

RHO ISO-EXTRACT 30%



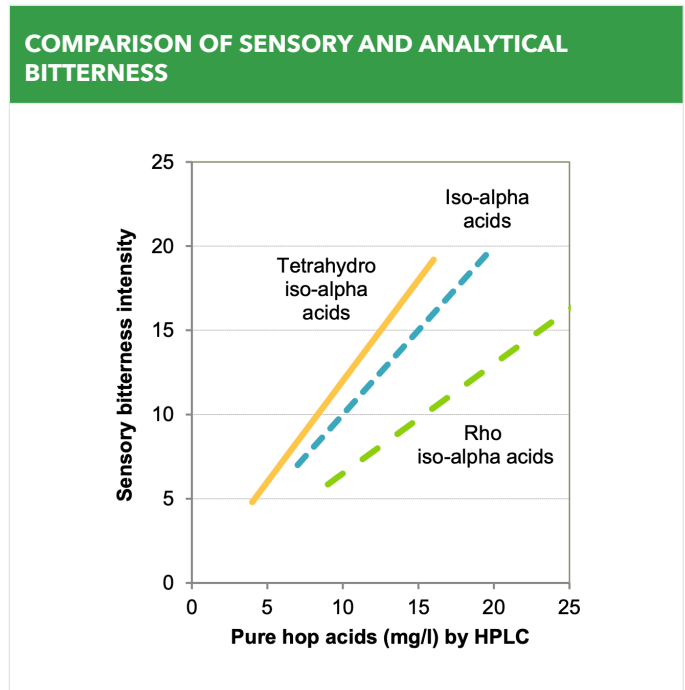
OVERVIEW

- **Rho Iso-Extract 30% (Rho 30%)** is a pure, aqueous solution of the potassium salts of rho iso-alpha acids derived exclusively from CO₂ hop extract.
- **Rho 30%** provides protection against lightstruck flavour when used as the sole source for bitterness or in combination with other light stable hop products.
- Compared to regular iso-alpha acids, **Rho 30%** imparts a smoother, non-lingering bitterness.



PROPERTIES	
APPEARANCE	At room temperature, Rho 30% is a liquid that is reddish-brown to amber in colour. Precipitation (reversible) may occur under normal storage conditions. Rho 30% is miscible in demineralised water and alcohol.
UTILISATION	When added to conditioned beer prior to the final step in filtration, utilisation of rho iso-alpha acids is typically 70 - 85%. If added to the wort kettle, utilisation is likely to be around 45 - 55%. Actual utilisation will vary from brewery to brewery due to differences in equipment and process conditions.
FLAVOUR	Rho 30% only imparts bitterness. Compared to regular iso-alpha acid products, Rho 30% lends a smoother, non-lingering bitterness to beer. Depending on the total bitterness and type of beer, the intensity of the bitterness of rho iso-alpha acids is 60 - 70% of that achieved with iso-alpha acids. Thus, the sensory factor of rho iso-alpha acids is 0.6 - 0.7 times the bitterness of iso-alpha acids at a value of 1.0.
LIGHT STABILITY	Rho 30% only provides protection against lightstruck flavour in the complete absence of alpha acids and iso-alpha acids. Rho 30% can be used in conjunction with any Ellerslie Australia light stable product to achieve light-stability.
QUALITY	All Ellerslie Australia products are processed in facilities which fulfill internationally recognised quality standards.
PACKAGING	Rho 30% is normally packaged in 20kg (45lb) pails.

QUICK SPECS	
DESCRIPTION:	Reddish-brown, aqueous solution of the potassium salts of rho iso-alpha acids
CONCENTRATION:	30.0 ± 2.0% (w/w) of rho iso-alpha acids by HPLC or corresponding UV spectrophotometric analysis value
ISO-ALPHA ACIDS:	Below detection limit
ALPHA ACIDS:	Below detection limit
PH:	8.45 (±0.5)
VISCOSITY	20 - 25 mPas at 20°C (68°F)
DENSITY:	1.075 (±0.005) g/ml at 20°C (68°F)



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PRODUCT USE	
<p>Rho 30% is typically used as a post-fermentation addition. However, it may be applied as a partial or even complete addition to the wort in order to reduce the risk of bacterial infection.</p>	
DOSAGE	<p>Rho 30% is based on an estimated or known utilisation and the desired intensity of bitterness in the beer. The fact that the bitterness of rho iso-alpha acids is about 30% less than that of iso-alpha acids derived from conventional hop products must be taken into consideration (see Flavour section).</p>
ADDITION	<p>Dosage during wort boiling can be done without any pre-treatment of the product. For a post-fermentation addition, Rho 30% should first be heated to 60°C (120°F) and agitated to ensure dissolution of any precipitated material before use.</p> <p>We recommend in-line additions directly into the beer stream, preferably at a point where vigorous mixing is assured, after primary filtration and gravity adjustment. The addition must be completed prior to final clarification and should take place over at least 70% of the total volume being transferred.</p> <p>If dilution is necessary, always add Rho 30% to demineralised water first and adjust the pH to 8.5 - 9.5 using either potassium hydroxide (KOH) or potassium carbonate (K₂CO₃). Laboratory scale testing is recommended prior to commercial use.</p> <p>If containers are used over several days, it is recommended that the headspace be flushed with nitrogen (CO₂ is not suitable).</p>
CLEANING RECOMMENDATION	<p>Rho 30% 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.</p>
STORAGE	<p>Rho 30% should be stored in sealed containers at 5 - 25°C (41 - 77°F). Opened containers should be used within a few days. For long-term storage, the ideal temperature is between 10 - 20°C (50 - 68°F).</p>

PRODUCT USE	
FOR LIGHT STABLE BEER	<p>For maximum protection against lightstruck flavour, it is essential that no other sources of non-reduced iso-alpha acids are inadvertently introduced into the wort or beer. Therefore, the following must be carefully implemented:</p> <p>Exclusive use of light stable hop products throughout the entire process</p> <p>Avoid contamination through equipment surfaces previously in contact with regular iso-alpha acids</p> <p>Never pitch wort with years that has been in contact with regular alpha and iso-alpha acids.</p>
BEST BEFORE DATE	<p>Rho 30% is stable for three years from the date it was produced / packaged if stored under the recommended conditions.</p>
SAFETY	<p>Rho 30% is a slightly alkaline, intensely bitter product and may be safely handled using routine precautions to avoid contact with skin and, in particular, the eyes. Any product coming into contact with the skin should be immediately washed off with soap and water or an appropriate hand cleanser.</p> <p>If Rho 30% gets into the eyes, flush with copious amounts of water until clear and seek medical attention.</p> <p>For full safety information, please refer to the relevant Ellerslie Australia safety data sheet.</p>

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ANALYTICAL METHODS

CONCENTRATION OF BITTER SUBSTANCES

The concentration of rho iso-alpha acids can be measured using the following methods:

- HPLC according to Analytica-EBC 7.9
- UV spectrophotometric analysis

CONCENTRATION OF REDUCED ISO-ALPHA ACIDS IN BEER

The concentration of reduced iso-alpha acids in beer can be measured by HPLC according to Analytica-EBC 9.47.

Note: It is possible that analysis results for the corresponding value for bitterness must be adjusted. The factor used in this analysis will result in lower values if reduced hop products were used as the exclusive source for bitterness or in higher amounts.

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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