

Mixed bed cartridge desaliQ:MB9

Intended use

The mixed bed cartridges desaliQ:MB9 are designed to produce ultra-pure water and to filter heating water and can be used in the following sectors:

In combination with
desaliQ resin bags:

- Full demineralisation of raw water of drinking water quality
- Full demineralisation during ongoing heating operation at max. 4 bar and 65 °C

In combination with
desaliQ inline filter module:

- Filtration of undissolved impurities such as rust or dirt particles from the heating water.

The mixed bed cartridges desaliQ:MB9 **must not** be used in the following sectors:

- Treatment of raw water to be used as drinking water
- Operation with gas cushions

Function

Filtration

In combination with
desaliQ inline filter module:

The unfiltered heating water flows from the bottom through the inlet side of the cartridge and via the flow distributor. Then, the water containing the particles passes the magnetic rod.

Magnetic particles such as iron particles/magnetite, etc. are attracted and removed from the heating water.

The pre-cleaned water then flows through 6 filter elements with a pore size of 5 µm.

By using the strap, the filter module can be easily removed from the mixed bed cartridge desaliQ:MB9.

Demineralisation

In combination with
desaliQ resin bags:

Physical

Via an interior distribution system, 2 resin bags filled with mixed bed resin are steadily flown through from bottom to top.

The fully demineralised water (demi water) is directed to the tank outlet via a collection element located at the tank lid.

Chemical

The cation exchanger resin removes all positively charged ions, the so-called cations, from the raw water. All cations contained in the water, such as calcium, magnesium, sodium, are exchanged for H⁺ ions.

In the demineralisation process, the anion exchanger resin is used to filter off the negatively charged ions, the so-called anions. All anions such as nitrate, phosphate, sulphate, chloride and hydrogen carbonate contained in the raw water are exchanged for OH⁻ ions.

Full demineralisation removes almost all undesired components from the raw water. Thanks to the highly alkaline anion exchanger resin, silicic acids and carbon dioxide are also filtered off.

The H⁺ and OH⁻ ions generated during the exchange process combine to H₂O. This results in ultra-pure water.

Demineralisation of raw water

The main application of the desaliQ mixed bed cartridge is the full demineralisation of raw water for easy and quick filling and make-up water feed of heating systems as well as full demineralisation in the ongoing heating operation (max. 4 bar, 65 °C).

The raw water is directed to the inlet of the mixed bed cartridge via an optional system separator and a fine filter.

