Fuel Pool Clean Up

Product Recommendation

Spent fuel is handled and stored under water for safety. Fuel pool clean-up systems are employed to ensure quality and clarity of this water. DuPont provides special ion exchange resins in either single beds or mixed beds made from individual components or ready to use mixed beds that can be used for spent fuel pool clean-up systems. In certain cases reverse osmosis membranes can be used to upconcentrate the radioactive stream and thus reduce the waste amount to be treated.

<table>
<thead>
<tr>
<th>TECHNOLOGY</th>
<th>PRODUCT</th>
<th>FEATURES AND RECOMMENDED USES</th>
<th>TYPE</th>
<th>MATRIX</th>
<th>TOTAL VOLUME CAPACITY (Eq/L)</th>
<th>IONIC FORM AS SHIPPED</th>
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</thead>
<tbody>
<tr>
<td>INDIVIDUAL RESINS FOR CUSTOMIZED CHEMISTRY CONTROL</td>
<td>AMBERLITE™ IRN97 H</td>
<td>High capacity 10% DVB uniform particle size cation resin for purification of fuel pool in VVER circuit #4 systems with good resistance to SAC GEL 2.10 H⁺</td>
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<td></td>
<td>AMBERLITE™ IRN99 H</td>
<td>Premium 16% DVB uniform particle size cation resin with very high capacity and oxidative stability. High selectivity for cationic radioisotopes and high total capacity for long runs resulting in reduced waste and exposure. The high oxidative stability results in reduced fuel pool sulfate concentration SAC GEL 2.50 H⁺</td>
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<td>AMBERLITE™ IRN9675 H</td>
<td>Nuclear grade macroporous cation resin designed to remove radioactive colloidal material in all nuclear applications. Often used SAC MACRO 1.70 H⁺</td>
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<td>AMBERLITE™ IRN78 OH</td>
<td>Premium high solids uniform particle size anion resin with very high capacity used for removal of anionic radioisotopes. SBA GEL 1.20 OH⁻</td>
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<td>AMBERLITE™ IRN9766 OH</td>
<td>Macroporous anion resin designed to remove radioactive colloidal material in all nuclear applications. Often used as an overlay above a mixed SBA MACRO 0.85 OH⁻</td>
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<td>READY TO USE MIXED BEDS</td>
<td>AMBERLITE™ IRN160 H/OH</td>
<td>High capacity nuclear grade mixed bed composed of uniform particle size AMBERLITE™ IRN97 H and IRN78 OH Resins on a 1:1 equivalent basis. Designed to minimize separation of anion and cation during installation MB GEL/GEL 210/120 H⁺/OH⁻</td>
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<td>AMBERLITE™ IRN170 H/OH</td>
<td>Premium nuclear grade mixed bed composed of uniform particle size AMBERLITE™ IRN99 H and IRN78 OH Resins on an 11 equivalent basis. Offers maximum oxidative stability and high operating capacity to achieve MB GEL/GEL 2.50/1.20 H⁺/OH⁻</td>
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<td>AMBERLITE™ IRN9882</td>
<td>Nuclear grade macroporous mixed bed composed of 40% cation resin (12% DVB) and 60% AMBERLITE™ IRN9766 OH Resins on a volume basis. Offers high exchange kinetics and the ability to remove colloids for highest decontamination rates. MB MACRO/MACRO 1.65/0.85 H⁺/OH⁻</td>
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<td>REVERSE OSMOSIS</td>
<td>FILMTEC™ Elements</td>
<td>Please contact your DuPont representative for assistance. N/A N/A N/A N/A</td>
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</tbody>
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Key:
1 = Mixed beds using individual cation and anion must be prepared in-situ.
SBA = Strong Base Anion
SAC = Strong Acid Cation
MB = Mixed Bed
Powering performance worldwide.

With a large global manufacturing footprint, strong R&D expertise and technical support services and systems, we supply high market volumes with high quality. DuPont partners with you, our customer, to understand unmet needs and develop tailored solutions.

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* Global Water Technology Center

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