



**Thermo Scientific Ion Exchange  
and Regeneration**

High quality demineralized water

**Economical solutions for your applications**

**Thermo**  
SCIENTIFIC

# Thermo Scientific Ion Exchange Cartridges

Ion exchange cartridges are an economical solution for converting tap water to demineralized, deionized water. Whether you need a few liters per week or large volumes daily, we have the most suitable, economical, reliable solution for your application.

- Feed water for dishwashers, autoclaves, climatic chambers and humidifiers
- Filling water baths and cooling circuits
- Rinsing components
- Battery water
- Emergency supply water
- Medical applications



## How does ion exchange work?

The process removes ions from tap water with the use of synthetic resins. These resins are chemically altered to have an affinity for dissolved inorganic ions and are divided into two classifications: cation removal resins and anion removal resins. Cations have a positive charge and include sodium ( $\text{Na}^+$ ), calcium ( $\text{Ca}^{+2}$ ) and magnesium ( $\text{Mg}^{+2}$ ). Anions have a negative charge and include chloride ( $\text{Cl}^-$ ), sulfates ( $\text{SO}_4^{-2}$ ), and bicarbonates ( $\text{HCO}_3^{-}$ ). The ions are removed from the water through a series of chemical reactions. These reactions take place as the water passes through the ion exchange resin beds. Cation resin contains hydrogen ( $\text{H}^+$ ) ions on the surface, which are exchanged for positively charged ions. Anion resin contains hydroxide ( $\text{OH}^-$ ) ions on its exchange sites, which are exchanged for negatively charged ions. The final product of these two exchanges is  $\text{H}^+$  and  $\text{OH}^-$ , which combine to form water ( $\text{H}_2\text{O}$ ).

## The resins used in Thermo Scientific Ion Exchange Cartridges are:

**Economical** – Our optimized cartridge design ensures water contacts 100% of resin

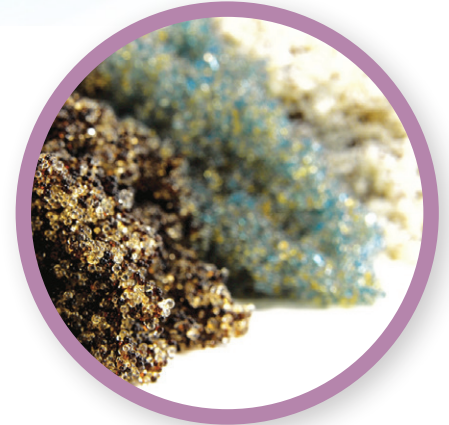
**Reliable** – Documented quality monitoring

**Environmentally friendly** – Resins provide service for several months, and can be regenerated for reuse

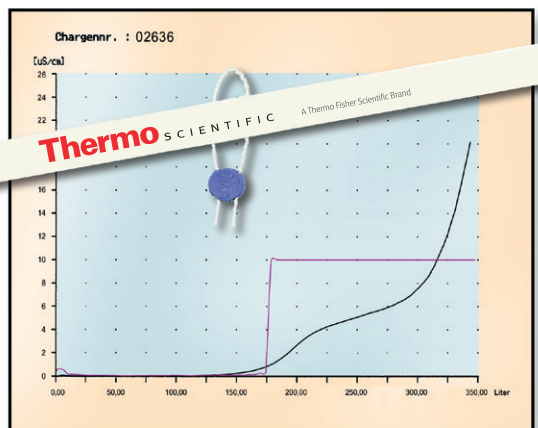
Additionally, ion exchange cartridges do not require a tank or booster pump, saving valuable space in your lab.

To ensure high quality water every time you use your Thermo Scientific Ion Exchange Cartridge, the state-of-the-art regeneration service provided by our partners comes with documentation of quality you can trust.

- Receiving inspection
- Batch test record
- TOC-Monitoring
- DIN ISO 9001 : 2008 and DIN EN ISO 14001 : 2009



High quality mixed-bed ion exchange resin



### Ion exchange resin regeneration with Total Organic Carbon (TOC) control

Our regeneration facility in Europe has DIN ISO 9001 certification and carries out batch testing. Our quality assurance, with the Thermo Scientific test certificate, intact seal and Thermo Scientific sealing tape, guarantees maximum capacity at continuous high quality.

