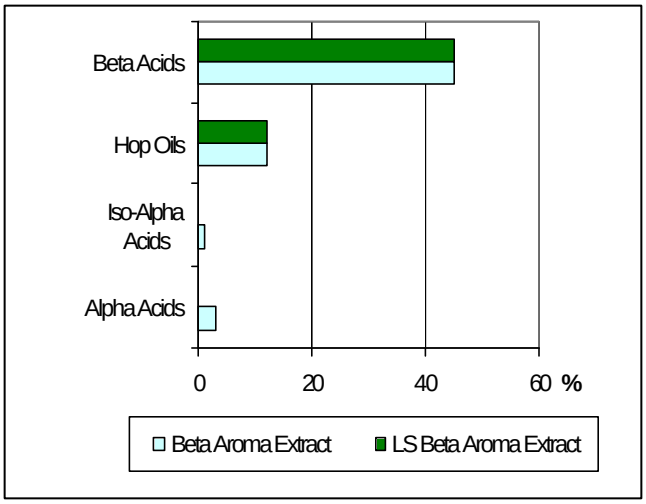
Light Stable Beta Aroma Extract

❖ Overview

- **Light Stable Beta Aroma Extract** is produced from CO_2 extract and contains predominantly hop ß-acids and essential oils
- Where the hop bittering material is added post fermentation, **Light Stable Beta Aroma Extract** can be added to the kettle, helping to prevent over-boiling and also suppressing the growth of gram positive bacteria during fermentation
- **Light Stable Beta Aroma Extract** contains no a- or iso-a- acids. It can therefore be used in conjunction with reduced iso-a products to produce light stable beer for packaging into clear or green bottles

Comparison of the Major Components of Beta Aroma Extract & Light Stable Beta Aroma Extract



❖ Specification

- **Description:** A yellowish-brown, waxy solid containing ß-acids, oils, fats and waxes (composition will vary according to variety).
- **Beta-acids:** Typically 40 – 50%
- **Iso-alpha-acids:** <0.1%
- **Alpha-acids:** <0.3%
- **Hop Oil:** Dependent on hop variety but typically 8 – 15%
- **Density:** Typically 1.0 g/ml

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❖ Properties

❑ Appearance:

A yellow-brown, semi-solid or moderately viscous paste at room temperature; becomes mobile when heated.

❑ Flavor:

Light Stable Beta Aroma Extract provides hop flavor when added to the kettle. Late addition will help to enhance the hop character of the finished beer. The absence of any unreduced a- or iso-a acids will help prevent the formation of light-struck or 'skunky' flavors.

❑ Stability:

When kept in unopened containers **Light Stable Beta Aroma Extract** is very stable. Use any opened containers as soon as possible.

❑ Quality:

All Hopsteiner® products are produced in plants accredited to internationally accepted quality standards.

❖ Packaging

Light Stable Beta Aroma Extract can be packaged into a range of cans (up to 4 kilos), 20 kilo pails or 200 kilo drums.

❖ Product Use

Light Stable Beta Aroma Extract serves four main functions:

- ❑ Suppression of **OVER-BOILING**
- ❑ Enhancement of **HOP AROMA**
- ❑ **BACTERIOSTATIC** activity
- ❑ **LIGHT STABILITY** in final beer

Light Stable Beta Aroma Extract is typically added during wort boiling. Early addition can help prevent over-boiling of the wort. Good recovery of aroma substances can be achieved when added late in the boil.
To achieve light stability, **Light Stable Beta Aroma Extract** must be used in conjunction with reduced iso-compounds. Contamination by non-reduced a- or iso-a acids from yeast or brewing plant must be avoided.

❑ Dosage:

Actual dosage will depend on the extract analysis, time of addition and degree of hop character required.

Example (for an oil content of 14 %):
Dosage into the wort towards the end of boiling: 14 g/hl. This corresponds to a hop oil dosage of 2 g/hl. However, the actual dosage of **Beta Aroma Extract** should be investigated in preliminary tests, as achievement of the desired aroma enhancement will depend on the individual boiling system and time of addition.

❑ Addition:

If handled in bulk, **Light Stable Beta Aroma Extract** must be warmed to c. 50°C (122°F) prior to use; otherwise use as normal kettle extract.

❑ Storage:

In order to preserve the essential oils, **Light Stable Beta Aroma Extract** should be stored at <10ºC (50ºF) in unopened containers.

❑ Safety:

The extract is non-toxic and should be handled like normal CO_2 extract. Any material coming into contact with skin should be washed off immediately.

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If **Light Stable Beta Extract** gets into the eyes, irrigate with excess water until clear and seek immediate medical attention.

For full safety information please see the relevant Steiner material safety data sheet.

❖ Analytical Methods

The following analytical methods are used:

- ß-acids and residual a-acids - by HPLC using the current ICE standard according to the EBC 7.8 method.
- Residual Iso-a-acids - by HPLC using the current ICS standard according to the modified EBC 7.8 method.
- Hop oils by the following methods - IOB 6.3 or ASBC hops-13.

❖ Technical Support

We will be pleased to offer help and advice on the full range of Hopsteiner® products:

- Copies of all relevant analytical procedures
- Material Safety Data Sheets (MSDS)
- Assistance with pilot or full brewery trials
- Specialist analytical services.

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