

Lewatit® MonoPlus SP 112 is a strongly acidic, macroporous cation exchange resin with beads of uniform size (monodisperse) based on a styrene-divinylbenzene copolymer. The monodisperse beads are chemically and osmotically very stable. The optimized kinetics leads to an increased operating capacity compared to ion exchange resins with heterodisperse bead size distribution.

Lewatit® MonoPlus SP 112 is especially applicable for:

- » The demineralization of water for industrial steam generation, e.g. LEWATIT® WS System, LEWATIT® Liftbed System or LEWATIT® Rinsebed System
- » polishing by a Lewatit® Multistep System in combination with **Lewatit® MonoPlus MP 800**
- » condensate softening
- » condensate polishing in combination with **Lewatit® MonoPlus MP 800**
- » removal of cationic in process water streams (metal, plastics, etc.)

Lewatit® MonoPlus SP 112 is adding special features to the resin bed:

- » high exchange flow rates during regeneration and loading
- » a good utilization of the total capacity
- » a low demand for rinse water
- » a homogeneous distribution of regenerants, water and solutions; leading to an homogeneous working zone
- » a nearly linear pressure drop gradient for the whole bed depth; allowing higher bed depths

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	Na ⁺
Functional group	Sulfonic acid
Matrix	Styrenic
Structure	Macroporous
Appearance	Beige, grey

Specified Data

Uniformity coefficient		max.	1.1
Mean bead size	d50	mm	0.65 (+/-0.05)
Total capacity (delivery form)		min. eq/L	1.7

Typical Physical and Chemical Properties

Bulk density for shipment	(+/- 5%)	g/L	750
Density		approx. g/mL	1.24
Water retention (delivery form)		approx. weight %	51-56
Volume change (Na ⁺ - H ⁺)		max. approx. %	8
Stability pH range			0-14
Storage time (after delivery)		max. years	2
Storage temperature range		°C	-20 - +40

Operation

Operating temperature		max. °C	140
Operating pH range	during exhaustion		2-14
Bed depth for single column		min. mm	800
Bed depth per component in mixed bed		min. mm	500
Back wash bed expansion per m/h (20°C)		%	4.5
Specific pressure loss kPa*h/m ² (15°C)		kPa*h/m ² (15°C)	0.8
Max. pressure loss during operation		kPa	300
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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