

## Isomerised Kettle Extract (IKE)

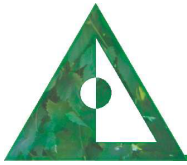
Isomerised Kettle Extract (IKE) is prepared from CO<sub>2</sub> extract and contains Iso- $\alpha$ -acids in their free form along with soft resins and hop oils. IKE can be used as a complete or partial replacement for normal kettle extract. The isomerisation rate is > 92% of the original  $\alpha$ -acids content.

### Characteristics:

IKE is an alternative to CO<sub>2</sub> extract resulting in higher bitterness efficiency by replacement of hops, pellets or extract in the kettle. Properties are generally similar to conventional CO<sub>2</sub> extract but the utilization of Iso- $\alpha$ -acids is significantly higher, however some change of aroma may be noticeable.

### Specifications:

<b>Description:</b>	A homogeneous, viscous or semi-liquid paste of the free acid form of isomerised $\alpha$ -acids, $\beta$ -acids and oils. The color can vary from yellow/golden to pale brown/green.
<b>Viscosity:</b>	approx. 1 – 3 Pas at 30 – 40 °C (86 – 104 °F), (depending on variety).
<b>Iso- <math>\alpha</math>-acids:</b>	Approx. 40 - 60% (depending on varieties)
<b><math>\alpha</math>-acids:</b>	< 2% absolute
<b><math>\beta</math>-acids:</b>	15 - 40% (depending on variety)
<b>Hop oils:</b>	3 – 12 % (depending on variety)
<b>Density:</b>	0.85 – 1.0 g/ml
<b>pH:</b>	2.5 ( $\pm$ 0.5)



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## Quality:

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

## Product Use:

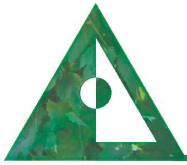
IKE can be used as a replacement of cone hops, pellets or extract in the kettle. Expect an improved utilization of approximately 60% and similar hop aroma. Very good bitterness utilization will be achieved irrespective of the time of addition. However when IKE is added late to the wort boil, this will also impact on the hop aroma imparted to the beer. We therefore recommend that IKE is added early in the boil for bitterness, with conventional Type 90 or Type 45 pellets added late for hop aroma. The quantity to be added is calculated using the Iso- $\alpha$ -acids content and the expected utilization. We recommend performing trials with IKE to determine its suitability, since the utilization may vary depending on plant and processing parameters. If added by means of an automatic dosing system the extract should be warmed to 40 °C and gently agitated to ensure effective dosing.

## Packaging:

Standardisation of the Iso-alpha acid content can be achieved by adjusting the weight of extract in each container. Container sizes range from 0.5 to 1 kg. Non-returnable bulk containers are available in size of 200 kg. Containers meet all food industry packaging regulations. When bulk containers are supplied for automatic dosing units, viscosity analysis maybe provided on request. All internal surfaces of containers are lined with a food grade coating.

## Storage and Best-Before Recommendation:

IKE stored in full, closed containers is best used within 12 months when stored at 15 to 25°C (59 - 77 °F) from the time of production, and within 24 months if stored cold at < 10 °C. Opened containers should be used within a few days.



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## Safety:

IKE is mildly corrosive due to its low pH. It should be handled in a similar way to normal kettle extract. Any material coming into contact with the skin should be washed off with soap and water. If IKE gets into the eyes, irrigate immediately with excess water until clear and seek medical attention. For further information please see the relevant Aromatrix Flora Material Safety Data Sheet (MSDS) from our web site.

## Analytical Methods:

The following methods of analysis are recommended for IKE:

- ❖ Iso-  $\alpha$ -acids,  $\alpha$ -acids and  $\beta$ -acids can be measured by any of the following methods:
  - By HPLC, using the current ICS & ICE standards, according to the EBC 7.8 method
  
- ❖ Hop oil concentration can be measured by:
  - EBC 7.10
  - ASBC Hops-13

## Technical Support:

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