



HVG – IKE

ISOMERIZED KETTLE EXTRACT

PRODUCT SPECIFICATION

MANUFACTURER

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SUPPLIER

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CUSTOMS TARIFF CODE

1210.20.0040 (Hops - other)

MEANING OF CODE EXPLAINED BY EXAMPLE

HHMG 20 Lg. 13- 189 / IKE:

HHMG: Variety = Hallertau Hallerauer Magnum; **20 = Harvest 2020;**

Lg. 13-189 = Reference number; Internal code; **IKE =** product type;

With that code we guarantee that we can trace a hop lot back to the hop-grower without any gaps.

QUALITY AND FOOD SAFETY

- HVG e.G. is certified according DIN ISO 9001:2015 since the year 2000 and HACCP
- Nateco2 is certified according DIN ISO 9001:2015, DIN ISO 14001:2015, DIN ISO 22000:2018 and HACCP
- Hopfenveredlung St. Johann GmbH is certified according DIN ISO 9001:2015; DIN ISO 14001:2015, 22000:2005 and HACCP



PRODUCT PROPERTIES

Isomerized Kettle Extract (IKE) is a type of CO₂ extract containing alpha-acids in isomerized form. HVG-IKE contains the non-polar substances of the flower of the hops plant (*humulus lupulus*) which have been extracted by means of supercritical CO₂ using HVG- CO₂ Extract as the basis for the production of IKE. The extract is a mixture of the aromatic substances of the hops (hop oils) and the pre-isomerized resin fraction.

PRODUCTION PROCESS

For IKE Production:

- Extract is collected and blended with water and magnesium salts and heated.
- Through later addition of acid, the aqueous phase is separated from the extract.
- The solvent free non aqueous phase is a mixture of the free acid form of Isomerized alpha acids, other hop soft resins and hop oils.

PHYSICAL-CHEMICAL DETAILS

Description	Unit	Value
Iso- α -acids (Iso humulones)	% w/w*	25 – 55
α – acids (humulones)	% w/w*	< 5
Conversion of α - to Iso- α -acids	%	> 95
β -acids (lupulones)	% w/w*	15 – 40
Essential oils	ml/100 g*	up to 10
Density	g/l	900 – 1,100
Appearance		Viscous liquid; color dependent on the hop variety from yellow-brownish to dark green
Viscosity		**

*depending on hop variety and crop year

**Flow properties changes depending on the temperature of the extract. At temperatures of about 25 °C it moves like honey and the higher the temperature becomes, the more fluid it gets. At temperatures of about 40 °C viscosity decreases and the extract can be easily pumped.

PACKING

HVG IKE is packed into cans lined with high quality food grade lining from 0,5 kg to 4,0 kg extract weight. Larger packing volumes, e.g. 200 litre standard or stainless steel drums, are available for use with automatic dosing units. If requested, standardisation to a certain iso-alpha-acids content can be achieved by adjusting the weight of extract in each container.



PRODUCT USE

HVG-IKE is used as a flavoring/bittering ingredient in the process of beer brewing. The term kettle in the product name indicates where in the brewery it should be added, namely during the boil. IKE contains almost the same ingredients as the original CO₂-extract, except that the alpha acids are already mostly isomerized. IKE may be added at the beginning of the boil or at any time during wort boiling, although a minimum boiling time of five minutes is generally sufficient for the extract to dissolve. HVG-IKE Extract can be used as single hop addition or in combination with HVG-Hop Pellets.

Utilization of the iso-alpha-acids up to the finished beer with product addition to the kettle is in the range of 45% to 60%, typically 55%. If the yields from an early extract addition are compared, the dosage can be effectively reduced by 20 to 40 % compared to conventional extracts.

Example of comparison between HVG-CO₂-Extract and HVG-IKE:

Conversion of alpha-acids to iso-alpha-acids with conventional HVG-CO₂ = 40%

For IKE utilization of iso-alpha-acids = 55%

To achieve 25 BU (=25 mg/l iso-alpha-acids) in beer with HVG- CO₂ a dosage of 6,25 gr alpha /hl is required in the wort kettle

To achieve 25 BU in beer with HVG-IKE a dosage of 4,55 gr iso-alpha /hl is required in the wort kettle.

STORAGE / STABILITY

Good stability characteristics, but less stable than conventional extracts. Out of quality reasons HVG-IKE should be used as soon as possible after opening the packaging. Hop constituents change in contact with air. Recommended storing conditions:

Temperature	Stability
At 10 – 15 °C (50 – 59 °F)	up to 2 years (in unopened, original packages)
At 0 – 5 °C (32 – 41 °F)	up to 4 years (in unopened, original packages)

Cardboard boxes may deteriorate in strength and become deformed due to factors in the storage location such as humidity, multilayer stacking, and storage duration. Note that the maximum number of cardboard boxes that may be stacked safely differs considerably depending on the storage conditions.

HEALTH AND SAFETY

Rubber gloves are advisable to avoid accidental contact. Protective goggles are advisable to avoid accidental contact. See MSDS.

ANALYTICAL METHODS

For HVG – IKE the following analysis methods can be applied:

Method	Usage
EBC 7.8	Iso-alpha, alpha and beta acids in Hops and Hop Products by HPLC
EBC 7.10	Hop oil concentration



OTHER INFORMATION

- The product is accompanied by the Phytosanitary Certificate, which states that the product has been produced according to the national health regulations.
- The above information is based on the current state of knowledge of our product at the time of publication and is furnished without warranty of any kind.
- The user must satisfy himself that the product is entirely suitable for his purposes.