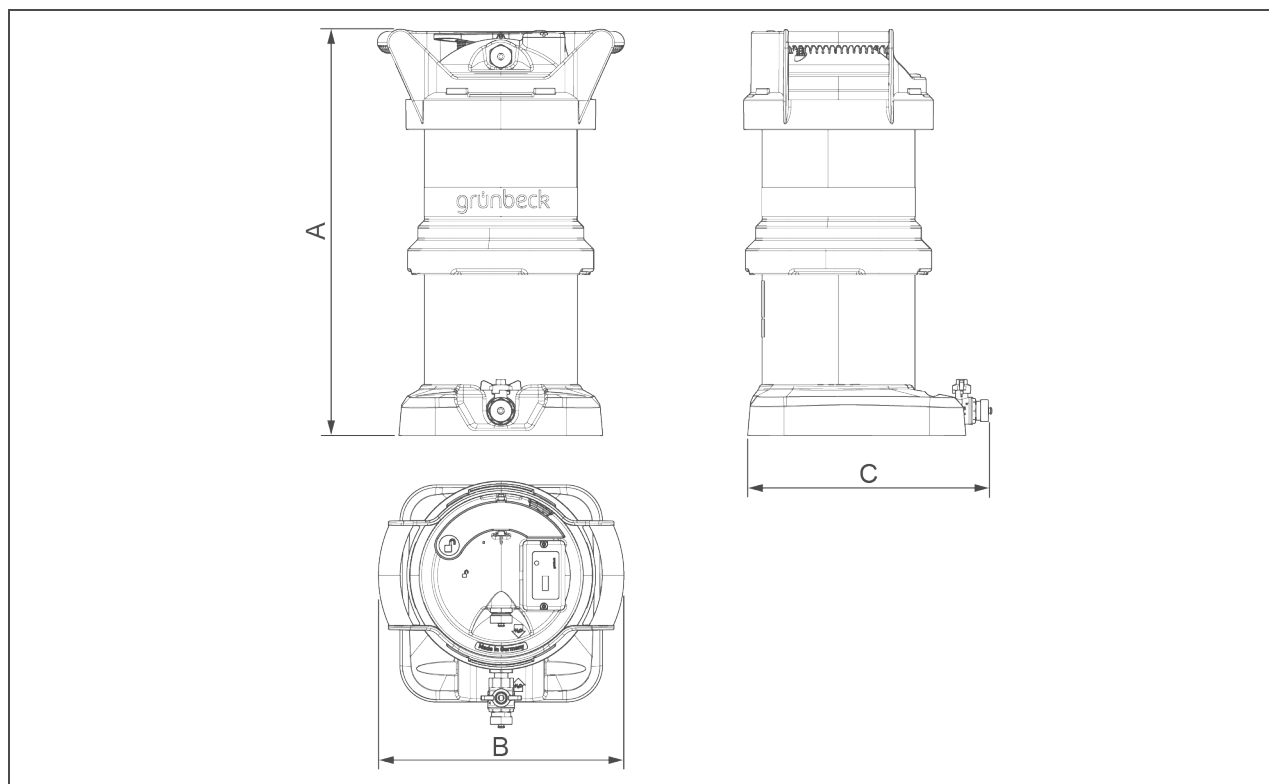
Design

- Tank made of glass fibre reinforced, temperature-resistant plastic
- Easy to replace resin bags filled with mixed bed resin or inline filter module
- Raw water connection at the tank bottom, with internal distribution system and flow restrictor
- Tank lid with quick-acting locking system, conductivity measuring cell, pure water connection and carrying handles

Scope of supply

- Mixed bed cartridge with conductivity meter
- Operation manual
- 2 resin bags filled with mixed bed resin

Technical specifications I



Dimensions and weights

A Height	mm	560
B Width	mm	340
C Depth	mm	330
Number of resin bags	pcs	2
Filling volume of mixed bed resin	l	12
Shipping weight, approx.	kg	17

Connection data

Nominal connection diameter	DN 20 (¾")
-----------------------------	------------

Performance data

Max. operating pressure	bar	4
Flow at Δp 1 bar	l/h	720
Capacity at < 10 $\mu\text{S/cm}$	$\mu\text{S/cm} \times \text{m}^3$	320
Capacity at < 50 $\mu\text{S/cm}$	$\mu\text{S/cm} \times \text{m}^3$	510
Nominal flow	m^3/h	0.9

General

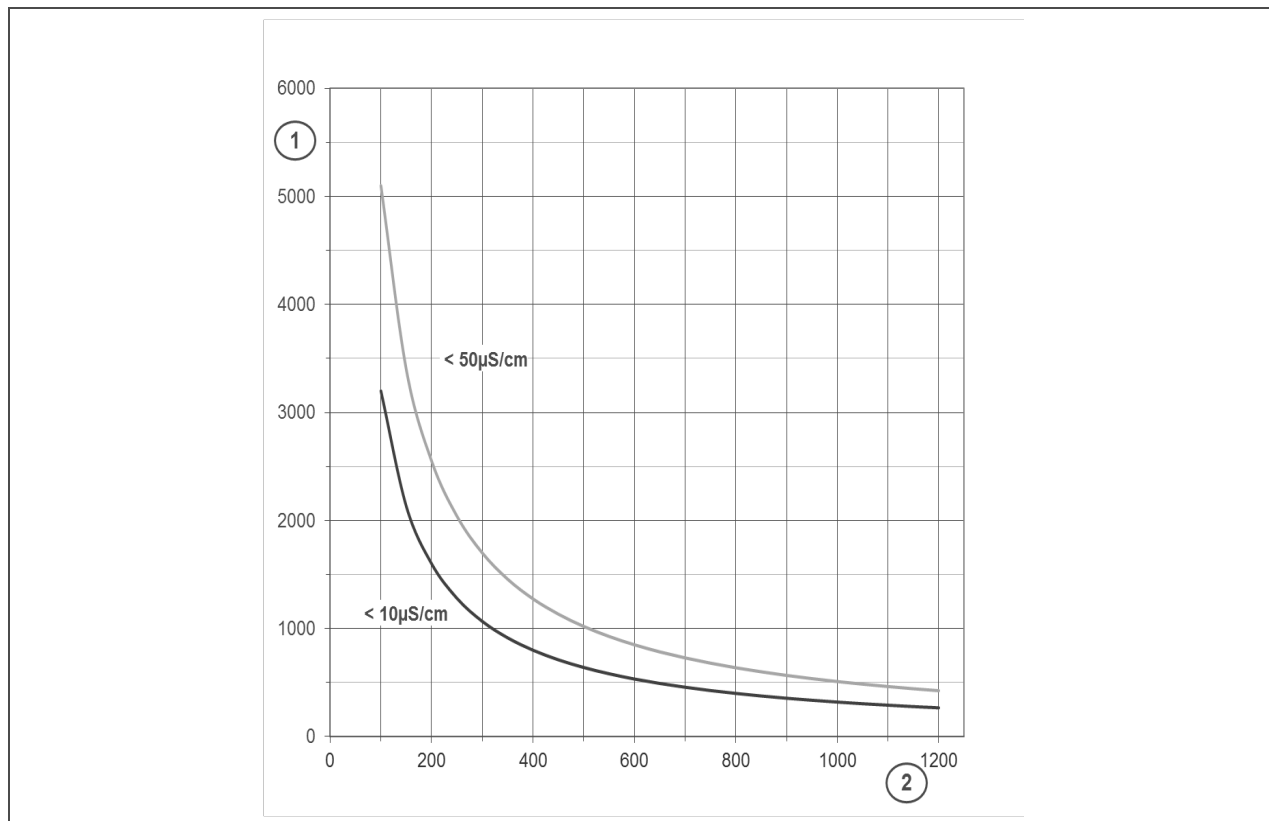
Water temperature	°C	5 – 65
Ambient temperature	°C	5 – 40
Order no.	707455000000	

