible errors to the address above.

Disclaimer

Deficiencies arising from circumstances that are not the responsibility of Metrohm, such as improper storage or improper use, etc., are expressly excluded from the warranty. Unauthorized modifications to the product (e.g., conversions or attachments) exclude any liability on the part of the manufacturer for resulting damage and its consequences. Instructions and notes in the Metrohm product documentation must be strictly followed. Otherwise, Metrohm's liability is excluded.

Table of contents

1 Overview

1.1 OMNIS Solvent Module – Product description

The OMNIS Solvent Module is a pump module, which is either controlled manually or via the OMNIS Software. The OMNIS Solvent Module is also equipped with features to secure bottles.

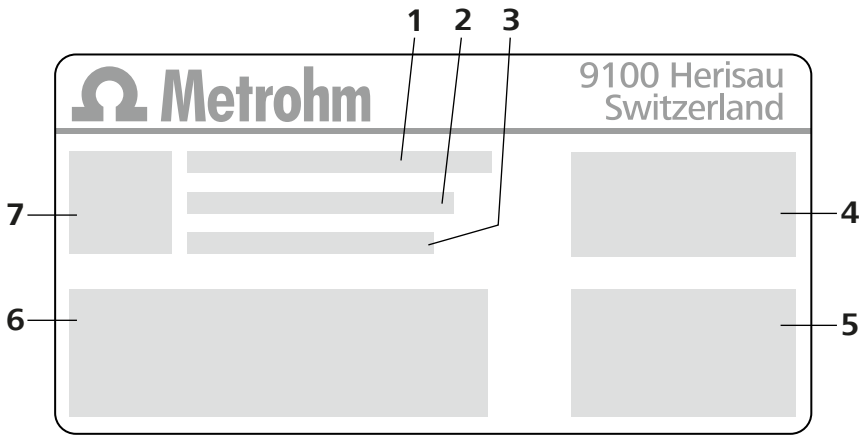
1.2 OMNIS Solvent Module – Product versions

The product is available in the following versions:

Table 1 Product versions

Article number	Designation
2.1009.0010	OMNIS Solvent Module

The article number and serial number for identification of the product can be found on the type label:



1	**(01) = Article number in accordance with GS1 standard**	**2**	**(21) = Serial number**
3	**(240) = Metrohm article number**	**4**	**Certification**
5	**Technical specifications**	**6**	**Certification**
7	**QR code**		

1.3 About the documentation

Possible depictions in the documentation:

Depiction	Meaning
*(5-**12**)*	Cross-reference to figure legend (Figure number - ***Element in the figure***)
1	Instruction step
Method	Parameters, menu items, tabs, and dialogs
File ▶ **New**	Menu path
[Continue]	Button or key
	Supplementary information to the descriptive text
	Note In graphics, orange arrows or frames indicate the reference to the descriptive text. The relevant elements may also be colored orange.
	Movement In graphics, blue arrows indicate the movement direction. The elements to be moved may also be colored blue.

1.4 Further information

Additional information on the product is available on the following pages:

- Metrohm website *https://www.metrohm.com* – Documents as PDF, overview of product family, information on applications and details of accessories.
- Metrohm Knowledge Base *https://guide.metrohm.com* – Thematically filtered individual content, videos, information on OMNIS Software.

1.5 Displaying accessories

Up-to-date information on the scope of delivery and on optional accessories can be found on the Metrohm website.

1 Searching for a product on the website

- Go to *https://www.metrohm.com*.
- Click on 🔍.
- Enter the article number of the product (e.g. **2.1001.0010**) into the search field and press **[Enter]**.

The search result is displayed.

2 Displaying product information

- To display the products matching the search term, click on **Product models**.
- Click on the desired product.

Detailed information regarding the product is displayed.

3 Displaying accessories and downloading the accessories list

- To display the accessories, scroll down to **Accessories and more**.
  - The **scope of delivery** is displayed.
  - Click on **[Optional parts]** for the optional accessories.
- To download the accessories list, click on **[Download accessories PDF]** under **Accessories and more**.

Metrohm recommends keeping the accessories list for reference purposes.

2 Safety

2.1 Intended use

Metrohm products are used for the analysis and handling of chemicals.

Usage therefore requires the user to have basic knowledge and experience in handling chemicals. Knowledge regarding the application of fire prevention measures prescribed for laboratories is also mandatory.

Adherence to this technical documentation and compliance with the maintenance specifications make up an important part of intended use.

Any utilization in excess of, or deviating from, the intended use is regarded as misuse.

Specifications regarding the operating values and limit values of individual products are contained in the "Technical specifications" section, if relevant.

Exceeding and/or not observing the mentioned limit values during operation puts people and components at risk. The manufacturer assumes no liability for damage due to non-observance of these limit values.

The EU declaration of conformity loses its validity as soon as modifications are carried out on the products and/or the components.

2.2 Responsibility of the operator

The operator must ensure that basic regulations on occupational safety and accident prevention in chemical laboratories are observed. The operator has the following responsibilities:

- Instruct personnel in the safe handling of the product.
- Train personnel in the use of the product according to the user documentation (e.g. install, operate, clean, eliminate faults).
- Train staff on basic occupational safety and accident prevention regulations.
- Provide personal protective equipment (e.g. protective glasses, gloves).
- Provide suitable tools and equipment to carry out the work safely.

The product may be used only when it is in perfect condition. The following measures are required to ensure the safe operation of the product:

- Check the condition of the product before use.
- Remedy defects and malfunctions immediately.
- Maintain and clean the product regularly.

