Fossil Power Plant
Condensate Polisher Product Recommendations

Condensate polishers protect critical boiler components from potential condenser leaks, thereby improving plant reliability. Our ion exchange resins have been the backbone of condensate polishing systems throughout the world for decades. Depending on the chemistry used in the boiler feed water, the right resin combination will help provide the optimum performance in terms of treated condensate purity and cycle run length.

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>AMINE TYPE</th>
<th>CATION PRE-BED</th>
<th>FEATURES AND RECOMMENDED USES</th>
<th>TYPE</th>
<th>MATRIX</th>
<th>TOTAL VOLUME CAPACITY (eq/L min)</th>
<th>IONIC FORM AS SHIPPED</th>
</tr>
</thead>
<tbody>
<tr>
<td>AmberLite™ HPR4700 OH</td>
<td>NH₄/ Organic Amine</td>
<td>N/A</td>
<td>This pairing offers the best balance of properties for fossil power plants: high capacity gel type resins, uniform particle size, and high physical stability. Combined with the exceptional separation in mixed beds, this is the go-to pairing for fossil power plants.</td>
<td>SBA</td>
<td>GEL</td>
<td>1.10</td>
<td>OH⁻</td>
</tr>
<tr>
<td>AmberLite™ HPR1300 H</td>
<td></td>
<td>Yes</td>
<td></td>
<td>SAC</td>
<td>GEL</td>
<td>2.00</td>
<td>H⁺</td>
</tr>
<tr>
<td>AmberLite™ HPR550 OH</td>
<td>NH₄/ Organic Amine</td>
<td>N/A</td>
<td>Most typically used in nuclear power plants, but suitable for fossil plants when the premium grade resins with tight metal specifications are required or preferred. Together, these resins offer exceptional separation in mixed beds, which combined with excellent water quality and resin purity, has made them known throughout the industry as a premium mixed bed pairing in condensate polishing. AmberLite™ HPR650 H Resin is also an excellent choice for cation pre-bed required to handle NH₄/amine load.</td>
<td>SBA</td>
<td>GEL</td>
<td>1.10</td>
<td>OH⁻</td>
</tr>
<tr>
<td>AmberLite™ HPR650 H</td>
<td></td>
<td>Yes</td>
<td>Most typically used in nuclear power plants, but suitable for fossil plants when the premium grade resins with tight metal specifications are required or preferred. Together, these resins offer exceptional separation in mixed beds, which combined with excellent water quality and resin purity, has made them known throughout the industry as a premium mixed bed pairing in condensate polishing. AmberLite™ HPR650 H Resin is also an excellent choice for cation pre-bed required to handle NH₄/amine load.</td>
<td>SAC</td>
<td>GEL</td>
<td>2.00</td>
<td>H⁺</td>
</tr>
<tr>
<td>AmberLite™ HPR550 OH or HPR4700 OH</td>
<td>NH₄/ Organic Amine</td>
<td>N/A</td>
<td>Pairing that offers you one of the highest NH₄/amine capacity with good anion protection, allowing enhanced pH for better FAC control. AmberLite™ HPR1600 H Resin provides high NH₄/amine capacity for cation pre-bed.</td>
<td>SBA</td>
<td>GEL</td>
<td>1.10</td>
<td>OH⁻</td>
</tr>
<tr>
<td>AmberLite™ HPR1600 H</td>
<td>NH₄/ Organic Amine</td>
<td>Yes</td>
<td></td>
<td>SAC</td>
<td>GEL</td>
<td>2.40</td>
<td>H⁺</td>
</tr>
<tr>
<td>AmberLite™ HPR900 OH</td>
<td>NH₄/ Organic Amine</td>
<td>N/A</td>
