

**Lewatit® S 1428** is a Food grade, strongly acidic, gel-type cation exchange resin based on crosslinked polystyrene. 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)
- » Lewatit® liftbed system

**Lewatit® S 1428** is suitable in the hydrogen form for:

- » decationisation of sugar solutions and solutions of organic products, e.g. glycerine, gelatine, whey, etc.
- » extraction of amino acids

In the sodium form, it is suitable for:

- » softening of sugar thin juice, pectin solutions, etc.

When using **Lewatit® S 1428** 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 Ion Exchange Resins.

## General Description

|                       |                          |
|-----------------------|--------------------------|
| Ionic form as shipped | Na <sup>+</sup>          |
| Functional group      | sulfonic acid            |
| Matrix                | crosslinked polystyrene  |
| Structure             | gel type beads           |
| Appearance            | light brown, translucent |

## Physical and Chemical Properties

|                                                  | metric units |                          |
|--------------------------------------------------|--------------|--------------------------|
| Uniformity Coefficient*                          | max.         | 1.6                      |
| Bead size* > 97 %                                | mm           | 0.4 - 1.2<br>5           |
| Effective size*                                  | mm           | 0.5 (+/- )<br>5 0.0<br>5 |
| Bulk density (+/- 5 %)                           | g/l          | 860                      |
| Density                                          | approx. g/ml | 1.29                     |
| Water retention                                  | wt. %        | 45 - 48                  |
| Total capacity*                                  | min. eq/l    | 2.0                      |
| Volume change Na <sup>+</sup> --> H <sup>+</sup> | max. vol. %  | 10                       |
| Stability at pH-range                            |              | 0 - 14                   |
| Storability of the product                       | max. years   | 2                        |
| Storability temperature range                    | °C           | - 20 - 40                |

\* Specification values subjected to continuous monitoring.

## Recommended Operating Conditions\*

|                                 |                               | metric units     |                  |                                |      |     |
|---------------------------------|-------------------------------|------------------|------------------|--------------------------------|------|-----|
| Operating temperature           |                               | max. °C          | 120              |                                |      |     |
| Operating pH-range              |                               |                  | 0 - 14           |                                |      |     |
| Bed depth                       |                               | min. mm          | 800              |                                |      |     |
| Specific pressure drop          | (15 °C)                       | approx. kPa*h/m² | 1.1              |                                |      |     |
| Pressure drop                   |                               | max. kPa         | 150              |                                |      |     |
| Linear velocity                 | operation                     | max. m/h         | 40               |                                |      |     |
| Linear velocity                 | backwash (20 °C)              | approx. m/h      | 14 - 18          |                                |      |     |
| Bed expansion                   | (20 °C, per m/h)              | approx. vol. %   | 4                |                                |      |     |
| Freeboard                       | backwash<br>(extern / intern) | vol. %           | 80 - 100         |                                |      |     |
| Regenerant                      |                               |                  | HCl              | H <sub>2</sub> SO <sub>4</sub> | NaCl |     |
| Counter current<br>regeneration | level                         | approx. g/l      | HCl              | 55                             |      |     |
|                                 |                               |                  | H <sub>2</sub> S | 90                             |      |     |
|                                 |                               |                  | O <sub>4</sub>   |                                |      |     |
|                                 |                               |                  | NaCl             | 100                            |      |     |
| Counter current<br>regeneration | concentration                 | wt. %            | HCl              | 4                              | -    | 6   |
|                                 |                               |                  | H <sub>2</sub> S | 1.5                            | /    | 3** |
|                                 |                               |                  | O <sub>4</sub>   |                                |      |     |
|                                 |                               |                  | NaCl             | 8                              | -    | 10  |
| Co current regeneration         | level                         | approx. g/l      | HCl              | 100                            |      |     |
|                                 |                               |                  | H <sub>2</sub> S | 150                            |      |     |
|                                 |                               |                  | O <sub>4</sub>   |                                |      |     |
|                                 |                               |                  | NaCl             | 200                            |      |     |
| Co current regeneration         | concentration                 | approx. wt. %    | HCl              | 4                              | -    | 6   |
|                                 |                               |                  | H <sub>2</sub> S | 1.5                            | /    | 3** |
|                                 |                               |                  | O <sub>4</sub>   |                                |      |     |
|                                 |                               |                  | NaCl             | 8                              | -    | 10  |
| Linear velocity                 | regeneration                  | approx. m/h      | 5                |                                |      |     |
| Linear velocity                 | rinsing                       | approx. m/h      | 5                |                                |      |     |
| Rinse water requirement         | slow / fast                   | approx. BV       | 6                |                                |      |     |

\* 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

## Additional Information & Regulations

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### **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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For more information or a quote, please use the

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