

Lewatit® MonoPlus TP 207 is a weakly acidic, macroporous cation exchange resin with chelating iminodiacetic acid groups designed for the selective extraction of heavy metal cations from weakly acidic to weakly basic solutions. Divalent cations are removed from neutralized waters in the following order (decreasing affinity):

Copper > Vanadium (VO²⁺) > Uranium (UO₂²⁺) > Lead > Nickel > Zinc > Cadmium > Cobalt > Iron (II) > Beryllium > Manganese >> Calcium > Magnesium > Strontium > Barium >>> Sodium.

The monodisperse, uniform sized beads of **Lewatit® MonoPlus TP 207** are mechanically and osmotically more stable than ion exchange resin beads with heterodisperse bead size distribution. Additionally they offer superior kinetic behavior which leads to faster uptake of cations and a better utilization of capacity. Therefore it is suitable for use in the following applications:

- the selective removal of metal contaminants from processing baths
- the concentration, extraction and recovery of heavy metals from hydrometallurgical solutions
- the recovery of useful metals from electroplating rinse waters
- the selective trace removal of heavy metals from industrial metal surface finishing effluents, even in presence of high calcium concentrations
- the selective removal of heavy metals out of contaminated ground and waste water streams for potable water production and ground water remediation
- purification of biopharmaceuticals, nutraceuticals, pharmaceuticals, supplements (please inform technical sales person in case product is used for this application)

The selective extraction of heavy metal cations by **Lewatit® MonoPlus TP 207** is also achieved in presence of complexing agents such as nitrogen compounds (e.g. ammonia, aliphatic and aromatic amines), multivalent carboxylic acids (e.g. citric, gluconic, tartaric, oxalic acid) and phosphates (e.g. sodium polyphosphate, tetrasodium diphosphate).

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.

PRODUCT INFORMATION

LEWATIT® MonoPlus TP 207



Common Description

Delivery form	Na ⁺
Functional group	immodiacetic acid
Matrix	styrenic
Structure	macroporous
Appearance	beige, opaque

Specified Data

Uniformity coefficient		max.	1.1
Mean bead size	d50	mm	0.61 (+/- 0.05)
Total capacity (H ⁺ form)		min. eq/L	2.0

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

Edition: 2022-10-28
Previous Edition: 2022-10-26

Typical Physical and Chemical Properties

		US Units		Metric Units	
Bulk density for shipment	(+/- 5%)	lb/ft ³	45.0	g/L	700
Density				approx. g/mL	1.14
Water retention (delivery form)				approx. weight %	55-60
Volume change (Na ⁺ - H ⁺)				typical approx. %	-25
Stability pH range					0-14
Stability temperature range				°C	1-80
Storability temperature range				°C	-20 - +40

Operation

		US Units		Metric Units	
Operating temperature		max. °F	176	max. °C	80
Operating pH range	during exhaustion				1.5-9
Bed depth for single column		min. inches	39.4	min. mm	1000
Back wash bed expansion per m/h (20°C)				%	4
Specific pressure loss (15°C)				kPa*h/m ²	1.1
Max. pressure loss during operation		PSI	36	kPa	250
Specific flow rate		max. gpm/ft ³	0.63-3.15	max. BV/h	5-25
Freeboard	during backwash			min. vol. %	80

Regeneration

		US Units		Metric Units	
HCl regeneration	concentration	approx. wt. %		approx. wt. %	4-10
HCl regeneration	quantity co-current	min. lb/ft ³	9.4	min. g/L resin	150
H ₂ SO ₄ regeneration	concentration	approx. wt. %		approx. wt. %	10
H ₂ SO ₄ regeneration	quantity co-current	min. lb/ft ³	13.1	min. g/L resin	210
HNO ₃ regeneration	concentration	approx. wt. %		approx. wt. %	12
HNO ₃ regeneration	quantity co-current	min. lb/ft ³	16	min. g/L resin	250
Regeneration contact time		min. minutes		min. minutes	20
Slow rinse at regeneration flow rate		min. gal/ft ³	37.4	min. BV	5
Fast rinse at service flow rate		min. gal/ft ³	37.4	min. BV	5

Conditioning

		Metric Units	
NaOH conditioning	concentration	approx. wt. %	4
NaOH conditioning, di-Na ⁺	quantity	min. g/L resin	80-96
Conditioning contact time		min. minutes	20
Slow rinse	at conditioning flow rate	min. BV	5
Fast rinse	at service flow rate	min. BV	5

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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LEWATIT® MonoPlus TP 207



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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