

QUALITY PURIFIES.



Lewatit® S 5528 – Food-quality Ion Exchange Resin for Decolorization

Lewatit® S5528 is a food grade, macroporous, strongly basic anion exchange resin (type I) based on a cross-linked polyacrylate, supplied in the Cl form. Lewatit® S5528 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® S5528 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.

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® S6368A/Lewatit® S6268 ion exchange resins for very low color final products (<50 ICUMSA)

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

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Performance

Lewatit® S5528 has been developed specifically for the removal of hydrophilic high molecular weight, anionic organic substances, and colorants from sugar syrups.

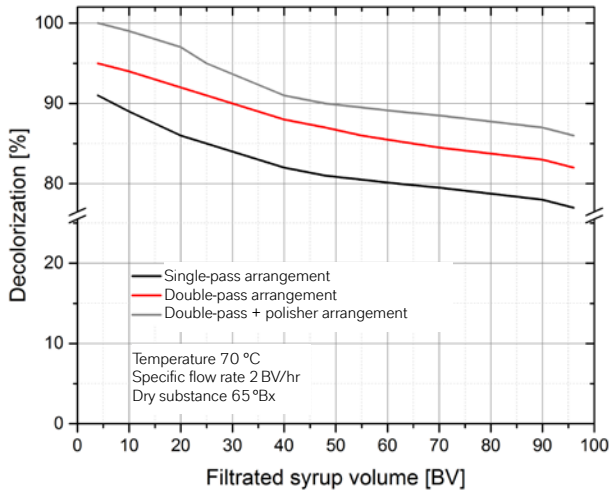


Figure 1: Decolorization performance at medium feed color levels >500 ICUMSA

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.

Standard recommendations

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
- Regeneration: down flow
- Specific flow rate: 2-4 BV/h
- Regeneration: NaCl 10%, 200 g/l_{Resin} (1.67 lb/g_{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.

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