2.3 Requirements for operating personnel

Only qualified personnel may operate the product. Qualified personnel are persons who meet the following requirements:

- Basic regulations on occupational safety and accident prevention for chemical laboratories are known and complied with.
- Knowledge of handling hazardous chemicals is present. Personnel have the ability to recognize and avoid potential dangers.
- Knowledge regarding the application of fire prevention measures for laboratories is available.
- Safety-relevant information is communicated and understood. The personnel can operate the product safely.
- The user documentation has been read and understood. The personnel operate the product according to the instructions in the user documentation.

2.4 Safety instructions

2.4.1 Danger from electrical potential

Contact with electrical potential can cause serious injuries or death. To avoid danger from electrical potential, observe the following:

- Operate the product only if it is in perfect condition. The housing must also be intact.
- Only use the product with the covers fitted. If covers are damaged or missing, disconnect the product from the energy supply and contact the regional Metrohm service representative.
- Protect live components (e.g. power supply unit, power cord, connection sockets) against moisture.
- Always have maintenance work and repairs on electrical components carried out by a regional Metrohm service representative.
- Disconnect the product from the energy supply immediately if at least one of the following cases occurs:
  - The housing is damaged or open.
  - Live parts are damaged.
  - Moisture penetrates.

2.4.2 Danger from biological and chemical hazardous substances

Contact with biological hazardous substances may cause poisoning from toxins or infections from microorganisms. Contact with aggressive chemical substances may cause poisoning or chemical burns. To avoid danger from biological or chemical hazardous substances, observe the following:

- Label the product according to regulations if it is used for substances that have a potential for chemical hazards and are generally subject to the Hazardous Substances Ordinance.
- Wear personal protective equipment (e.g. protective glasses, gloves).
- Use exhaust equipment when working with vaporizing hazardous substances.
- Dispose of hazardous substances in accordance with regulations.
- Clean and disinfect contaminated surfaces.
- Only use detergents that do not cause any unwanted side reactions with the materials to be cleaned.
- Dispose of chemically contaminated materials (e.g. cleaning material) in accordance with regulations.
- Proceed as follows in case of a return shipment to Metrohm AG or a regional Metrohm representative:
  - Decontaminate the product or product component.
  - Remove the labeling for hazardous substances.
  - Create a declaration of decontamination and enclose it with the product.

2.4.3 Danger from highly flammable substances

Using highly flammable substances or gases may cause fires or explosions. To avoid danger from highly flammable substances, observe the following:

- Avoid ignition sources.
- Use protective grounding.
- Use exhaust equipment.

2.4.4 Danger from leaking liquids

Leaking liquids may cause injuries and may damage the product. To avoid danger from leaking liquids, observe the following:

- Check the product and its accessories for leakages and loose connections.
- Replace leaking parts and connecting elements without delay.
- Tighten loose connecting elements.
- Do not loosen tubing connections under pressure.
- Do not remove aspiration tubing under pressure.
- Carefully pull the ends of the tubing out of the containers.
- Carefully let liquids from tubing drain into suitable containers.
- Insert the buret tips completely into the containers.
- Remove and dispose of leaked liquids in accordance with regulations.
- If you suspect that liquid has penetrated the instrument, disconnect the instrument from the energy supply. Then have the instrument checked by a regional Metrohm service representative.

2.4.5 Danger during transport of the product

Chemical or biological substances may be spilled during the transport of the product. Parts of the product may fall down or may be damaged. There is a risk of injury from chemical or biological substances and pieces of broken glass. To ensure safe transport, observe the following:

- Remove loose parts (e.g. sample racks, sample vessels, bottles) before transport.
- Remove liquids.
- Lift and transport the product with both hands on the base plate.
- Lift and transport heavy products only according to instructions.

2.5 Design of warning messages

The present documentation uses warning messages as follows.

Structure

1. Severity of the danger (signal word)
2. Type and source of danger
3. Consequences of disregarding the danger
4. Measures for averting the danger

Hazard levels

Signal color and signal word designate the hazard level.

DANGER

Indicates an immediate danger. It will result in serious injuries or death if not avoided.

WARNING

Indicates a potential danger. Failure to avoid the danger may result in death or serious injury.

CAUTION

Indicates a potential danger. If not avoided, it may result in light or minor injuries.

NOTICE

Indicates a potentially damaging situation. If not avoided, the product or something in the surrounding area could be damaged.

2.6 Meaning of warning signs

Warning signs on the product or in the documentation indicate potential dangers or draw attention to certain behaviors in order to avoid accidents or damage.

Depending on the application purpose, the operating company attaches additional warning signs to the product. The corresponding instructions of the operator must be followed.

Table 2 Warning signs according to ISO 7010 (examples)

Warning signs / meaning		Warning signs / meaning	
	General warning sign		Warning of hot surface
	Warning of sharp object (cut/ puncture)		Warning of hand injuries (crushing)
	Warning of electrical voltage		Warning of corrosive substances
	Warning of optical radiation		Warning of a laser beam
	Warning of flammable materials		Warning of biological hazard
	Warning of toxic materials		

