Lewatit® S 5528 is a food grade, macroporous, strongly basic anion exchange resin (type I) based on a cross-linked polyacrylate, supplied in the Cl form. Lewatit® S 5528 is suitable for the decolorization of sugar syrups, especially cane sugar syrup. The macroporous structure and balanced resin matrix of this product facilitates the kinetics of adsorption and desorption. Adsorbed substances can be desorbed easily by regeneration with a neutral sodium chloride solution. Thanks to its specific granulometry, Lewatit® S 5528 has been specially adjusted for use in cocurrent and countercurrent systems like Lewatit® WS and VWS fluidized bed systems. These countercurrent fluidized bed systems allow a further reduction of operational costs. For sugar syrups, the use of ion exchange resin (IXR)-based decolorization technology has proven to be more effective and economical than carbon or bone char-based technologies.

Benefits
- High adsorption capacity by improved surface area and advanced adsorption kinetics
- Excellent interaction of ionic forces between high molecular weight, anionic color bodies, and charge of the IXR
- Excellent interaction of the hydrophobic forces between the non-polar particles in the color bodies and the resin matrix
- Operating the resin in chloride form ensures that the pH value of the treated juice is not materially changed
- Excellent resistance to physical breakdown by attrition and osmotic shock
- Operating the resin in chloride form ensures stability at high temperatures (max. 80 °C operating temperature)
- High fouling resistance compared with other types of resins such as those based on cross-linked polystyrene

Applications
- Decolorization of cane sugar syrup (>500 ICUMSA)
- Decolorization of liquid sugar syrups (sugar cane or beet sugar-based >300 ICUMSA)
- Use in combination with Lewatit® S 6368 A/Lewatit® S 6268 ion exchange resins for very low color final products (<50 ICUMSA)
Lewatit® S5528 has been developed specifically for the removal of hydrophilic high molecular weight, anionic organic substances, and colorants from sugar syrups.

The high operating capacity and therefore life expectancy of Lewatit® S5528 for all applications depends on the quality and composition of the water-based sugar syrup to be treated. We recommend a detailed feed quality analysis of factors such as color, viscosity, pH value, temperature, and targeted color effluent limit as the basis for the selection of the most appropriate decolorization system and resin amount.

Before implementation, a small-scale pilot test is recommended.

Figure 1: Decolorization performance at medium feed color levels >500 ICUMSA

The typical configuration contains two decolorization filters with parallel flow. Treatment of higher colorant feed concentrations requires two or three adsorber filters in a series flow configuration.

- Operation mode: down flow or up flow
- Specific flow rate: 2-4 BV/h
- Regeneration: NaCl 10%, 200 g/l$_{\text{Resin}}$ (1.67 lb/g$_{\text{Resin}}$)
- Resin bed height: min. 0.8 m (2.62 ft)

Specifications

- Lewatit® S5528 is manufactured in accordance with Halal, Kosher, and Food Contact requirements. Documents are available on request.
- When using Lewatit® S5528 to treat aqueous sugar syrups, special care should be given to the initial cycles of the new resin. Please refer to the recommended start-up conditions.

Contact

LANXESS Deutschland GmbH
Business Unit Liquid Purification Technologies
Kennedyplatz 1, 50569 Cologne, Germany
Tel.: +49 221 8885-0
E-mail: lewatit@lanxess.com

We will be happy to support your business. Please contact us for additional information: visit www.lpt.lanxess.com

Health and Safety Information: Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling the LANXESS products mentioned in this publication. For materials mentioned which are not LANXESS products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be followed. Before working with any of these products, you must read and become familiar with the available information on their hazards, proper use and handling. This cannot be overemphasized. Information is available in several forms, e.g., material safety data sheets, product information and product labels. Consult your LANXESS representative in Germany or contact the Regulatory Affairs and Product Safety Department of LANXESS Deutschland GmbH or – for business in the USA – the LANXESS Corp. Regulatory Affairs and Product Safety Department in Pittsburgh, PA, USA.

Regulatory Compliance Information: Some of the end uses of the products described in this publication must comply with applicable regulations, such as the FDA, BfR, NSF, USDA, and CPSC. If you have any questions on the regulatory status of these products, contact – for business in the USA – the LANXESS Corporation Regulatory Affairs and Product Safety Department in Pittsburgh, PA, USA or for business outside US the Regulatory Affairs and Product Safety Department of LANXESS Deutschland GmbH in Germany. The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.

All trademarks are trademarks of the LANXESS Group, unless otherwise specified. Status 08/2017.