



Distizym® AG-7

Glucoamylase for the
saccharification of starch
in distilling mashes

Product Description

Distizym® AG-7 is a special enzyme which is applied in alcohol production for the saccharification of mashes which contain liquefied starch. The enzyme is produced from a specially selected strain of *Aspergillus niger*. The main activity of the enzyme is based on a glucoamylase (exo-1,4- α -D-glucosidase: EC.3.2.1.3.).

Distizym® AG-7 is tested by specialized laboratories for purity and quality.

Aim of Treatment

Extensive saccharification of liquefied starch to fermentable D-glucose units.

Product and Effect

Distizym® AG-7 progressively hydrolyses 1,4- α -D-glycosidic bonds of starch, dextrans and oligosaccharides starting from the non-reducing chain end. In this process D-glucose units are split off. The enzyme also cleaves the 1,6- α -glycosidic bonds of amylopectin, yet with reduced conversion rate.

Dosage

The following standard dosage is recommended, independently of the raw material applied:

350 mL Distizym® AG-7/tonne starch.

Since the saccharification activity of Distizym® AG-7 is further active during fermentation, the dosage also depends on the duration of fermentation. The dosage mentioned above corresponds to the required dosage for a three-day-fermentation under standard conditions.

Application

Prior to addition to the mash Distizym® AG-7 is diluted with cold water in the ratio of 1:1 and added during the cooling phase subsequent to starch liquefaction. Due to the extremely good temperature tolerance of Distizym® AG-7 the enzyme can be added as soon as the temperature is below 70 °C (the optimum is at 65 °C). Before addition the pH-value is adjusted with semi-concentrated acid (phosphoric or sulphuric acid etc., in accordance with the respective laws and regulations) to a pH-value of 4.0-5.0 (optimum at pH 3.8-4.2). It is not necessary to stabilize the enzyme by adding calcium.

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.

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General Characteristics

Enzyme characteristics: the activity range of Distizym® AG-7 is between pH 2.5 and pH 6.5, the optimum is at pH 3.8-4.2. The temperature range of the enzyme is between 25 °C and 80 °C, the temperature optimum is at 65 °C.

The diagrammes 1 and 2 show the influence of temperature and pH-value on the enzyme activity of Distizym® AG-7.

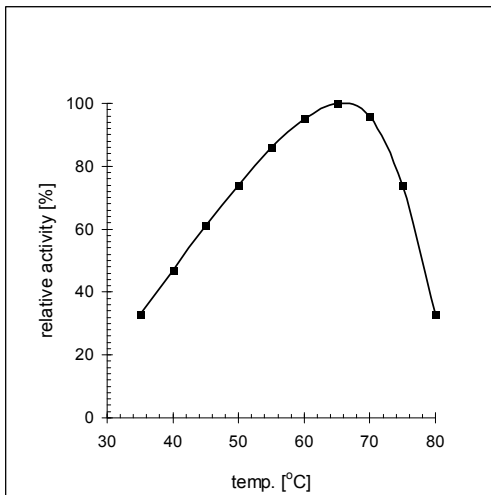


Fig 1: Influence of temperature on activity
(30 % maltodextrin DE18, pH 4.0).

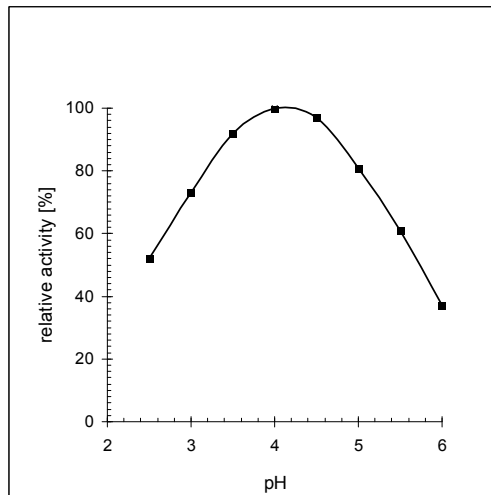


Fig 2: Influence of pH-value on activity
(30 % maltodextrin DE18, 60 °C).