

PRODUCT INFORMATION

LEWATIT® MonoPlus S 100



Lewatit® MonoPlus S 100 is a strongly acidic, gelular cation exchange resin with beads of uniform size (monodisperse) based on a styrene-divinylbenzene copolymer, designed for all demineralization applications. The monodisperse beads have high chemical and osmotic stability. The extremely high monodispersity (uniformity coefficient: max. 1.1) and very low fines content of max. 0.1 % (< 0.4 mm) result in particularly low pressure losses compared with standard resins.

Lewatit® MonoPlus S 100 is especially suitable for:

- » demineralization of water for industrial steam generation operated with co-current or modern counter-current systems like e.g. Lewatit® WS System, Lewatit® Liftbed System or Lewatit® Rinsebed System
- » polishing using the Lewatit® Multistep System or a conventional mixed bed arrangement in combination with **Lewatit® MonoPlus M 800** or **Lewatit® MonoPlus M 500**

Lewatit® MonoPlus S 100 adds special features to the resin bed:

- » high flow rates during regeneration and loading
- » good utilization of the total capacity
- » low rinse water requirement
- » homogeneous throughput of regenerants, water and solutions, resulting in a homogeneous operating zone
- » virtually linear pressure drop gradient across the entire bed depth, allowing operation with higher bed depths
- » good separation of the components in mixed bed applications

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	Na ⁺
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	0.6 (+/- 0.05)
Share of beads in the range*	Mean bead size +/- 0,05 mm	vol. %	> 90
Bulk density	(+/- 5 %)	g/l	830
Density		approx. g/ml	1.28
Water retention		wt. %	42 - 48
Total capacity*		min. eq/l	2.0
Volume change	Na ⁺ --> H ⁺	max. vol. %	8
Stability	at pH-range		0 - 14
Storability	of the product	max. years	2
Storability	temperature range	°C	-20 - 40

* 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 loss	(15 °C)	approx. kPa*h/m ²	1.0		
Pressure loss		max. kPa	200		
Linear velocity	exhaustion	max. m/h	60***		
Linear velocity	backwash (20 °C)	approx. m/h	15		
Bed expansion	(20 °C, per m/h)	approx. vol. %	4		
Freeboard	backwash (extern / intern)	vol. %	60 - 80		
Regenerant			HCl	H ₂ SO ₄	NaCl
Counter current regeneration	level	approx. g/l	HCl H ₂ SO ₄ NaCl	50 80 90	
Counter current regeneration	concentration	wt. %	HCl H ₂ SO ₄ NaCl	4 1.5 8	- / - 6 3** 10
Linear velocity	regeneration	approx. m/h	HCl H ₂ SO ₄ NaCl	5 10 5	- - 20
Linear velocity	rinsing	approx. m/h	HCl H ₂ SO ₄ NaCl	5 5 5	
Rinse water requirement	slow / fast	approx. BV	HCl H ₂ SO ₄ NaCl	2 2 2	
Co current regeneration	level	approx. g/l	HCl H ₂ SO ₄ NaCl	100 150 200	
Co current regeneration	concentration	approx. wt. %	HCl H ₂ SO ₄ NaCl	6 1.5 8	- / - 10 3** 10
Linear velocity	regeneration	approx. m/h	HCl H ₂ SO ₄ NaCl	5 10 5	- - 20
Linear velocity	rinsing	approx. m/h	HCl H ₂ SO ₄ NaCl	5 5 5	

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Rinse water requirement	slow / fast	approx. BV	HCl	6	
			H ₂ SO ₄	6	
			NaCl	6	
Mixed bed operation					
Bed depth		min. mm	HCl	500	
			H ₂ SO ₄	500	
Regenerant	level	approx. g/l	HCl	100	
			H ₂ SO ₄	150	
Regenerant	concentration	approx. wt. %	HCl	4	6
			H ₂ SO ₄	2	8

* 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 are to be found in our Technical Information Sheets.

** Regeneration progressive

*** 100m/h for polishing

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.

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 applications. 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 without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all 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.

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