

**Lewatit® S 1668** is a monodisperse, 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 strong 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

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. For single filter use please contact our technical customer service!

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    | Na <sup>+</sup> |
| Functional group | Sulfonic acid   |
| Matrix           | Styrenic        |
| Structure        | Gel             |
| Appearance       | Dark brown      |

## Specified Data

|                                |     |           |           |
|--------------------------------|-----|-----------|-----------|
| Uniformity coefficient         |     | max.      | 1.1       |
| Mean bead size                 | d50 | mm        | 0.57-0.67 |
| Total capacity (delivery form) |     | min. eq/L | 2.2       |

## Typical Physical and Chemical Properties

|                                                   |          |                  |           |
|---------------------------------------------------|----------|------------------|-----------|
| Bulk density for shipment                         | (+/- 5%) | g/L              | 830       |
| Density                                           |          | approx. g/mL     | 1.3       |
| Water retention (delivery form)                   |          | approx. weight % | 41-46     |
| Volume change (Na <sup>+</sup> - H <sup>+</sup> ) |          | max. approx. %   | 12        |
| Stability pH range                                |          |                  | 0-14      |
| Stability temperature range                       |          | °C               | 1-120     |
| Storage time (after delivery)                     |          | max. years       | 2         |
| Storage temperature range                         |          | °C               | -20 - +40 |

## Operation

|                                                    |                   |                             |        |
|----------------------------------------------------|-------------------|-----------------------------|--------|
| Operating temperature                              |                   | max. °C                     | 120    |
| Operating pH range                                 | during exhaustion |                             | 0-14   |
| Bed depth for single column                        |                   | min. mm                     | 800    |
| Back wash bed expansion per m/h (20°C)             |                   | %                           | 4      |
| 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                         | 200    |
| Specific flow rate                                 |                   | max. BV/h                   | 20     |
| Freeboard                                          | during backwash   | min. vol. %                 | 80-100 |

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 | 55-65 |
| H <sub>2</sub> SO <sub>4</sub> regeneration | concentration            | approx. wt. %  | 1.5-3 |
| H <sub>2</sub> SO <sub>4</sub> regeneration | quantity co-current      | min. g/L resin | 150   |
| H <sub>2</sub> SO <sub>4</sub> regeneration | quantity counter-current | min. g/L resin | 80    |
| NaCl regeneration                           | concentration            | approx. wt. %  | 8-10  |
| NaCl regeneration                           | quantity co-current      | min. g/L resin | 200   |
| NaCl regeneration                           | quantity counter-current | min. g/L resin | 100   |
| Regeneration contact time                   |                          | min. minutes   | 20    |
| Slow rinse at regeneration flow rate        |                          | min. BV        | 2     |
| Fast rinse at service flow rate             |                          | min. BV        | 4     |

## 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.

### Packaging

The experience has shown that the packaging stability for reliable resin containment is limited to 24 months under the storage conditions described above. It is therefore recommended to use the product within this time frame; otherwise the packaging condition should be checked regularly.

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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