Whey Demineralization

There are three main technologies that can be applied to whey demineralization, depending on the level of purification needed:

- Nanofiltration (NF)
- Electrodialysis (ED)
- Ion Exchange (IX)

Relative performance of whey demineralization technologies:

<table>
<thead>
<tr>
<th>Technology</th>
<th>NF</th>
<th>ED</th>
<th>IX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demineralization</td>
<td>&lt; 30%</td>
<td>50 - 70%</td>
<td>&gt;90%</td>
</tr>
<tr>
<td>Lactose content</td>
<td>&lt; 84%</td>
<td>85 - 86%</td>
<td>&gt; 87%</td>
</tr>
<tr>
<td>Ash content</td>
<td>&gt; 5%</td>
<td>4 - 2.5%</td>
<td>&lt; 1%</td>
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</table>

Dow Water & Process Solutions offers a range of products to support both NF and IX

**Nanofiltration**

Dow HYPERSHELL™ NF245-8038
- Contains robust DOW FILMTEC™ membrane
- Precision automated rolling
- Machined polypropylene shell

The rugged HYPERSHELL products offer:
- Safer and faster loading and removal of elements
- Reduced bypass and premature element failure
- Improved hydrodynamics

**Ion Exchange**

**SAC: Strong Acid Cation Resin**

Product: DOWEX™ MONOSPHERE™ C-600B
- Matrix: Gel

Uniform particle size resin designed to exhibit faster kinetics, improved regeneration efficiency, higher operating capacity and reduced regenerant usage

**WBA: Weak Base Anion Resin**

Product: AMBERLITE™ FPA51
- Matrix: Macro

Styrenic resin that combines high physical stability with high operating efficiency to give long process cycle times

Product: AMBERLITE FPA55
- Matrix: Gel

Acrylic resin that resists organic fouling giving a longer lifespan of the resin bed and shorter rinse cycles

Contact us today to learn more about our resin solutions.

Email DowCIG@dow.com, or call 1-800-447-4369

www.dowwaterandprocess.com/applications/food_beve/index.htm

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