DOWEX MB-50
A Ready-for-use Regenerable Mixed Bed Resin for Production of High Quality Water in Lab and Industrial Applications

Product Resin ratio Matrix Functional group
DOWEX* MB-50 1.2:1 by equivalent, cation:anion Styrene-DVB gel Sulfonic acid, quaternary amine

Guaranteed Sales Specifications

<table>
<thead>
<tr>
<th></th>
<th>OH⁻ form</th>
<th>H⁺ form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total exchange capacity, min.</td>
<td>eq/l</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>kgr/ft³ as CaCO₃</td>
<td>26.2</td>
</tr>
<tr>
<td>Water content</td>
<td>%</td>
<td>60 max.</td>
</tr>
<tr>
<td>Bead size distribution†:</td>
<td>%</td>
<td>90</td>
</tr>
<tr>
<td>0.3-1.2 mm, min.</td>
<td>%</td>
<td>90</td>
</tr>
<tr>
<td>Conversion (OH), min.</td>
<td>%</td>
<td>1</td>
</tr>
<tr>
<td>Cl, max.</td>
<td>%</td>
<td>—</td>
</tr>
</tbody>
</table>

Typical Physical and Chemical Properties

<table>
<thead>
<tr>
<th></th>
<th>OH⁻ form</th>
<th>H⁺ form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particle density</td>
<td>g/ml</td>
<td>1.08</td>
</tr>
<tr>
<td>Shipping weight</td>
<td>g/l</td>
<td>720</td>
</tr>
<tr>
<td></td>
<td>lbs/ft³</td>
<td>45</td>
</tr>
</tbody>
</table>

Recommended Operating Conditions

- Maximum operating temperature: 60°C (140°F)
- pH range: 0-14
- Bed depth, min.: 800 mm (2.6 ft)
- Flow rates:
  - Service/fast rinse: 5-50 m/h (2-20 gpm/ft²)
  - Backwash: 10-15 m/h (4-6 gpm/ft²)
  - Regeneration/displacement rinse: 2-10 m/h (0.8-4 gpm/ft²)
- Total rinse requirement: 3-6 Bed volumes
- Regenerant: 1-8% H₂SO₄ or 4-8% HCl and 4-8% NaOH
- Operating capacity, typical: 0.5 eq/l (11 kgr/ft³ as CaCO₃)
- Treated water quality, typical:
  - Conductivity: < 0.2 µS/cm
  - Silica: 20-30 ppb

† For additional particle size information, please refer to the Particle Size Distribution Cross Reference Chart (Form No. 177-01775).
**Typical Properties and Applications**

DOWEX MB-50 resin is a ready-to-use regenerable mixture of DOWEX HCR-S (H) cation exchange resin and DOWEX SBR LC NG (OH) anion exchange resin.

DOWEX MB-50 resin is used for production of high quality water for laboratory and industrial use.

**Packaging**

25 liter bags

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**Figure 1. Pressure Drop Data**

Temperature = 20° C (68° F)

For other temperatures use:

\[ P_T = P_{20°C} / (0.026 T_°C + 0.48), \text{ where } P = \text{bar/m} \]

\[ P_T = P_{68°F} / (0.014 T_°F + 0.05), \text{ where } P = \text{psi/ft} \]

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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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