3 Functional description

3.1 OMNIS Solvent Module – Overview

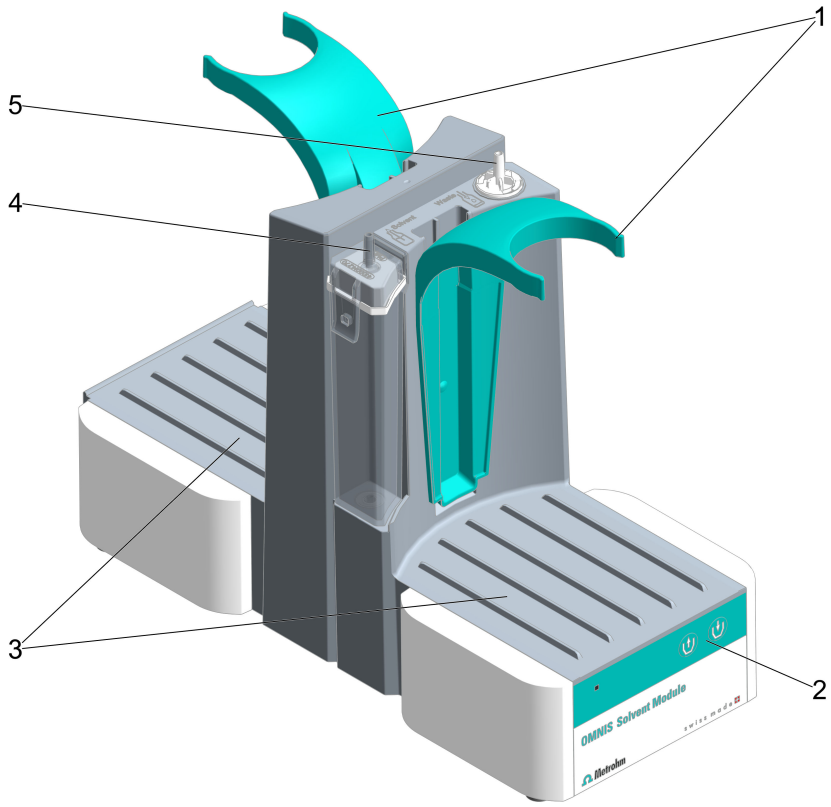


Figure 1 OMNIS Solvent Module – Front

1	**Bottle holder**
2	**Controls**
3	**Platform** For chemical bottles
4	**Tubing connector for cartridge** Tubing connection between OMNIS Solvent Module and reagent bottle (Solvent)
5	**Tubing connector** Tubing connection between OMNIS Solvent Module and waste bottle (Waste)

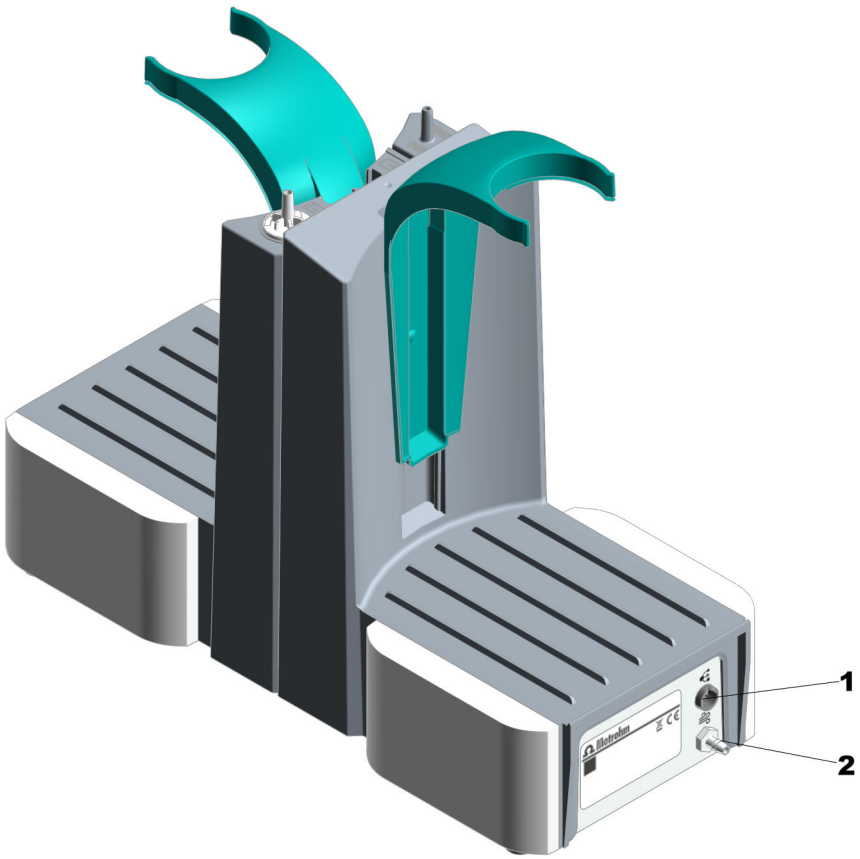


Figure 2 OMNIS Solvent Module – Rear

1 MDL connector
MDL = Metrohm Device Link. Connection socket for connecting cables between OMNIS instruments

2 Air vent
Nozzle for inlet air and exhaust air

3.1.1 Adsorption cartridge – Overview

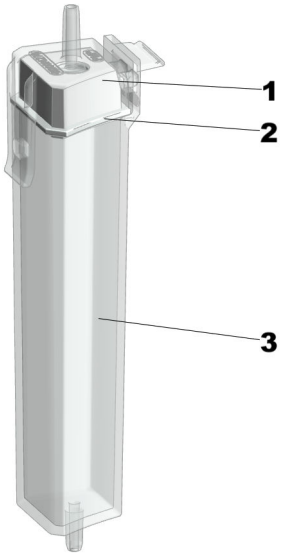


Figure 3 Adsorption cartridge (6.01807.000)

1	**Cartridge lid** With tubing olive for the PVC tubing leading to solvent bottle	**2**	**Seal** Integrated in the cartridge lid
3	**Cartridge housing** With connection nipple for OMNIS Solvent Module		

3.2 OMNIS Solvent Module – Function

NOTICE

Material damage by chemicals

The OMNIS Solvent Module is not suitable for pumping reagents containing acetone, MIBK (methyl isobutyl ketone) or THF (tetrahydrofuran).

