

## BETABIO 45%

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### OVERVIEW

**BetaBio 45%** is produced from CO<sub>2</sub> hop extract.

**BetaBio 45%** 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 gram-positive bacteria and certain algae.

**BetaBio 45%** is typically added to materials or process streams that require antibacterial protection.

### SPECIFICATIONS

Short description	beta acid extract in propylene glycol
Beta acids	45.0 ± 2.0 % (w/w) HPLC
Hop oils	1.5 ± 0.5 % (w/w)
Propylene glycol	20.0 ± 15 % (w/w)
pH	11.0 ± 0.5 (1 pt product: 3.5 pts water)
Density	ca. 1.1 g/ml (20 °C / 68 °F)
Viscosity	300 - 1000 mPas (20 °C / 68 °F)

### PROPERTIES

#### APPEARANCE

BetaBio 45% is a dark brown viscous liquid.

#### QUALITY

All Hopsteiner® products are processed in facilities which fulfill internationally recognized quality standards.

### 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 BetaBio 45% be used in its undiluted form. It is not difficult to pump and is compatible with the usual materials used in food processing plants.

## DOSAGE

Actual dosage will depend on the application, but typically 5 - 10 ppm of BetaBio 45% is effective as an antibacterial agent.

## STORAGE

The recommended storage temperature in the original unopened packaging is 41 - 59 °F (5 - 15 °C)

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 6 years.

## 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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Simon H. Steiner, Hopfen, GmbH  
Mainburg, Germany  
Email: info(at)hopsteiner.de

S.S. Steiner Inc.  
New York, USA  
Email: sales(at)hopsteiner.com

Steiner Hops Ltd.  
Normandy, England  
Email: enquiries(at)hopsteiner.co.uk

Steiner Hops (Zhuhai) Co., Ltd.  
Zhuhai, China  
Email: info(at)hopsteiner.com.cn