

PRODUCT INFORMATION

LEWATIT® MonoPlus SP 112



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 Sybron Inc.

Common Description

Delivery form	Na ⁺
Functional group	sulfonic acid
Matrix	styrenic
Structure	macroporous
Appearance	beige, grey

Specified Data

		US Units		Metric Units	
Uniformity coefficient				max.	1.1
Mean bead size	d50			mm	0.65 (+-0.05)
Total capacity (delivery form)		kgr/ft ³	37.1	min. eq/L	1.7

Typical Physical and Chemical Properties

		US Units		Metric Units	
Bulk density for shipment	(+/- 5%)	lb/ft ³	46.3	g/L	750
Density				approx. g/mL	1.24
Water retention (delivery form)				approx. weight %	51-56
Volume change (Na ⁺ - H ⁺)				max. approx. %	9
Stability pH range					0-14
Storage time (after delivery)				max. years	2
Storability temperature range				°C	-20 - +40

Operation

		US Units		Metric Units	
Operating temperature		max. °F	284	max. °C	140
Operating pH range	during exhaustion				2-14
Bed depth for single column		min. inches	31.5	min. mm	800
Bed depth per component in mixed bed		min. inches		min. mm	500
Back wash bed expansion per m/h (20°C)				%	4.5
Specific pressure loss (15°C)				kPa*h/m ²	0.8
Max. pressure loss during operation		PSI	44	kPa	300
Specific flow rate		max. gpm/ft ³	8	max. BV/h	60 (100*)

Regeneration

		US Units		Metric Units	
HCl regeneration	concentration	approx. wt. %		approx. wt. %	4-6
HCl regeneration	quantity co-current	min. lb/ft ³	6.3	min. g/L resin	100
HCl regeneration	quantity counter-current	min. lb/ft ³	3.4	min. g/L resin	55
H ₂ SO ₄ regeneration	concentration	approx. wt. %		approx. wt. %	1.5-8
H ₂ SO ₄ regeneration	quantity co-current	min. lb/ft ³	7.5	min. g/L resin	120
H ₂ SO ₄ regeneration	quantity counter-current	min. lb/ft ³	5.0	min. g/L resin	80
Regeneration contact time		min. minutes		min. minutes	20
Slow rinse at regeneration flow rate		min. gal/ft ³	15.0	min. BV	2
Fast rinse at service flow rate		min. gal/ft ³	15.0	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.

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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 application. 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 with notice. It is expressly understood and agreed that you assume and hereby expressly release us from 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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Note: The information contained in this publication is current as of the date of edition. Please contact LANXESS Sybron Chemicals Inc. to determine if this publication has been revised.



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