

## PRELIMINARY TECHNICAL DATASHEET

**Lewatit® PH 1074 HEP** is a macroporous, strongly basic (type I) anion exchange resin based on a crosslinked polyacrylate.

**Lewatit® PH 1074 HEP** is suitable for the decolorization of liquid sugar syrups and has been optimized for biopharmaceutical processing applications to reliably support the capture and purification of high molecular weight organic compounds deriving from sugar solutions or complex fermentation broth process solutions. In its chloride form **Lewatit® PH 1074 HEP** is suitable for applications such as:

- Decolorization of syrups from cane sugar production
- Heparin extraction and purification, including heparin storage on resin
- Chondroitin sulfate extraction and purification
- Nadroparin calcium extraction and purification
- Dermatan sulfate extraction and purification
- Decolorization of bioprocessing solutions

The macroporous structure and balanced resin matrix of **Lewatit® PH 1074 HEP** facilitates the kinetics of adsorption and desorption, achieving highest adsorption capacities and ideal desorption properties. This is highly beneficial for recovery of high-molecular hydrophilic anionic organic substances, for example, from fermentation broths, such as required for heparin and other glycosaminoglycans. Elution is easily achieved by neutral or alkaline sodium chloride solution.

The following certificates and statements are available for **Lewatit® PH 1074 HEP**:

- Non-GMO
- TSE/BSE
- Allergens
- Heavy metals
- Halal
- Kosher
- EU regulation No 1935/2004 of the European Parliament and the Council of the European Union on materials and articles intended to come into contact with food
- Council of Europe Resolution ResAP(2004)3 on ion exchange and adsorbent resins used in the processing of foodstuffs
- EU regulation No 2023/2006 on good manufacturing practice for materials and articles intended to come into contact with food

If using **Lewatit® PH 1074 HEP** 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.

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

## Common Description

|                  |                                |
|------------------|--------------------------------|
| Delivery form    | Cl <sup>-</sup>                |
| Functional group | Quaternary ammonium;<br>type 1 |
| Matrix           | Acrylic                        |
| Structure        | Macroporous                    |
| Appearance       | White, yellow                  |

## Specified Data

|  |                    |            |           |
|--|--------------------|------------|-----------|
| Uniformity coefficient                     |                    | max.       | 1.8       |
| Range of size for >90<br>vol% of all beads |                    | mm         | 0.40-1.60 |
| Effective size                             | d10                | mm         | 0.50-0.65 |
| Fines                                      | less than 0.315 mm | max. vol % | 0.5       |
| Total capacity (delivery<br>form)          |                    | min. eq/L  | 0.7       |

## Typical Physical and Chemical Properties

|   |           |                  |           |
|---|-----------|------------------|-----------|
| Bulk density for shipment                         | (+/- 10%) | g/L              | 740       |
| Density   |           | approx. g/mL     | 1.1       |
| Water retention (delivery form)                   |           | approx. weight % | 69-79     |
| Volume change (Cl <sup>-</sup> -OH <sup>-</sup> ) |           | max. approx. %   | 30        |
| Stability pH range                                |           |                  | 0-14      |
| Stability temperature range                       |           | °C               | 1-80 (Cl) |
| Storage time (after delivery)                     |           | min. years       | 2         |
| Storage temperature range                         |           | °C               | -20 - +40 |

## Operation

|  |                   |                             |         |
|--|-------------------|-----------------------------|---------|
| Operating temperature                              |                   | max. °C                     | 80 (Cl) |
| Operating pH range                                 | during exhaustion |                             | 0-12    |
| Bed depth for single column                        |                   | min. mm                     | 800     |
| Back wash bed expansion per m/h (20°C)             |                   | %                           | 13      |
| Specific pressure loss kPa*h/m <sup>2</sup> (15°C) |                   | kPa*h/m <sup>2</sup> (15°C) | 2.2     |
| Max. pressure loss during operation                |                   | kPa                         | 250     |
| Specific flow rate                                 |                   | max. BV/h                   | 5       |
| Freeboard  | during backwash   | min. vol. %                 | 80-100  |

## Regeneration

|                                      |                     |                |        |
|--------------------------------------|---------------------|----------------|--------|
| NaCl regeneration                    | concentration       | approx. wt. %  | >14    |
| NaCl regeneration                    | quantity co-current | min. g/L resin | 200    |
| NaCl/NaOH regeneration               | concentration       | approx. wt. %  | 10/0.5 |
| NaCl/NaOH regeneration               | quantity co-current | min. g/L resin | 200/2  |
| Regeneration contact time            |                     | min. minutes   | 60     |
| Slow rinse at regeneration flow rate |                     | min. BV        | 2      |
| Fast rinse at service flow rate      |                     | min. BV        | 4      |

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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.

### 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.

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