

# HOP OIL TYPE ESSENTIAL (VARIETY SPECIFIC)

## OVERVIEW

**Hop Oil Type ESSENTIAL** is produced either from leaf hops, hop pellets or conventional hop extracts of a specific hop variety and contains the essential aroma components as resulting from a regular late and dry hopping.

**Type ESSENTIAL** is a hop product that highlights the variety characteristics after late and dry hopping.

**Type ESSENTIAL** is typically dosed during beer filtration and results in improved aroma yields compared to traditional hopping techniques. By using **Type ESSENTIAL** the so-called “hop creep effect” will not occur.



## SPECIFICATIONS

<b>Short description</b>	pure hop oil containing the complete range of hop aroma compounds from a selected hop variety, diluted in propylene glycol
<b>Key compounds:</b>	<ul style="list-style-type: none"> <li>Linalool</li> <li>Myrcene</li> <li>Caryophyllene</li> <li>Humulene</li> <li>Geraniol</li> <li>Hop esters</li> <li>Hop thiols</li> </ul>
<b>Bittering substances</b>	not detectable
<b>Density</b>	ca. 1.0 g/ml (20 °C / 68 °F)
<b>Viscosity</b>	ca. 46 mPas (25 °C / 77 °F)

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

## PROPERTIES

### APPEARANCE

Type ESSENTIAL is a nearly colorless to light green, transparent or slightly turbid liquid.

### FLAVOR

Type ESSENTIAL has similar hop aroma compositions as in late or dry-hopped beers. By using Type ESSENTIAL, the late and/ or dry hop flavor of the variety used is pronounced. Therefore any flavor from herbal to fruity and citrusy can be achieved, and the intensity and character depends on the quantity used. During beer aging the aroma components of Type ESSENTIAL remain stable and contribute to overall flavor stability.

### UTILIZATION

Type ESSENTIAL has an excellent recovery rate. Depending on the time of the addition, the recovery rate for hop oil can be close to 100%.

## 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:

- Aluminum bottles 0.5 and 1.0 kg (DE)
- Aluminium bottles 0.1 - 5.0 kg (US)

The product is supplied as a dilution in propylene glycol.

## USAGE

### DOSAGE

The quantity of the hop oil addition is determined by the brewer and depends on the time and point of the addition.

Example (addition before / during filtration):

- 1 - 30 ml/hl for bottom-fermented beers
- 5 - 40 ml/hl for top-fermented beers

Trials performed by injecting the product into bottled beer with a microliter syringe are helpful for determining the quantity of Type ESSENTIAL required.

### APPLICATION

Shake the packaging well before use. Type ESSENTIAL can be added at different stages on the cold side of beer production, typically prior to filtration. Dosing equipment which pumps the product into the beer stream is preferred for the addition of Type ESSENTIAL. Alternatively, the hop oil can be added to the tank prior to filling. In both cases, an excellent late and/or dry hop flavor can be achieved immediately after addition. Type ESSENTIAL is ideal for bottle conditioned beers: the hop creep effect will NOT occur.

### STORAGE

The recommended storage temperature in the original unopened packaging is 1 - 10 °C.

### BEST BEFORE DATE

Under the recommended storage conditions, the shelf life from the date of production/ packaging is at least 1 year. Opened containers should be consumed as soon as possible.

### 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

Hop oil components

- Analytica-EBC 7.12 (GC)
- ASBC Hops-17 (GC)

## 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.

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