enzyme supplies

Product Information Sheet

Cellulase ACx 8000L / 8000P

An *Enzyme Supplies* acid cellulase liquid or powder preparation for the alcohol, bio-ethanol, brewing, and fruit and vegetable processing industries

INTRODUCTION

Cellulase ACx 8000L/P is a liquid or powder enzyme preparation for the degradation of cellulose and other viscosity increasing non-starch polysaccharides. It is produced by submerged fermentation of a genetically modified strain of *Trichoderma reesei.* The enzyme is characterized by endoglucanase (endo-1, 3/4/6-β-D-glucanase); cellobiohydrolase (exo-1, 4-β-D-glucanase, and β-glucosidase (1, 4-β-D-glucosidase) activity, and works optimally in an acid pH range.

- IUB-No. 3.2.1.4
- CAS-No. 9012-54-8

This product complies with the recommended specifications of the FAO/WHO joint expert committee on food additives (JECFA), and the food chemicals codex (FCC) for food-grade enzymes.

ENZYME PROPERTIES

Cellulase ACx 8000L/P has an optimum pH range of 4.5-6.0 (effective range 4.0-7.0).
The enzyme has an optimum temperature range of 40°C to 65°C, with an effective range from 25º-75°C.

TYPICAL CHARACTERISTICS

Activity minimum 8,000 u/g
Appearance – light brown liquid / powder with a characteristic odour
Bulk density 1.1g/ml
Fully water soluble

APPLICATION SCOPE

Cellulase ACx 8000L/P is used in the production of alcohol, bio-ethanol, biogas and beer, and also in the processing of fruit and vegetables.

- Distillation: Cellulase ACx 8000L/P reduces the viscosity of the mash by acting on the non-starch carbohydrates linked to starch. This aids the enzymatic starch hydrolysis, & reduces the mechanical stresses on heat exchangers, pumps and stirrers. Typical dose 100-150ml/tonne raw material.
- Biofuel/Biogas: Cellulase ACx 8000L/P contains the three primary activities which are optimal for the breakdown of a wide variety of cellulosic feedstocks. To enhance its activity on certain selected feedstocks, the product can have additional enzyme activities such as pectinase and xylanase added according to customers' requirements producing a truly flexible product solution for all biofuel/biogas needs.
- Brewing: Where malt quality is less than advantageous, Cellulase ACx 8000L/P assists in the utilization of the wheat and barley, and can accelerate lautering, improve filtration, prevent glucans haze and increase yield extraction. Can be added at the start of the mashing process (dose rate 50-150ml/tonne malt), or at the start of the main fermentation (dose rate 0.5-1.0ml/hl wort).
- Fruit and vegetable processing: Usually in combination with pectinases, Cellulase ACx 8000L/P hydrolyses non-starch polysaccharides, reducing viscosity. Dose range 100-200g/tonne.

PACKAGING

Cellulase ACx 8000L is available in bulk containers or 25Kg 'non-toxic' plastic barrels. Cellulase ACx-8000P is available in 25Kg bag in box.

STORAGE STABILITY

To maintain optimum activity, cellulase ACx 8000L/P should be stored at moderate temperatures (below 25º C), in the original containers and with the lid closed. When stored at temperatures below 25°C, the activity loss will be less than 10% in 6 months. At temperatures below 10ºC, the activity loss will be less than 10% in 1 year.

SAFETY AND ENZYME HANDLING

Inhalation of aerosols from liquid enzymes should be avoided. Open in a well-ventilated environment. In case of contact with skin/eyes, promptly rinse with water for at least 15 minutes. Clean any spillages with low-pressure water hoses, avoiding the formation of aerosols. For more detailed information please refer to the Material Safety Data Sheet for this product.

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