Hop Pellets (BBC Pure Hop Pellet™)

Characteristics

The BBC Pure Hop Pellet™ is a hop product added to the kettle, to the Whirlpool or for dry hopping to provide hop flavour. It is specifically designed for high efficiency and heavy-use applications in both conventional and dry hopping applications. Developed in collaboration with Boston Beer Company, the BBC Pure Hop Pellet™ increases the yield of hop volatiles, resulting in higher aroma and flavour. It provides improved homogeneity and better storage stability compared to raw hops. The proprietary pure hop process removes extraneous material, resulting in true hop flavour. The BBC Pure Hop Pellet™ is produced using a finer, more uniform grind than standard Type 90 pellets. A sub-zero process – milling and sieving takes place at approx. -35°C (-31 °F) – prevents hop resins and essential oils from oxidation. Supported by a long history of safe use in brewing, and in accordance with US FDA regulation 21 CFR 170.30(c) and 170.3(f), hop pellets are generally recognised as safe (GRAS).

Product Specifications*

Description	Cylindrical pellets of approx. 6 mm (0.24 inch) diameter, milled and compressed whole hops
Consistency	A solid which normally breaks up into a powder
Color	Typically from dark-green to olive-green (depending on variety)
α-acids	Typically 4 - 16% (depending on variety and crop year; standardisation is possible)
β-acids	Dependent upon raw hops
Hop Oils	0.4 - 3.5 mL/100 g (depending on variety and crop year)
Moisture	7 – 12 %

* Further information on hop varieties is available at www.barthhaas.com

Quality and Food Safety

Barth-Haas maintains quality management systems registered to the ISO 9001 standard, as well as food safety management programs based on internationally recognised (HACCP) principles. Please refer to our web site (www.barthhaas.com) for more information on our systems and programs.

Product Use

For efficient provision of bitterness, the pellets should be added to the wort at the beginning or up to 15 minutes after the start of the boil. Utilization of α-acids into beer depends on the boiling system and conditions and is normally in the range of 30% - 35%. Added late into the boil, utilization of α-acids diminishes as the utilisation of the aroma improves giving a characteristic hop flavor in the beer. The quantity to be added is calculated using the α-acids content and the estimated utilization. For aroma, the quantity to be added should preferably be calculated using the oil content of the product. Pellets can be dosed automatically.

Packaging

Pellets are packed in laminated foils with an aluminum layer as a barrier against diffusion of oxygen. They are sealed under inert gas or vacuum packed. The foil material used meets all food industry packaging regulations. The residual oxygen content in the foil packs is less than 2% by volume. Pack sizes are available from 2.5 kg to 140 kg.

Storage and best-by Recommendation

The BBC Pure Hop Pellet™ should be stored cold at 0 - 5°C (32 – 41 °F) and is best used within 3 years after processing. If stored at –20 °C (-4 °F) it should be used within 5 years. Foils, once opened, should be used within a few days to avoid deterioration of bitter acids and essential oils.

Hop Deterioration during Storage and Shipping

Hop Product	Storage at up to 30°C	Cold Storage at 3 °C
Cones (3 months storage	22 %	5 %
Pellets (1 year storage)	12 %	3-6 %

Table 1: α-Acid losses in % relative during different storage conditions [1]

Shipping Temperature	Alpha Losses
Up to 25°C	3-6 %
Up to30°C	5-8 %
Up to35 °C	6-10 %
> 35°C	Up to 15 %

Table 2: Alpha-acid losses during overseas transportation in % relative [2]

Analytical Methods

The determination of α-acids comprises three types of methods, the specific measurement of α-acids by means of HPLC, spectrophotometric, or conductometric methods:

- α-acids can be measured by any of the following methods:
  - EBC method 7.5 - (α-acids as lead conductometric value (LCV))
  - ASBC Spectrophotometric method (Hops-6) - (α and β-acids)
  - By HPLC, using the current ICE standard, according to the EBC 7.7 method, or the ASBC method (Hops-14) - (α and β-acids)
- Hop oil concentration can be measured by:
  - EBC 7.10
  - ASBC Hops-13

Safety

If dust is generated, it is advisable to use a dust mask. Hop pellets are a combustible material. For further information please download the relevant Safety Data Sheet (SDS).

Technical Support

We will be pleased to offer help and advice on the use of the BBC Pure Hop Pellet™ in brewing.

E-Mail: Brewingsolutions@barthhaas.de

References

1. Biendl M, Engelhard B, Forster A, et al (2012) Hopfen: vom Anbau bis zum Bier. Hans Carl GmbH, Nürnberg
2. Forster A (2002) What happens to hop pellets during unexpected warm phases? Brauwelt Int 43–46