

For the production of ultrapure water ( $> 18 \text{ MOhm} \cdot \text{cm}$  at  $25 \text{ }^\circ\text{C}$ ).

**Lewatit® UltraPure 1213 MD** is a highly regenerated, specially cleaned, strongly acidic, gelular cation exchanger with a uniform particle bead size distribution.

**Lewatit® UltraPure 1213 MD** meets international standards for applications in the semiconductor industry with extremely low TOC-leaching and a high operating capacity for "non-regenerable" applications.

Due to its high chemical and mechanical stability, **Lewatit® UltraPure 1213 MD** can be used either as a cation polisher ( $\Delta \text{TOC} < 10 \text{ ppb}$ ) or in a polishing mixed bed ( $\Delta \text{TOC} < 5 \text{ ppb}$ ) together with **Lewatit® UltraPure 1243 MD**.

Test certificates for ionic leachables can be provided on request.

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 Ion Exchange Resins.

## General Description

Ionic form as shipped	H <sup>+</sup>
Functional group	sulfonic acid
Matrix	crosslinked polystyrene
Structure	gel type beads
Appearance	brown, translucent

## Physical and Chemical Properties

		metric units	
Uniformity Coefficient*		max.	1.1
Mean bead size*		mm	0.65 (+/- 0.05)
Bulk density	(+/- 5 %)	g/l	790
Density		approx. g/ml	1.20
Water retention		wt. %	46 - 51
Total capacity*		min. eq/l	2.0
Volume change	H <sup>+</sup> --> Na <sup>+</sup>	max. vol. %	-6
Stability	at pH-range		0 - 14
Storability	of the product	max. months	3
Storability	temperature range	°C	4 - 24
TOC release (a. 80 BV)	as single component	max. ppb	10
Resitivity effluent* (a. 80 BV)	as single component	min. MOhm*cm	12

\* Specification values subjected to continuous monitoring.

### Recommended Operating Conditions\*

		metric units		
Operating temperature		max. °C	120	
Operating pH-range			0 - 14	
Bed depth		min. mm	800	
Specific pressure drop	(15 °C)	approx. kPa*h/m <sup>2</sup>	1.1	
Pressure drop		max. kPa	200	
Linear velocity	operation	max. m/h	100	
Bed expansion	backwash (20 °C)	approx. % per m/h	4	
Regenerant			HCl**	H <sub>2</sub> SO <sub>4</sub>
Regeneration	level	approx. g/l	200	300
Regeneration	concentration	approx. wt. %	6-8	5-8
Regeneration	contact time	minutes	> 30	> 30
Linear velocity	regeneration	approx. m/h	1 - 10	1 - 10

\* The recommended operating conditions refer to the use of the product under normal operating conditions. It is based on tests in pilot plants and data obtained from industrial applications. However, additional data are needed to calculate the resin volumes required for ion exchange units. These data are to be found in our Technical Information Sheets.

\*\* After regeneration the listed TOC and resistivity figures might not be achieved again.

## Additional Information & Regulations

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### **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.

This information and our technical advice – whether verbal, in writing or by way of trials – are given in good faith but without warranty, and this also applies where proprietary rights of third parties are involved. Our advice does not release you from the obligation to check its validity and to test our products as to their suitability for the intended processes and uses. The application, use and processing of our products and the products manufactured by you on the basis of our technical advice are beyond our control and, therefore, entirely your own responsibility. Our products are sold in accordance with the current version of our General Conditions of Sale and Delivery.

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

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**LENNTECH**

WATER TREATMENT SOLUTIONS

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For more information or a quote, please use the