The OMNIS Solvent Module contains one membrane pump and one valve.

With the integrated membrane pump, new reagent (Solvent) can be added without the titration cell having to be opened and the waste (e.g. the titrated solution) can be aspirated from the titration cell.

To achieve this, air only is pumped through the pump and a positive or negative air pressure is created by switching the valve.

With positive air pressure in the reagent bottle, the liquid flows through the tubing and into the titration cell.

With negative air pressure, the waste is aspirated from the connected titration cell.

The Siphon Breaker on the reagent bottle prevents liquid from seeping into the titration cell after the pumping procedure.

3.2.1 Adsorber cartridge – Function

When pumping solvent out of the solvent bottle, the air stream that replaces it is guided through the adsorber cartridge where it is dried.

For this reason, the adsorber cartridge needs to be filled with molecular sieve that must then be replaced at regular intervals *(see "Replacing the adsorber material", chapter 5.3, page 16)*. In addition, the adsorber cartridge must be connected to the solvent bottle *(see "OMNIS Solvent Module – Mounting the bottles", chapter 5.5, page 21)*.

Make sure

- that the lid of the adsorber cartridge is tightly sealed.
- that the cotton loosely covers the whole base of the adsorber housing.

3.3 OMNIS Solvent Module – Indicators and controls

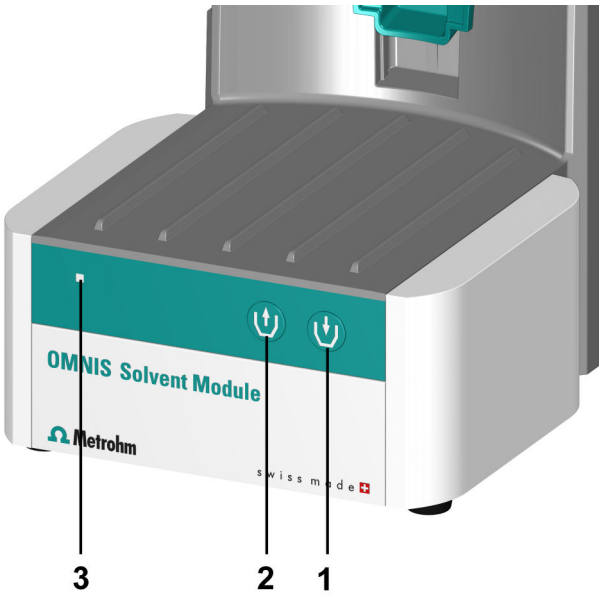


Figure 4 OMNIS Solvent Module – Indicators and controls

1	**Add key** Deliver liquid (Solvent) into the titration cell
2	**Aspirate key** Aspirate waste from the titration cell
3	**Status display** Multi-colored

Indicators

The status of the instrument is displayed with the status display *(4-**3**) (see "System – Signals", chapter 3.4, page 13)*.

Controls

The keys *(4-**1**)* and *(4-**2**)* are used for the hardware-side operation of the OMNIS Solvent Module.

Table 3 Behavior of the keys

Operation mode	Function of the pump
Long pressing (> 1 s)	The liquid is delivered for as long as the key is pressed. The dosing time is saved.
Short pressing (≤ 1 s)	The liquid is delivered as long as the last saved dosing time. The delivery is stopped by pressing the key again.

3.4 System – Signals

System components with status indicators show their operating status with colors and/or flashing patterns. The meaning of the colors and flashing patterns is explained in the following table.

Visual signal		Meaning
	LED lights up yellow.	System start or initialization
	LED flashes yellow (slowly).	Ready for connection setup or locking
	LED flashes yellow (fast).	Connection setup started or locking underway
	LED lights up green.	Ready for operation
	LED flashes green (slowly).	In operation
	LED flashes red (fast).	Malfunction or error

Some system components only use part of the explained flashing patterns.

3.5 OMNIS Solvent Module – Interfaces

Figure 5 OMNIS Solvent Module – Interfaces and connectors

1 MDL connector
MDL = Metrohm Device Link. Connection socket for connecting cables between OMNIS instruments

2 Air vent
Nozzle for inlet air and exhaust air (e.g. for controlled extraction of methanol vapor with tubing)

4 Delivery and packaging

4.1 Delivery

Inspect the delivery immediately upon receipt:

- Check the delivery against the delivery note to ensure completeness.
- Check the product for damage.
- If the delivery is incomplete or damaged, contact your regional Metrohm representative.

4.2 Packaging

The product and accessories are supplied in protective special packaging. Keep this packaging to ensure safe transportation of the product. If a transport locking device is present, keep this as well for future reuse.

5 Installation

5.1 Installation by Metrohm

Installation and the initial start-up of the system is always carried out by the regional Metrohm service representative.

5.2 Setup location

The product is only suitable for operation indoors and may not be used in explosive environments.

The following requirements apply to the setup location:

- The room is well-ventilated and protected against both direct sunlight and excessive temperature fluctuations.
- The setup space is stable and free of vibrations. The setup space must be suitable for the dimensions and weight of the components (see technical specifications).
- All cables and connectors are accessible during operation. The cables are safely installed (no tripping hazards).
- The workplace is ergonomically designed and ensures trouble-free operation of the product.

