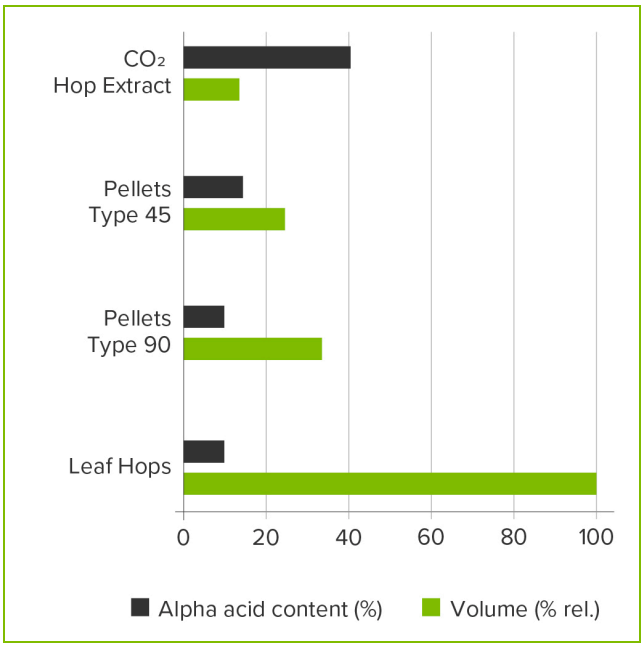
CO_2-HOP EXTRACT

OVERVIEW

CO_2-Extract is produced through the extraction of hop pellets with food-grade carbon dioxide in a liquid or supercritical form.

CO_2-Extract contains alpha acids, beta acids and essential oils and can be used to partially or entirely replace leaf hops or hop pellets in the brewing process.

CO_2-Extract offers a concentrated and practical alternative to leaf hops or hop pellets. Moreover, **CO_2-Extract** has a long shelf life.



SPECIFICATIONS

Short description	hop extract for bittering during wort boiling
Alpha acids	typically 30 - 70 %
Beta acids	typically 12 - 35 %
Hop oils	typically 2 - 12 %
pH	4.0 ± 0.5
Density	0.9 - 1.0 g/ml (20 °C / 68 °F)
Viscosity	200 - 400 mPas (45 °C / 113 °F)

PROPERTIES

APPEARANCE
Golden green to amber in color, CO_2-Extract is a thick syrup (depending on the hop variety and extraction conditions).

FLAVOR
The flavor characteristics of the original hops are almost completely retained in CO_2-Extract. Early additions of CO_2-Extract during wort boiling mainly serve to impart bitterness.

UTILIZATION
If CO_2-Extract is boiled for at least 50 minutes, utilization within the range of 32 - 38 % can be expected. Actual utilization will vary from brewery to brewery due to differences in equipment and process conditions.

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:

- Cans 0.5 - 3.1 kg (DE)
- Cans 0.5 - 4.0 kg (US)
- Pail 4 - 20 kg (US)
- Drum 200 kg (US / DE)

Filling can be done as gramm extract or gramm alpha acids.
The extract can be adjusted to a specific bitter content by admixing tannin extract or glucose syrup.

USAGE

CO_2-Extract is typically added to the wort kettle as a complete or partial replacement for leaf hops or hop pellets.

DOSAGE
Kettle additions of CO_2-Extract are based on the concentration of alpha acids, an estimated or known utilization and the desired intensity of bitterness in the beer.

APPLICATION
Pre-warming cans of CO_2-Extract is not necessary. Suspending punctured cans in the boiling wort will ensure that all of the extract is completely flushed out into the kettle. If CO_2-Extract is added by means of automatic dosing units, it should be warmed to 45 °C (113 °F) and gently mixed to ensure perfect dosing.

STORAGE
The recommended storage temperature in the original unopened packaging is < 10 °C.
Short-term, transport-related temperature deviations do not affect product quality.

BEST BEFORE DATE
Under the recommended storage conditions, the shelf life from the date of production/ packaging is at least 8 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 commitees such as ASBC or Analytica-EBC using current standards are applied.

PRODUCT ANALYTICS

Concentration of bitter substances

- Analytica EBC 7.6 (LCV)
- ASBC Hops-8 (II) (LCV)
- Analytica-EBC 7.7 (HPLC)
- ASBC Hops-14 (HPLC)
- ASBC Hops-8 (I) (Spectro)

Concentration of hop oils

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

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

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