

**Lewatit® MonoPlus S 200 KR** is a strongly acidic, premium grade, gel-type cation exchange resin with beads of uniform size (monodisperse), in highly regenerated form and purified (extremely low content of desorbable chloride ions) to meet nuclear industry specifications.

Lewatit® nuclear resins (Lewatit® KR) are noted for their outstanding mechanical and chemical stability and their high osmotic stability.

Because of their excellent hydrodynamic properties, Lewatit® KR resins allow particularly high flow rates. The extremely high monodispersity and very low fines content result in particularly low pressure losses compared with standard resins. Used in radioactive water circuits, they provide a number of special tasks and guarantee a water quality that fully complies with the requirement of the nuclear power industry.

**Lewatit® MonoPlus S 200 KR** is particularly suitable for:

- » the removal of cations, including radioactive isotopes, from aqueous solutions (pH control through adsorption of excess <sup>7</sup>Li)
- » the decontamination of circuits in nuclear reactor plants
- » the removal of radioactive cations, highly selective for caesium 137
- » the treatment of primary coolant e.g. in pressure water reactors
- » the purification of steam generator blowdown irrespective of the conditioning with Levoxin (hydrazine), ethanolamine or morpholine
- » the removal of activated cleavage or corrosion products, including mechanical filtration of suspended impurities
- » the polishing in the primary and secondary sections as a mixed bed component with **Lewatit® MonoPlus M 800 KR**.

**Important!**

Rinse carefully with demineralized water prior to service or mixing with **Lewatit® MonoPlus M 800 KR**.

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	Sulfonic acid
Matrix	Styrenic
Structure	Gel
Appearance	Dark brown

### Specified Ddata

Uniformity coefficient		max.	1.1
Mean bead size	d50	mm	0.60 (+-0.05)
Total capacity (delivery form)		min. eq/L	2.1

## Typical Physical and Chemical Properties

Bulk density for shipment	(+/- 5%)	g/L	780
Density		approx. g/mL	1.2
Water retention (delivery form)		approx. weight %	45-50
Volume change (H <sup>+</sup> - Na <sup>+</sup> )		max. approx. %	-6
Stability pH range			0-14
Storability (from the time of delivery)		max. years	1
Storability temperature range		°C	-20 - +40
Friability		average g/bead	600
Friability	>200 g/bead	min. vol %	95
Ionic conversion H <sup>+</sup>		min. eq. %	99

## Operation

Operating temperature		max. °C	140
Operating pH range	during exhaustion		2-14
Bed depth for single column		min. mm	800
Bed depth per component in mixed bed		min. mm	500
Back wash bed expansion per m/h (20°C)		%	3.5
Specific pressure loss kPa*h/m <sup>2</sup> (15°C)		kPa*h/m <sup>2</sup> (15°C)	1
Max. pressure loss during operation		kPa	250
Specific flow rate		max. BV/h	100

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

## Regeneration

HCl regeneration	concentration	approx. wt. %	4-6
HCl regeneration	quantity co-current	min. g/L resin	100
HCl regeneration	quantity counter-current	min. g/L resin	55
H <sub>2</sub> SO <sub>4</sub> regeneration	concentration	approx. wt. %	1.5-8
H <sub>2</sub> SO <sub>4</sub> regeneration	quantity co-current	min. g/L resin	120
H <sub>2</sub> SO <sub>4</sub> regeneration	quantity counter-current	min. g/L resin	80
Regeneration contact time		min. minutes	20
Slow rinse at regeneration flow rate		min. BV	2
Fast rinse at service flow rate		min. BV	2

## Trace Impurities

Na		max. mg/kg dry resin	20
Ca		max. mg/kg dry resin	50
K		max. mg/kg dry resin	20
Mg		max. mg/kg dry resin	10
Fe		max. mg/kg dry resin	25
Cu		max. mg/kg dry resin	10
Al		max. mg/kg dry resin	10
Co		max. mg/kg dry resin	10
Pb		max. mg/kg dry resin	10
Hg		max. mg/kg dry resin	1
Heavy metals		max. mg/kg dry resin	20
SiO <sub>2</sub>		max. mg/kg dry resin	50
Cl <sup>-</sup>		max. mg/kg dry resin	40

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

## 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.

**LANXESS Deutschland GmbH**  
Liquid Purification Technologies  
Kennedyplatz 1  
50569 Koeln  
Germany

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

www.lanxess.com  
www.lewatit.com

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