**DuPont™ AmberLyst™ 33 Polymeric Catalyst**

**Industrial-grade, Strongly Acidic Catalyst**

**Description**

DuPont™ AmberLyst™ 33 Polymeric Catalyst is a clean, gel, sulfonic acid, polymeric catalyst exhibiting high activity for the production of high-purity Bisphenol-A (BPA) via the condensation of phenol with acetone. This catalyst was specifically designed with very low acid leaching to meet the more stringent demands of BPA.

**Applications**

- Condensation (Bisphenol-A)

**Typical Properties**

<table>
<thead>
<tr>
<th>Physical Properties</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Copolymer</td>
<td>Styrene-divinylbenzene</td>
</tr>
<tr>
<td>Matrix</td>
<td>Gel</td>
</tr>
<tr>
<td>Type</td>
<td>Strong acid cation</td>
</tr>
<tr>
<td>Functional Group</td>
<td>Sulfonic acid</td>
</tr>
<tr>
<td>Physical Form</td>
<td>Amber, translucent, spherical beads</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Properties</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ionic Form as Shipped</td>
<td>H⁺</td>
</tr>
<tr>
<td>Concentration of Acid Sites ‡</td>
<td>≥ 5.00 eq/kg</td>
</tr>
<tr>
<td></td>
<td>≥ 1.20 eq/L</td>
</tr>
<tr>
<td>Water Retention Capacity</td>
<td>64 – 70%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Particle Size §</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Particle Diameter</td>
<td>550 – 750 µm</td>
</tr>
<tr>
<td>Uniformity Coefficient</td>
<td>≤ 1.60</td>
</tr>
<tr>
<td>&lt; 300 µm</td>
<td>≤ 1.0%</td>
</tr>
<tr>
<td>&gt; 1180 µm</td>
<td>≤ 2.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shrinkage (in solvent)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>46%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Density</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Weight</td>
<td>750 g/L</td>
</tr>
</tbody>
</table>

‡ Dry Weight Capacity ≥ 5.00 eq/kg; Total Exchange Capacity (on a water-wet basis) ≥ 1.20 eq/L

§ 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>Maximum Operating Temperature</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-aqueous media</td>
<td>130°C (265°F)</td>
</tr>
<tr>
<td>Aquous media</td>
<td>80°C (175°F)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bed Depth, min.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1000 mm (3.3 ft)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Pressure Drop, max.</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1 bar (15 psig)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Flowrates</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LHSV</td>
<td>0.5 – 5 h⁻¹</td>
</tr>
</tbody>
</table>
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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.

Have a question? Contact us at:

www.dupont.com/water/contact-us

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