

Wash clean (Corn Exclusive)

OVERVIEW

It is enzyme complex of fugal α - Amylase, pullulanase, and cellulase.

Fungal α -amylase is an endo-amylase that quickly hydrolyzes the α -(1,4)-glycosidic bonds in aqueous solutions of both linear and branched starches, resulting in the production of a large amount of oligosaccharides and disaccharides along with smaller quantities of glucose, and further glucoamylase degrades it into sugars, promoting the release of cell contents and increasing alcohol yield.

Pullulanase specifically targets and breaks down the α -(1,6)-glycosidic bonds in pullulan, amylopectin, and related oligosaccharides, effectively removing entire side branches to form a straight-chain debranching enzyme. This process allows for the decomposition of the smallest units of the branch chain, optimizing the utilization of starch raw materials.

When combined efficiently with enzymes such as glucoamylase and β -amylase, it accelerates reaction speeds and enhances production of glucose and maltose

Cellulase refers to a group of enzymes that synergistically act on the β -(1,4)-glycosidic bonds in cellulose, breaking down cellulose-bound starch into short fibers, cellobiose, and glucose. This group includes endo- β -glucanase (EG), which randomly cleaves β -(1,4)-glucosidic bonds within the cellulose molecule; exo- β -glucanase (CBH), which cleaves β -(1,4)-glucosidic bonds from the non-reducing ends to produce cellobiose; and β -glucosidase (BG), which hydrolyzes cellobiose into glucose.

PRODUCT SPECIFICATIONS

Format	Color	Enzyme Activity
Liquid	Brown	28,000 U/mL

	Pullulanase	Fungal α - Amylase	Cellulase
Enzyme activity	1,000 – 7,000 U/mL	28000 U/mL	100,000 – 200,000u/ml
Liquid form	pH (25°C): 6.0 – 7.0	6.0 - 7.0	4.0 - 7.0
	Specific gravity: \leq 1.25 g/mL	1.25 g/mL	1.25 g/mL
Temperature range	30 – 65°C	30 – 65°C	35–80°C
pH range	4.0 – 6.5	4.0 – 6.5	3.0 – 5.0
Effect of metal ions on enzyme activity	Activating effects: Ca ²⁺	Ca ²⁺	Na ⁺ ,Cu ²⁺ ,Ca ²⁺ ,Mn ²⁺ ,Zn ²⁺
	Inhibitory effects:Fe ²⁺ , Ba ²⁺ , Cu ²⁺ , Mn ²⁺ , Fe ³⁺ ,Hg ²⁺ , Pb ²⁺ , Zn ²⁺	Fe ²⁺ , Ba ²⁺ , Cu ²⁺ , Mn ²⁺ , Fe ³⁺ ,Hg ²⁺ , Pb ²⁺ , Zn ²⁺	Fe ²⁺ , Fe ³⁺

Definition of enzymeactivity: 1g of solid enzyme powder (or 1mL of liquid enzyme) hydrolyzes soluble starch in 30 minutes under the conditions of pH 5.0 and 40 \pm 0.5°C. The amount of enzyme needed to produce a reducing sugar equivalent to 10mg of glucose in the reaction solution is defined as 1 enzyme activity unit, expressed as U/mL (U/g).

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APPLICATION GUIDE

- Fuel ethanol production:** In the production of corn alcohol using solid-state fermentation, it can degrade cellulose-bound starch, break down the α -(1,6)-glycosidic bonds in pullulan, amylopectin and related oligosaccharides, and quickly hydrolyze the α -(1,4)- glycosidic bonds in the aqueous solution of both linear and branched starches. All available convertible sugars, promoting the release of cell contents and increasing alcohol yield. The recommended dosage is 0.03-0.06 kg per ton of starch, added during fermentation or saccharification
- Production of beer:** It can be introduced during the saccharification or fermentation stages to improve the degree of fermentation and reduce saccharification time. Typically, 10-50 ml per ton of wort is recommended
- Modified starch processing:** It can enhance amylose content and modify starch's film-forming properties, digestibility and solubility to varying extents. For small-scale testing, an initial dosage of 0.6-2.0 L per ton of raw material is recommended (maintained for 6-12 hours under optimal conditions).
- Other industries:** it can be incorporated during the saccharification process of products such as monosodium glutamate, alcohol, vinegar, soy sauce and rice wine. This helps to reduce residual dextrin and enhance the utilization rate of raw materials. For small-scale testing, an initial dosage of 0.1-0.3 L per ton of raw material is recommended

PACKAGING

Format	Color
Liquid	Plastic drum (25 kg)
Solid	Woven bag (25 kg, 28 kg)

Packaging can be customized according to customer needs

STORAGE & HANDLING

This product is a biologically active substance. High temperatures and strong acidic/alkaline conditions will inactivate enzymes.

Avoid exposure to sunlight and rain during transportation and storage. Recommended to store below 25°C in a cool, dry, and airtight container.