# PRODUCT INFORMATION
# LEWATIT® UltraPure 1216 MD

**Lewatit® UltraPure 1216 MD** is a gel type, strongly acidic cation exchange resin (SAC) with a monodispersed bead size distribution (uniform particles) based on a styrene-divinylbenzene copolymer for the use in polishing systems for the production of ultrapure 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 1216 MD** is specially produced to meet the specifications for the production of Ultrapure Water.

An optimized combination of **Lewatit® UltraPure 1216 MD** and **Lewatit® UltraPure 1243 MD** excellently performs in polishing mixed bed systems for a furtheron low release of TOC and a high resistivity.

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, Business Unit Liquid Purification Technologies.

## Common Description

| | |
|---|---|
| Delivery form | |
| Functional group | |
| Matrix | |
| Structure | |
| Appearance | |

## Specified Data

| | | | |
|---|---|---|---|
| Uniformity coefficient | | max. | 1.1 |
| Mean bead size | d50 | mm | 0.55 (+-0.05) |
| Total capacity (delivery form) | | min. eq/L | 2.1 |

## Typical Physical and Chemical Properties

| | | | |
|---|---|---|---|
| Ultrapure water rinse test (resistivity) | after 80 BV | min. MOhm*cm | 12 |
| Ultrapure water rinse test | delta TOC after 80 BV | max. ppb | 10 |
| Bulk density for shipment | (+/- 5%) | g/L | 790 |
| Density | | approx. g/mL | 1.22 |
| Water retention (delivery form) | | approx. weight % | 45-50 |
| Volume change ($H^+$ - $Na^+$) | | max. approx. % | -8 |
| Stability pH range | | | 0-14 |
| Storage time (after delivery) | | max. years | 1 |
| Storage temperature range | | °C | -20 - +40 |
| Friability | | average g/bead | 600 |
| Friability | >200 g/bead | min. vol % | 95 |
| Ionic conversion $H^+$ | | min. eq. % | 99.9 |

## Operation

| | | | |
|---|---|---|---|
| Operating temperature | | max. °C | 60 |
| Operating pH range | during exhaustion | | 0-14 |
| Bed depth for single column | | min. mm | 800 |
| Specific pressure loss kPa*h/$m^2$ (15°C) | | kPa*h/$m^2$ (15°C) | 1.5 |
| Max. pressure loss during operation | | kPa | 200 |
| Specific flow rate | | max. BV/h | 100 |

## Regeneration

| | | | |
|---|---|---|---|
| HCl regeneration | concentration | approx. wt. % | 4-6 |
| HCl regeneration | quantity co-current | min. g/L resin | 100 |
| HCl regeneration | quantity counter-current | min. g/L resin | 55 |
| $H_2SO_4$ regeneration | concentration | approx. wt. % | 1.5-8 |
| $H_2SO_4$ regeneration | quantity co-current | min. g/L resin | 120 |
| $H_2SO_4$ regeneration | quantity counter-current | min. g/L resin | 80 |
| Regeneration contact time | | min. minutes | 20 |
| Slow rinse at regeneration flow rate | | min. BV | 2 |
| Fast rinse at service flow rate | | min. BV | 2 |

## 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.