Sample calculation:

- Conductivity of the raw water: 500 $\mu\text{S/cm}$
- Cartridge used: desaliQ:MB9
- $320/500 = 0.64 \text{ m}^3$ (corresponds to 640 litres at 10 $\mu\text{S/cm}$)
- $510/500 = 1.02 \text{ m}^3$ (corresponds to 1020 litres at 50 $\mu\text{S/cm}$)

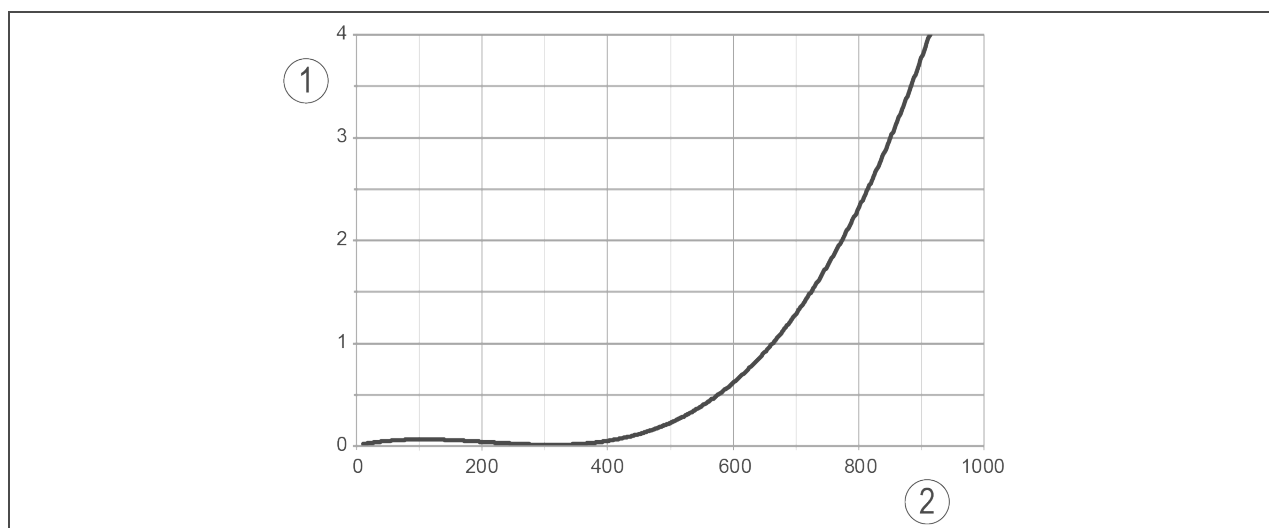
Technical specifications II

Capacity curves of mixed bed cartridge desaliQ:MB9



Item	Designation	Item	Designation
1	Volume of demineralised water in l	2	Conductivity of the raw water in µS/cm