5.3 Replacing the adsorber material

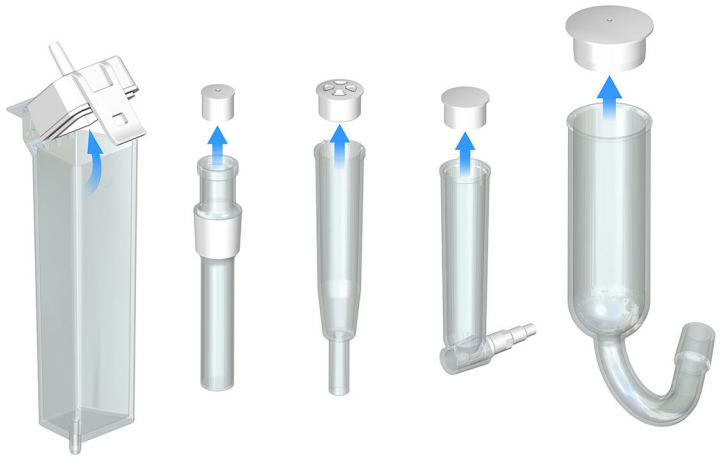
Depending on the OMNIS product, different adsorber cartridges or adsorber tubes are available.

Table 4 Available adsorber cartridges or adsorber tubes

Adsorber cartridge / adsorber tube	Article number	Figure
Adsorber cartridge for OMNIS Solvent Module	6.01807.000	

Adsorber cartridge / adsorber tube	Article number	Figure
Adsorber tube for coulometric Karl Fischer titration cell	6.1403.030	
Adsorber tube for volumetric Karl Fischer titration cell	6.01406.010	
Adsorber tube for a cylinder unit OMNIS	6.1619.020	
Adsorber tube for waste bottle for OMNIS Dosing Module	6.1609.000	

1 Removing the lid from the housing



- Adsorber cartridge: Unlatch and remove the lid including the seal from the housing.
- Adsorber tube: Remove the lid by pulling it out of the housing.

2 Removing the molecular sieve (if present)

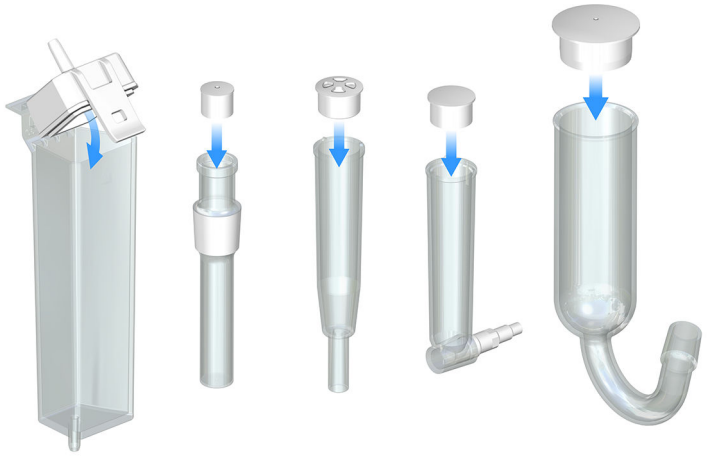
- Remove the molecular sieve and regenerate for at least 24 hours in the drying oven at 300 °C. Place in a desiccator to cool down and then seal airtight in a glass bottle, see also *FAQ on Karl Fischer titration*.

3 Filling the molecular sieve

- Adsorber cartridge: Place a base-covering cotton plug loosely into the housing at the bottom. Do not pack the wad of cotton too tightly as sufficient gas flow must be possible. Use a molecular sieve to fill the housing to approx. 1 cm under the housing edge.
- Adsorber tube: Place a small cotton plug on the molecular sieve. Do not pack the wad of cotton too tightly as sufficient gas flow must be possible.

4 Sealing the housing with the lid

Make sure that the sealing surface between the housing and the lid is clean and dry, and that there no residual filling material whatsoever is present.



- Adsorber cartridge: Hook the lid including the seal into the housing side and close it by clicking it into place.
- Adsorber tube: Seal the housing with the lid.

At moderate humidity, replace the molecular sieve approx. every 6 weeks.

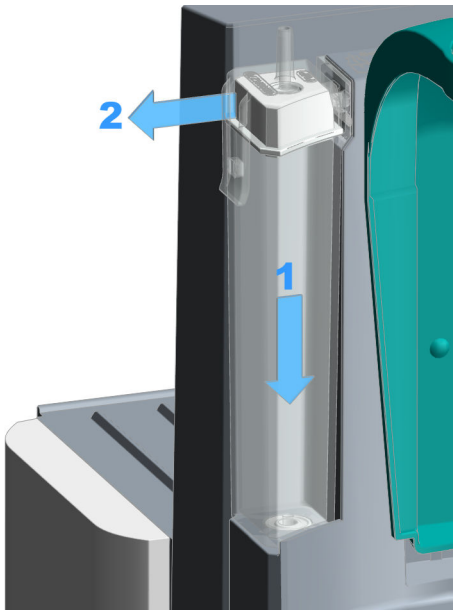
An increase in drift is an indication that the molecular sieve is saturated and that the humidity is therefore entering the Karl Fischer titration cell.

Hint:

After replacing the molecular sieve, write the date on the adsorber housing.

