

**Lewatit® S 1668** is a food grade, gel-type, strongly acidic cation exchange resin based on a styrene-divinylbenzene copolymer. The optimized kinetics lead to an increased operating capacity compared to ion exchange resins with heterodisperse bead size distribution. An strongly improved value of the total capacity provides additionally for long running times with low leakage and economical regeneration amount.

**Lewatit® S 1668** is especially applicable for:

- » the softening of solutions, especially for thin juices of the sugar and pectin industries
- » the decationisation of solutions of organic products, e.g. sugar beet, sugar cane, starch sugar, glycerine, gelatine, whey and food acids etc.
- » the extraction of amino acids, e.g. lysine

**Lewatit® S 1668** adds special features to the resin bed:

- » high exchange flow rates during regeneration and loading
- » a good utilization of the total capacity
- » a low sweeten-on-, sweeten-off- and rinse water demand
- » a homogeneous throughput of regenerants, water and solutions; therefore an homogeneous working zone
- » nearly linear pressure drop gradient for the whole bed depth; therefore an operation with higher bed depth possible
- » good separation behavior of the components in a mixed bed application

If using **Lewatit® S 1668** 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	Na <sup>+</sup>
Functional group	Sulfonic acid
Matrix	Crosslinked polystyrene
Structure	Gel
Appearance	Brown-black

## Specified Data

	metric units	
Uniformity Coefficient	max.	1.1
Mean bead size	mm	0.62 (+/- 0.05)
Total capacity	min. eq/l	2.2

## Physical and Chemical Properties

		metric units	
Bulk density	(+/- 5 %)	g/l	840
Density		approx. g/ml	1.28
Water retention		wt. %	41 - 46
Volume change	Na <sup>+</sup> --> H <sup>+</sup>	max. vol. %	10
Stability	at pH-range		0 - 14
Stability	temperature range	°C	-20 - +120
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	
<b>OPERATION</b>			
Operating temperature		max. °C	120
Operating pH-range			0 - 14
Bed depth		min. mm	800
Specific pressure drop	(15 °C)	approx. kPa*h/m <sup>2</sup>	1.0
Pressure drop		max. kPa	200
Linear velocity	operation	max. m/h	60
<b>REGENERATION, COUNTER-CURRENT</b>			
Regenerant	type		HCl H <sub>2</sub> SO <sub>4</sub> NaCl
Regenerant	quantity	approx. g/l	HCl 50 H <sub>2</sub> SO <sub>4</sub> 80 NaCl 90
Regenerant	concentration	wt. %	HCl 4 - 6 H <sub>2</sub> SO <sub>4</sub> 1.5 / 3** NaCl 8 - 10
Linear velocity		approx. m/h	HCl 5 H <sub>2</sub> SO <sub>4</sub> 10 - 20 NaCl 5
Linear velocity	rinsing	approx. m/h	HCl 5 H <sub>2</sub> SO <sub>4</sub> 5 NaCl 5
Rinse water requirement	slow / fast	approx. BV	HCl 4 H <sub>2</sub> SO <sub>4</sub> 4 NaCl 4
<b>REGENERATION, CO-CURRENT</b>			
Regenerant	type		HCl H <sub>2</sub> SO <sub>4</sub> NaCl
Regenerant	quantity	approx. g/l	HCl 100 H <sub>2</sub> SO <sub>4</sub> 150 NaCl 200
Regenerant	concentration	approx. wt. %	HCl 4 - 6 H <sub>2</sub> SO <sub>4</sub> 1.5 - 3** NaCl 8 - 10
Linear velocity	backwash (20 °C)	approx. m/h	10 - 12

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# PRODUCT INFORMATION LEWATIT® S 1668



Linear velocity	rinsing	approx. m/h	HCl 5 H <sub>2</sub> SO <sub>4</sub> 5 NaCl 5
Bed expansion	(20 °C, per m/h)	approx. vol. %	4
Freeboard	backwash (extern / intern)	vol. %	60

\* 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.

\*\* Regeneration progressive

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## 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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