# The right system for your application

## Compact Pressureless Plastic Ion Exchange Cartridges for Small Volume Needs

Small and compact, these systems provide completely demineralized water of the same quality as larger systems. Ideal for small laboratories as well as autoclaves and washers in medical and dental practices, these systems supply water of outstanding quality, so that neither streaks nor stains are left on instruments, and no pitting occurs.

### DI 425

**For daily requirements up to 10 liters**  
(Depending upon feed water quality)

Pressureless plastic system consisting of a disposable cartridge, analog conductivity meter, hose set and wall mount.

### DI 750

**For daily requirements up to 50 liters**

Compact pressureless plastic cartridge complete with analog conductivity meter and hose set.



DI 425

DI 750

Thermo Scientific Mixed-bed Ion Exchange Cartridges	DI 425	DI 750
Cat. No.	01.0425	01.1705
Flow rate (L/h)	50	100
Capacity at 10° TDS* (L)	425	750
Purified water quality (µS/cm)	0.1 – 20	0.1 – 20
Max water temperature (°C)	30	30
Line connection (V/Hz)	230 / 50-60	230 / 50-60
Material	Polyethylene	Polyethylene
Dimensions, including conductivity meter Ø x H (mm)	100 x 600	175 x 480
Connectors	R ¾"	R ¾"
Approximate weight (kg)	3	7
Replacement cartridge	2 x 01.0427	01.1750
Disposable resin for 2 cartridge fillings	N/A	10.2005
Wall mount	Included	03.1404

\*Total dissolved solids.

## Pressure-Resistant Ion Exchange Cartridges for Larger Volume Needs

These systems provide demineralized water of consistent, reproducible quality with very low conductivity.

For higher performances or special demands on water quality, please request information on Thermo Scientific large customized reverse osmosis systems.

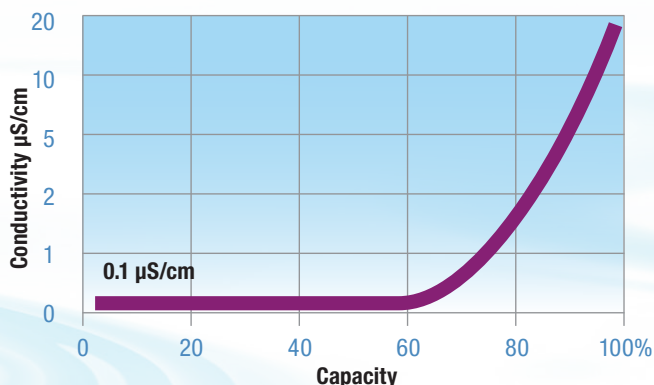
## Thermo Scientific Ion Exchange Cartridges for up to 150L/day

V4A stainless steel, pressure-resistant up to 10 bar. To be used with temperatures up to 30 °C. Cartridges equipped with R 3/4" connectors. Cartridges with quick connectors available upon request.



Ion Exchange Cartridges for up to 1000 L/h

The connection between conductivity and capacity



Mixed-bed Ion Exchange Cartridges	DI 1500	DI 2000	DI 2800	DI 4000	DI 6000
Cat. No.	02.1500	02.2000	02.2800	02.4000	02.6000
Flow rate (L/h)	300	300	950	1000	1000
Capacity at 10° TDS* (L)	1500	2000	2800	4000	6000
Purified water quality (µS/cm)	0.1 – 20	0.1 – 20	0.1 – 20	0.1 – 20	0.1 – 20
Dimensions, Ø x H (mm)	240 x 410	240 x 490	240 x 600	240 x 700	240 x 1155
Approximate weight (kg)	14	18	24	27	45
Wall mount	N/A	03.1405	03.1405	03.1405	03.1405

\*Total dissolved solids.

## Thermo Scientific Industrial Ion Exchange Cartridges

Extremely large capacity and high flow rate, designed for industrial applications.

