

# 还原异构酒花浸膏 30%

## Rho Iso-Extract 30%

### 概述 OVERVIEW

还原异构酒花浸膏30%是一种纯净的水溶液，主要成分是从二氧化碳酒花浸膏中萃取的钾盐还原异 $\alpha$ -酸。Rho Iso-Extract 30 % (Rho 30%) is a pure, aqueous solution of the potassium salts of rho iso-alpha acids derived from CO<sub>2</sub> hop extract.

当作为唯一苦味来源、或与其他光稳定酒花产品配合使用时，还原异构酒花浸膏30%能有效预防啤酒产生日光臭。Rho 30% provides protection against lightstruck flavor when used as the sole source for bitterness or in combination with other light stable hop products.

与普通异 $\alpha$ 酸相比，还原异构酒花浸膏30%能赋予啤酒更柔和干净的苦味特征。Compared to regular iso-alpha acids, Rho 30% imparts a smoother, non-lingering bitterness.

### 规格 SPECIFICATIONS

简述 Short description:	光稳定型水溶性酒花浸膏，具有柔和苦味特征 light-stable, aqueous hop extract with mild bitterness
$\alpha$ -酸 Alpha acids:	未检出 below detection limit
异 $\alpha$ -酸 Iso-alpha acids:	未检出 below detection limit
还原异 $\alpha$ -酸 Rho iso-alpha acids:	30.0 $\pm$ 0.2 % (重量比，HPLC法测定) 或相应紫外分光光度测定值 (w/w) HPLC or corresponding UV spectro-photometric value
酸碱度 pH:	8.5 $\pm$ 0.5
密度 Density:	ca. 1.08g/ml (20°C)
黏性 Viscosity:	20-25 mPas (20°C/68°F)

### 性能 PACKAGING

#### 外观 Appearance

还原异构酒花浸膏30%为红棕色至琥珀色液体。在常规储存条件下，可能出现可逆性沉淀。Rho 30 % is a liquid that is reddish-brown to amber in color. A reversible precipitation may occur under normal storage conditions.

#### 风味 Flavor

还原异构酒花浸膏30%仅提供苦味特征。与传统异 $\alpha$ -酸产品相比，本产品能为啤酒带来更柔和且不持久的苦感。根据啤酒总苦度及类型的不同，还原异 $\alpha$ -酸的苦味强度相当于常规异 $\alpha$ -酸的60%至70%。因此，如果以异 $\alpha$ -酸苦度值按1.0为基准，还原异 $\alpha$ -酸的感官因子系数则为0.6-0.7。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 to 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.

#### 利用率 Utilization

若在过滤最终步骤前添加至熟化啤酒中，还原异 $\alpha$ 酸的利用率通常为70%至85%；若在麦汁煮沸阶段添加，利用率约为45%至55%。实际利用率会因各啤酒厂的设备及工艺条件差异而有所不同。When added to conditioned beer prior to the final step in filtration, utilization of rho iso-alpha acids is typically 70 - 85 %. If added to the wort kettle, utilization is around 45 - 55%. Actual utilization will vary from brewery to brewery due to differences in equipment and process conditions.

## 光稳定性 Light Stability

还原异构酒花浸膏30%仅在完全不含 $\alpha$ -酸和异 $\alpha$ -酸的情况下，才能有效防止日光臭的产生。本产品可与任何斯丹纳光稳定产品配合使用，以实现光稳定性。

Rho 30 % only provides protection against lightstruck flavor in the complete absence of alpha acids and iso-alpha acids. Rho 30 % can be used in conjunction with any Hopsteiner light stable product to achieve light stability.

## 质量 Quality

所有斯丹纳产品均在符合国际认证质量标准的生产设施中加工制造，并配备完善的残留物监控体系。

All Hopsteiner products are processed in facilities which fulfill internationally recognized quality standards. A monitoring system for residues is in place.

## 包装规格 PACKAGING

本产品采用标准包装规格，也可以根据客户要求提供其它规格。

Our products are delivered in their respective recommended standard packaging. Alternatives may be possible upon customer request.

美国(US)与德国(DE)加工厂的包装规格如下：

Standard packages of our processing plants in the USA (US) and Germany (DE) are:

- 罐装 Canister : 20 kg (US / DE)
- 壶装 Jug : 10 kg (US)
- 桶装 Pail : 20 kg (US)

## 产品使用 USAGE

还原异构酒花浸膏30%通常作为发酵后添加剂使用，也可部分或完全添加到麦汁中，以降低细菌污染风险。

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.

