

**Lewatit® MonoPlus S 108** is a strongly acidic, gel-type cation exchange resin in the Na-form with beads of uniform size (monodisperse) based on a styrene-divinylbenzene copolymer. Due to a special manufacturing process this resin type is extremely resistant to chemical, osmotic and mechanical stress. That leads to very low leachables even under critical conditions like higher temperatures, presence of oxidants (O<sub>2</sub>, Fe-oxides) and external regeneration processes. Even at very short cycle times (one cycle = service + regeneration) the special ion exchange resin matrix leads to long life cycles in demineralization processes. The high total capacity results in high operating capacities with a very low ionic leakage and a very high regenerant utilization.

The extremely high monodispersity and very low fines result in particularly low pressure losses paired with an efficient and cost optimized operation of demineralization plants.

**Lewatit® MonoPlus S 108** 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 the following anion components: **Lewatit® MonoPlus M 500 MB, Lewatit® MonoPlus M 800, Lewatit® MonoPlus M 600, Lewatit® MonoPlus MP 500, Lewatit® MonoPlus MP 800 and Lewatit® MonoPlus MP 600.**

**Lewatit® MonoPlus S 108** adds special features to the resin bed:

- » high flow rates during regeneration and loading
- » a high operating capacity at low regenerant consumption
- » a low demand for rinse water
- » a homogeneous throughput of regenerants, water and solutions, resulting in a homogeneous operating zone
- » a virtually linear pressure drop gradient across the entire bed depth, allowing operation with higher bed depths
- » a low TOC emission and high resistance to oxidative stress
- » a 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 Corporation.

## Common Description

Delivery form	Na <sup>+</sup>
Functional group	sulfonic acid
Matrix	styrenic
Structure	gel
Appearance	black

## Specified Data

		US Units			
Uniformity coefficient				max.	1.1
Mean bead size	d50			mm	0.62 (+-0.05)
Total capacity (delivery form)		kgr/ft <sup>3</sup>	48.0	min. eq/L	2.2

## Typical Physical and Chemical Properties

		US Units		Metric Units	
Bulk density for shipment	(+/- 5%)	lb/ft <sup>3</sup>	51.9	g/L	830
Density				approx. g/mL	1.30
Water retention (delivery form)				approx. weight %	41-46
Volume change (Na <sup>+</sup> - H <sup>+</sup> )				max. approx. %	10
Stability pH range					0-14
Storage time (after delivery)				max. years	3
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
Specific pressure loss (15°C)				kPa*h/m <sup>2</sup>	1
Max. pressure loss during operation		PSI	36	kPa	250
Specific flow rate		max. gpm/ft <sup>3</sup>	8	max. BV/h	60

## Regeneration

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

## Conditioning

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

## Trace Impurities

## Additional Information & Regulations

**PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE OF PRODUCTS MENTIONED HEREIN IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING ANY PRODUCT, ALWAYS READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION.**

### **Safety precautions**

Strong oxidants, e.g. nitric acid, can cause violent reactions if they come into contact with ion exchange resins.

### **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.

### **Packaging**

The experience has shown that the packaging stability for reliable resin containment is limited to 24 months under the storage conditions described within the product safety information. It is therefore recommended to use the product within this time frame; otherwise the packaging condition should be checked regularly.

# PRODUCT INFORMATION

## LEWATIT® MonoPlus S 108



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 Corporation Inc. to determine if this publication has been revised.

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