

ISOMERISED HOP EXTRACT 30%



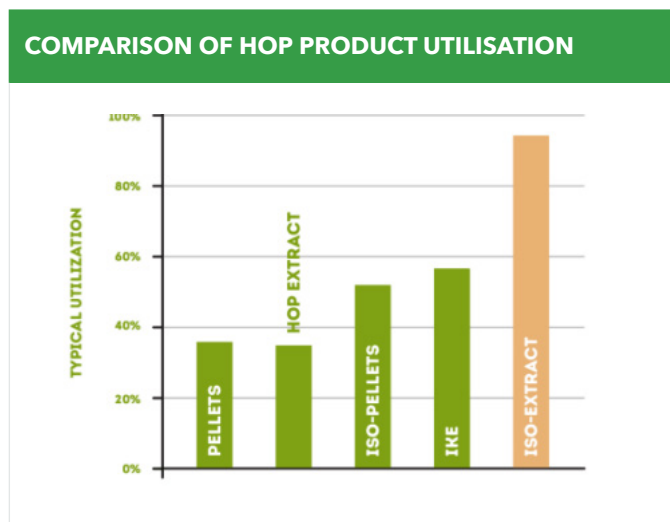
OVERVIEW

- **Isomerized Hop Extract 30 % (Iso- Extract)** is an aqueous solution of the potassium salts of iso-alpha acids produced exclusively from CO2 hop extract.
- **Iso-Extract** can be used post- fermentation to adjust bitterness or to partially replace conventional hop products used to impart bitterness.
- **Iso-Extract** is typically added prior to filtration and has the highest yield of all hop products.



PROPERTIES	
APPEARANCE	Pale amber to yellow in color, Iso-Extract is a clear, homogeneous, aqueous solution. Free flowing at the recommended storage and application temperatures, Iso-Extract is miscible in demineralised water, alcohol and propylene glycol.
UTILISATION	Based on HPLC analysis of the finished beer, utilisation of iso-alpha acids can be as high as 85 - 90% if the extract is added prior to the final step in filtration. Actual utilisation will vary from brewery to brewery due to differences in equipment and process conditions.
FLAVOUR	Iso-Extract produces a clean bitter flavor. It can be used as a partial replacement for kettle hopping. Iso-Extract is primarily used to adjust the final bitterness of beer. Noticeable changes in the bitter flavor of beer may be observed if more than 30 - 40 % of the total bitterness is contributed by Iso-Extract.
QUALITY	All Ellerslie Australia products are processed in facilities which fulfill internationally recognised quality standards.
PACKAGING	Iso-Extract is normally packaged in 20 kg pails. Other sizes are available on request, e.g. 5-Gal. Jericans or IBC of 640 - 1000 kg.

QUICK SPECS	
DESCRIPTION	Clear, pale amber to yellow aqueous solution of the potassium salts of iso-alpha acids
ISO-ALPHA ACIDS	typically 30.0 ±2.0% (w/w)
ALPHA ACIDS	< 0.6%
BETA ACIDS	< 0.2%
HOP OIL	< 0.1%
PH	9.0 (±1.0)
VISCOSITY	15 - 20 mPas at 20°C (68°F)
DENSITY	1.065 (±0.005)g/ml at 20°C (68°F)



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PRODUCT USE

Iso-Extract is typically used for the post fermentation adjustment of beer bitterness.

DOSAGE

Dosage of Iso-Extract (typically 30%) is based on the concentration of the Iso-Extract, the expected utilisation and the desired intensity of bitterness in the beer.

ADDITION

Iso-Extract is added at full strength (undiluted) prior to filtration.

If dilution is necessary, always add **Iso-Extract** to demineralised water first and adjust the pH to 8.5 - 9.5 using either potassium hydroxide (KOH) or potassium carbonate (K_2CO_3). Laboratory scale testing is recommended prior to commercial use.

Never dilute full-strength **Iso-Extract** with beer, as the lower pH will cause precipitation.

Suitable dosing equipment should be used to add **Iso-Extract** into the beer stream at a point where vigorous mixing is assured during beer transfer.

If containers are used over several days, it is recommended that the headspace be flushed with nitrogen (CO_2 is not suitable).

CLEANING RECOMMENDATION

Iso-Extract should not be left in dosing lines at low temperatures. Lines and dosing pumps should be flushed with warm, slightly alkaline, demineralised water or ethanol for purposes of cleaning.

STORAGE

Iso-Extract should be stored in sealed containers at 5 - 15°C (41 - 59 °F). Avoid exposure to sunlight and use opened containers as soon as possible.

BEST BEFORE DATE

Iso-Extract is stable for three years from the date it was produced / packaged if stored under the recommended conditions.

SAFETY

Iso-Extract is an intensely bitter product. Solutions of Iso-Extract are mildly alkaline and therefore contact with sensitive skin should be avoided. If **Iso-Extract** gets into the eyes, flush with copious amounts of water until clear and seek medical attention.

ANALYTICAL METHODS

CONCENTRATIONS OF BITTER SUBSTANCES

Iso-alpha acids can be measured using the following methods:

- HPLC according to Analytica-EBC 7.9 or ASBC Hops-9C, Hops -9D with the current ICS standard.

BITTERNESS IN THE FINISHED BEER

When determining the bittering units of the finished beer, take into account that **Iso-Extract** contains only iso-alpha acids and unlike more traditional hop products, there is no contribution of other bittering substances to the analysis results. Hence, the bittering units will be lower compared to the concentration of iso-alpha acids measured by HPLC (Analytica-EBC 9.47), given that **Iso-Extract** was used exclusively or in higher quantities.

The factor 50, used for the calculation of bittering units, can be adjusted to a higher value to match the final sensory bitterness.

TECH SUPPORT

We are pleased to offer assistance and advice on the full range of Ellerslie Australia products:

- Copies of all procedures relevant analytical procedures
- Safety Data Sheets (SDS)
- Assistance with pilot or full-scale brewing trials
- Special analytical services

Disclaimer: The information provided in this document is believed to be correct and valid. However, Ellerslie Australia does not guarantee that the information provided here is complete or accurate and thus assumes no liability for any consequences resulting from its application.

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