Demineralisation

BECOME A WATER EXPERT!

A new approach to water treatment

Demineralisation system ionliQ

grünbeck

All components at a glance

1 System rack
For quick and easy installation, all components are pre-assembled on an aluminium rack and ready for connection.

2 Inlet filter
A filter installed upstream offers additional safety and reliably protects the module from particles. Smooth operation is guaranteed.

3 Hydro block and module
The unique electro-chemical process ensures reliable demineralisation.

4 Control unit
The fully automatic control unit with data logging enables easy operation and provides all important parameters.

5 Diaphragm expansion tank
The flow-through buffer enables hygienic inline operation without interruptions.

The future of demineralisation

Water is one of the most valuable resources on earth. As it is only available in limited quantities, however, we have a responsibility to handle it with care.

The requirements for water treatment are changing. Various factors cause the composition of the water to change over time. We have set ourselves the task of finding new approaches and of further developing technologies that meet this challenge. Be it new, currently unutilised sources or water recovery from processes – Grünbeck does not stand still and is constantly researching new solutions. With the revolutionary demineralisation system ionliQ, we rely on electricity as driving force and use membrane-based capacitive deionisation (MCDI) as process technology.

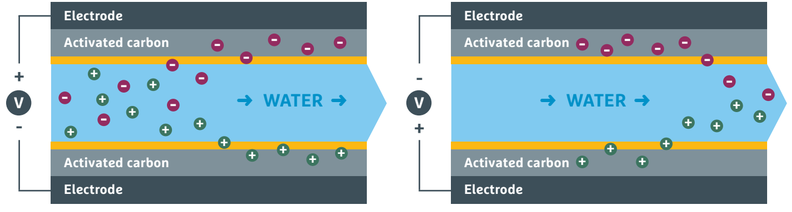
Your advantages

- Removal of anions and cations
- Without any addition of chemicals or salts
- Energy savings of up to 75 % compared to common processes
- Robust process (e.g. resistant to chlorine, low risk of scaling)
- No pretreatment required for safe system operation*
- Straightforward system technology (e.g. no pressure booster pump required)
- Hygienically closed system
- Smooth start/stop behaviour
- Demineralisation capacity individually adjustable

** For raw water > 20 °dH (3.5 mmol(/l), dimensioning by Grünbeck*

Design and function of the module

Grünbeck's new system ionliQ generates an electrical DC field between two capacitive electrodes. During the demineralisation process, adsorption and desorption phase alternate continuously.



Adsorption phase

The raw water passes between two oppositely charged electrodes. Positively charged ions are attracted by the negative electrode, negatively charged ions by the positive electrode.

The adsorbed substances such as chloride, nitrate, sulphate, sodium and potassium, but also the hardness forming ions calcium and magnesium, are temporarily stored in a layer of activated carbon. The result: Pure water with a reduced total salt content. CO_2 and silicate remain.

Desorption phase

In order to regenerate the cell, the polarity of the electrical field is reversed. The electrodes and the stored ions repel each other, the latter are released to the water and are flushed to the drain as concentrate. The recovery, i.e. the ratio between adsorption and desorption can individually be adjusted on the control unit according to the water quality.

Sample application

Generation of ultra-pure water
For residual demineralisation in ultra-pure water applications (< 0.1 µS/cm), additional ion exchangers can be installed downstream of the ionliQ demineralisation system. This combination provides an additional advantage: The pre-demineralisation by means of the ionliQ system significantly prolongs the service life of these mixed bed ion exchangers and considerably reduces the operating costs.

Demineralisation system ionliQ with mixed bed cartridge desaliQ

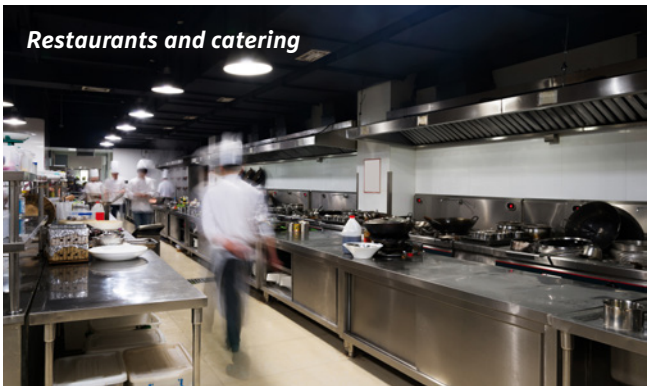
Specifications

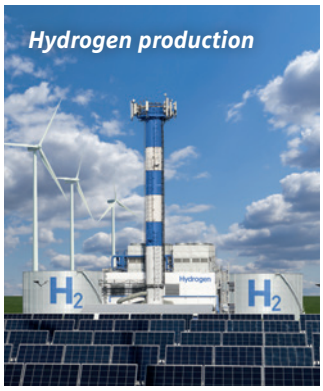
Demineralisation system	ionliQ:SB60
Nominal connection diameter [DN]	15
Nominal flow [l/h]	60
Min./max. operating pressure [bar]	2 - 8
Pressure loss at nominal pressure [bar]	0.5
Ambient temperature [°C]	0 - 40
Water temperature [°C]	4 - 35
Power supply [V/Hz]	230/50
Wattage [W]	120
Dimensions (w x h x d) [mm]	800 x 650 x 500
Order no.	**704010000000**

Perfectly treated water for your individual application

Fields of application

- Hydrogen production
- Water jet systems
- Sterilisation in hospitals and laboratories
- Production of cooling lubricants
- Heating, ventilation and air conditioning technology
- Air humidification
- Restaurants and catering
- Preparation of coffee
- Capacity increase of de-mineralisation cartridges
- Removal of sulphate





QUALITY MADE IN GERMANY

Grünbeck
Wasseraufbereitung GmbH
Josef-Grünbeck-Str. 1
89420 Hoechstaedt
GERMANY

+49 9074 41-0
info@gruenbeck.com

More information at
www.gruenbeck.com

German Standards
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