



Product Information Sheet

Protease AP-30L

An *Enzyme Supplies* fungal acid protease for the alcohol, bio-ethanol, brewing, and protein hydrolysis industries

INTRODUCTION

Protease AP-30L is an acid protease containing exo and endo-peptidase activity. It is produced by fermentation of *Aspergillus niger*.

Protease AP-30L hydrolyses high molecular weight protein into low molecular weight peptides. 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. The enzyme is not derived from a genetically modified fungal strain.

ENZYME PROPERTIES

Protease AP-30L is characterized by being extremely acid tolerant, and has an optimum pH range of 2.5-3.5 (effective range 2.3-6.0). The enzyme has an optimum temperature range of 45°C to 55°C, with an effective range from 30°-60°C. The enzyme is inactivated rapidly at pH levels above 6.5 and temperatures above 60°C

Protease AP-30L also contains side-activities of cellulase, hemicellulase and amylase

TYPICAL CHARACTERISTICS

Activity minimum 500PAC/g on a casein substrate

Appearance – light brown liquid with a characteristic odour

Bulk density 1.15g/ml

Fully water soluble

APPLICATION SCOPE

Protease AP-30L can be used in a range of protein modification applications, but principally:

- Distillation/Biofuel: Protease AP-30L acts to improve the separation of protein from starch (protein-starch matrix), thus improving the alcohol yield. The low molecular weight peptides formed do not sediment on the walls of the mash tun, fermenters or distilling equipment thus aiding cleaning regimes. Typical dose 300ml-500ml/tonne raw material.
- Brewing: Protease AP-30L is used to supply the protease activity commonly missing in low quality barley/malt. The product is not inhibited by barley protease-inhibitors and therefore high values of α -amino nitrogen can be achieved (dose rate 250-750ml/tonne raw material).
- Typical hydrolysis applications for Protease AP-30L include wheat gluten, soya protein, gelatin, fish and meat protein hydrolysates, milk proteins. Typical dose rate 0.05 – 0.1% of protein content. Protease AP-30L can reduce the characteristic bitterness associated with peptides that are formed from the action of an endo-protease.

PACKAGING

Protease AP-30L is available in bulk containers of 1,000Kg, 225Kg or 25Kg 'non-toxic' plastic barrels

STORAGE STABILITY

To maintain optimum activity, Protease AP-30L should be stored at moderate temperatures (below 25° 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 10°C, 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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