Ion exchanger performance data

<table>
<thead>
<tr>
<th>Type</th>
<th>No. of cartridges</th>
<th>Resin volume per system</th>
<th>Capacity m³/h</th>
<th>Frame size (Width x depth x height in mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE/KR 2x50</td>
<td>2</td>
<td>60 l</td>
<td>0.6 – 1.2</td>
<td>1250 x 500 x 1600</td>
</tr>
<tr>
<td>SE/KR 4x50</td>
<td>4</td>
<td>120 l</td>
<td>0.6 – 1.8</td>
<td>1800 x 500 x 1600</td>
</tr>
<tr>
<td>SE/KR 2x50</td>
<td>2</td>
<td>100 l</td>
<td>1.0 – 2.0</td>
<td>1250 x 500 x 1800</td>
</tr>
<tr>
<td>SE/KR 4x50</td>
<td>4</td>
<td>200 l</td>
<td>1.0 – 4.0</td>
<td>1800 x 500 x 1800</td>
</tr>
<tr>
<td>SE/KR 2x120</td>
<td>2</td>
<td>240 l</td>
<td>1.2 – 4.8</td>
<td>1200 x 800 x 2000</td>
</tr>
<tr>
<td>SE/KR 2x180</td>
<td>2</td>
<td>360 l</td>
<td>1.8 – 7.2</td>
<td>1200 x 1000 x 2000</td>
</tr>
<tr>
<td>SE/KR 4x120</td>
<td>4</td>
<td>480 l</td>
<td>2.4 – 9.6</td>
<td>1200 x 1000 x 2000</td>
</tr>
<tr>
<td>Single cartridge*</td>
<td>1</td>
<td>20 – 50 l</td>
<td>0.1 – 2.0</td>
<td>ø 320 – 360</td>
</tr>
</tbody>
</table>

* Mixed bed resin for the production of demineralised water
Regeneration for loaded ion exchanger cartridges

Application examples:

Recirculation of rinsing water or selective removal of heavy metals. Loading is indicated, for example, by conductivity monitoring 5 µS/cm. Replacement takes place using exchange units.

Transport using our own transport service, using a parcel service or by direct delivery by the customer.

Regeneration of the loaded ion exchanger cartridges in the central regeneration plant at DECKER Verfahrenstechnik GmbH in 92348 Berg/Opf. / Germany and transport back to the customer.

Recirculation system
- Water-saving
- Waste water-free
- Simple operation
- Suitable for temperatures up to 70 °C

Application of circulation
Circulation of final rinsing water up to 70 °C
- Considerable energy costs are saved, as the rinsing water does not have to be constantly reheated.
- Through a suitable design of the activated carbon-cation-anion-mixed bed unit, pure water qualities of ≤ 1 µS/cm (microsiemens/cm) will be achieved.
- No foams will be caused when the water is dried off.

Circulation of all rinsing water
Bath line with pretreatment/nickel/chrome
- Rinsing water volume: e.g. 2.5 m³/h
- Advantage of recirculation: No further waste water discharge. Replacement of the resin cartridges: 2–4 times per month

Circulation of cyanide or chrome-contaminated rinsing water
- Rinsing water volume: e.g. 1.5 m³/h
- Advantage: No oxidation/reduction of the rinsing water necessary. Less burden on the internal waste water treatment facilities

Circulation of rinsing water containing precious metals
- Precious metals (e.g. gold, palladium) can be completely recovered from the rinsing water.
- The costs for the regeneration service are significantly below the credits for the precious metals.
- In some cases, smaller plants may be able to operate completely without further waste water treatment.

Selective system
- Compliance with limit values
- Metal recovery
- Minimum operating requirements

Application in selective systems
- Selective binding of heavy metals such as copper, nickel, zinc, lead, cobalt, cadmium, mercury, chrome, etc. downstream of waste water treatment plants.
- Ultrafiltration and microfiltration plants, heavy metal-contaminated rinsing baths.
- Selective binding of heavy metals or cyanides during groundwater remediation.
- Recovery of precious metals such as gold, silver, palladium, platinum.

Example
- Waste water: 10 m³ per day
- Residual metal content: 2 mg/l nickel, 1 mg/l copper, 1 mg/l zinc
- Capacity: 20 – 30 g metal/resin pro litre.

In this application example, a 50 litre resin cartridge is loaded after approx. 4 to 8 weeks of operation.