Physical Chemical Properties

Polymer Structure: Sulfonated Styrene / divinylbenzene copolymer

Ionic Form as Shipped: Hydrogen

Physical Form: Tough, spherical, black beads

Screen Size Distribution:
-16+40 mesh (U.S. Std.) 99%
-40+50 mesh 1% maximum

pH Range: 0 to 14

Moisture Content: 50 to 56%

Conversion to H+ Form: 99% minimum

Shipping Weight: 50 lbs per cubic foot

Total Capacity H+ Form: 1.8 meq/ml minimum

Specific Gravity: 1.23

Recommended Operating Conditions

Influent pH: No restrictions

Maximum Temperature: 250 °F

Bed Depth:
- Minimum 24”
- Normal 36”

Service Flow Rate: 1 to 10 US GPM per cubic foot

Backwash Flow Rate: See Fig. 1

Regenerant:
- 1 to 8% H2SO4 or HCl

Regenerant Flow Rate: 0.3 to 1.5 US GPM per cubic foot resin

Regenerant Contact Time: 15 to 60 minutes

Regenerant Dosage Level: 2 to 15 lbs of regenerant per cubic foot

Slow Rinse (Displacement) Flow Rate: 0.3 to 1.5 US GPM per cubic foot

Slow Rinse Volume: 20 USG per cubic foot resin

Fast Rinse Rate: 1.0 to 10 US GPM per cubic foot

Fast Rinse Volume: 30-60 USG per cubic foot

C-800H Features

Elemental analysis, dry basis

Sodium (Na) <100 ppm
Cobalt (Co) <50 ppm
Copper (Cu) <50 ppm
Aluminum (Al) <50 ppm
Iron (Fe) <50 ppm

Very Low TOC
Non solvent sulfonation and special manufacturing processes assure very low TOC leakage.

Uniform Particle Size
99% of all beads are in the minus 16 to plus 40 mesh range: giving a lower pressure drop while maintaining the superior kinetics of standard mesh size products.

Superior Physical Stability
90% plus sphericity and high crush strengths together with a very uniform particle size provide greater resistance to bead breakage while maintaining low pressure drop.

Safety Information

A material safety data sheet is available for Aldex C-800H. Copies can be obtained from Aldex Chemical Co., LTD. Aldex C-800H is not a hazardous product and is not WHMIS controlled.

Caution: Acidic and basic regenerant solutions are corrosive and should be handled in a manner that will prevent eye and skin contact. Before using strong oxidizing agents in contact with ion exchange resin, consult sources knowledgeable in the handling of these materials.
### Backwash Characteristics

Aldex C-800H should be backwashed for at least 10 minutes after each service cycle in a conventional down flow regenerate unit. To reclassify the beads and remove suspended solids from the top of the bed, the resin bed should be expanded at least 50% according to Fig 1.

In case of non-conventional or upflow regenerated units, it may not be necessary to follow the above procedure.

### Operating Capacity

The following table (Fig 3.) shows the hydrogen cycle relationship between operating capacity and regeneration level when using sulfuric acid as the regenerant.

The calcium data is based on an acid concentration of 2% in order to avoid calcium sulfate precipitation. Higher operation capacities could be obtained using a step wise increase in acid concentration to avoid the calcium problem. For more information please contact our technical department.

<table>
<thead>
<tr>
<th>Acid Regenerant (LBS/CU FT)</th>
<th>Capacity (KGR/CU FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₂SO₄ per cubic foot</td>
<td>500 ppm CaCO₃ NaCl</td>
</tr>
<tr>
<td>5</td>
<td>19.0</td>
</tr>
<tr>
<td>7.5</td>
<td>23.0</td>
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<tr>
<td>10</td>
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<td>15</td>
<td>28.1</td>
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<tr>
<td>20</td>
<td>29.7</td>
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<tr>
<td>500 ppm CaCl₂</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>11.5</td>
</tr>
<tr>
<td>7.5</td>
<td>12.8</td>
</tr>
<tr>
<td>10</td>
<td>13.6</td>
</tr>
<tr>
<td>15</td>
<td>14.5</td>
</tr>
<tr>
<td>20</td>
<td>15.0</td>
</tr>
</tbody>
</table>

### Pressure Drop

![Fig. 2 Pressure Drop vs Flow Rate at various degrees Fahrenheit (F°)](image)

**Fig. 2** Pressure Drop vs Flow Rate at various degrees Fahrenheit (F°)

![Fig. 4 Typical Aldex C-800H Operating Capacities](image)

**Fig. 4** Typical Aldex C-800H Operating Capacities