



# CraftZYM® ruby

Fungal pentosanase and  $\beta$ -glucanase for the degradation of filtration inhibiting colloids in the production of top-fermented or bottom fermented beers

## Product description

CraftZYM® ruby is a highly concentrated and extremely heat-stable (up to 95 °C)  $\beta$ -glucanase with strong xylanase and cellulase concomitant activity. For efficient glucan and pentosan degradation in brewing mashes and to improve filtration performance in breweries, both in lauter tuns and mash filters and in final beer filtration.

Advantages	<ul style="list-style-type: none"> <li>• Significant reduction of <math>\beta</math>-glucan concentration (<math>\beta</math>-1,3 and <math>\beta</math>-1,4-glucans or barley glucans)</li> <li>• This improves filtration in the brewhouse during refining and final beverage filtration</li> <li>• Especially for the use of unmalted cereals (barley, wheat, rye, oats, sorghum, emmer, buckwheat, Urkorn) or to compensate for quality fluctuations in barley malt.</li> <li>• Ideal for high-short mashing processes, as the degradation of <math>\beta</math>-glucans up to a temperature of 95 °C is guaranteed</li> </ul>
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The use of CraftZYM® ruby is not permitted in accordance with § 9 Para. 6 of the Provisional Beer Act (BierG) and thus within the framework of the German Purity Law. Further applicable national or international regulations must be checked by the user.

## Dosage

CraftZYM® ruby is needed in the brewing process when, due to the utilization of f.ex. wheat, oat, barley (unmalted), emmer, spelt, rice, maize and rye malt and other cereals, unsatisfactory results in the course of lautering and filtration of the beer are obtained or are to be expected. The dosage of the enzyme depends on the quality of the raw material, the temperature and the reaction time.

Guide value: 100 - 200 mL/t of grist  
 2 - 5 mL/100 L original wort  
 3 - 10 mL/100 L green beer  
 8 - 20 mL/100 L finished beer

### Very important:

The dosing point of the enzyme in Brewhouse, will be in the "mash-in-water" before the grist will be mashed in and as a 2<sup>nd</sup> parameter; the Calcium content in the brewwater must be higher than 35 mg/L to ensure a 100 % activity of the enzyme.

Dilute CraftZYM® ruby with cold water. Dosage of the enzyme dilution to the wort before fermentation, to the green beer during tunnage or to the finished beer in the tank. At standard temperatures, CraftZYM® ruby activity is slowed down in the wort, green and finished beer. The lowered activity due to temperature is however taken into consideration by including the contact time into the calculation of the dosage.

**pH dependence of barley glucanase activity (60 °C)**

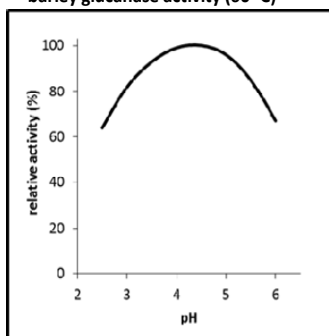


Fig. 3: Influence of pH-value on  $\beta$ -glucanase activity (barley- $\beta$ -glucan, 60 °C/122 °F).

**Temperature dependence of barley glucanase activity (pH4.0)**

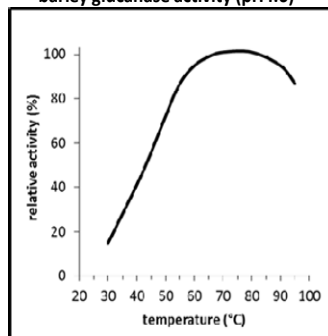


Fig. 4: Influence of temperature on  $\beta$ -glucanase activity (barley- $\beta$ -glucan, pH 4.0)

## Storage

Optimal storage is at 0 - 10 °C / 32 - 50 °F. Higher storage temperatures lead to reduced shelf life. Avoid temperatures above 25 °C (77 °F). Reseal opened packagings tightly and use up soon.

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The application recommendations given herein describe the intended use of the product as a processing aid or additive as part of a good manufacturing practice. Only this application can lead to a food safety of the final product. However, please note: Our technical product leaflets are based on our current knowledge and experience. They have to be seen as general information on our products only. Due to the imponderabilities of treating natural products and the potential prior treatment we cannot accept any liability. Accordance with all national laws and regulations for use of our products has to be ensured by each user. All data is therefore provided without any warranty. All information is subject to change without prior notice. Our general terms of business apply, please refer to www.erbsloeh.com.  
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