HVG PELLETS TYPE 90

PRODUCT SPECIFICATION

MANUFACTURER

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SUPPLIER

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CUSTOMS TARIFF CODE

1210 20 90 (Hop cones, ground powdered or in the form of pellets (excl. with higher lupulin content))

MEANING OF CODE EXPLAINED BY EXAMPLE

- **32 DE 2020:**
  32 = N° of certification center according to "List of hop certification centers and their code numbers"; Article 24, Regulation (EC) No 1850/2006; DE: Germany; Harvest 2020
- **HHMG:** Origin = Hallertau; Variety = Hallertauer Magnum.
  Name of the variety according to the "List of world hop varieties of the International Hop Growers` Convention (IHGC)" in its current version
- **VA 20-263**: Production Year 2020; Batch number 263.
  With this printed code we guarantee that the product is fully traceable back to the farmer's leaf hops lots used for its production.

QUALITY AND FOOD SAFETY

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

PRODUCT PROPERTIES

HVG Pellets 90 retain nearly all the natural compounds of the female hop flower (Humulus lupulus) in their chemically unaltered form. Their composition is very similar to whole leaf hops, as they contain most of the aromatic substances (hop oils), polyphenols, and bitter resins (humulones and lupulones) found in whole hop cones. The exact composition varies depending on the hop variety and growing conditions. Pellets Type 90 are made entirely from hops—without any additives during processing or packaging—ensuring a pure, natural product.

PHYSICAL-CHEMICAL DETAILS

Description	Unit	Value
α-acids (resins)	% w/w*	2 – 22
β – acids (resins)	% w/w*	1 – 10
Essential oils	ml/ 100 g*	up to 4
Appearance	*	Dull green with a typical hop aroma
Specific weight	kg/ m^3	up to 600
Moisture	%	7 – 10

*depending on hop variety and crop year

PACKING AND DOSAGE

HVG Pellet 90 are packed in aluminum laminated foils under Inert atmosphere in corrugated cardboard cartons. The foil size Is ranging from 2,0 kg to 20,0 kg (4.4 lbs to 44 lbs) net pellets weight. Larger packing volumes, e.g., 140 kg (308 lbs) Zewatheners are available for use with automatic dosing units.

HEALTH AND SAFETY

Use protective mask where dust Is generated. See MSDS.

PRODUCTION PROCESS AND PROCESS SPECIFICATIONS

Pelletized hops are made by milling whole hops and compressing the hops into pellets. The production process of pellets Type 90 is described in the book: Hops - Their Cultivation, Composition and Usage; publisher Hans Carl, 09/2014, ISBN: 978-3-418-00823-3.

PRODUCT USE

Hops provide aroma and bitterness in beer. Traditionally hopping takes place in the wort kettle, but HVG PELLETS 90 are suitable for "dry-hopping" during (or after) fermentation and maturation as well. The time for the dosage in the brew-house varies from first-wort hopping, via additions directly before casting, up to direct aroma hopping in the whirlpool. Isomerisation rate of the alpha acids as early addition to the kettle up to the final product is in the range of 25 % to 45 %, typically 35 %.

Regarding HVG Pellets no special precautions are necessary. No hazardous reactivity known. Use protective mask where dust is generated. See MSDS.

STORAGE / STABILITY

Out of quality reasons HVG Pellets should be used as soon as possible after opening the packaging. Hop constituents oxidize in contact with air, which leads e.g., to a deterioration of bitter acids and essential oils. Recommended stockholding period to reduce the loss of bittering constituents:

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 5 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.

TRANSPORTATION

In order to guarantee the quality of the product until delivery at the brewery, preventive measures have to be implemented during transportation in order to avoid an exposure of HVG Pellets to temperatures exceeding 25 °C (77 °F) for more than 3 to 4 days. If this temperature requirement cannot be met, we strictly recommend to use a refrigerated container for overseas transportation with a temperature setting of about 4 °C (39 °F). High temperatures during a prolonged period of time may cause an inflation of the packaging due to a volume increase of the gases contained therein and may lead also to an inert degradation of the value-giving compounds of the hops. Under extreme exposure some foils may even break open exposing the hops to air leading to a total loss of value giving compounds.

ANALYTICAL METHODS

For HVG PELLETS the following analysis methods can be applied:

Method	Usage
EBC 7.5	Bitter Substances in Hops and Hop products by Lead Conductance Value
EBC 7.7	Alpha and beta acids in Hops and Hop Products by HPLC (ASBC Hops-14)
ASBC	Hops-6 Spectrophotometric method
EBC 7.10 & ASBC Hops-13	Hop oil concentration

OTHER INFORMATION

- HVG PELLETS 90 are a natural product and are not treated with any kind of food additives.
- 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.