5.4 OMNIS Solvent Module – Removing and mounting the adsorber cartridge

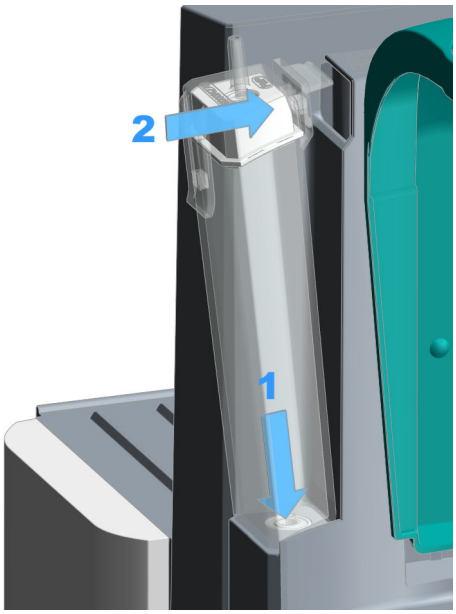
Removing the adsorber cartridge from the OMNIS Solvent Module



1. Remove the PVC tubing from the tubing olive.
2. Press the integrated cartridge of the OMNIS Solvent Module down (**1**). At the same time, carefully pull it outwards (**2**) until you hear it click out of the OMNIS Solvent Module.
3. Lift the cartridge out of the seal of the OMNIS Solvent Module and remove it.

Mounting the adsorber cartridge onto the OMNIS Solvent Module

The adsorber cartridge is filled with molecular sieve and sealed tightly *(see "Replacing the adsorber material", chapter 5.3, page 16)*.



1. Place the cartridge into the seal of the OMNIS Solvent Module and press it down (**1**). At the same time, tilt it inwards (**2**) until you hear it click into place.
2. Mount the PVC tubing of the solvent bottle onto the tubing olive.

5.5 OMNIS Solvent Module – Mounting the bottles

Various bottles with a GL 45 thread and a maximum filling volume of 2.5 L can be used as reagent bottles and waste bottles.

The reagents used for Karl Fischer titration must be kept as dry as possible, even if they are conveyed from supply bottles that have been open for a long time. The connected adsorber cartridge prevents humidity from entering the reagent bottle.

Setting up the waste bottle (Waste)

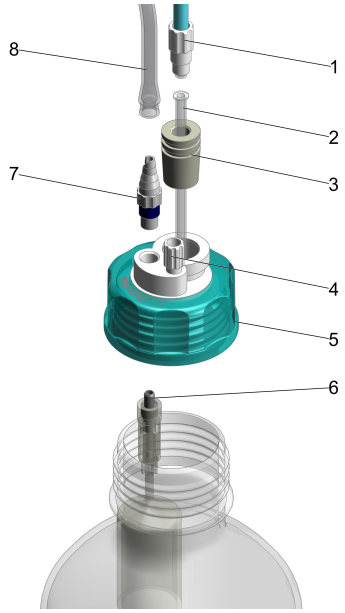


Figure 6 Equipping the GL 45 bottle cap for the waste bottle (Waste)

1	**M8 PTFE tubing** (6.1805.200)	**2**	**Short PTFE cannula** (6.1819.050)
3	**Ground-joint stopper SGJ 14/M8** (6.1446.090)	**4**	**M6 threaded stopper** (6.1446.040)
5	**Bottle cap for GL 45** (6.1602.105)	**6**	**Overflow protection** (6.1623.000)
7	**Tubing olive** (6.1808.050)	**8**	**PVC tubing** (6.0184.210)

1 Place the threaded stopper *(6-**4**)* in the M6 connector (smallest opening) of the bottle cap *(6-**5**)* and screw it tight.

2 Introduce the overflow protection *(6-**6**)* from below into the M8 connector (second-smallest opening) of the bottle cap and fasten it.

Make sure that the overflow protection *(6-**6**)* is connected to the M8 connector from which the PVC tubing *(6-**8**)* leads to the tubing olive of the OMNIS Solvent Module.

3 Place the tubing olive *(6-**7**)* in the M8 connector of the bottle cap from above and screw it tight.

4 Plug a PVC tubing *(6-**8**)* onto the tubing olive.

5 Insert the ground-joint stopper *(6-**3**)* into the remaining opening of the bottle cap.

6 Insert the short PTFE cannula *(6-**2**)* into the ground-joint stopper *(6-**3**)* from above and pull it through.

Make sure that the cannula is pulled through as far as it will go.

7 Insert an M8 PTFE tubing *(6-**1**)* into the ground-joint stopper *(6-**3**)* from above and screw it tight.

8 Place the fully equipped bottle cap *(6-**5**)* on the clear glass bottle (or on a different bottle with GL 45 thread) and screw it tight.

Setting up the reagent bottle (Solvent)

Only use the reagent bottle (Solvent) with Siphon Breaker! Other bottle caps are not permitted.

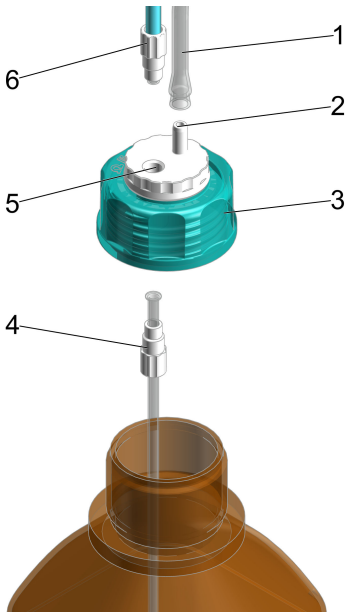


Figure 7 Equipping the Siphon Breaker for the reagent bottle (Solvent)

1	**PVC tubing** (6.01804.210)	**2**	**Tubing olive, integrated**
3	**Siphon Breaker** (6.01600.200)	**4**	**M8 aspiration tubing** (6.01805.130)
5	**M8 connector, integrated**	**6**	**M8 PTFE tubing** (6.1805.200)

1 Insert the M8 aspiration tubing *(7-**4**)* with the screw nipple from below into the M8 connector of the Siphon Breaker *(7-**3**)* and screw it tight.

