

The **Lewatit® MonoPlus S 300 KR** is a strongly acidic, highly cross-linked gel-type cation exchange resin, manufactured in the form of a specific grain size (mean grain diameter ca. 0,53 mm) with a monodisperse distribution of its particle size. The degree of regeneration is at >99.5 % (H⁺ form). Due to its special production, the **Lewatit® MonoPlus S 300 KR** has very good osmotic and physical stabilities, and a high resistance to oxidation as well.

Lewatit® MonoPlus S 300 KR is optimized for polishing condensates. The extremely high rate favors the desalination result in applications with high flow rates. Due to its extremely low content of elutable chloride ions, the special requirements of the nuclear industry are met.

The application in mixed beds, this in combination with the **Lewatit® Mono Plus M 800 KR** or **Lewatit® Mono Plus M 880 KR**, is well possible, even at high flow rates. The residual salt content is very low.

Their unique monodispersity (uniformity coefficient: max 1.1) in combination with a very low content of fines (max. 0.1 % of particles < 0.315 mm) produces very low pressure losses compared to standard ion exchange resins. If used in circuits containing radioactive water, they produce a water quality that fully meets the requirements of the nuclear power industry.

Lewatit® MonoPlus S 300 KR is particularly advantageous for:

- » the removal of cations, including radioactive isotopes of aqueous solutions (pH control by adsorption of excess ⁷Li)
- » the decontamination of circuits in nuclear installations
- » the removal of radioactive cations (high selectivity for cesium 137)
- » the use in the primary coolant circuit of pressure or boiling water reactors
- » the cleaning of blow down from steam generation units, regardless of their precedent conditioning with Levoxin® (hydrazine hydrate), ethanolamine or morpholine
- » the removal of radioactive fission products and corrosion products, including mechanical filtration of suspended
- » the fine cleaning both in primary and in the secondary circuit as a mixed bed component, this in combination with **Lewatit® Mono Plus M 800 KR** or **Lewatit® MonoPlus M 880 KR**

Important

Before mixing with **Lewatit® Mono Plus M 800 KR** or **Lewatit® Mono Plus M 880 KR** and commissioning, it is necessary to thoroughly rinse with deionized water.

PRODUCT INFORMATION
LEWATIT® MonoPlus S 300 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 (LPT).

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

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General Description

Ionic form as shipped	H ⁺
Functional group	Sulfonic acid
Matrix	Crosslinked Polystyrene
Structure	Gel
Appearance	Black, translucent

Specified Data

	metric units	
Uniformity Coefficient	max.	1.1
Mean bead size	mm	0.53 (+/- 0.05)
Total capacity	min. eq/l	2.1

Physical and Chemical Properties

		metric units	
Bulk density	(+/- 5 %)	g/l	790
Density		approx. g/ml	1.22
Water retention		wt. %	45 - 50
Volume change	H ⁺ --> Na ⁺	max. vol. %	- 6
Stability	at pH-range		0 - 14
Friability	average	g/bead	600
Friability	> 200 g/bead	min. vol %	95
Storability	of the product	max. months	12
Storability	temperature range	°C	-20 - +40
Ionic conversion	H ⁺	min. eq. %	99

Trace Elements Analysis

Element	Limit	Unit	Value
Na	max.	mg / kg dry resin	20
Ca	max.	mg / kg dry resin	10
K	max.	mg / kg dry resin	10
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 (as Pb)	max.	mg / kg dry resin	10
SiO ₂	max.	mg / kg dry resin	50
Chloride	max.	mg / l	10

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Recommended Operating Conditions*

		metric units	
OPERATION			
Operating temperature		max. °C	120
Operating pH-range			0 - 14
Bed depth		min. mm	800
Specific pressure drop	(15 °C)	approx. kPa*h/m ²	1.5
Pressure drop		max. kPa	200
Linear velocity	operation	max. m/h	5 - 120
OPERATION, MIXED BED			
Bed depth		min. mm	600
REGENERATION, MIXED BED			
Regenerant	type		HCl H ₂ SO ₄
Regeneration	quantity	approx. g/l	HCl 50 - 100 H ₂ SO ₄ 80 - 200
Regeneration	concentration	approx. wt. %	HCl 4 - 10 H ₂ SO ₄ 1.5 - 5
Regeneration/ displacement rinse		m/h	1 - 10
Rinse water requirement	slow / fast	approx. BV	2 / 2

* 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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