

Bacterial α -amylase for starch liquefaction in beer production from malt with raw grain portions

Product Description

Beerzym AMYL is a liquid special enzyme for starch liquefaction in brewing with malt and raw grain portions (adjuncts) in infusion mashing. The enzyme is produced from a specially selected strain of *Bacillus subtilis*. The main activity of the enzyme is based on an α -amylase (1,4- α -D-glucoamylase: EC 3.2.1.1). Beerzym AMYL is tested by specialized laboratories for purity and quality.

Aim of Treatment

Liquefaction of the gelatinized, broken down starch in brewing mashes up to 80 °C (176 °F).

Product and Effect

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

Dosage

Beerzym AMYL is needed in the brewing process when, due to the utilization of raw grain (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: 150-350 mL/ton adjunct.

Application

Dilute Beerzym AMYL with cold water. Dosage into the mash tun or into the mash copper after mashing in. The enzyme is active within the pH-range of the mash up to 80 °C (176 °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.

General Characteristics

Enzyme characteristics: the activity range of the enzyme is between pH 4.0 and 8.0, the optimum is at pH 5.8-6.0 in the presence of substrate and calcium. The temperature range is between 30 °C (86 °F) and 90 °C (194 °F), the temperature optimum is at 70-80 °C (158-176 °F) in the presence of substrate, calcium and optimal pH-value. The diagrammes 1 and 2 show the influence of temperature and pH-value on the enzyme activity of Beerzym AMYL.

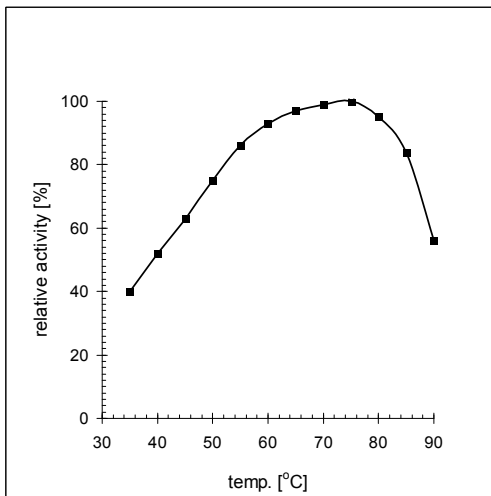


Fig 1: Influence of temperature on activity
(16 % starch; pH 6.0).

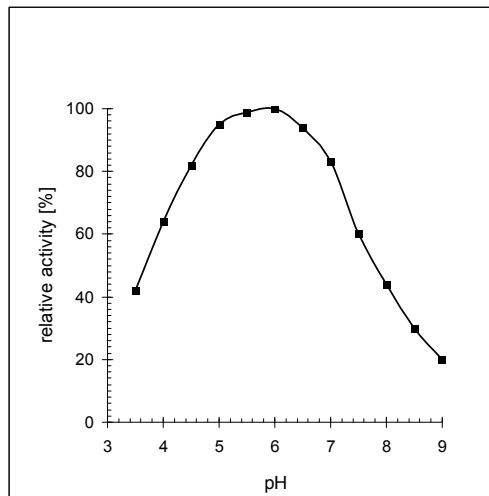


Fig 2: Influence of pH-value on activity
(16 % starch; 70 °C /158 °F).

Please note:

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