

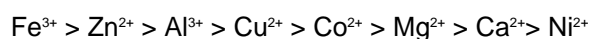
Lewatit® TP 272 is a crosslinked polystyrene based macroporous resin which contains Bis-(2,4,4-trimethylpentyl-) phosphinic acid. This active ingredient is directly incorporated during the formation of the copolymer, fixed by adsorption and homogeneously distributed within the bead in high concentration. During operation lower rates of extractant loss are obtained relative to impregnated resins.

Generally it can be assumed that ions which can be removed with Bis-(2,4,4-trimethylpentyl-) phosphinic acid will also be adsorbed by **Lewatit® TP 272**. The resin is effective primarily for heavy metals recovery from sulphate and chloride solutions.

Lewatit® TP 272 is designed primarily for the following application:

- » Cobalt electrolyte purification (Cobalt extraction from Nickel solution)

Besides its high affinity for Cobalt **Lewatit® TP 272** will also extract other metal cations and can be used for various other applications. The selectivity order can be expected as:



Advantages of **Lewatit® TP 272** compared to solvent extraction:

- » no organic solvent for the dilution of the liquid extractant required
- » no phase separation problems
- » simple equipment similar to conventional bead type ion exchange resins
- » very low leakage due to sharp plug flow exhaustion along the direction of flow

The active ingredient of **Lewatit® TP 272** is in the form of a free acid. This means that the resin can be used without further pre-treatment. **Exposure to sodium/potassium hydroxide or sodium/potassium carbonate should be avoided because the active ingredient might be washed out.**

Since the resins density is lower than water it tends to float to the water surface. Therefore the resin layer is recommended to be covered by inert material (e.g. **Lewatit® IN 42**) and to be used in columns with strainers at the bottom and at the top. Loading should to be done up flow and regeneration down flow.

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 (LPT).

General Description

Functional group	Bis-(2,4,4-trimethylpentyl -) phosphinic acid
Matrix	Crosslinked polystyrene
Structure	Macroporous

Specified Data

	metric units	
Zinc capacity	min. g/l	12.5
Bead size	> 90 % mm	0.3 - 1.6

Physical and Chemical Properties

		metric units	
Bulk density	(+/- 5 %)	g/l	530
Density		approx. g/ml	0.97
Water retention		wt. %	28 - 35
Stability	temperature range	°C	-20 - +40
Storability	of the product	max. years	2
Storability	temperature range	°C	-20 - +40

Recommended Operating Conditions*

	metric units	
Operating temperature	max. °C	60
Operating pH-range		1 - 6
Bed depth	min. mm	800
Specific pressure drop (15 °C)	approx. kPa*h/m ²	1.1
Regenerant		HCl H ₂ SO ₄ **
Regeneration concentration	approx. wt. %	5 - 25%***
Rinse water requirement	approx. BV	2 - 4

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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This document contains important information
and must be read in its entirety.