

Hop Oil – Type HOPTANICAL

❖ Overview

- **Hop Oil – Type HOPTANICAL** is produced by conventional hop extraction with subsequent fractionation by means of distillation. On top of a purified hop oil, flavor extracts of various botanicals (herbs, spices, etc.) are added.
- **Hop Oil – Type HOPTANICAL** has been specifically developed for additions prior to filtration and has an excellent recovery in beer and beverages.
- **Hop Oil – Type HOPTANICAL** is mainly used to achieve unique flavors in specialty brands, ranging from citrusy and fruity flavors to herbal and spice-like aroma impressions.



❖ Specifications

- **Description:** pure hop oil and natural botanical extracts diluted in a blend of propylene glycol and ethanol
- **Key hop compound:** linalool 500 ppm (\pm 50 ppm)
- **Specific ratios:**
 - linalool / myrcene > 5.0
 - linalool / caryophyllene \leq 0.1
 - linalool / humulene \leq 0.1
- **Ratio of botanical to hop oil:** dependent on the Type of HOPTANICAL
- **Bittering substances:** not detectable
- **Viscosity:** approx. 46 mPas at 25 °C (77 °F)
- **Density:** approx. 1.0 g/ml at 20 °C (68 °F)

For batch-dependent information, please refer to the enclosed certificate of analysis.

❖ Properties

• Appearance

Hop Oil – Type HOPTANICAL is a nearly colorless to light green, transparent or slightly turbid liquid, containing essential oils from hops and a natural extract of other plant sources.

• Flavor

Depending on the quantity added and the type of beer and beverage, **Hop Oil – Type HOPTANICAL** can pronounce the spicy hop aroma in combination with non-hop related citrusy, fruity, herbal and spice-like flavors.

Hop Oil – Type HOPTANICAL has little influence on the sensory bitterness of beer and beverage.

During beer aging the aroma components of **Hop Oil – Type HOPTANICAL** remain stable and contribute to overall flavor stability.

• Utilization

Hop Oil – Type HOPTANICAL contains linalool with an excellent recovery rate, which can be close to 100 %. The non-hop based natural aroma is transferred in a high yield to finally pronounce the overall flavor.

• Quality

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

❖ Packaging

Hop Oil – Type HOPTANICAL is normally packaged in aluminum bottles of various sizes. The product is diluted in a blend of 95 % propylene glycol and 5 % ethanol.

❖ Product Use

• Dosage

The quantity to be used is determined by the brewer and depends on the time and point of the addition.

The hop oil dosage should be based on ml of supplied product per hl of beer or beverage. The typical dosing range for beer is **5 – 20 ml / hl**.

This range is intended for orientation only; actual additions will depend on the impression and intensity of the aroma desired.

Trials performed by injecting the product into bottled beer or beverage with a microliter syringe are helpful for determining the quantity of **Hop Oil – Type HOPTANICAL** required.

- **Application**

Shake the packaging well before use.

Hop Oil – Type HOPTANICAL can be added at different stages on the cold side of beer and beverage production, typically prior to filtration.

For the highest possible yield, a direct addition into the beer or beverage stream prior to filtration is recommended. This enables the **Hop Oil – Type HOPTANICAL** to dissolve in the beer or beverage without changing its flavor.

- **Storage**

Hop Oil – Type HOPTANICAL should ideally be stored at temperatures of 1 - 10 °C and in the delivered original container

- **Best Before Date**

Hop Oil – Type HOPTANICAL is stable one year from the date it was produced / packaged if stored under the recommended conditions. Once opened, it is recommended to use within one month and limit the number of openings.

- **Safety**

Any product coming into contact with the skin should be immediately washed off with soap and water. If **Hop Oil – Type HOPTANICAL** gets into the eyes, flush with copious amounts of water until clear and seek medical attention.

For full safety information, please refer to the relevant Hopsteiner® safety data sheet.

❖ Analytical Methods

- **Aroma Compounds**

Individual hop oil compounds can be analyzed by means of gas chromatography techniques using the following methods:

- Analytica-EBC 7.12
- ASBC Hops-17

❖ Technical Support

We are pleased to offer assistance and advice on the full range of Hopsteiner® products:

- Safety Data Sheets (SDS)
- assistance with pilot or full-scale brewing trials
- special analytical services

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.