BayWa

# Spezification Type 90 Hop Pellets

*Hop pellets type 90 have the same composition as raw hops. They are mainly used in wort boiling. In the brewing process, this hop product gives the beer a certain bitter character and a defined hop aroma.*
*Compared to raw hops, type 90 pellets are more homogeneous, more storage-stable and more compact.*
*This creates advantages in terms of transport, storage and dosing.*

## Visual appearance/sensory perception

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| **Description** | Cylindrical pellets derived from dried and ground raw hops.<br>Pellets diameter approx. 6 mm, length approx. 10-15 mm. |
| **Consistency** | Solid, compact form |
| **Colour** | Green to dark green |
| **Taste/aroma** | Type 90 pellets retain the original bitter characteristics from the raw hops. |

## Physical and chemical properties

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| **Alpha acids*** | 2% - 24% w/w |
| **Beta acids*** | 1% - 10% w/w |
| **Hop oils*** | 0.3 ml – 4 ml/100 g |
| **Water content*** | 7% - 12% |

*Depending on the variety and the year of harvest

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## Product use

**Yield**

The yield depends on the individual wort boiling conditions. With early hopping, a yield of up to 35% can be achieved, based on the alpha acids. Later hopping leads to lower isomerisation rates and consequently to lower bitter substance yields due to shorter exposure times, while the intensity of the hop aroma increases.

**Dosing**

Type 90 hop pellets can be used similarly as raw hops.
The pellet dosage is calculated on the basis of the alpha acids. To create a certain hop aroma, one ideally calculates the late hop dosage on the basis of aroma components (hop oil). In any case, brewing trials should be carried out. The resulting sensory outcome depends on the individual beer matrix.

## Packaging

**Material**

5 -layer aluminium composite foil
The foil material used complies with the specifications:

- EU Framework Regulation 1935/2004/EU
- Regulation (EU) 10/2011 incl. subsequent amendments and corrections
- Provisions of the German Food, Feed and Commodities Code (LFGB) §§30 and §§31
- International standards such as the FDA guidelines.

**Inert gas**

Packing takes place under inert gas ($N_2$/$CO_2$).

## Analysis

**Alpha and beta acids**

Analytica EBC 7.7
Spectrophotometric method: ASBC – Hops – 6A

**Alpha acids**

Analytica EBC 7.5, EBC 7.4 (conductometer value)

**Hop storage index**

ASBC Hop 12, Analytica EBC 7.13

**Total oil**

Analytica EBC 7.10

**Water content**

Analytica EBC 7.2

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## Quality assurance and food safety

| | |
|---|---|
| **Food safety** | Certification to ISO 22000:2018 Management system for Food safety according to internationally recognized guidelines. |
| **Production** | All BayWa products are produced in plants that comply with internationally recognised quality standards. |

## Storage and shelf life

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|---|---|
| **Storage** | Storage at < 5°C/<41°F<br>Opened foil containers should be used up within a few days because of the degradation reactions of the bitter acids and oil components that occur. |
| **Minimum shelf life** | 4 years from the date of production under the recommended storage conditions. |

## Safety and support

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|---|---|
| **Safety** | For more information, please refer to the BayWa Material Safety Data Sheet (MSDS). |
| **Support** | If you have any questions about our hop products or the use of the products in your brewing process, please do not hesitate to contact us. |

## Validity

This specification is valid for type 90 pellets from production date **12.02.2023**.

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