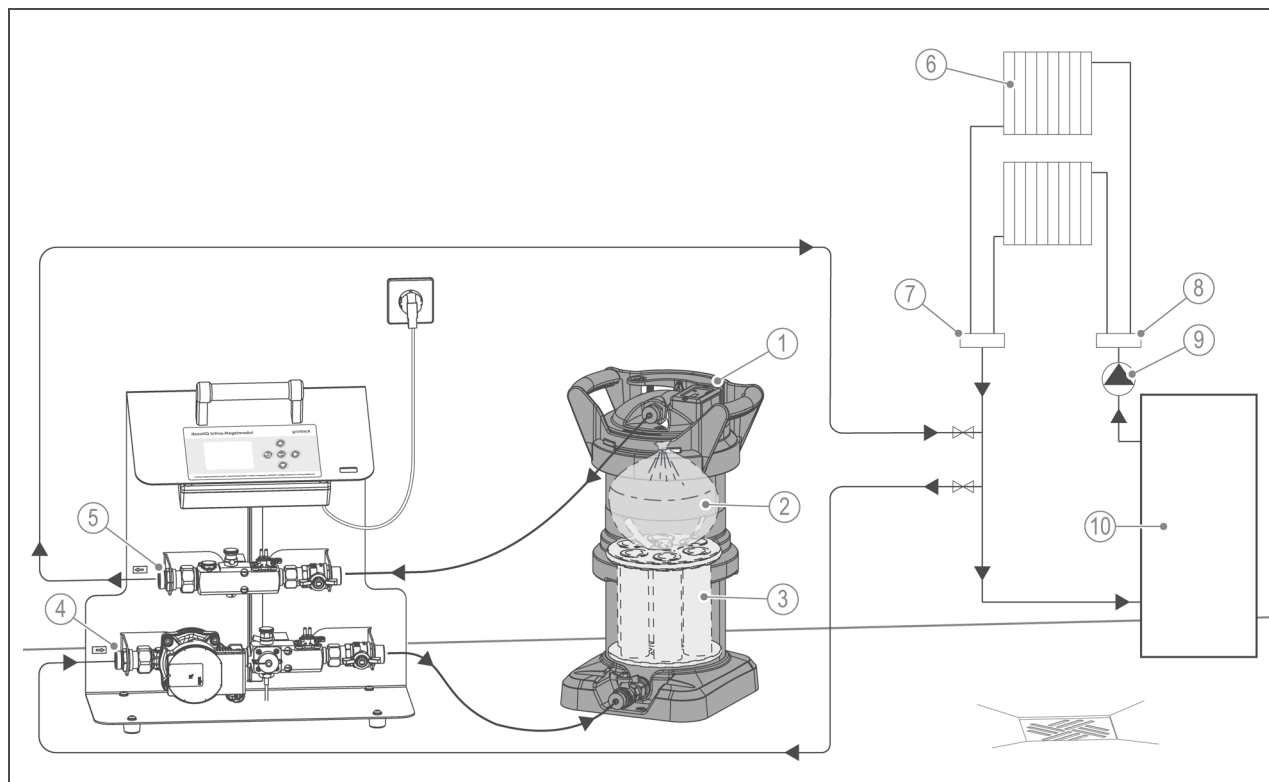
Pressure loss curve of mixed bed cartridge desaliQ:MB9



