



# Distizym<sup>®</sup> GL

Thermotolerant fungal  
pentosanase and fungal  
 $\beta$ -glucanase to prevent  
viscosity increases

## Product Description

Distizym<sup>®</sup> GL is a special enzyme which is applied during alcohol production for pentosan and  $\beta$ -glucan degradation in starch-containing mashes from rye. The enzyme is produced from a genetically modified strain of *Trichoderma reesei*. The main activities are based on different thermotolerant hemicellulases (hemicellulase: endo 1,4- $\beta$ -D-mannanase: EC.3.2.1.78, endo 1,4- $\beta$ -D-xylanase: EC 3.2.1.8, endo 1,3- $\beta$ -D-xylanase: EC 3.2.1.32 and exo 1,4- $\beta$ -D-xylosidase: EC 3.2.1.37) and a thermotolerant  $\beta$ -glucanase (endo 1,3(4)- $\beta$ -D-glucanase: EC 3.2.1.6 and endo 1,4- $\beta$ -glucanase: EC 3.2.1.4).

Distizym<sup>®</sup> GL is tested by specialized laboratories for purity and quality.

## Aim of Treatment

Pentosan and  $\beta$ -glucan degradation in distilling mashes from rye to prevent viscosity increases.

## Product and Effect

As endo enzyme Distizym<sup>®</sup> GL hydrolyses 1,4- $\beta$ -glycosidic bonds in hemicelluloses and pentosans (arabinoxylan), cellulose, lichenins, as well as in other glucans which occur particularly in rye. Hexoses and pentoses are hereby split off.

## Dosage

The following standard dosages are recommended:

50 mL Distizym<sup>®</sup> GL/tonne rye flour.

In case of a deviation from standard conditions a higher or lower dosage might be required.

## Application

### Digestion of starch without pressure

Distizym<sup>®</sup> GL is dosed into the mash tank after doughing or milling in the rye flour. Before addition the enzyme is diluted with cold water in the ratio of 1:1. Addition is made before or at the start of the heating phase. Distizym<sup>®</sup> GL can be applied up to 85 °C and in a pH-range of pH 5.0-6.5. The enzyme can also be added in the cooling phase (as of 80 °C). The nearer the mash pH at the optimum of pH 5.0, the better the temperature stability of the enzyme (max. 90 °C).

### High Pressure Cooking Methods and special pressure/thermo processes:

After blowing out, or in the cooling phase, Distizym<sup>®</sup> GL is added - diluted with cold water – as soon as the temperature has dropped below 80°C. Addition is best made together with the saccharification amylases Distizym<sup>®</sup> AG or Distizym<sup>®</sup> AG ALPHA.

## Storage

Optimum storage conditions at 0-10 °C. Higher storage temperatures result in a shorter shelf life. Temperatures above 25 °C must be avoided. Reseal opened packagings tightly and use up as soon as possible.

## General Characteristics

Enzyme characteristics: the activity range of the enzyme is between pH 5.0 and 8.0, the optimum is at pH 5.5-6.5. The temperature range is between 30 °C and 90 °C, the optimum is at 55-70 °C. The values equally apply to pentosanase activity and to  $\beta$ -glucanase activity.

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