

# SILEX 21 – Top-Grade Demineralized Water

## Plant description

A SILEX plant produces demineralized water of the highest quality without chemical usage at the installation site.

A complete SILEX plant comprises a stainless steel tank and a conductivity meter that continuously indicates the conductivity of the demineralized water.

The SILEX tank contains cation and anion exchange resins with a certain demineralization capacity.

## Price - Complete Silex 21 plant

- 1 Silex 21 tank unit stainless steel tank (AISI 316Ti)
- 1 Conductivity Meter Type ST 3
- 1 Transformer 230/12 VAC
- 21 litres Ion exchange resins (The tank unit is filled with ion exchange resins at the time of delivery)
- 1 Measuring cell ½"
- 3 1,2 m Plastic hose ½"

**Total price without taxes and shipping: 13.300 Swedish kronor**

Delivery time: 3-4 weeks



## Consumables

### Ion exchange resins

When the mixed bed ion exchangers have been consumed they must be replaced by new exchangers. You can either order new ion exchangers from us in bags of 25 litres each or buy the mixed bed ion exchangers locally in your country.

### Price - ion exchange resin

1 bag of ion exchange resin, 25 litres

**Price without taxes and shipping: 1 600 Swedish kronor**

## Application

The system is specially developed for users needing demineralised water of highest quality and who neither want to store nor handle regeneration chemicals (acid and lye) at the installation site.

The system is applicable for the following main purposes:

- Demineralisation of mains water.
- Polishing/final treatment of demineralised water.

## Typical Customer Groups

- Laboratories
- Battery water
- Photo-laboratories
- Printing firms
- Dentists, physicians, and pharmacies
- Schools, high schools etc.

## Water Quality

Dependent on application the major part of the plant capacity has conductivities below 0,1 µS/cm.

## Plant Construction

A complete plant is composed of a tank unit and a conductivity meter that continuously displays the conductivity.

The tank unit comprises a stainless steel tank (AISI 316Ti) with couplings.

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## Quality requirements of the untreated water

The temperature of the water to be demineralized **must not exceed 35°C and must not contain iron, manganese, oil, or large quantities of organic matter.** Common mains water will normally meet these requirements.

## Plant Data

Water temperature.....max.	35°C
Inlet water pressure .....max.	6 bar
Pipe connection, to, from, and drain.....	DN 15/20 mm PVC
Connection.....	Plastic hose ½"
Electrical connection.....	1 x 230 VAC, 50 Hz
transformed into	12 VAC, 50 Hz

## Specifications

Type	Flow rate litres/h	Basic capacity* litres °GH	Diameter mm	Height mm	Transport weight kg
SILEX 21	420	22700	237	600	24

## Capacity calculation

The volume of mains water that a tank can demineralize is calculated based on the basic capacity of the tank.

The tank capacity is calculated by dividing the total salt content of the saline water converted into °GH into the basic capacity.

### Example:

SILEX 21 has a basic capacity of 22,700 litres °GH.

The total salt content of the water corresponds to 20°GH.

Calculated capacity: 22,700 divided by 20 = 1,135 litres.

## Calculation of total salt content of the inlet water, converted into °GH

Cation load		°GH.	Calculation °GH
Calcium	Ca <sup>2+</sup>	mg/l x 0,140 =	
Magnesium	Mg <sup>2+</sup>	mg/l x 0,230 =	
Sodium	Na <sup>+</sup>	mg/l x 0,122 =	
Ammonium	NH <sub>4</sub> <sup>+</sup>	mg/l x 0,156 =	
<b>Anion load</b>			
Chloride	Cl <sup>-</sup>	mg/l x 0,079 =	
Sulphate	SO <sub>4</sub> <sup>2-</sup>	mg/l x 0,058 =	
Bicarbonate	HCO <sub>3</sub> <sup>-</sup>	mg/l x 0,046 =	
Nitrate	NO <sub>3</sub> <sup>-</sup>	mg/l x 0,045 =	
Silicic Acid	SiO <sub>3</sub>	mg/l x 0,047 =	
Uncombinex Carbonic Acid	CO <sub>2</sub>	mg/l x 0,064 =	
		The total salt content – German degree °GH	

Total saltcontent equivalent °GH (German degree)	<b>SILEX 21</b> The actual capacity per unit / L
4 °GH	5675
5 °GH	4540
6 °GH	3783
7 °GH	3243
8 °GH	2837
9 °GH	2522
10 °GH	2270
11 °GH	2063
12 °GH	1892
13 °GH	1746
14 °GH	1621
15 °GH	1513
16 °GH	1419
17 °GH	1335
18 °GH	1261
19 °GH	1195
20 °GH	1135
21 °GH	1081
22 °GH	1032
23 °GH	987
24 °GH	946
25 °GH	908