Item	Designation	Item	Designation
1	Pressure loss in bar	2	Flow in l/h

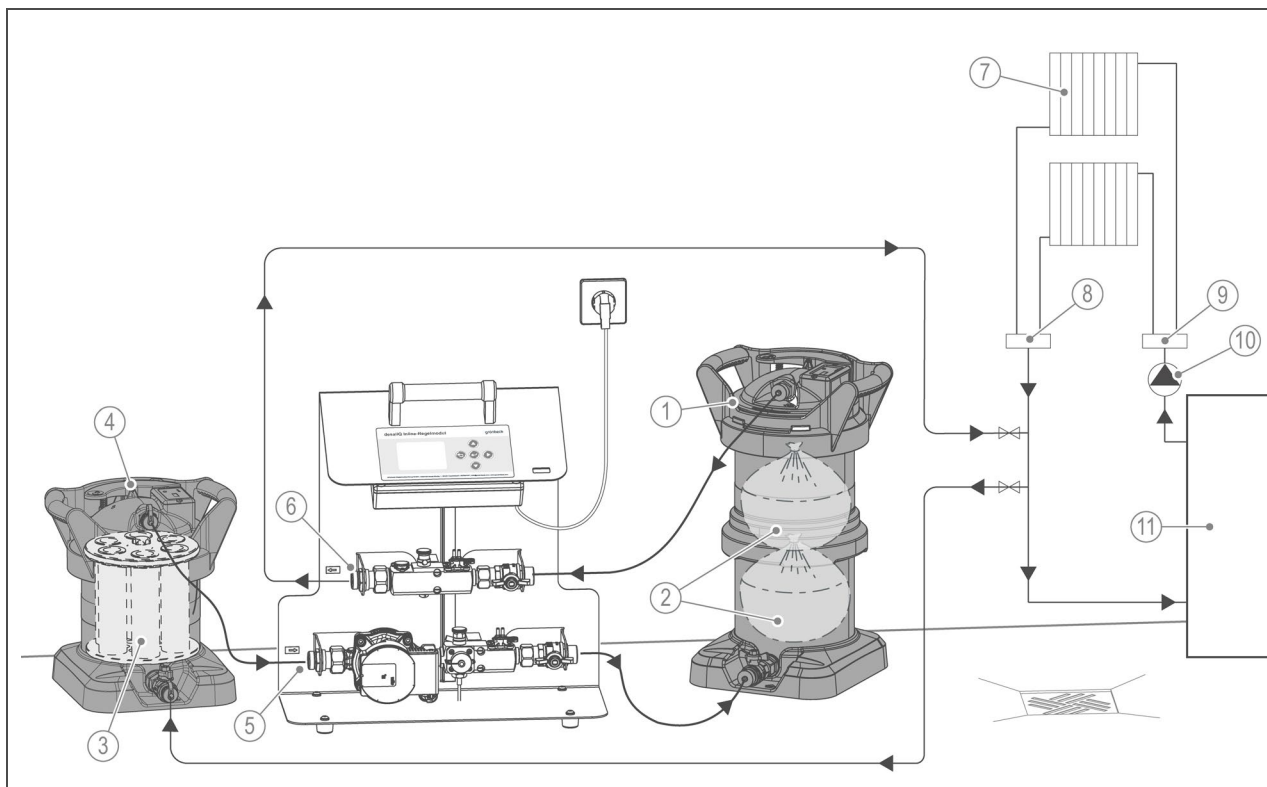
Installation example

Partial flow filtration (Variant I)



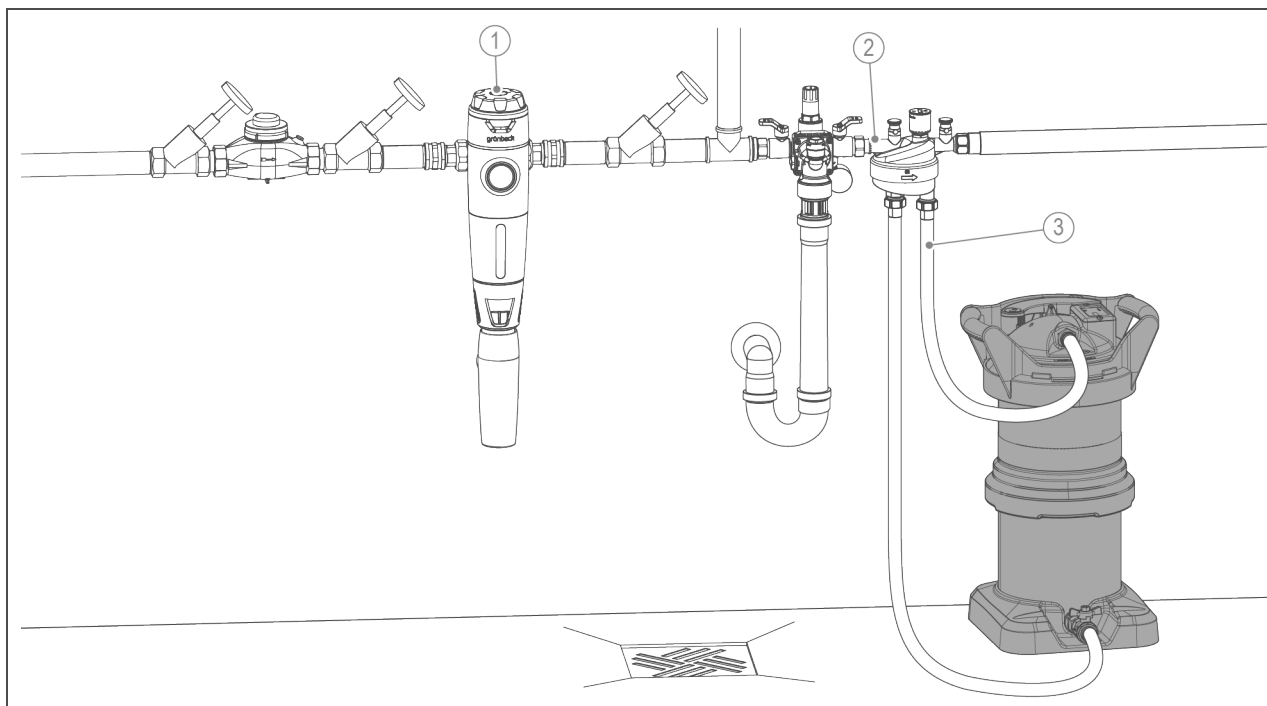
Item	Designation	Item	Designation
1	Mixed bed cartridge desaliQ:MB9	2	desaliQ resin bag
3	desaliQ inline filter module	4	Connection from heating circuit (pump section)
5	Connection to heating circuit (sensor section)	6	Consumer
7	Return of heating circuit	8	Supply of heating circuit
9	Circulation pump	10	Heating system

