

PRODUCT INFORMATION

LEWATIT® MonoPlus M 500



Lewatit® MonoPlus M 500 is a strongly basic, gelular anion exchange resin with beads of uniform size (monodisperse) based on a styrene-divinylbenzene copolymer. The monodisperse beads are chemically and osmotically highly stable. The optimized kinetics lead to an increased operating capacity compared to ion exchange resins with heterodisperse bead size distribution.

Lewatit® MonoPlus M 500 is especially applicable for:

- » demineralization of water for industrial steam generation, e.g. Lewatit® WS System, Lewatit® Liftbed System or Lewatit® Rinsebed System Liftbed System or Lewatit® Rinsebed System
- » polishing by a Lewatit® Multistep System in combination with **Lewatit® MonoPlus S 100**

Lewatit® MonoPlus M 500 is adding special features to the resin bed:

- » high exchange flow rates during regeneration and loading
- » good utilization of the total capacity
- » low rinse water demand
- » homogenous throughput of regenerants, water and solutions; therefore an homogeneous working zone
- » nearly linear pressure drop gradient for the whole bed depth; therefore an operation with higher bed depth possible

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 Ion Exchange Resins.

General Description

| | |
|-----------------------|---------------------------|
| Ionic form as shipped | Cl ⁻ |
| Functional group | quarternary amine, type I |
| Matrix | crosslinked polystyrene |
| Structure | gel type beads |
| Appearance | yellow, translucent |

Physical and Chemical Properties

| | | metric units | |
|------------------------------|-------------------------------------|--------------|------------------|
| Uniformity coefficient* | | max. | 1.1 |
| Mean bead size* | | mm | 0.62 (+/- 0.05) |
| Share of beads in the range* | Mean bead size +/- 0,05 mm | vol. % | > 90 |
| Bulk density | (+/- 5 %) | g/l | 700 |
| Density | | approx. g/ml | 1.08 |
| Water retention | | wt. % | 48 - 55 |
| Total capacity* | | min. eq/l | 1.3 |
| Volume change | Cl ⁻ --> OH ⁻ | max. vol. % | 22 |
| Stability | at pH-range | | 0 - 14 |
| Storability | of the product | max. years | 2 |
| Storability | temperature range | °C | -20 - 40 |

* Specification values subjected to continuous monitoring.

Recommended Operating Conditions*

| | | metric units | |
|---------------------------------|-------------------------------|------------------------------|----------|
| Operating temperature | | max. °C | 70 |
| Operating pH-range | | | 0 - 12 |
| Bed depth | | min. mm | 800 |
| Specific pressure loss | (15 °C) | approx. kPa*h/m ² | 1.0 |
| Pressure loss | | max. kPa | 200 |
| Linear velocity | exhaustion | max. m/h | 60*** |
| Linear velocity | backwash (20 °C) | approx. m/h | 7 |
| Bed expansion | (20 °C, per m/h) | approx. vol. % | 11 |
| Freeboard | backwash (extern / intern) | vol. % | 80 - 100 |
| Regenerant | | | NaOH |
| Counter current regeneration | level | approx. g/l | 50 |
| WS-System | concentration | approx. wt. % | 2 - 4 |
| Linear velocity | regeneration | approx. m/h | 5 |
| Linear velocity | rinsing | approx. m/h | 5 |
| Co current regeneration | level | approx. g/l | 100 |
| Co current regeneration | concentration | approx. wt. % | 3 - 5 |
| Linear velocity | regeneration | approx. m/h | 5 |
| Linear velocity | rinsing | approx. m/h | 5 |
| Rinse water requirement | slow / fast | approx. BV | 10 |

* The recommended operating conditions refer to the use of the product under normal operating conditions. It is based on tests in pilot plants and data obtained from industrial applications. However, additional data are needed to calculate the resin volumes required for ion exchange units. These are to be found in our Technical Information Sheets.

*** 100m/h for polishing

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.

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 applications. 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 without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all 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 under the claims of any patent.

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