**Lewatit® UltraPure 1297 MD** is a less separable ready-to-use mixed bed comprising a gel type strongly acidic cation exchange resin (SAC) and a gel type, strongly basic anion exchange resin (SBA, type I), individually with a monodispersed bead size distribution (uniform particles) based on a styrene-divinylbenzene copolymer for the use in working/regenerable and polishing/non-regenerable systems for the production of ultra pure water.

The monodisperse beads are chemically and osmotically highly stable. The optimized kinetics lead to an increased operating capacity, and the very low content of fines also results in a low pressure drop compared to ion exchange resins with heterodisperse bead size distribution.

**Lewatit® UltraPure 1297 MD** is correspondingly adjusted to the total capacity of the individual components to an equivalent ratio of 1:1. The smaller bead size of the SAC contributes to better mixing properties.

**Lewatit® UltraPure 1297 MD** is highly regenerated and specially cleaned for meeting the specifications of the semiconductor industry.

The special properties of this product can only be fully utilized if the technology and process used correspond to the current state-of-the-art. Further advice in this matter can be obtained from Lanxess Corporation.
Common Description

<table>
<thead>
<tr>
<th>Delivery form</th>
<th>H⁺/OH⁻</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional group</td>
<td>Quaternary ammonium Typ1/ Sulfonic acid</td>
</tr>
<tr>
<td>Matrix</td>
<td>Styrenic</td>
</tr>
<tr>
<td>Structure</td>
<td>Gel</td>
</tr>
<tr>
<td>Appearance</td>
<td>Dark brown / Light brown translucent</td>
</tr>
</tbody>
</table>

Specified Data

<table>
<thead>
<tr>
<th>Uniformity coefficient (SAC component)</th>
<th>max. 1.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uniformity coefficient (SBA component)</td>
<td>max. 1.1</td>
</tr>
<tr>
<td>Mean bead size (SAC component) d50 mm</td>
<td>0.35 (+/-0.08)</td>
</tr>
<tr>
<td>Mean bead size (SBA component) d50 mm</td>
<td>0.64 (+/-0.06)</td>
</tr>
<tr>
<td>Total capacity (SAC component H⁺ form) min. eq/L</td>
<td>2.1</td>
</tr>
<tr>
<td>Total capacity (SBA component OH form) min. eq/L</td>
<td>1.1</td>
</tr>
</tbody>
</table>
Typical Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Metric Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultrapure water rinse test (resistivity) after 80 BV rinsing</td>
<td>min. MOhm*cm 17.5</td>
</tr>
<tr>
<td>Ultrapure water rinse test delta TOC after 80 BV</td>
<td>max. ppb 30</td>
</tr>
<tr>
<td>Bulk density for shipment (+/- 5%)</td>
<td>g/L 720</td>
</tr>
<tr>
<td>Water retention (SAC component H+ form) approx. weight %</td>
<td>35 - 49</td>
</tr>
<tr>
<td>Water retention (SBA component OH- form) approx. weight %</td>
<td>54 - 64</td>
</tr>
<tr>
<td>Volume change (during exhaustion) max. approx. %</td>
<td>-20</td>
</tr>
<tr>
<td>Stability pH range</td>
<td>0 - 14</td>
</tr>
<tr>
<td>Storage time (after delivery) max. years</td>
<td>1</td>
</tr>
<tr>
<td>Storability temperature range °C</td>
<td>-20 - +40</td>
</tr>
<tr>
<td>Operating temperature max. °C</td>
<td>40</td>
</tr>
<tr>
<td>Operating pH range during exhaustion</td>
<td>0 - 14</td>
</tr>
<tr>
<td>Specific pressure loss (15°C) kPa*h/m²</td>
<td>2</td>
</tr>
<tr>
<td>Max. pressure loss during operation kPa</td>
<td>200</td>
</tr>
<tr>
<td>Specific flow rate max. BV/h</td>
<td>100</td>
</tr>
</tbody>
</table>
Additional Information & Regulations

Safety precautions
Strong oxidants, e.g. nitric acid, can cause violent reactions if they come into contact with ion exchange resins.

Toxicity
The safety data sheet must be observed. It contains additional data on product description, transport, storage, handling, safety and ecology.

Disposal
In the European Community ion exchange resins have to be disposed, according to the European waste nomenclature which can be accessed on the internet-site of the European Union.

Storage
It is recommended to store ion exchange resins at temperatures above the freezing point of water under roof in dry conditions without exposure to direct sunlight. If resin should become frozen, it should not be mechanically handled and left to thaw out gradually at ambient temperature. It must be completely thawed before handling or use. No attempt should be made to accelerate the thawing process.

Packaging
The experience has shown that the packaging stability for reliable resin containment is limited to 24 months under the storage conditions described above. It is therefore recommended to use the product within this time frame; otherwise the packaging condition should be checked regularly.
The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and application. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee and is subject to change with notice. It is expressly understood and agreed that you assume and hereby expressly release us from liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.

Health and Safety Information: Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling the LANXESS Corporation products mentioned in this publication. For materials mentioned which are not LANXESS Corporation products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be followed. Before working with any of these products, you must read and become familiar with the available information on their hazards, proper use, and handling. This cannot be overemphasized. Information is available in several forms, e.g., material safety data sheets and product labels. Consult your LANXESS Corporation representative or contact the Product Safety and Regulatory Affairs Department at LANXESS Corporation.

Regulatory Compliance Information: Some of the end uses of the products described in this publication must comply with applicable regulations, such as the FDA, BfR, NSF, USDA, and CPSC. If you have any questions on the regulatory status of these products, contact - for business in the USA - the LANXESS Corporation Regulatory Affairs and Product Safety Department in Pittsburgh, PA, USA or for business outside US the Regulatory Affairs and Product Safety Department of LANXESS Deutschland GmbH in Germany.

Note: The information contained in this publication is current as of the date of edition. Please contact LANXESS Corporation Inc. to determine if this publication has been revised.

This document contains important information and must be read in its entirety.