## SOLENIS™ FERMENTATION AIDS

# Improved control of undesirable microorganisms without the use of antibiotics



- Improved microbiological control
- Enhanced yeast viability
- Improved fermentation efficiency
- Increased ethanol yields
- Improved profitability



### Technology Overview

Solenis fermentation aids comprise a family of proprietary, antibiotic-free products that effectively control undesirable microorganisms in the fermentation process while simultaneously promoting and aiding yeast propagation. These products complement most of the fermentation processes in use today, including isobutanol and second-generation processes, are effective in both low and high pH systems, and feature wide dosage parameters.

Products specifically designed for propagation and fermentation are available as well as products that can be fed upstream for plant-wide control of competing microorganisms.



#### Mode of Action

Solenis fermentation aids significantly enhance the ability of yeast to compete with undesirable microorganisms in the critical initial stages of propagation and fermentation. This is achieved by boosting the metabolic functions of yeast and by creating a more favorable environment for yeast propagation. The fermentation aids also hinder the propagation of undesirable microorganisms by either damaging or destroying the cell membrane of these microorganisms, rendering them unable to effectively compete with yeast.

#### **GRAS** Designation

Solenis fermentation aids do not contain antibiotics and, therefore, do not expose distillers grains and the subsequent food chain to active, undesired antibiotic residue. All Solenis fermentation aids are generally recognized as safe (GRAS) when used to produce distillers grains for feed for food producing animals.

#### **Application and Dosing**

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Solenis fermentation aids are easily applied. Depending on the fermentation aid selected, the application may require no equipment or simply a feed pump and container. The fermentation aids feature wide dosage parameters, allowing the dosage levels to be customized to achieve maximum efficacy and cost effectiveness.

#### **Features and Benefits**

Solenis fermentation aids contain no antibiotics and are GRAS certified when coproducts from the ethanol process are used in livestock feed. Patented and patent-pending products are available.

Commercial applications confirm that the fermentation aids provide a number of value-added benefits, including:

- Improved microbiological control
- Enhanced yeast viability
- Improved fermentation efficiency
- Increased ethanol yields
- Improved profitability

#### **More Information**

For more information about Solenis fermentation aids, please visit solenis.com/fermentation.

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