DOWEX 88 MB
Ion Exchange Resin for Mixed Bed Sweetener Applications

<table>
<thead>
<tr>
<th>Product</th>
<th>Type</th>
<th>Matrix</th>
<th>Functional group</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOWEX™ 88 MB</td>
<td>Strong acid cation</td>
<td>Styrene-DVB, macroporous</td>
<td>Sulfonate</td>
</tr>
</tbody>
</table>

**Typical Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ionic form as produced</td>
<td>Na⁺</td>
</tr>
<tr>
<td>Total exchange capacity, min.</td>
<td>1.8 eq/L</td>
</tr>
<tr>
<td>Water content</td>
<td>42 - 48 %</td>
</tr>
<tr>
<td>Bead size distribution</td>
<td></td>
</tr>
<tr>
<td>Range &lt; 500 µm (through 35 mesh)</td>
<td>% &lt; 5</td>
</tr>
<tr>
<td>Total swelling (Na⁺ → H⁺)</td>
<td>5 %</td>
</tr>
<tr>
<td>Whole uncracked beads, min.</td>
<td>95 %</td>
</tr>
<tr>
<td>Particle density, approx.</td>
<td>1.2 g/mL</td>
</tr>
<tr>
<td>Shipping weight, approx.</td>
<td>800 g/L, 50 lbs/ft³</td>
</tr>
</tbody>
</table>

**Recommended Operating Conditions**

- Maximum operating temperature (H⁺ form) 93°C (200°F)
- pH range 0 - 14
- Bed depth, min. 91 cm (3 ft)
- Flow rates:
  - Service 3 - 5 bed volumes/hour
  - Backwash See Figure 1
  - Regeneration time 30 - 45 min.
  - Displacement rinse 30 - 45 min.
  - Fast rinse (if applicable) 2 - 10 bed volumes/hour
- Total rinse requirement 3 - 6 bed volumes
- Regenerant:
  - Concentration 7% HCl
  - Level, 100% basis† 6 - 7 lbs/ft³, 96 - 112 kg/m³
  - Temperature, max. 93°C (200°F)

† Regeneration level may be lower for counter-current regeneration systems.
**Typical Properties and Applications**

DOWEX 88 MB resin is a macroporous strong acid cation resin for use in mixed bed polishing in sweetener applications. This macroporous matrix provides excellent mechanical strength and good operating capacity. DOWEX 88 MB resin can best be used in a mixed bed polisher together with DOWEX 22 ion exchange resin.

**Packaging**

25 liter bags, 5 cubic feet fiber drums or 1 cubic meter super sacks.

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**Figure 1. Backwash Expansion Data**

For other temperatures use:

\[ F_T = F_{77} \left[ 1 + 0.008 \left( T_F - 77 \right) \right], \text{ where } F = \text{gpm/ft}^2 \]

\[ F_T = F_{25} \left[ 1 + 0.008 \left( 1.8T_F - 45 \right) \right], \text{ where } F = \text{m/h} \]

**Figure 2. Pressure Drop Data**

For other temperatures use:

\[ P_T = P_{25} \left( 0.026 T_F + 0.43 \right), \text{ where } P = \text{bar/m} \]

\[ P_T = P_{77} \left( 0.014 T_F + 0.55 \right), \text{ where } P = \text{psi/ft} \]

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**DOWEX Ion Exchange Resins**

Warning: Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions. This could lead to anything from slight resin degradation to a violent exothermic reaction (explosion). Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

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