

Isomerised Hop Pellets

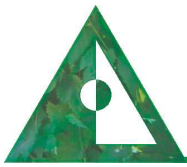
Isomerised Hop Pellets provide a more efficient provision of bitterness by replacement of hops, pellets or extract in the kettle. Isomerised Hop Pellets are produced by warming Stabilized Pellets at approximately 50 °C for one to two weeks. The α -acids are nearly completely isomerised under these conditions, with a subsequent large increase in utilization when added to the brewing kettle. Isomerised Hop Pellets can replace existing conventional, alpha hop products for bittering beer and provide opportunities for savings in hop cost through higher utilization.

Specifications:

Description:	Cylindrical pellets in which > 92% of the α -acids have been converted to iso- α -acids (by addition of food grade magnesium oxide and the action of heat)
Consistency:	A solid which normally breaks up into a powder
Colour:	Different shades of green (depending on variety)
Iso-α-acids:	Typically 4 - 16% (depending on the original alpha content of the variety and the crop year)
β-acids:	as in raw hops, depending on variety and crop year
Hop oils:	0.4 - 3.5 mL/100 g (depending on variety and crop year, composition of hop oils may vary due to the isomerisation process conditions)
Moisture:	7-12%

Quality:

All Aromatrix Flora products are produced in plants accredited to internationally accepted quality standards.



AROMATRIX FLORA PVT. LTD.

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Product Use:

Isomerised Hop Pellets can be used as a replacement of cone hops or Type 90 Pellets in the kettle. Expect an improvement of up to 50% in utilization over that of cone hops or pellets. Because the α -acids are mostly isomerised, high bitterness utilization will be achieved almost irrespective of the time of addition. Although a good utilization of bittering components can be achieved with Isomerised Pellets added late to the wort boil, this will also impact on the hop aroma imparted to the beer. We therefore recommend that Isomerised pellets are added early in the boil for bitterness, with conventional Type 90 or Type 45 pellets added late for hop aroma.

Packaging:

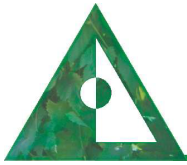
Isomerised Hop Pellets are packed in laminated foils with an aluminium layer as a barrier against diffusion of oxygen. They are sealed under inert gas and/or vacuum packed. The foil material used meets all food industry packaging regulations. The residual oxygen content in the foil packs is less than 2% by volume. Pack size is available in 10 kg.

Storage and Best-Before Recommendation:

Isomerised Hop Pellets should be stored cool at 0-5° C. Pellets should be used within 3 years after processing. If stored at -20° C Pellets should be used within 5 years. Foils once opened should be used within days to avoid deterioration of bitter acids and essential oils.

Safety:

If dust is generated, it is advisable to use a dust mask. Hop pellets are a combustible material. For further information please see the relevant Aromatrix Flora Material Safety Data Sheet (MSDS) from our web site.



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Analytical Methods:

The determination of Iso- α -acids, α -acids, β -acids and Hop oil in Isomerised Hop Pellets can be done by the following methods:

- ❖ Iso- α -acids, α -acids, β -acids can be measured by any of the following methods:
 - By HPLC, using the current ICE & ICS standards, according to the EBC 7.11 method, or the ASBC method Hops-14 (for α and β -acids) & Hops-15 (for Iso- α -acids)

- ❖ Hop oil concentration can be measured by steam distillation:
 - EBC 7.10
 - ASBC Hops-13

Technical Support:

We will be pleased to offer help and advice on the use of Hop Pellets in brewing.