Resinex™ OR-1
Strong acid cation resin for oil removal

Resinex™ OR-1 is a strongly acidic gel-type, polystyrene-divinylbenzene-copolymer cation exchange resin especially developed for the oil removal from condensate. Resinex™ OR-1 acts like an coalescing agent and does not require regeneration of the resin beads to allow an economic operation. The superior mechanical strength combined with the selected bead size ensures a low pressure drop and prevents strainers from blocking. Resinex™ OR-1 is able to reduce the oil concentration from 100 ppm down to 1 ppm.

Typical Properties

<table>
<thead>
<tr>
<th>Type</th>
<th>Crosslinked polystyrene divinylbenzene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Gel-type, amber, spherical beads</td>
</tr>
<tr>
<td>Functional group</td>
<td>Sulfonic acid</td>
</tr>
<tr>
<td>Whole bead count</td>
<td>96% min.</td>
</tr>
<tr>
<td>Ionic form, as shipped</td>
<td>Na⁺</td>
</tr>
<tr>
<td>Bead size</td>
<td>0.42 - 1.25 mm</td>
</tr>
<tr>
<td>Effective bead size</td>
<td>0.60 ± 0.15 mm</td>
</tr>
<tr>
<td>Uniformity coefficient</td>
<td>1.60 max.</td>
</tr>
<tr>
<td>Bulk density, as shipped</td>
<td>830 kg/m³</td>
</tr>
<tr>
<td>Real density</td>
<td>1.28 g/cm³</td>
</tr>
<tr>
<td>Water retention</td>
<td>43 - 48%</td>
</tr>
<tr>
<td>Total capacity (Na⁺ form)</td>
<td>2.00 eq/l min.</td>
</tr>
<tr>
<td>Stability, temperature</td>
<td>120°C max.</td>
</tr>
<tr>
<td>Stability, pH</td>
<td>0 - 14</td>
</tr>
</tbody>
</table>

Key Features and Benefits

- High Integrity Beads
  Excellent resistance to mechanical degradation ensures low pressure drop
- Extended Operating Capacity
  Economical advantage
- Chemical Resistancy
  Insoluble in acids, alkalies and all common solvents
- Selected Bead Size
  Prevent blocking of the strainers

Typical Applications

- Oil Removal from Condensate streams

Standard Design Conditions

- Bed depth: > 700 mm
- Service flow rate (Uplow): 20 - 30 BV/h
- Backwash expansion: 50 - 75%

Standard Packaging

- 25 lit. PE valve bag
- 1000 litre big bag
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**Principles of the De-greasing process**

The oily contaminated water passes the resin layer from the bottom to the top of the de-greaser, short grained oil drops gathered into large drops on the resin surface, disappear from the resin layer and will be transferred to the second accumulation layer. After passing this step, the oil will be separated by gravity - the oil is on top of the unit and can be taken out.

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**Operation Parameter**

- **Conductivity of feed water**: 50 µS/cm max.
- **Total suspended solids**: 5 ppm max.
- **Oil content**: 500 ppm max.
- **Iron content**: 0.5 ppm max.
- **Hardness**: 0.3 mmol/l max.
- **Alkalinity**: 1.5 mmol/l max.
- **Linear velocity**: 5 - 15 m/h
- **pH**: 6-9

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**Pressure Drop**

![Pressure Drop Graph](image)

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**Product Packing**

- **25 lit. polyethylene valve bag**
- **42 bags per pallet**
- **Polypropylene FIBCs (big bag), 1,000 lit.**

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**CAUTION**: Strong oxidizing agents such as nitric acid can react violently with ion exchange resins and cause explosive type reactions. Before using strong oxidants, consult sources knowledgeable in the handling of these materials.