

Lewatit® CNP 80 WS is a weakly acidic, macroporous, acrylic-based cation exchange resin of special bead size distribution used in modern counter-current regenerated systems. Due to its very high total and operating capacity, excellent chemical and mechanical stability together with high resistance to osmotic shock, it is preferable used for dealkalization. The arrangement with strong dissociated cation exchanger (**Lewatit® MonoPlus S 100**), in demineralization units (e.g. **Lewatit® VWS System**) leads to higher regeneration efficiency.

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

- » dealkalization of industrial water operated with co-current or modern counter-current systems like e.g. **Lewatit® WS System**, **Lewatit® Liftbed System**, **Lewatit® Multistep System** or **Lewatit Rinsebed System**
- » in combination with a strong acidic cation exchange resin, e.g. **Lewatit® MonoPlus S 100**, in a decationization unit for the demineralisation of water
- » removal of temporary hardness (hardness associated with alkalinity)
- » in a single bed unit downstream from a demineralization unit (polisher) for the removal of cations present as hydroxides at flow rates up to 50 m/h
- » in produced water softening as single filter unit or in combination with **Lewatit® S 1467** 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.

Lewatit® CNP 80 WS can be used in conjunction with all conventional ion exchange processes. For other systems there are special grades of this resin with a suitable bead size distribution.

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 Ion Exchange Resins.

General Description

Ionic form as shipped	H ⁺
Functional group	carboxylic acid
Matrix	crosslinked polyacrylate
Structure	macroporous
Appearance	yellow white, opaque

Physical and Chemical Properties

		metric units	
Uniformity Coefficient*		max.	1.8
Bead size*	> 90 %	mm	0.4 - 1.6
Effective size*		mm	0.53 (+/- 0.05)
Bulk density	(+/- 5 %)	g/l	750
Density		approx. g/ml	1.19
Water retention		wt. %	45 - 50
Total capacity*		min. eq/l	4.3
Volume change	H ⁺ --> Ca ²⁺	max. vol. %	7
Volume change	H ⁺ --> Na ⁺	max. vol. %	64
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	75	
Operating pH-range			5 - 14	
Bed depth		min. mm	600	
Specific pressure drop	(15 °C)	approx. kPa*h/m ²	1.1	
Pressure drop		max. kPa	250	
Linear velocity	operation	max. m/h	50	
Linear velocity	backwash (20 °C)	approx. m/h	12 - 14	
Bed expansion	(20 °C, per m/h)	approx. vol. %	4	
Freeboard	backwash (extern / intern)	vol. %	60 - 80	
Regenerant			HCl	/ H ₂ SO ₄
Counter current regeneration	level	approx. g/l	HCl H ₂ SO ₄	70 90
Counter current regeneration	concentration	wt. %	HCl H ₂ SO ₄	3 - 6 0.5 - 0.8
Linear velocity	regeneration	approx. m/h	HCl H ₂ SO ₄	5 - 20 5 - 20
Linear velocity	rinsing	approx. m/h	HCl H ₂ SO ₄	5 - 20 5 - 20
Rinse water requirement	slow / fast	approx. BV	HCl H ₂ SO ₄	3.5 3.5

* 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 data are to be found in our Technical Information Sheets.

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.

This information and our technical advice – whether verbal, in writing or by way of trials – are given in good faith but without warranty, and this also applies where proprietary rights of third parties are involved. Our advice does not release you from the obligation to check its validity and to test our products as to their suitability for the intended processes and uses. The application, use and processing of our products and the products manufactured by you on the basis of our technical advice are beyond our control and, therefore, entirely your own responsibility. Our products are sold in accordance with the current version of our General Conditions of Sale and Delivery.

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

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