

**Lewatit® CNP 80 WS** is a weakly acidic, macroporous, acrylic-based cation exchange resin of standard bead size distribution. Due to its very high total and operating capacity, excellent chemical and mechanical stability together with high resistance to osmotic shock, it is preferably used for dealkalization. In combination with a strong acidic cation exchanger (**Lewatit® MonoPlus S 108**), in demineralization units leads to higher regeneration efficiency.

As **Lewatit® CNP 80 WS** only requires a small excess of regenerant acid, it can be economically used in the following applications:

- » dealkalisation of industrial water by co-current systems
- » in combination with a strong acidic cation exchange resin, e.g. **Lewatit® MonoPlus S 108**, in the decationization step in the demineralisation of water
- » removal of temporary hardness (hardness associated with alkalinity)
- » in a single bed unit downstream of a demineralization unit (polisher) for the removal of cations present as hydroxides at high flow rates .
- » in produced water softening as single filter unit or in combination with **Lewatit® S 1567**, as polisher
- » in its sodium-form for the removal/extraction of heavy metals such as copper, nickel and zinc from electroplating rinse waters at a pH-value > 5 in absence of calcium and complexing agents.

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 <sup>+</sup>
Functional group	Carboxylic acid
Matrix	Crosslinked polyacrylate
Structure	Macroporous
Appearance	Yellow, white

## Specified Data

Uniformity coefficient		max.	1.8
Range of size for >90 vol% of all beads		mm	0.4 - 1.6
Effective size	d10	mm	0.48 - 0.58
Total capacity (delivery form)		min. eq/L	4.5

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

## Typical Physical and Chemical Properties

Bulk density for shipment	(+/- 5%)	g/L	750
Density		approx. g/mL	1.19
Water retention (delivery form)		approx. weight %	42 - 47
Volume change (H <sup>+</sup> - Ca <sup>2+</sup> )		max. approx. %	7
Volume change (H <sup>+</sup> - Na <sup>+</sup> )		max. approx. %	70
Stability pH range			0 - 14
Storage time (after delivery)		max. years	2
Storage temperature range		°C	-20 - +40

## Operation

Operating temperature		max. °C	95
Operating pH range	during exhaustion		5 - 14
Bed depth for single column		min. mm	800
Back wash bed expansion per m/h (20°C)		%	4
Specific pressure loss kPa*h/m <sup>2</sup> (15°C)		kPa*h/m <sup>2</sup> (15°C)	1.3
Max. pressure loss during operation		kPa	250
Specific flow rate		max. BV/h	40

## Regeneration

HCl regeneration	concentration	approx. wt. %	3 - 6
HCl regeneration	quantity co-current	min. g/L resin	70
H <sub>2</sub> SO <sub>4</sub> regeneration	concentration	approx. wt. %	0.5 - 0.8
H <sub>2</sub> SO <sub>4</sub> regeneration	quantity co-current	min. g/L resin	90
Regeneration contact time		min. minutes	20
Slow rinse at regeneration flow rate		min. BV	2
Fast rinse at service flow rate		min. BV	2

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## 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.

### 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.

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