

LEWATIT[®] MonoPlus M 500

Product Information

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
- polishing by a Lewatit Multistep System or mixed bed 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 a homogeneous working zone
- nearly linear pressure drop gradient for the whole bed depth; therefore operation with higher bed depth possible
- good separation behavior of the components in a mixed bed application

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 Bayer AG, Business Group Specialty Products, Business Unit Ion Exchange Resins and Water Chemicals.

LEWATIT[®] MonoPlus M 500

General Description

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

Physical and Chemical Properties

| | | | |
|-----------------------------|------------------|--------------|-----------------|
| Average bead size | * (AB) | mm | 0.61 (+/- 0.05) |
| Share of beads in the range | * AB +/- 0.05 mm | % | > 90 |
| Bulk density | (+/- 5%) | g/l | 670 |
| Density | | approx. g/ml | 1.08 |
| Water retention | | % | 50 - 60 |
| Total capacity* | | min. eq/l | 1.2 |
| Volume change | Cl- -> OH- | max. % | 22 |
| Stability | at pH-range | | 0 - 14 |
| Storability | of the product | min. years | 2 |
| Storability | at temperature | °C | 1 - 40 |

* These data are specification values and are subject to continuous monitoring.

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Recommended Operating Conditions*

| | | | |
|-----------------------------------|----------------------|------------------------------|----------|
| 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 |
| Max. pressure loss | | 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. % | 11 |
| Freeboard | as % of resin volume | % | 80 - 100 |
| Regenerant | | | NaOH |
| Countercurrent regeneration level | | approx. g/l | 50 |
| WS-System | concentration | approx. % | 2 - 4 |
| Linear velocity | regeneration | approx. m/h | 5 |
| Linear velocity | rinsing | approx. m/h | 5 |
| Rinse water requirement | | approx. BV | 3.5 |
| Cocurrent regeneration | level | approx. g/l | 100 |
| Cocurrent regeneration | concentration | approx. % | 3 - 5 |
| Linear velocity | regeneration | approx. m/h | 5 |
| Linear velocity | rinsing | approx. m/h | 5 |
| Rinse water requirement | | approx. BV | 10 |
| Mixed bed operation | | | |
| Bed depth | | min. mm | 500 |
| Regenerant | level | approx. g/l | 100 |
| Regenerant | concentration | approx. % | 2 - 6 |

* 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.

** progressive Regeneration

*** 100m/h for polishing



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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

A proprietary technical recycling process for used ion exchanger is unknown to us. In the European Community the following possibilities for disposal can be utilized.

Resins used for water treatment and in the sugar industry can be disposed under code number 190 905. Our preference is to recommend disposal in an industrial incinerator.

Ion exchange resins which contain impurities after use in industrial processes, e.g. electroplating, chemicals treatment etc., can be disposed under code number 190 806. A certificate of disposal is required.

Bayer AG
BG Specialty Products
BU Ion Exchange Resins and Water Chemicals
D-51368 Leverkusen

Internet: <http://www.lewatit.com>

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