

# Allpen Special™

Fermentation Antimicrobial

ALLPEN SPECIAL™ antimicrobial is a penicillin-based product for use in fuel ethanol fermentations. The active ingredient is penicillin, which controls a wide range of fermentation contaminants known to be detrimental to ethanol production. ALLPEN SPECIAL™ antimicrobial is especially effective in controlling gram-positive bacteria, such as *Lactobacillus sp.*

## CHARACTERISTICS

Acts by inhibiting bacterial cell-wall synthesis. It is easily soluble.

Eliminates contaminating bacteria, resulting in:

- Prevention of competition for glucose
- Reduction of yeast stress
- Increased alcohol yields

## DESCRIPTION

ALLPEN SPECIAL™ antimicrobial is a white free-flowing powder in a water-soluble bag that contains penicillin. Product color may vary per batch, but this in no way affects the performance of the product.

## APPLICATIONS

ALLPEN SPECIAL™ antimicrobial is used as a bacterial growth inhibitor and is intended for use in ethanol fermentations.

- ALLPEN SPECIAL is effective over a pH range of 4.2-5.8. However, due to the instability of penicillin at pH values below 4.5, this product is most effective at 4.5-5.0.
- ALLPEN SPECIAL is most effective at temperatures below 100°F (38°C).

However, since penicillin decomposes rapidly at temperatures above 125°F, (52°C) any ALLPEN SPECIAL antimicrobial present at the end of fermentation is deactivated in the still

- ALLPEN SPECIAL can be added to the yeast propagator or to the fermentor. However, it is most effective in the propagator.

## PACKAGING

ALLPEN SPECIAL™ antimicrobial is available in convenient water-soluble bags (500 and 250 g), packed in 25 kg (55 lb) cartons.

## DIRECTIONS FOR USE

ALLPEN SPECIAL™ should be added during the fermentation phase of ethanol production. It can be added to the propagation system such that the final concentration in the fermentor equals 1-6 ppm. Do not exceed 6.0 ppm (22.7 mg per U.S. gal) during the fermentation cycle. Consult your technical representative for additional information.

## STORAGE & HANDLING

In order to maintain the integrity of the water-soluble bags, ALLPEN SPECIAL™ should be stored in a dry area away from extreme temperature variations and moisture for maximum stability. When stored under these conditions, the product is stable for 18 months from the date of manufacture.

## PRECAUTIONS

Avoid inhaling antimicrobial dust and avoid eye or skin contact. In case of contact, wash thoroughly with soap and water. In case of irritation or allergic symptoms, seek medical attention. People with sensitivity to antibiotics should refer to the MSDS.

### WARNING

This product is not intended nor suitable for use in animal feed.

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