

Lewatit® S 4228 is a food grade, macroporous, heterodisperse, medium basic anion exchange resin based on a styrene-divinylbenzene copolymer. It is bead-shaped and has a special bead size distribution for use in the following processes:

- » Lewatit® WS system (fluidised bed)
- » Lewatit® VWS system (compound fluidised bed)
- » Standard co current regenerated system

In its free base form, the **Lewatit® S 4228** is suitable for the removal of acid and simultaneous decolorisation of solutions of organic substances, e.g. sugar, gelatine, glycerine, grape must, whey, fruit concentrates, etc.

The macroporous structure and the relation between the weakly and strongly basic groups ensures very good adsorption of organic substances (e. g. colorants) and partial absorption of organic acids and mineral acids. The substances are easy to desorb by regeneration with a solution of caustic soda.

If using the **Lewatit® S 4228** to treat potable water and the aqueous solutions listed above, special care should be given to the initial cycles of the new resin. Please refer to the recommended start-up conditions available on request.

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).

General Description

Ionic form as shipped	Free base / Cl ⁻
Functional group	Tertiary / quaternary amine
Matrix	Crosslinked polystyrene
Structure	Macroporous
Appearance	Beige, opaque

Specified Data

	metric units	
Uniformity Coefficient	max.	1.6
Bead size > 90 %	mm	0.4 - 1.25
Effective size	mm	0.55 (+/- 0.05)
Total capacity	min. eq/l	1.6

Physical and Chemical Properties

	metric units	
Bulk density (+/- 5 %)	g/l	680
Density	approx. g/ml	1.03
Water retention	wt. %	51 - 56
Volume change total swelling (delivered --> Cl ⁻)	typical vol. %	28
Volume change operational swelling	typical vol. %	16
Stability at pH-range		0 - 14
Stability temperature range	°C	-20 - +70
Storability of the product	max. years	2
Storability temperature range	°C	-20 - +40

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

Recommended Operating Conditions*

		metric units	
OPERATION			
Operating temperature		max. °C	70
Operating pH-range			0 - 8
Bed depth		min. mm	800
Specific pressure drop	(15 °C)	approx. kPa*h/m ²	1.1
Pressure drop		max. kPa	250
REGENERATION, COUNTER-CURRENT			
Regenerant	type		NaOH
Regenerant	quantity	approx. g/l	50 - 80
Regenerant	concentration	wt. %	2 - 4
Linear velocity		approx. m/h	5
Linear velocity	rinsing	approx. m/h	5 - 8
Rinse water requirement	slow / fast	approx. BV	6
REGENERATION, CO-CURRENT			
Regenerant	type		NaOH
Regenerant	quantity	approx. g/l	90 - 120
Regenerant	concentration	approx. wt. %	2 - 4
Linear velocity	backwash (20 °C)	approx. m/h	4 - 5
Linear velocity	rinsing	approx. m/h	5 - 8
Bed expansion	(20 °C, per m/h)	approx. vol. %	17
Freeboard	backwash (extern / intern)	vol. %	80 - 100

* 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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