

**Lewatit® S 4528** is a food grade, macroporous, heterodisperse, weakly 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 (fluidized bed)
- » Lewatit® VWS system (compound fluidized bed)
- » Standard co current regenerated system

**Lewatit® S 4528** is suitable in the free base form for the removal of acid and simultaneous decolorization of solutions of organic products such as sugar, gelatine, glycerin, grape must, whey, fruit concentrates, etc.

Its macroporous structure ensures very good adsorption of both acid and organic substances (e.g. colorants). These are desorbed by regeneration with caustic soda solution. Due to its low basicity, **Lewatit® S 4528** can be used in the treatment of products sensitive to alkali. The partial isomerisation resulting from contact with the ion exchange resin (e.g. conversion of glucose to fructose and mannose) is negligible.

If using **Lewatit® S 4528** 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.

### Common Description

|                  |                |
|------------------|----------------|
| Delivery form    | Free base      |
| Functional group | Tertiary amine |
| Matrix           | Styrenic       |
| Structure        | Macroporous    |
| Appearance       | Beige, opaque  |

### Specified Ddata

|                                |     |           |           |
|--------------------------------|-----|-----------|-----------|
| Uniformity coefficient         |     | max.      | 1.8       |
| Mean bead size                 | d50 | mm        | 0.4-1.25  |
| Effective size                 | d10 | mm        | 0.41-0.53 |
| Total capacity (delivery form) |     | min. eq/L | 1.7       |

## Typical Physical and Chemical Properties

|   |          |                   |           |
|---|----------|-------------------|-----------|
| Bulk density for shipment               | (+/- 5%) | g/L               | 620       |
| Density                                 |          | approx. g/mL      | 1.02      |
| Water retention (delivery form)         |          | approx. weight %  | 44-52     |
| Volume change (free base - Cl)          |          | max. approx. %    | 45        |
| Volume change (free base - Cl)          |          | typical approx. % | 35        |
| Stability pH range                      |          |                   | 0-14      |
| Stability temperature range             |          | °C                | 1-80      |
| Storability (from the time of delivery) |          | max. years        | 2         |
| Storability temperature range           |          | °C                | -20 - +40 |

## Operation

|  |                   |                             |     |
|--|-------------------|-----------------------------|-----|
| Operating temperature                              |                   | max. °C                     | 80  |
| Operating pH range                                 | during exhaustion |                             | 0-8 |
| Bed depth for single column                        |                   | min. mm                     | 800 |
| Back wash bed expansion per m/h (20°C)             |                   | %                           | 30  |
| Specific pressure loss kPa*h/m <sup>2</sup> (15°C) |                   | kPa*h/m <sup>2</sup> (15°C) | 1.1 |
| Max. pressure loss during operation                |                   | kPa                         | 250 |
| Specific flow rate                                 |                   | max. BV/h                   | 5   |

## Regeneration

|                                      |                          |                |     |
|--------------------------------------|--------------------------|----------------|-----|
| NaOH regeneration                    | concentration            | approx. wt. %  | 2-4 |
| NaOH regeneration                    | quantity co-current      | min. g/L resin | 80  |
| NaOH regeneration                    | quantity counter-current | min. g/L resin | 50  |
| Regeneration contact time            |                          | min. minutes   | 30  |
| Slow rinse at regeneration flow rate |                          | min. BV        | 2   |
| Fast rinse at service flow rate      |                          | min. BV        | 4   |

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

## 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.

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