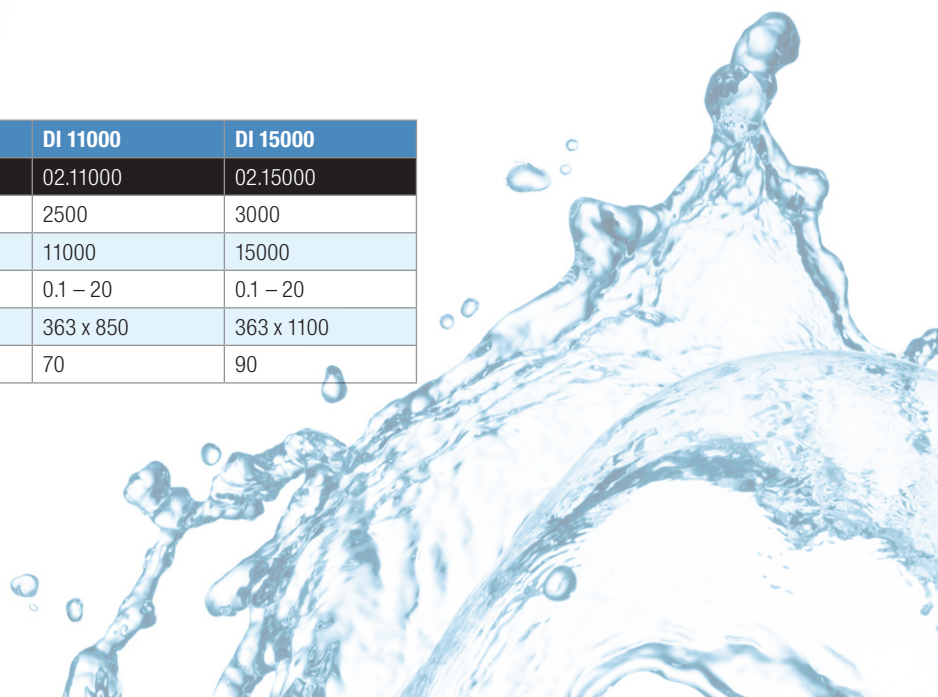
V4A stainless steel, pressure-resistant up to 10 bar. To be used with temperatures up to 30° C. Cartridges equipped with R ¾" connectors. Cartridges with quick connectors available upon request.



Industrial ion exchange cartridges for 300 to 3000 L/h

Mixed-bed Ion Exchange Cartridges	DI 7000	DI 11000	DI 15000
Cat. No.	02.7000	02.11000	02.15000
Flow rate (L/h)	2000	2500	3000
Capacity at 10° TDS* (L)	7000	11000	15000
Purified water quality (µS/cm)	0.1 – 20	0.1 – 20	0.1 – 20
Dimensions, Ø x H (mm)	363 x 660	363 x 850	363 x 1100
Approximate weight (kg)	55	70	90

\*Total dissolved solids



## Thermo Scientific High Precision Digital Conductivity Meters For Continuous Quality Control

Exact temperature measurement and an integrated reference resistor allow high-precision measurements with digital accuracy, even in the lowest conductivity range. Ideal for online measurements of high purity and ultrapure water at the outlet of ion exchanger cartridges, as well as for monitoring loop lines. Fully automatic matching prior to each measurement. The standard version is available with a potential-free contact or with a solenoid valve. RS-232 interface is available for documentation. Ready to connect, complete with connecting cable, plug power unit, 2 x 1.5 m hoses, R 3/4" female thread and measuring cell.

### Specifications and Ordering Information

Measurement range, conductivity (µS/cm)	0.055 – 199.9 (automatic switchover at 9.99)
Measurement range, temperature (°C)	0.1 – 99.9
Temperature compensation	Automatic
Limiting value setting, conductivity (µS/cm)	0.055 - 30 stepless
Limiting value setting, temperature (°C)	10 – 40 stepless
Signals when a limiting value is exceeded	Green/red alternation of the LED + buzzer, both limiting values can be switched off
Interface (option only)	RS 232 (04.1806 + 04.1807)
Line connection	110/230 V / 50-60 Hz
Voltage, measuring instrument	12 Volt DC
Protection	IP 54
Dimensions W x D x H (mm)	75 x 30 x 130
Positioning	Wall mounting
Connector	R 3/4"

