PRODUCT INFORMATION
LEWATIT® MonoPlus M 600

Lewatit® MonoPlus M 600 is a strongly basic, gelular anion exchange resin (type II) 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 and very low fines content result in particularly low pressure losses compared with standard resins.

Due to the excellent regeneration efficiency and high operating capacity **Lewatit® MonoPlus M 600** is generally used for waters in which silica and carbon dioxide concentrations are moderate. For higher silica feeds, a type I anion exchange resin such as **Lewatit® MonoPlus M 500** is recommended.

Lewatit® MonoPlus M 600 is especially suitable for:

» the 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 in combination with **Lewatit® MonoPlus S 108 H** or **Lewatit® MonoPlus S 200 KR**

Lewatit® MonoPlus M 600 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

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

Functional group	quaternary ammonium type 2
Matrix	styrenic
Structure	gelular
Appearance	yellow, translucent

Specified Data

		US Units			
Uniformity coefficient				max.	1.1
Mean bead size	d50			mm	0.62 (+/- 0.05)
Total capacity (delivery form)		kgr/ft³	28.4	min. eq/L	1.3

Typical Physical and Chemical Properties

		US Units		Metric Units	
Bulk density for shipment	(+/- 5%)	lb/ft³	42.5	g/L	680
Density				approx. g/mL	1.1
Water retention (delivery form)				approx. weight %	45-50
Volume change (Cl^- -OH^-)				max. approx. %	16
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	86	max. °C	30
Operating pH range	during exhaustion				0-12
Bed depth for single column		min. inches	31.5	min. mm	800
Back wash bed expansion per m/h (20°C)				%	10
Specific pressure loss (15°C)				kPa*h/m²	1
Max. pressure loss during operation		PSI	29	kPa	200
Specific flow rate		max. gpm/ft3	8	max. BV/h	60

Regeneration

		US Units		Metric Units	
NaOH regeneration	concentration	approx. wt. %		approx. wt. %	2-6
NaOH regeneration	quantity co-current	min. lb/ft³	5.0	min. g/L resin	80
NaOH regeneration	quantity counter-current	min. lb/ft³		min. g/L resin	40
Regeneration contact time		min. minutes		min. minutes	20
Slow rinse at regeneration flow rate		min. gal/ft³	15.0	min. BV	2
Fast rinse at service flow rate		min. gal/ft³	15.0	min. BV	2

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.

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	Toxicity
Toxicity	The safety data sheet must be observed. It contains additional data on product description, transport, storage, handling, safety and ecology.
	Disposal
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
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 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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Regulatory Compliance Information: Some of the end uses of the products described in this publication must comply with applicable regulations, such as the FDA, BfR, NSF, USDA, and CPSC. If you have any questions on the regulatory status of these products, contact - for business in the USA - the LANXESS Corporation Regulatory Affairs and Product Safety Department in Pittsburgh, PA, USA or for business outside US the Regulatory Affairs and Product Safety Department of LANXESS Deutschland GmbH in Germany.

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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