

Lewatit® UltraPure 1213 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 1213 MD is specially produced to meet the specifications for the production of Ultrapure Water.

An optimized combination of **Lewatit® UltraPure 1213 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	H ⁺
Functional group	Sulfonic acid
Matrix	Styrenic
Structure	Gel
Appearance	dark brown

Specified Data

Uniformity coefficient		max.	1.1
Mean bead size	d50	mm	0.60 (+-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	1.23
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
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
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 ₂ SO ₄ regeneration	concentration	approx. wt. %	1.5-8
H ₂ SO ₄ regeneration	quantity co-current	min. g/L resin	120
H ₂ SO 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

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

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.

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