



BACTOSHIELD

Advanced membrane-active antimicrobial blend for process hygiene & recovery.

The fermentation of molasses, grains, and sugars is an open process that is susceptible to microbial contamination because of the nutrient-rich feedstock, simple sugar availability, favorable pH, and temperature conditions. *Leuconostoc*, *Lactobacillus*, and wild yeast are examples of thermotolerant bacteria that can withstand temperatures as high as 80°C. As a result, fermentable sugars in molasses and grain deteriorate, the sugar recovery juice industry is diminished, and the quality of the final product is compromised.

BactoShield, is a next-generation cationic antibacterial formulation made up of C12, C14, and C16 alkyl homologues designed to restrict microbial development. Its membrane-active qualities give it a broad-spectrum antibacterial impact, making it extremely useful at controlling unwanted microorganisms in sugar processing systems. It offers a reliable and efficient solution for managing contamination and minimizing losses caused by microbial activity.

Mode of Action

BactoShield consists of cationic compounds with long alkyl chains (12–18 carbon atoms) that interact with negatively charged microbial cell surfaces.

- Adsorbs onto microbial cell membranes
- Disrupts surface proteins and lipid bilayer integrity
- Forms pores in the cell membrane
- Causes leakage of intracellular contents
- Leads to cytoplasmic coagulation and rapid cell death at higher concentrations

Product Key Benefits

- Effective against thermo-tolerant microbial flora
- Works at low dosage (3–5 ppm)
- Broad-spectrum antimicrobial activity due to synergistic blend
- Prevents microbial contamination and sugar losses
- Improves hygiene and helps in process efficiency
- Reduces scum formation

Product Application

Bactoshield is applied in the sugar manufacturing process, including primary juice, secondary juice, and muddy juice stages, to control microbial contamination. In molasses and grain industry during sanitisation process or CIP and during addition of recycling streams, filling. The exact location and dosages will be ascertained based on plant process conditions.

Operational Conditions

- Temperature: **30–90°C**
- pH Range: **4-10**

Dosage

- **Normal dosage:** 3–5 ppm (depending on contamination level)
- **Shock dosage:** Up to 10 ppm for severe or recurring contamination (in recycling streams)

Product Characteristics

- **Type:** Cationic antimicrobial blend
- **Composition:** C12, C14, C16 alkyl homologues
- **Appearance:** Liquid
- **Solubility:** Water-soluble
- **Stability:** Stable under recommended conditions

Product Packaging

- Available in **25 kg HDPE drums**

Product Shelf Life

- Minimum **18 months** when stored under recommended conditions.

Product Handling

- Avoid inhalation; may cause sensitization or allergic reactions
- Prolonged exposure may irritate skin, eyes, and mucous membranes
- Use appropriate PPE: gloves, protective clothing, and eye/face protection
- Avoid splashing and direct contact
- In case of spillage, flush with plenty of water
- Wash contaminated clothing before reuse
- Refer to MSDS for detailed safety guidelines



ISO 9001:2015 Certified | FSC 22000 Certified

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