

# LEWATIT<sup>®</sup> CNP 80

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## Product Information

**Lewatit CNP 80** is a weakly acidic, macroporous, acrylic-based cation exchange resin of standard bead size distribution. Its very high total capacity, excellent chemical and mechanical stability together with high resistance to osmotic shock make it specially suitable for dealkalization.

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

- decarbonization (dealkalization) of industrial water (co-current system)
- in combination with a strongly acidic cation exchange resin, e. g. **Lewatit MonoPlus S 100**, in a decationization unit for the demineralization of water for steam generation
- in a single bed unit downstream from a demineralization unit for the removal of cations present as hydroxides (polishing) at flow velocities up to 40 m/h
- 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 the absence of calcium and complexing agents.

**Lewatit CNP 80** 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 Bayer AG, Business Group Specialty Products, Business Unit Ion Exchange Resins and Water Chemicals.

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## General Description

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

## Physical and Chemical Properties

Bead size*	> 90%	mm	0.315 - 1.60
Effective size*		mm	0.48 (+/- 0.05)
Uniformity coefficient*		max.	1.8
Bulk density	(+/- 5%)	g/l	750
Density		approx. g/ml	1.19
Water retention		%	45 - 50
Total capacity*		min. eq/l	4.3
Volume change	H+ -> Ca <sup>2+</sup>	max. %	7
Stability	at pH-range		0 - 14
Storability	of the product	min. years	2
Storability	at temperature	°C	-20 - 40

\* These data are specification values and are subject to continuous monitoring.

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## Recommended Operating Conditions\*

Operating temperature	max. °C	75	
Operating pH range		5 - 14	
Bed depth	min. mm	800	
Specific pressure loss (15°C)	approx. kPa*h/m <sup>2</sup>	1.3	
Max. pressure loss	kPa	250	
Linear velocity	exhaustion	max. m/h	40
Linear velocity	backwash (20 °C)	approx. m/h	12 - 14
Bed expansion	(20°C, per m/h)	approx. %	4.5
Freeboard	as % of resin volume	%	60 - 80
Regenerant		HCl	H <sub>2</sub> SO <sub>4</sub>
Countercurrent regeneration level	approx. g/l	70	90
Countercurrent regeneration concentration	%	3 - 6	0.5 - 0.8
Linear velocity	regeneration	approx. m/h	5 - 20
Linear velocity	rinsing	approx. m/h	5 - 20
Rinse water requirement	approx. BV	5	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 are to be found in our Technical Information Sheets.

\*\* progressive Regeneration

\*\*\* 100m/h for polishing

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## Safety precautions

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Strong oxidants, e.g. nitric acid, can cause violent reactions if they come into contact with ion exchange resins.

## Toxicity

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The safety data sheet must be observed. It contains additional data on product description, transport, storage, handling, safety and ecology.

## Disposal

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A proprietary technical recycling process for used ion exchanger is unknown to us. In the European Community the following possibilities for disposal can be utilized.

Resins used for water treatment and in the sugar industry can be disposed under code number 190 905. Our preference is to recommend disposal in an industrial incinerator.

Ion exchange resins which contain impurities after use in industrial processes, e.g. electroplating, chemicals treatment etc., can be disposed under code number 190 806. A certificate of disposal is required.

Bayer AG  
BG Specialty Products  
BU Ion Exchange Resins and Water Chemicals  
D-51368 Leverkusen

Internet: <http://www.lewatit.com>

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