

Thermostable bacterial α -amylase for starch liquefaction in beer production with malt and adjuncts

Product Description

Beerzym AMYL HT is a liquid special enzyme for the liquefaction of starch in beer production with malt and adjuncts in starch degradation by decoction mashing method or in starch degradation with a cereal cooker at temperatures up to 95 °C (203 °F). The enzyme is produced from a specially selected strain of *Bacillus licheniformis*. The main activity of the enzyme is based on a thermostable α -amylase (1,4- α -D-glucan-glucanohydrolase: EC 3.2.1.1). Beerzym AMYL HT is tested by specialized laboratories for purity and quality.

Aim of Treatment

Liquefaction of the gelatinized, broken down starch in brewing mashes at temperatures up to 95 °C (203 °F).

Product and Effect

As an endo-enzyme Beerzym AMYL HT hydrolyzes 1,4- α -D-glycosidic bonds within the starch molecule. Products formed hereby are α -limit dextrines and oligosaccharides.

Dosage

Beerzym AMYL HT is needed in the brewing process when, due to the utilization of adjuncts (barley, rice, corn) the activity of the α -amylase of the malt portion is not sufficient to liquefy the starch. The dosage of the enzyme depends on the quality of the raw material, the temperature and the contact time.
Guide value: 80-240 mL/ton adjunct.

Application

Dilute Beerzym AMYL HT with cold water. In case of the decoction mashing method the enzyme dilution is dosed into the mash tun or into the mash copper or, when using a cereal cooker, it is added to the already refined adjunct. The enzyme is active within the pH-range of the mash up to 95 °C (203 °F).

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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General Characteristics

Enzyme characteristics: the activity range of the enzyme is between pH 5.0-9.0, the optimum is at pH 6.5 in the presence of substrate and calcium. The temperature range reaches from 30 °C (86 °F) to 100 °C (212 °F), max. 105 °C(221 °F), the optimal temperature is within the range of 90-95 °C (194-203 °F) in the presence of substrate, calcium and optimal pH-value. The diagrams 1 and 2 show the influence of temperature and pH-value on the enzyme activity of Beerzym AMYL HT.

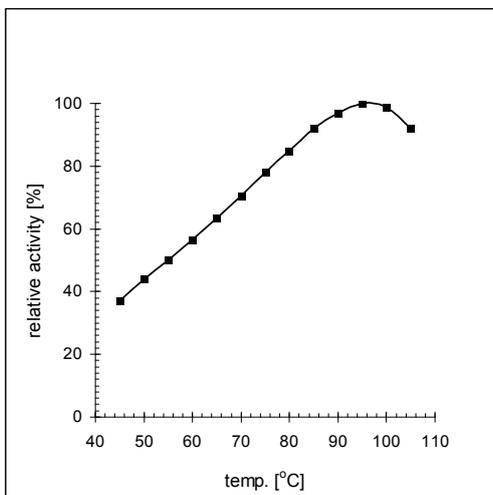


Fig 1: Influence of temperature on activity (10 % soluble starch; pH 6.5).

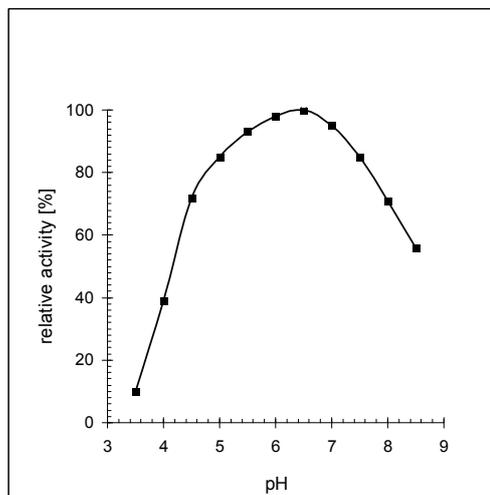


Fig 2: Influence of pH-value on activity (10 % soluble starch; 90 °C/194 °F).

Please note:

When applying Beerzym AMYL HT the food regulations of the individual countries currently in force have to be adhered to.