Make sure that the M8 aspiration tubing *(7-**4**)* is fastened from below to the Siphon Breaker and the M8 PTFE tubing *(7-**6**)* for the KF titration cell is fixed in place from above.

2 Insert an M8 PTFE tubing *(7-**6**)* into the M8 connector *(7-**5**)* of the Siphon Breaker from above and screw it tight.

3 Plug a PVC tubing *(7-**1**)* onto the tubing olive *(7-**2**)*.

4 Place the fully equipped Siphon Breaker *(7-**3**)* on the reagent bottle (Solvent) and screw it tight.

Mounting and connecting the bottles to the OMNIS Solvent Module

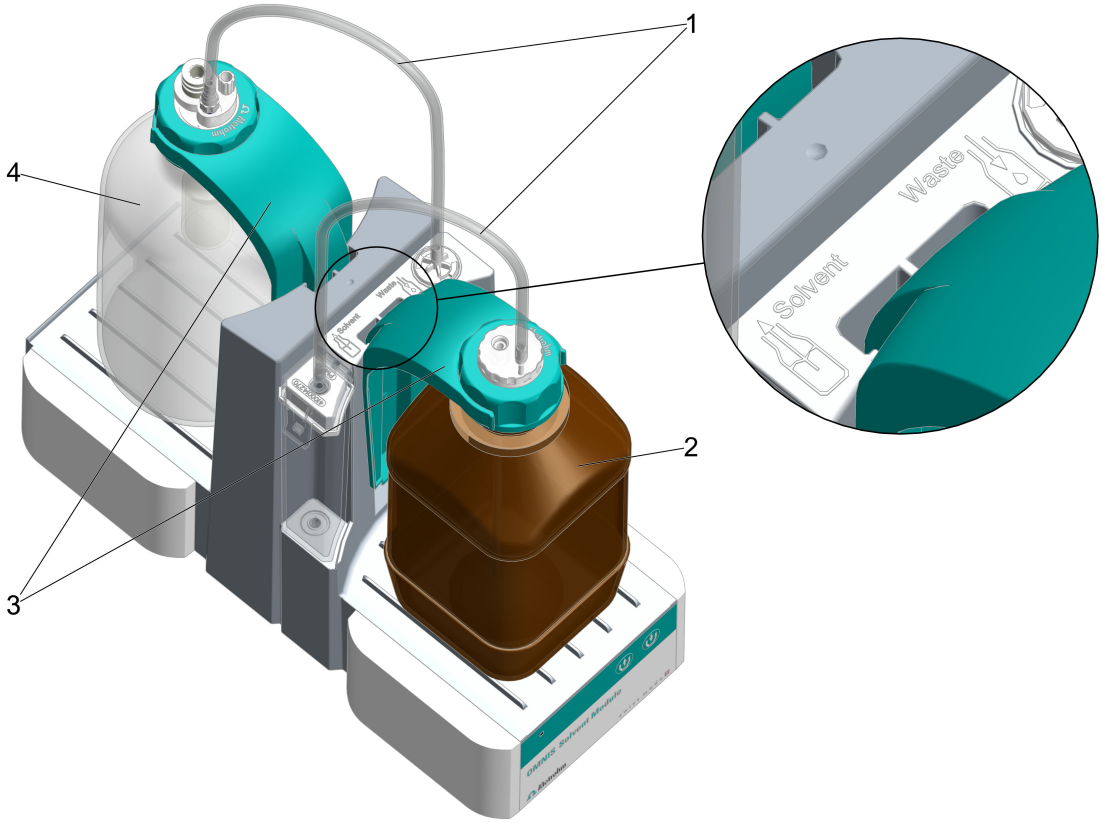


Figure 8 Arrangement of the bottles on the OMNIS Solvent Module, the necessary connections and symbols of the tubing connectors – Overview

1	**PVC tubings** From the Siphon Breaker to the adsorber cartridge of the OMNIS Solvent Module and from the waste bottle (Waste) to the OMNIS Solvent Module	**2**	**Reagent bottle (Solvent)**
3	**Bottle holder (2 pieces)**	**4**	**Waste bottle (Waste)**

Make sure the time the open reagent bottle (Solvent) and the KF titration cell are exposed to humidity is as short as possible.

The KF titration cell must be already fully equipped and mounted on the OMNIS Titrator (see *OMNIS Titrator manual (8.1001.8002)*), except for the **2** M8 PTFE tubings from the aspiration tip and the dosing tip.

Prerequisites:

- The adsorber cartridge is filled with fresh molecular sieve, see *(see "Replacing the adsorber material", chapter 5.3, page 16)*.
- The Siphon Breaker for the reagent bottle is fully equipped and screwed tight on the reagent bottle (Solvent).
- The GL 45 bottle cap for the waste bottle is fully equipped and screwed tight on the waste bottle (Waste).

1. Place the fully equipped reagent bottle (Solvent) *(8-**2**)* on the front platform of the OMNIS Solvent Module.

2. Place the fully equipped waste bottle (Waste) *(8-**4**)* on the rear platform of the OMNIS Solvent Module.

3. Secure both bottles with a bottle holder *(8-**3**)* each.

4. Plug a PVC tubing *(8-**1**)* between the Siphon Breaker and the adsorber cartridge onto the **Solvent** tubing connector.