Partial flow filtration (Variant II)



Pos.	Bezeichnung	Pos.	Bezeichnung
1	Mixed bed cartridge desaliQ:MB9	2	desaliQ resin bags (2x)
3	desaliQ Inline filter module	4	Mixed bed cartridge desaliQ:MB5
5	Connection from heating circuit (pump section) and upstream desaliQ:MB5	6	Connection to heating circuit (sensor section)
7	Consumer	8	Return of heating circuit
9	Supply of heating circuit	10	Circulation pump
11	Heating system		

Filling the heating system



Item	Designation	Item	Designation
1	Drinking water filter pureliQ:RD	2	Filling section thermaliQ:FB2 with connection adapter
3	desaliQ hose kit		

Requirements for the installation site

Obey the local installation directives, general guidelines and technical specifications.

- Protection from frost, severe heat exposure and direct sunlight
- Protection from chemicals, dyes, solvents and their vapours
- Access for maintenance work (take note of space required)
- Sufficiently illuminated as well as aerated and ventilated
- Horizontal installation surface with sufficient load-bearing capacity to support the operating weight of the product

Water installation

- Drinking water filter installed upstream and pressure reducer, if required
- Floor drain or corresponding safety device with water stop function (e.g. safety device protectliQ)

Accessories

desaliQ inline control module
Order no. 707000030000

For partial flow treatment of the heating circuit during heating operation

desaliQ basic filling module
Order no. 707000050000

Tool for easy, quality-controlled filling of the heating system

desaliQ inline filter module
Order no. 707000010000

For filtration and treatment of heating water

desaliQ hose kit
Order no.: 707 850

To connect upright full demineralisation units with the filling section thermaliQ:FBx.

- 2 Flexible connection hoses, 1.5 m in length

Filling section thermaliQ:FB2
Order no.: 707 760
with desaliQ connection adapter
Order no.: 707 276

Water meter
with connection material
Order no.: 702 845

Filling section thermaliQ:FB13i
Order no.: 707 770

Euro system separator
GENO-DK 2-Mini
Order no.: 133 100

Backwash filter pureliQ:RD
Order no. 101 370

The backwash filter pureliQ:RD filters the drinking water and protects the domestic water system according to DIN EN 806

Safety device protectliQ:A20
Order no.: 126 400

Product to protect against water damage in one and two-family homes

Analysis case

Order no.: 707 190

Water test kits for pH value, conductivity, total hardness and molybdenum concentration

Analysis case

Order no.: 707 192

Water test kits for pH value, conductivity and total hardness

Consumables

desaliQ resin bags 2 x 6 l
Order no. 707 435

Consisting of one bucket containing 2 resin bags

desaliQ inline filter elements
Order no. 707000020000

Consisting of 6 filter elements with a pore size of 5 µm and spare O-rings for support mesh

Contact

Grünbeck AG
Josef-Grünbeck-Str. 1
89420 Hoechstädt
GERMANY

 +49 9074 41-0

 +49 9074 41-100

info@gruenbeck.com
www.gruenbeck.com

