

# **CLEAN BETABIO**

### **OVERVIEW**

Clean BetaBio is produced from CO<sub>2</sub> hop extract.

Clean BetaBio mainly contains the natural beta acid fraction of the hop extract, dissolved (as potassium salts) in food-grade propylene glycol. Beta acids are well-known to have potent antimicrobial properties, particularly against grampositive bacteria and certain algae.

**Clean BetaBio** is typically added to materials or process streams that require antibacterial protection.

### **SPECIFICATIONS**

**Short description** beta acid extract in propylene glycol

**Beta acids**  $10 - 45 \pm 0.5 \% \text{ (w/w) HPLC}$ 

Propylene glycol 20.0  $\pm$  15 % (w/w)

**pH**  $8.5 - 12.0 \pm 0.5$  (1 pt product: 3.5 pts water)

**Density** ca. 1.1 g/ml (20  $^{\circ}$ C / 68  $^{\circ}$ F)

Viscosity 300 - 1000 mPas (20 °C / 68 °F)

## **PROPERTIES**

## **APPEARANCE**

Clean BetaBio is a dark brown viscous liquid.

#### **QUALITY**

All Hopsteiner® products are processed in facilities which fulfill internationally recognized quality standards. A monitoring system for residues is in place.

#### **PACKAGING**

Our products are delivered in their respective recommended standard packaging. Alternatives may be possible upon customer request.

Standard packages of our processing plants in the USA (US) and Germany (DE) are:

- Pail 20 kg (US)
- Drum 200 kg (US)

### **USAGE**

We recommend that Clean BetaBio be used in its undiluted form. It is not difficult to pump and is compatible with the ususal materials used in food processing plants.

#### **DOSAGE**

Actual dosage will depend on the application, but typically 5 - 10 ppm of Clean BetaBio is effective as an antibacterial agent.

#### **STORAGE**

The recommended storage temperature in the original unopened packaging is 20 °C (68 °F).

Bulk storage in heated tanks (up to 40 °C) is also possible, provided the product is not directly exposed to air and used within about 3 months.

### **BEST BEFORE DATE**

Under the recommended storage conditions, the shelf life from the date of production/ packaging is at least 1 year.

#### **SAFETY**

Ensure good ventilation of the workplace and wear personal protective equipment. Avoid contact with eyes and skin. Do not inhale vapors or dusts. For full safety information, please refer to the relevant Hopsteiner® safety data sheet.

### **ANALYTICAL METHODS**

International approved methods listed in committees such as ASBC or Analytica-EBC using current standards are applied.

#### PRODUCT ANALYTICS

Concentration of bitter substances

• Analytica-EBC 7.8 (HPLC)

## **TECHNICAL SUPPORT**

We are pleased to offer assistance and advice on:

- safety data sheets
- support for brewing trials on a pilot or commercial scale
- analytical services and information about analytical procedures

Disclaimer: The information provided in this document is believed to be correct and valid. However, Hopsteiner® does not guarantee that the information provided here is complete or accurate and thus assumes no liability for any consequences resulting from its application.

## **ADDITIONAL INFORMATION**

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Both beta acids and propylene glycol are classified as GRAS.

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