   Plug the other PVC tubing *(8-**1**)* between the GL-45 bottle cap and the OMNIS Solvent Module onto the **Waste** tubing connector.

To connect the OMNIS Solvent Module with the KF titration cell, see the *OMNIS Titrator manual (8.1001.8002)*.

6 Operation and control

6.1 Operation

The product can be operated via the OMNIS Software. Further information on the OMNIS Software under *OMNIS Help*.

6.2 Filling and emptying the KF titration cell

The solvent bottle, waste bottle and KF titration cell are fully mounted and connected with the corresponding tubings *(see "OMNIS Solvent Module – Mounting the bottles", chapter 5.5, page 21)*.

1 Filling the KF titration cell

Press the key:

The OMNIS Solvent Module starts adding liquid from the solvent bottle into the KF titration cell.

Different versions are possible:

- Long pressing (> 1 s): The liquid is added until the key is released. The pumping duration is saved.
- Short pressing (≤ 1 s): The liquid is added during the saved dosing time. Press the key again to stop the procedure prematurely.

2 Emptying the KF titration cell

Press the key:

The OMNIS Solvent Module starts aspirating waste out of the KF titration cell into the waste bottle.

Different versions are possible:

- Press and hold (> 1 s): Aspirating takes place until the key is released. The pumping duration is saved.
- Press briefly (≤ 1 s): The aspiration takes place during the saved pumping duration. Press the key again to stop the procedure prematurely.

Addition and aspiration can also be controlled via the OMNIS Software.

7 Maintenance

Regularly perform maintenance work on the product to prevent malfunctions and to ensure a long service life.

- Metrohm recommends having the products maintained by the regional Metrohm service representative as part of an annual service. Shorter maintenance intervals may be necessary if you frequently work with caustic and corrosive chemicals.
- Only perform maintenance work that is described in this instruction. Contact your regional Metrohm service representative for further maintenance work and repairs. The regional Metrohm service representative offers every form of technical advice for maintenance and service of all Metrohm products.
- Only use spare parts that meet the technical requirements of the manufacturer. Original spare parts always meet these requirements.

7.1 Cleaning the product surface

Regularly clean the product to prevent malfunctions and to ensure a long service life.

- Remove spilled chemicals immediately.
- Protect plug connections against contamination.

WARNING

Chemical hazardous substances

Contact with aggressive chemical substances may cause poisoning or chemical burns.

- Wear personal protective equipment (e.g. protective glasses, gloves).
- Use exhaust equipment when working with vaporizing hazardous substances.
- Clean contaminated surfaces.
- Only use detergents that do not cause any unwanted side reactions with the materials to be cleaned.
- Dispose of chemically contaminated materials (e.g. cleaning material) in accordance with regulations.

WARNING

Health hazards from electrical potential.

Severe injuries with possibly fatal consequences.

- Operate the product only if it is in perfect condition. The housing must also be intact.
- Only use the product with the covers fitted.
- Protect live components (e.g. power supply unit, power cord, connection sockets) against moisture.
- Always have maintenance work and repairs on electrical components carried out by a regional Metrohm service representative.

Prerequisite:

- The product is switched off and disconnected from the energy supply.

Required accessories:

- Cleaning cloth (soft, lint-free)
- Water or ethanol

1. Clean the surface with a damp cloth. Remove persistent contamination with ethanol.
2. Wipe the surface with a dry cloth.
3. Clean the connectors with a dry cloth.

8 Troubleshooting

Messages on malfunctions and errors are displayed in the control software or in the embedded software (e.g. on the display of an instrument) and contain the following information:

- Descriptions of causes of malfunctions (e.g. jammed drive)
- Descriptions of problems with the control (e.g. missing or invalid parameter)
- Information on how to solve the problem

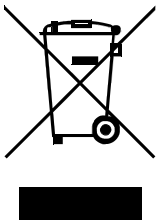
System components with status display elements also indicate malfunctions and errors with a red flashing LED.

Troubleshooting on the product is often only possible with the control software or the embedded software (e.g. initializing, moving to a defined position).

See also

System – Signals (chapter 3.4, page 13)

9 Disposal



Properly dispose of chemicals and of the product to reduce negative effects on the environment and public health. Local authorities, waste disposal companies or dealers provide more detailed information on disposal. Observe the WEEE EU directive (WEEE = Waste Electrical and Electronic Equipment) for the proper disposal of waste electronic equipment within the European Union.

10 Technical specifications

10.1 Ambient conditions

Nominal function range	+5 to +45 °C	at max. 80% relative humidity, non-condensing
Storage	+5 to +45 °C	at max. 80% relative humidity, non-condensing

10.2 OMNIS Solvent Module – Energy supply

Nominal voltage	24 VDC

10.3 OMNIS Solvent Module – Dimensions

Measurements

Width	142 mm
Height	250 mm
Depth	335 mm

Weight

Type	2.7 kg

10.4 OMNIS Solvent Module – Housing

Materials

Base	1.4301	stainless steel
Enclosure	PBT	poly(butylene terephthalate)
Front foils	PET	poly(ethylene terephthalate), mat

IP degree of protection IP 30

10.5 OMNIS Solvent Module – Connectors specifications

Energy supply via MDL

Socket round plug

MDL Metrohm Device Link

10.6 Display specifications

Status display LED multi-colored

10.7 OMNIS Solvent Module – Liquid handling specifications

Pump

Type		membrane
Number	1	
Flow rate		
Add	600 mL/min	depending on the fill level in the respective bottle
Aspirate	300 - 400 mL/min	depending on the fill level in the respective bottle