

## SALVOPLUS

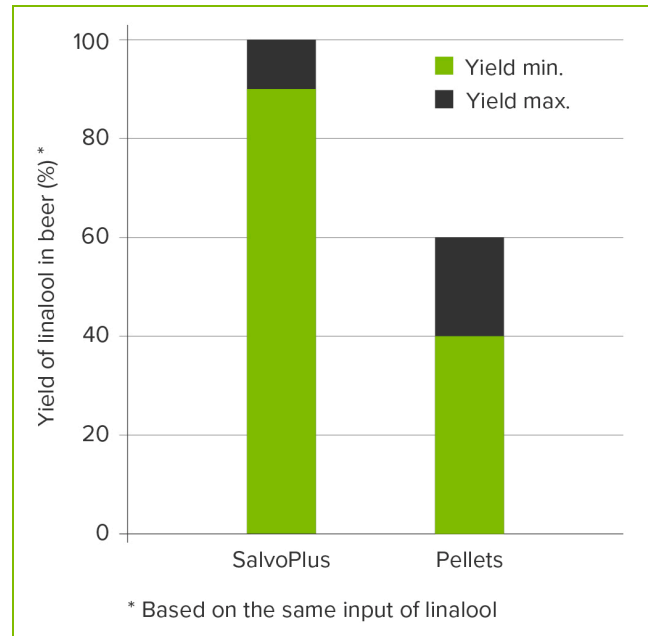
### OVERVIEW

**SalvoPlus** is a pure, water-based liquid hop aroma product made exclusively from hop extract and water. Free from solvents and emulsifiers, it contains only the essential hop oils and beta acids derived from CO<sub>2</sub> hop extract.

**SalvoPlus** was specially developed for improved aroma application both the hot and cold side of the brewing process.

**SalvoPlus** has little to no sensory bitterness, but an intense aroma.

**SalvoPlus** is -compared to pellets- very effective and has a significantly higher yield of all hop aroma compounds, especially with regard to linalool. In addition, beer losses are drastically reduced as no plant material is introduced.



### SPECIFICATIONS

<b>Short description</b>	liquid hop extract with a high content of hop essential oils and beta acids
<b>Alpha acids</b>	< 0.3 %
<b>Iso-alpha acids</b>	< 0.3 %
<b>Beta acids</b>	< 10 %
<b>Hop oils</b>	11 ± 3 %
<b>pH</b>	7.5 ± 0.5
<b>Density</b>	ca. 1.0 g / ml (20 °C / 68 °F)
<b>Viscosity</b>	< 100 mPas (20 °C / 68 °F)

## PROPERTIES

### APPEARANCE

SalvoPlus is a yellow, liquid hop extract.

### FLAVOR

SalvoPlus contains typical hop aroma components of hop-forwarded beers. Depending on the quantity dosed and the time of dosing, a strong or subtle hop aroma can be achieved. Late additions of SalvoPlus in the brewhouse/whirlpool give the finished beer a typical "late hop" aroma. In the cold section, SalvoPlus will contribute to a typical "dry hop" aroma.

### UTILIZATION

The utilization of Linalool can be up to 100%, varying from brewery to brewery due to differences in equipment and process conditions, such as dosing point. The yield of specific hop aroma substances from SalvoPlus is significantly higher compared to hop addition with pellets with the same hop oil dosage.

### 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:

- HDPE polymer bottles, various sizes (DE / US)
- jerrycans, various sizes (DE / US)

## USAGE

SalvoPlus is used in liquid form to impart a hop aroma to beer.

## DOSAGE

The dosage in the hot range should be based on the desired linalool content. Late-hopped lager and pilsner beers usually have a linalool concentration in the range of 20 to 100 µg / l, which corresponds to a quantity of SalvoPlus of 4 - 20 ml / hl. In dry hopping, the addition of SalvoPlus is usually based on the total oil content or the desired aroma intensity. The addition should take place during fermentation in order to achieve an ideal aroma in the finished beer. If SalvoPlus is used as a substitute for pellets in existing recipes, 60 - 80 % of the total oil content of the pellets is sufficient to achieve the same aroma intensity with dry hopping. The exact dosage should always be determined by trial and error.

## APPLICATION

Always warm the container to room temperature before use and shake well. SalvoPlus can be added manually or with an automatic dosing system. Neither preheating is necessary, nor stirring the liquid during dosing. Further dilution of the product is not recommended.

## CLEANING RECOMMENDATION

Fresh residues of SalvoPlus can be easily removed by rinsing all pipes and vessels with plenty of hot water. Do not allow SalvoPlus to dry.

## STORAGE

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

The product must not be exposed to temperatures below or around freezing point.

## 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 hop oils

- Analytica-EBC 7.10 (Distillation)
- ASBC Hops-13 (Distillation)

Concentration of bitter substances

- Analytica-EBC 7.8 (HPLC)
- ASBC Hops-16 (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.

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