

## Standardised CO<sub>2</sub> Hop Extract

Standardised CO<sub>2</sub> Hop Extracts have been prepared from hops or hop pellets using carbon dioxide and contain the  $\alpha$ -acids,  $\beta$ -acids and essential oils of hops. The extract is then standardized to certain  $\alpha$ -acid content (e. g. 20 or 30%) by the addition of food grade glucose syrup.

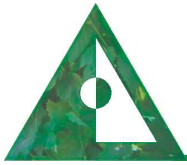
Standardised CO<sub>2</sub> Hop Extract offers the brewer a concentrated hop product that can provide added efficiency and flexibility in the brew house. In the United States hop extracts are generally recognised as safe (GRAS) in accordance with US FDA regulation 21 CFR 182.20.

### Characteristics:

Standardised CO<sub>2</sub> Hop Extract retains the aroma and the bittering potential of the hops from which it is made. Stability is excellent. Compared to raw hops or hop pellets the extracts represent a convenient and concentrated alternative. Since the brewing characteristics of the original hops are maintained, an early addition to the kettle imparts mainly bitterness while late addition will result in a carryover of the volatile oils in beer with aromatic "late hop" character.

### Specifications:

- Description:** Depending on the extraction conditions and the hop variety, the colour of the extract can vary from yellow to dark green. It is a semi-fluid paste at room temperature. The product becomes more fluid when warmed up. Some phase separation (hop extract – glucose) may form during normal storage which can be re-dissolved by heating and mixing.
- Viscosity:** approx. 1 – 3 Pas at 30 – 40 °C (86 – 104 °F), (depending on variety).
- $\alpha$ -acids:** Depending on desired concentration; typical range is between 10 and 40%



# AROMATRIX FLORA PVT. LTD.

**Factory:** Plot No. 242, HPSIDC Industrial Area, Baddi,  
District Solan, Himachal Pradesh -173205, INDIA  
Tel.: +91-1795-244901; Fax: +91-1795-247300  
E-mail: aromatrixflora@hotmail.com

<b><math>\beta</math>-acids:</b>	Typically 5 - 40% - not standardized and depending on variety and desired alpha acid standardization.
<b>Hop oils:</b>	1 – 12 ml/100 g - not standardized and depending on variety and desired alpha acid standardization.
<b>Density:</b>	0.85 – 1.1 g/mL

## Quality:

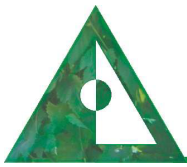
All Aromatrix Flora products are produced in plants accredited to internationally accepted quality standards.

## Product Use:

For efficient provision of bitterness, the extract should be added to the kettle at the beginning or up to 10 minutes after the beginning of the wort boil. Utilisation of  $\alpha$ -acids in beer is slightly better compared to non-isomerized pellets and within the range of 32% - 38%. Added late in the boil utilisation of  $\alpha$ -acids may be reduced considerably. The quantity to be added is calculated using the  $\alpha$ -acids content and the estimated utilisation. Actual utilisation may vary depending on plant and processing parameters. If added by means of an automatic dosing system, the extract should be warmed up to 40°C and gently agitated to ensure proper dosing.

## Packaging:

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.



# AROMATRIX FLORA PVT. LTD.

**Factory:** Plot No. 242, HPSIDC Industrial Area, Baddi,  
District Solan, Himachal Pradesh -173205, INDIA  
Tel.: +91-1795-244901; Fax: +91-1795-247300  
E-mail: aromatrixflora@hotmail.com

## Storage and Best-Before Recommendation:

Standardised CO<sub>2</sub> Hop Extract is exceptionally stable when properly stored. Hop oils are preserved in the condition as they were in hops. CO<sub>2</sub> Hop Extract should be cold stored at 0-5°C (32-41°F) and should be used within 8 years after processing. If stored at ambient conditions (below 25°C, 77°F) extracts should be used within 3 years. Containers once opened should be used within a few days.

## Safety:

Standardised CO<sub>2</sub> Hop Extract is a natural, non-toxic substance and may be safely handled using routine precautions to avoid contact with skin and, particularly, eyes. For further information please see the relevant Aromatrix Flora Material Safety Data Sheet (MSDS) from our web site.

## Analytical Methods:

The determination of  $\alpha$ -acids comprises three types of methods, the specific measurement of  $\alpha$ -acids by means of HPLC, spectrophotometric or conductometric methods:

- ❖  $\alpha$ -acids can be measured by any of the following methods:
  - EBC method 7.6 or ASBC Hops-8 ( $\alpha$ -acids as lead conductometric value (LCV))
  - ASBC Spectrophotometric method - Hops-8 ( $\alpha$  and  $\beta$ -acids)
  - By HPLC, using the current ICE standard, according to the EBC 7.7 method, or the ASBC method - Hops-14 ( $\alpha$  and  $\beta$ -acids)
  
- ❖ 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 CO<sub>2</sub> Hop Extract in brewing.