



Product description

Highly concentrated liquid glucoamylase (exo-1.4- α -D-glucosidase: EC.3.2.1.3.) from *Aspergillus niger* for the degradation of hydrolyzed starch.

Typical applications for EnerZyme® HT are:

- complete saccharification of liquefied starch including its dextrans, amylopectins, and oligomers
- degradation of the utilizable residual dextrans in beers being produced for diabetics

Saccharification of residual dextrans to the largest possible extent leading to a lower final degree of fermentation and higher real degree of fermentation. EnerZyme® HT gradually hydrolyzes 1,4- α -D-glycosidic bonds in starch, dextrans and oligosaccharides starting from the non-reducing end of the chain. In this process D-glucose units are split off. The enzyme equally splits 1,6- α -D-glycosidic bonds of amylopectin.

Dosage

EnerZyme® HT is most effective within a pH-range of 3.4 - 6.0 and at temperatures up to 65 °C (149 °F). Exact dosage recommendations depend on the aim of the application.

Typical applications for EnerZyme® HT are:

- For saccharification during mashing: 110 - 330 mL/MT (50 - 150 mL/1,000 pounds) of grist
- When added at the start of fermentation: 0.4 - 13 mL/hL (0.5 - 15 mL/bbl) of bitter wort
- In the production of dry beers: 2 - 5 mL/hL (2.3 - 5.8 mL/bbl) of bitter wort

When adding to the mash dose EnerZyme® HT directly into the mash water. When added at the start of fermentation add directly too or with the pitching yeast. When used in the cellars insure rigorous cleaning methods. All glucoamylases can be inadvertently transferred by hoses, fittings and other flow control components. This can result in the cross contamination across the cellars.

The activity range of EnerZyme® HT is between pH 2.5 - 6.5, with an optimum pH between 3.8 - 4.2. The temperature range of the enzyme is between 25 °C - 80 °C (77 °F - 176 °F), with the temperature optimum at 65 °C (149 °F).

Figures 1 and 2 show the influence of temperature and pH-value on the enzymatic activity of EnerZyme® HT

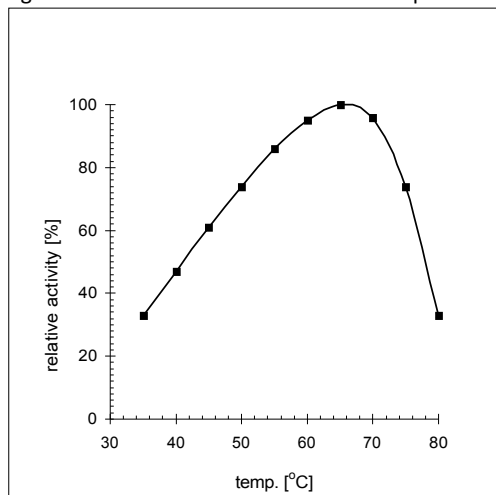


Fig 1: Influence of temperature on activity (30 % maltodextrin DE18, pH 4.0)

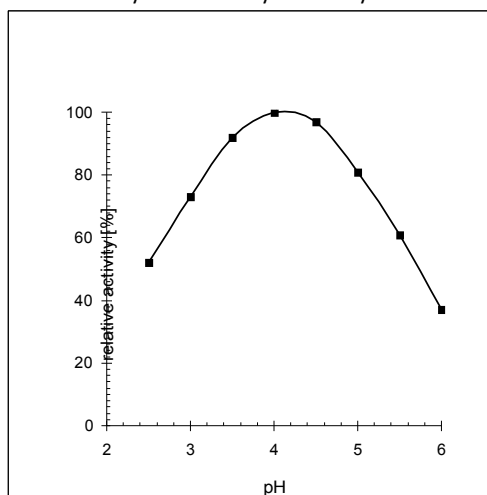


Fig 2: Influence of pH-value on activity (30 % maltodextrin DE18, 60 °C)

Storage

EnerZyme® HT is best stored between 0 - 10°C (32 - 50 °F). Higher temperatures will shorten shelf life. Avoid temperature above 25 °C (77 °F). Tightly reclose open packages as soon as possible.

Note

Please follow all federal, state, and local rules, and regulations when applying EnerZyme® HT.