## 光稳定啤酒制备要点 For Light Stable Beer

为确保防日光臭效果最佳，须避免在麦汁或啤酒中混入任何来源的非还原异 $\alpha$ -酸，需特别注意：

For maximum protection against lightstruck flavor, 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:

- 全程仅使用光稳定酒花产品  
exclusive use of light stable hop products throughout the entire process.
- 避免接触曾与常规异 $\alpha$ -酸接触过的设备表面  
avoid contamination through equipment surfaces previously in contact with regular iso-alpha acids.
- 禁止使用接触过常规 $\alpha$ -酸/异 $\alpha$ -酸的酵母菌种  
never pitch wort with yeast that has been in contact with regular alpha and iso-alpha acids.

## 添加量 Dosage

需根据预估/已知利用率、和目标啤酒苦度来确定添加量。需注意：还原异 $\alpha$ 酸的苦度较传统酒花产品，衍生的异 $\alpha$ -酸低约30%（参见"风味"章节）。

Dosage of Rho 30% is based on an estimated or known utilization 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 Flavor section).

## 添加方法 Application

还原异构酒花浸膏30%可直接添加，无需预处理。作为发酵后添加剂使用时，应首先加热至60°C(120°F)，并搅拌以确保溶解沉淀物后再使用。建议在主过滤和比重调整后，通过在线添加系统，直接注入啤酒流中，应优先选择能够确保充分混合的添加点。添加操作必须在最终澄清前完成，且添加过程应覆盖至少70%的输送总量。如需稀释，请先将还原异构酒花浸膏30%加入去离子水中，然后使用氢氧化钾(KOH)或碳酸钾(K<sub>2</sub>CO<sub>3</sub>)将pH调节至8.5-9.5。建议在商业化应用前进行实验室规模测试。如果产品要在几天内分次使用，建议在包装容器顶部空间填充氮气（不可使用二氧化碳）。

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. 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. If dilution is necessary, always add Rho 30 % to demineralized water first and adjust the pH to 8.5 - 9.5 using either potassium hydroxide (KOH) or potassium carbonate (K<sub>2</sub>CO<sub>3</sub>). Laboratory scale testing is recommended prior to commercial use. If containers are used over several days, it is recommended that the headspace be flushed with nitrogen (CO<sub>2</sub> is not suitable).

## 清洁建议 Cleaning Recommendation

请勿让还原异构酒花浸膏30%在低温条件下滞留于加料管路中。应使用温热的弱碱性去离子水、或乙醇冲洗管路和计量泵进行清洁。

Rho 30% should not be left in dosing lines at low temperatures. Lines and dosing pumps should be flushed with warm, slightly alkaline, demineralized water or ethanol for purposes of cleaning.

## 存储 Storage

建议在5-25°C（41-77°F）存储（未启封）。

The recommended storage temperature in the original unopened packaging is 5-25°C（41-77°F）. 如需长期储存，10-20°C（50-68°F）为理想温度范围。

For prolonged storage, a temperature of 10-20°C（50-68°F）is ideal.

## 最佳使用时间 Best Before Date

在建议的储藏条件下，最佳使用时间为生产/包装日期后至少三年。

Under the recommended storage conditions, the shelf life from the date of production/ packaging is at least 3 year.

## 安全性 Safety

确保工作场所通风良好，并佩戴个人防护装备。避免接触眼睛和皮肤，请勿吸入蒸汽或粉尘。更详尽的安全资料请参考斯丹纳产品安全数据表。

Ensure good ventilation of the workplace and wear personal protective equipment. Avoid contact with eyes and skin. Do not inhale vapors or dusts. For full safety information, please refer to the relevant Hopsteiner safety data sheet.

## 分析方法 ANALYTICAL METHODS

使用ASBC（美国酿造协会）和Analytica-EBC（欧洲酿造协会）等国际权威机构颁布的最新标准方法进行检测。

International approved methods listed in committees such as ASBC or Analytica-EBC using current standards are applied.

## 产品分析 Product analytics

苦味物质含量 Concentration of bitter substances

- Analytica-EBC 7.9 (HPLC)

## 啤酒分析 Beer analytics

### 啤酒中还原异 $\alpha$ -酸含量 Concentration of reduced iso-alpha acids in beer

#### • Analytica-EBC 9.47 (HPLC)

注意事项：当使用较高剂量的还原异构酒花浸膏30%时，可能需要调整啤酒苦味值的标准计算公式（Analytica-EBC 9.8或ASBC Beer-23A），因为这些公式会导致计算结果偏低。

The standard formula for calculating bitter units in beer (Analytica-EBC 9.8 or ASBC Beer-23A) may need to be adjusted as it results in too low values when using higher amounts of Rho 30%.

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