

LEWATIT® MonoPlus TP 209 XL is a weakly acidic, macroporous cation exchange resin with chelating iminodiacetate (IDA) groups for the selective extraction of heavy metal cations from weakly acidic to weakly basic solutions. With its big bead size as well as the high operational capacity this resin is tailor-made for the concentration, extraction and recovery of base metals in Resin-in-Pulp (RIP) processes.

Cations are removed from neutralized waters in the following order:

$\text{Fe}^{3+} > \text{Cu}^{2+} > \text{VO}^{2+} > \text{UO}_2^{2+} > \text{Pb}^{2+} > \text{Ni}^{2+} > \text{Zn}^{2+} > \text{Cd}^{2+} > \text{Fe}^{2+} > \text{Mn}^{2+} > \text{Ca}^{2+} > \text{Mg}^{2+} \gg \text{Na}^+$

LEWATIT® MonoPlus TP 209 XL has a monodisperse bead size distribution, i.e. beads of uniform size. Its high degree of cross-linkage results in an improved resistance towards mechanical stress such as abrasion and attrition. Compared with the standard grade IDA resin **LEWATIT® MonoPlus TP 207** offers the following advantages:

- Lower dynamic pressure drop at the same flow rate
- Diminished risk of accumulation of suspended solids
- Easier screening and sieving during resin/feed separation

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 Liquid Purification Technologies.

Common Description

Delivery form	Na+
Functional group	Iminodiacetic acid
Matrix	Styrenic
Structure	Macroporous
Appearance	white, opaque

Specified Data

Uniformity coefficient		max.	1.1
Mean bead size	d50	mm	0.85 (+-0.05)
Total capacity (H ⁺ form)		min. eq/L	2.4

Typical Physical and Chemical Properties

Bulk density for shipment	(+/- 5%)	g/L	709
Density		approx. g/mL	1.18
Water retention (delivery form)		approx. weight %	50
Volume change (H ⁺ - Na ⁺)		max. approx. %	35
Stability pH range			0-14
Stability temperature range		°C	1-80
Storage temperature range		°C	-20 - +40

Operation

Operating temperature		max. °C	80
Operating pH range	during exhaustion		2-10
Bed depth for single column		min. mm	1000
Back wash bed expansion per m/h (20°C)		%	4
Specific pressure loss kPa*h/m ² (15°C)		kPa*h/m ² (15°C)	0.5

Regeneration

HCl regeneration	concentration	approx. wt. %	7
H ₂ SO ₄ regeneration	concentration	approx. wt. %	10
Regeneration contact time		min. minutes	15

Conditioning

NaOH conditioning	concentration	approx. wt. %	4
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This document contains important information and must be read in its entirety.

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.

This information and our technical advice – whether verbal, in writing or by way of trials – are given in good faith but without warranty, and this also applies where proprietary rights of third parties are involved. Our advice does not release you from the obligation to check its validity and to test our products as to their suitability for the intended processes and uses. The application, use and processing of our products and the products manufactured by you on the basis of our technical advice are beyond our control and, therefore, entirely your own responsibility. Our products are sold in accordance with the current version of our General Conditions of Sale and Delivery.

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