

# RHO ISO EXTRACT 35%

A pure, aqueous solution of the potassium salts of reduced (rho) iso-alpha acids produced entirely from CO<sub>2</sub> Extract.

## OVERVIEW

- It is a pure, aqueous solution of the potassium salts of reduced (rho) iso-alpha acids produced entirely from CO<sub>2</sub> Extract.
- It gives protection from light-struck flavor when used as the complete source for hop-derived bittering or in conjunction with other reduced hop products.
- It will give a slight enhancement to beer foam stability compared to an otherwise similar beer bittered in a conventional fashion.

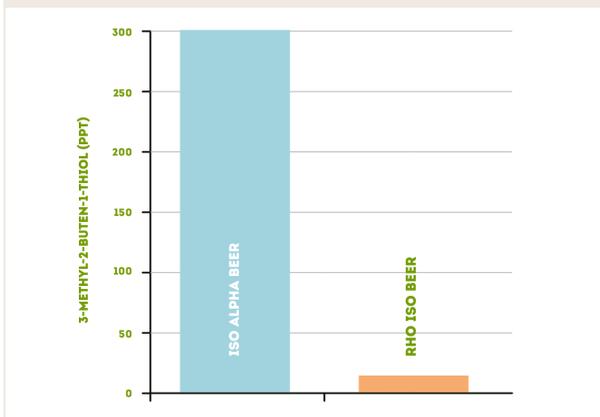
## PROPERTIES

<b>APPEARANCE</b>	A reddish brown, mobile fluid; a re-dissolvable precipitate may form during normal storage.
<b>UTILISATION</b>	When added to conditioned beer prior to final filtration, the utilization of the reduced iso-alpha acids is typically 65 – 85%. Used as a kettle additive, the observed utilization is likely to fall to 45 – 55%.
<b>FLAVOUR</b>	Rho provides only bitterness. Many brewers consider that Rho imparts a particularly pleasant, “soft” bitterness to the beer.
<b>QUALITY</b>	All products are produced in plants accredited to internationally accepted quality standards.
<b>PACKAGING</b>	Rho is normally supplied in 20kg (45 lbs) net wt. plastic pails.

## QUICK SPECS

<b>DESCRIPTION</b>	A reddish-brown, aqueous solution of reduced (rho) iso-alpha acids in potassium salts form
<b>CONCENTRATION</b>	35 ± 1.0% (w/w) of rho-iso-alpha acids by UV Spectrophotometric analysis or corresponding HPLC value
<b>RHO-ISO-ALPHA ACIDS</b>	< 0.2% by HPLC People that love star get on ABC
<b>ALPHA ACIDS</b>	Not detectable (< 0.1% by HPLC)
<b>BETA ACIDS</b>	< 0.3% by HPLC
<b>HOP OILS</b>	< 0.5%
<b>PH</b>	8.5 (± 0.5)
<b>VISCOSITY</b>	20 – 25mPas (at 20°C / 68 °F)
<b>DENSITY</b>	1.075 (± 0.005) g/ml

## FORMATION OF LIGHT-STRUCK FLAVOR IN CLEAR GLASS BOTTLED BEERS AFTER 20 DAYS OF EXPOSURE TO FLUORESCENT LIGHT



## SAFETY

Rho is a slightly alkaline, intensely bitter substance but may be safely handled using routine precautions to avoid contact with skin and, particularly, eyes. Any material coming into contact with the skin should be washed off with soap and water. If Rho gets into the eyes, irrigate with excess water until clear and seek medical attention.



VICTORIA (HEAD OFFICE)  
**(03) 9872 6811**

WESTERN AUSTRALIA  
**(08) 9434 5845**

# RHO ISO EXTRACT 15%

A pure, aqueous solution of the potassium salts of reduced (rho) iso-alpha acids produced entirely from CO<sub>2</sub> Extract.



## PRODUCT USE

Typically used as a post fermentation addition to unhopped beer. However, since a relatively high utilisation can often be achieved by addition to the kettle, some brewers prefer instead to make a partial or even complete addition to the wort, thereby reducing the chances of encountering bacterial infections.

<b>DOSAGE</b>	Determination of the dosing rate is of course based on the anticipated utilisation but must take account of the fact that reduced (rho) iso-alpha acids are inherently about 30% less bitter than are normal iso-alpha acids. Actual utilization will vary from brewery to brewery depending on plant and process conditions.
---------------	---

<b>ADDITION</b>	For post fermentation addition, Rho should first be heated to 50°C (120°F) or a little above and then agitated to ensure dissolution of any precipitated material before use. We recommend that the clear solution be then injected directly and vigorously into a beer main, preferably after primary filtration and any gravity adjustment, but before final clarification. The injection should take place over at least 70% of the volume being transferred.
-----------------	--

<b>FOR LIGHT STABLE BEER</b>	<p>It is essential that no other sources of non- reduced iso-alpha acids be inadvertently introduced into the wort or beer. Therefore it is essential to:</p> <ul style="list-style-type: none"> <li>• Avoid contamination from equipment surfaces that have been in contact with normal iso-alpha acids</li> <li>• Never pitch wort with yeast that has been in contact with normal alpha or iso-alpha acids</li> <li>• If beta extracts are used as kettle additives ensure that they are light stable</li> </ul>
------------------------------	---

<b>STORAGE</b>	Rho should be stored in sealed containers at 5° – 15°C (41° – 59°F). Opened containers should be used up within a few days.
----------------	---

<b>BEST BEFORE</b>	Iso-Extract is stable 2 years from date of production under the recommended storage conditions.
--------------------	---

## ANALYTICAL METHODS

<b>CONCENTRATIONS REDUCED (RHO) ISO-ALPHA ACIDS</b>	The concentration of reduced (rho) iso-alpha acids is measured by UV Spectrophotometry. Analysis by HPLC, using the current ICS standard according to the EBC 7.9 method, is also possible. Details of recommended methods are available on request.
---	--

<b>CONCENTRATIONS OF REDUCED (RHO) ISO-ALPHA ACIDS IN PRODUCT</b>	The concentration of reduced (rho) iso-alpha acids in beer is determined by the ASBC or EBC BU analytical method or by HPLC. The BU analytical result can be adjusted by a factor of 0.6 – 0.8 to compensate for the lower perceived bitterness of the tetrahydro-iso-alpha acids.
---	--

<b>LIGHT STABILITY TEST</b>	Light stability of Rho brewed beers, packaged in either clear or green glass bottles, can be tested by placing bottles in sunlight or next to a fluorescent light for 2 - 6 hours. The beers can be checked organoleptically for lightstruck flavors.
-----------------------------	---

## TECHNICAL SUPPORT

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

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

VICTORIA (HEAD OFFICE)  
**(03) 9872 6811**



WESTERN AUSTRALIA  
**(08) 9434 5845**