<td>Pairing that offers you high NH₄/amine capacity with good resistance to anion resin fouling. AmberLite™ HPR1600 H Resin provides high NH₄/amine capacity for cation pre-bed. The use of a macroporous anion resin provides excellent resistance to surface fouling and kinetic impairment.</td>
<td>SBA</td>
<td>MACRO</td>
<td>0.80</td>
<td>OH⁻</td>
</tr>
<tr>
<td>AmberLite™ HPR1600 H</td>
<td>NH₄/ Organic Amine</td>
<td>Yes</td>
<td></td>
<td>SAC</td>
<td>GEL</td>
<td>2.40</td>
<td>H⁺</td>
</tr>
<tr>
<td>AmberLite™ HPR900 OH</td>
<td>NH₄/ Organic Amine</td>
<td>N/A</td>
<td>Pairing that offers you high NH₄/amine capacity with good resistance to anion resin fouling. The use of a macroporous anion resin provides excellent resistance to surface fouling and kinetic impairment.</td>
<td>SAC</td>
<td>MACRO</td>
<td>1.70</td>
<td>OH⁺</td>
</tr>
<tr>
<td>AmberLite™ HPR1300 H</td>
<td>NH₄/ Organic Amine</td>
<td>Yes</td>
<td></td>
<td>SAC</td>
<td>GEL</td>
<td>2.00</td>
<td>H⁺</td>
</tr>
<tr>
<td>AmberLite™ HPR9000 OH</td>
<td>Organic Amines</td>
<td>N/A</td>
<td>Pairing that offers you high Na selectivity for operation past amine break. The use of a macroporous anion resin provides excellent resistance to surface fouling and kinetic impairment.</td>
<td>SBA</td>
<td>MACRO</td>
<td>0.80</td>
<td>OH⁻</td>
</tr>
<tr>
<td>AmberLite™ HPR2000 H</td>
<td></td>
<td>No</td>
<td></td>
<td>SAC</td>
<td>MACRO</td>
<td>1.70</td>
<td>H⁺</td>
</tr>
<tr>
<td>AmberLite™ HPR9000 OH</td>
<td>NH₄/ Organic Amine</td>
<td>N/A</td>
<td>Macro resin pairing that combines excellent physical stability with superior resistance to fouling for enhanced resin life. Recommended for for use in oxidative conditions or with alternative amines or when high stability needed. This pair is designed for use when a balance of operating performance, simple operation, long resin life, and cost-effective operation is required.</td>
<td>SBA</td>
<td>MACRO</td>
<td>0.80</td>
<td>OH⁻</td>
</tr>
<tr>
<td>AmberLite™ HPR252 H</td>
<td>NH₄/ Organic Amine</td>
<td>Yes</td>
<td></td>
<td>SAC</td>
<td>MACRO</td>
<td>1.65</td>
<td>H⁺</td>
</tr>
<tr>
<td>AmberLite™ HPR9000 OH</td>
<td>NH₄/ Organic Amine</td>
<td>N/A</td>
<td>Macro resin pairing designed to be used when a combination of exceptional physical stability, simple and reliable operation, and long resin life is required. Recommended for use in oxidative conditions or with alternative amines or when high stability needed. This resin is compliant with the China National Standard specifications for fossil power condensate polishing applications, including the China Strong Osmotic Ball Mill test.</td>
<td>SBA</td>
<td>MACRO</td>
<td>0.80</td>
<td>H⁺</td>
</tr>
<tr>
<td>AmberLite™ HPR2800 H</td>
<td>NH₄/ Organic Amine</td>
<td>Yes</td>
<td></td>
<td>SAC</td>
<td>MACRO</td>
<td>1.70</td>
<td>OH⁻</td>
</tr>
<tr>
<td>AmberLite™ 600i</td>
<td>Layer Separation</td>
<td>N/A</td>
<td>Inert interface separator compatible with all PWR condensate polishing resin pairs.</td>
<td>Inert</td>
<td>GEL</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Key: SBA = Strong Base Anion  SAC = Strong Acid Cation  MB = Mixed Bed
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