PRODUCT INFORMATION
LEWATIT® MonoPlus TP 260

Lewatit® MonoPlus TP 260 is a weakly acidic, macroporous cation exchange resin with chelating amino methyl phosphonic acid groups for the selective removal of transition heavy metals and alkaline earth cations. The monodisperse beads are mechanically and osmotically superior stable. The optimized kinetics lead to an increased operating capacity compared to ion exchange resins with heterodisperse bead size distribution. Divalent cations are removed from neutralized waters in the following order: Uranium (UO_2^{2+} Lead > Copper > Zinc > Nickel > Cadmium > Cobalt > Magnesium > Strontium > Barium >>> Sodium. Adsorption of trivalent cations takes place, but desorption may be difficult. For instance iron (III) can only be desorbed by uneconomically high amounts of specific acid dosage.

It is e. g. suitable for use in:

- secondary purification of brine feed to chloralkali membrane cells (traces of alkaline earth ions are removed after their normal precipitation by carbonates in the pH-range 8-11) at absence of iron (III) ions and in case of low demand on Sr and Ba removal.
- uranium removal from crude phosphoric acid
- titanium removal from recycled battery acid
- antimony (Sb) and tungsten (Bi) removal from copper containing electrolytes
- aluminium removal from urea solutions
- fluoride removal with aluminium doped **Lewatit®MonoPlus TP 260**
- lead and strontium removal from BF_4^- containing waste water out of PCB production
- removal of iron (II), nickel and zinc from 5 % gluconate containing metal working liquid

In brine purification the operating capacity of **Lewatit® MonoPlus TP 260** depends on the pH-value of the brine. At pH 10 it is approx. threefold of that achieved at pH 7. At pH 10 and calcium content of 5 ppm, a capacity up to 15 g Ca/l **Lewatit® MonoPlus TP 260** (volume of resin in di-sodium-form) is obtained. At a service flow rate of 20-30 BV/h, the residual calcium concentration is well below 20 ppb. Greater security can be achieved by operating two units of equal size in series. **Lewatit® MonoPlus TP 260** has to be conditionned with caustic soda solution after every regeneration cycle/before every exhaustion cycle. After the conditioning it is in the di-sodium-form and ready to use for the final polishing of chlorakali brine feed.

The special properties of this product can only be fully utilized if the technolgy and process used correspond to the current state-of-the-art and the operating conditions are adapted to the individual requirements. Further advice in this matter can be obtained from Lanxess, Business Unit Ion Exchange Resins.

General Description

Ionic form as shipped	Na+
Functional group	Aminomethylphosphonic acid
Matrix	crosslinked polystyrene
Structure	macroporous
Appearance	beige, opaque

Physical and Chemical Properties

		metric units	
Total capacity*	H-Form	min. eq/l	2.4
Uniformity Coefficient*		max.	1.1
Mean bead size*		mm	0.63 (+/- 0.05)
Bulk density	(+/- 5 %)	g/l	720
Density		approx. g/ml	1.2
Water retention		wt. %	58 - 62
Volume change	Na^+ --> H^+	max. vol. %	-35
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	80
Operating pH-range			1 - 12
Bed depth		min. mm	1000
Specific pressure drop	(15 °C)	approx. kPa*h/m²	1.0
Pressure drop		max. kPa	250
Specific velocity	operation	max. BV/h	30
Linear velocity	backwash (20 °C)	approx. m/h	10 - 15
Bed expansion	(20 °C, per m/h)	approx. vol. %	4
Freeboard	backwash (extern / intern)	vol. %	80
Regenerant			HCl
Co current regeneration	level	approx. g/l	140 - 150
Co current regeneration	concentration	approx. wt. %	4 - 10
Linear velocity	regeneration	approx. m/h	5
Linear velocity	rinsing	approx. m/h	5
Conditioning			NaOH
Conditioning	level	g/l	80 - 88
Conditioning	concentration	approx. wt. %	4
Linear velocity	conditioning	approx. m/h	5
Linear velocity	rinsing	approx. m/h	5
Rinse water requirement		approx. BV	2

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 industrial scale ion exchange units. These can be found in our technical data sheets, have to be requested from Lanxess-application-specialists or have to be elaborated in laboratory- and pilot-tests.

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.

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For more information or a quote, please use the

Contact Form