Instrument	Control 330	Control 330	Control 330
Cat. No.	04.1805	04.1806	04.1807



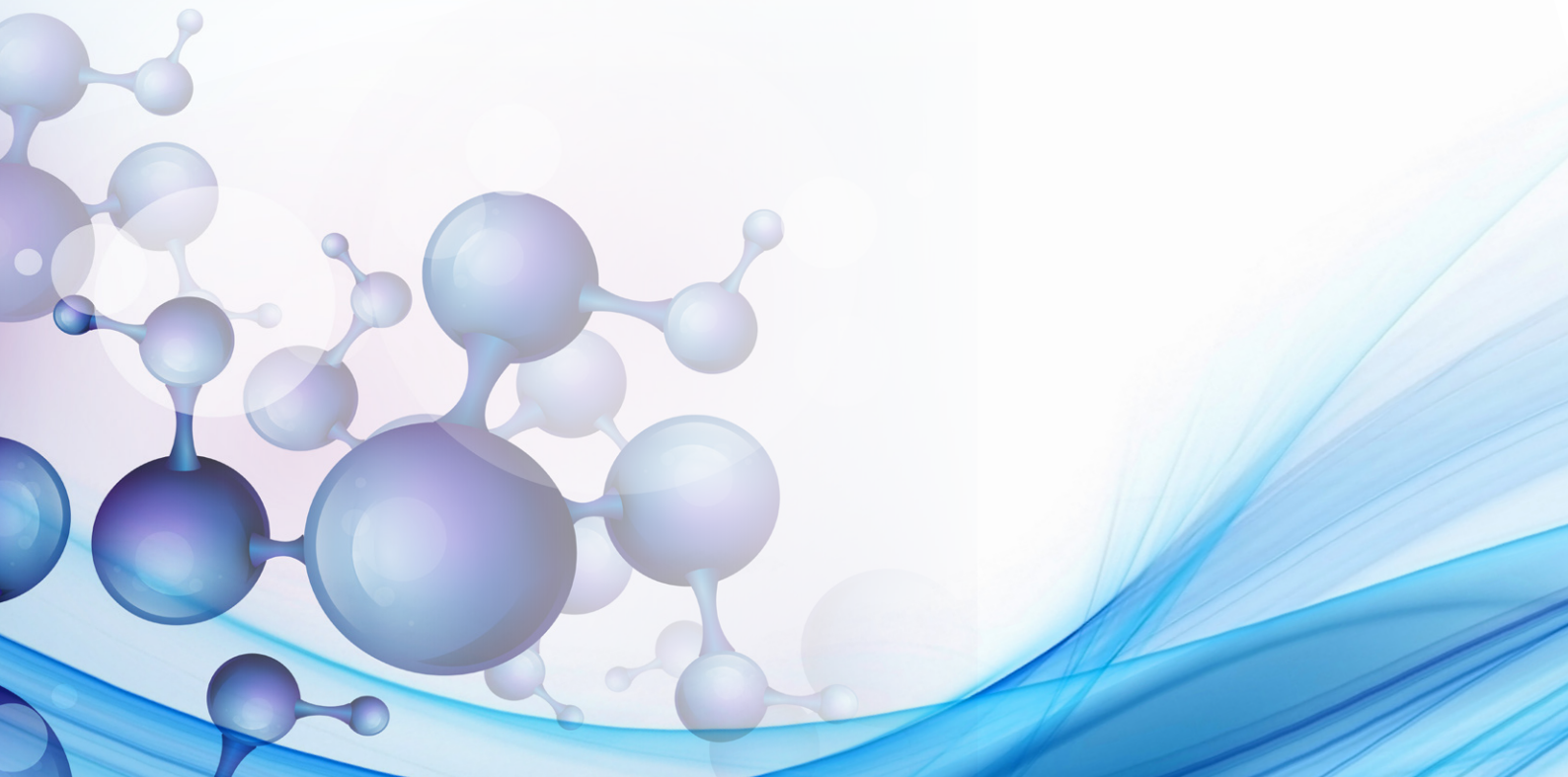
- Illuminated display** with 3 1/2 place display of conductivity in µS/cm or MΩxcm as well as of temperature in °C
- LEDs** indicate that the display shows conductivity, megohm or temperature
- Limiting values** Continuously variable setting of limiting values for temperature and conductivity
- Acoustic and optical signals** when a limiting value is exceeded

## Thermo Scientific Analog 50 Conductivity Meters

Simple and reliable conductivity meters for quality control of high purity water. Analog display of measured values in µS/cm, measuring range 0 – 50 µS/cm. Complete with 2 x 1.5 m hoses, R 3/4" female thread and measuring cell Instrument.

Analog 50 Conductivity Meters	For Ion Exchangers 02.1500 – 02.15000	For DI 750
Cat. No.	04.1601	04.1609





To learn more, contact your sales representative or  
email [sales.labwater@thermofisher.com](mailto:sales.labwater@thermofisher.com)

[thermoscientific.com/regeneration](http://thermoscientific.com/regeneration)

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