PRODUCT INFORMATION
LEWATIT® MonoPlus TP 220

Lewatit® MonoPlus TP 220 is a macroporous weakly basic resin with chelating bis-picolylamine groups for copper, nickel and cobalt processing solutions. It has a monodisperse bead size distribution, i.e. beads of an uniform size, which results in high adsorption kinetics and a good utilization of the theoretical capacity.

Under acidic conditions (pH =2) heavy metal cations are removed from aqueous solutions consistent with the following selectivity series: Cu^{2+}>>Ni^{2+}>UO_2^{2+}>Fe^{3+}>Zn^{2+}>Co^{2+}>Cd^{2+}>Fe^{2+}.

Lewatit® MonoPlus TP 220 is especially suitable for the use in the following applications:

- Purification of cobalt electrolytes (cobalt/nickel separation)
- Separation of nickel/copper from ferric solutions
- Recovery of copper from strongly acidic solutions (pH < 2)
- Purification of chromium(III) baths (removal of heavy metals such as copper and nickel)
- Adsorption of heavy metals (e.g. copper) from solutions containing strong chelating agents like EDTA

While most metals are removed from the loaded resin with a conventional acid strip, copper can only efficiently be desorbed with ammonia solution.

If low TOC values in the effluent of the resin are required we recommend to perform special start-up by hot water rinse with details available on request.

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	H_2SO_4 salt
Functional group	Bis-picolylamine
Matrix	Styrenic
Structure	Macroporous
Appearance	White, opague

Specified Data

Uniformity coefficient		max.	1.1
Mean bead size	d50	mm	0.62 (+-0.05)
Copper capacity (delivery form)		min. g/L	29

Typical Physical and Chemical Properties

Bulk density for shipment	(+/- 5%)	g/L	670
Density		approx. g/mL	1.13
Water retention (delivery form)		approx. weight %	50-56
Volume change (delivered form - free base)		max. approx. %	-23
Stability pH range			0-14
Stability temperature range		°C	1-70
Storage temperature range		°C	-24 - +40

Operation

Operating temperature		max. °C	70
Operating pH range	during exhaustion		0-14
Bed depth for single column		min. mm	1000
Back wash bed expansion per m/h (20°C)		%	10
Specific pressure loss kPa*h/m² (15°C)		kPa*h/m² (15°C)	0.9
Max. pressure loss during operation		kPa	250

Regeneration

H_2SO_4 regeneration	concentration	approx. wt. %	20
NH_4OH regeneration	concentration	approx. wt. %	3.5

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 conditions
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.

Storage time
The recommended storage time for this product is explained in the technical document “Technical guidelines on the storage of Lewatit® ion exchange resins” available for download on our website. Please use the following link for more information: https://lanxess.com/en/products-and-brands/brands/lewatit/literature

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.

LANXESS Deutschland GmbH
Liquid Purification Technologies
Kennedyplatz 1
50569 Koeln
Germany

+49-221-8885-0
lewatit@lanxess.com

www.lanxess.com
www.lpt.lanxess.com