AmberLite™ IRA402 Cl Ion Exchange Resin
Gaussian, Gel, Strong Base Anion Exchange Resin for Industrial Demineralization Applications

Description
AmberLite™ IRA402 Cl Ion Exchange Resin is a general-purpose demineralization resin with a long-established track record of reliable performance in the industry. This industry-staple resin is designed to provide excellent balance of properties for capacity, strength, silica selectivity, and a long lifetime for co-flow regenerated systems in variety of industrial water treatment applications.

Applications
- Demineralization
  - Ideally when treating water with:
    - High percentage of silica
  - When the treatment goal is:
    - Removal of strong and weak acids
    - Lowest silica leakage

System Designs
- Co-current

Typical Properties

<table>
<thead>
<tr>
<th>Physical Properties</th>
<th>Chemical Properties</th>
<th>Particle Size $^5$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copolymer</td>
<td>Ionic Form as Shipped</td>
<td>Particle Diameter</td>
</tr>
<tr>
<td>Matrix</td>
<td>Total Exchange Capacity</td>
<td>600 – 750 µm</td>
</tr>
<tr>
<td>Type</td>
<td>Water Retention Capacity</td>
<td>Uniformity Coefficient</td>
</tr>
<tr>
<td>Functional Group</td>
<td></td>
<td>≤ 1.80</td>
</tr>
<tr>
<td>Physical Form</td>
<td></td>
<td>&lt; 300 µm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 1.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; 1180 µm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 5.0%</td>
</tr>
</tbody>
</table>

Stability
- Whole Uncracked Beads: ≥ 90%
- Swelling: Cl$^-$ → OH$^-$ ≤ 20%

Density
- Particle Density: 1.07 g/mL
- Shipping Weight: 670 g/L

$^5$ For additional particle size information, please refer to the Particle Size Distribution Cross Reference Chart (Form No. 45-D00954-en).
### Suggested Operating Conditions

<table>
<thead>
<tr>
<th></th>
<th>Temperature Range</th>
<th>pH Range</th>
<th>Service Cycle</th>
<th>Stable</th>
</tr>
</thead>
<tbody>
<tr>
<td>OH⁻ form ‡</td>
<td>5 – 60°C (41 – 140°F)</td>
<td></td>
<td>1 – 14</td>
<td>0 – 14</td>
</tr>
<tr>
<td>Cl⁻ form</td>
<td>5 – 100°C (41 – 212°F)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

‡ Operating at elevated temperatures, for example above 60 – 70°C (140 – 158°F), may impact resin life. Contact our technical representative for details.

For additional information regarding recommended minimum bed depth, operating conditions, and regeneration conditions for separate beds (Form No. 45-D01131-en) in water treatment, please refer to our Tech Fact.

### Hydraulic Characteristics

Estimated bed expansion of AmberLite™ IRA402 Cl Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AmberLite™ IRA402 Cl as a function of service flowrate and temperature is shown in Figure 2. These pressure drop expectations are valid at the start of the service run with clean water and a well-classified bed.

**Figure 1: Backwash Expansion**  
Temperature = 10 – 60°C (50 – 140°F)

**Figure 2: Pressure Drop**  
Temperature = 10 – 60°C (50 – 140°F)

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Please be aware of the following:

- **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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**Have a question? Contact us at:**

[www.dupont.com/water/contact-us](http://www.dupont.com/water/contact-us)

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