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Cellulase (40,000 U/g)

Product Number: FE19

Shipping and Storage

1. This product is an active biological agent. During transportation and storage, it should be kept away from light, at low temperatures, dry, and ventilated.
2. This product is originally packaged in a cool and dry environment, with a shelf life of 12 months.

Component

Component	FE19
Cellulase (40,000 U/g)	25kg/barrel

Description

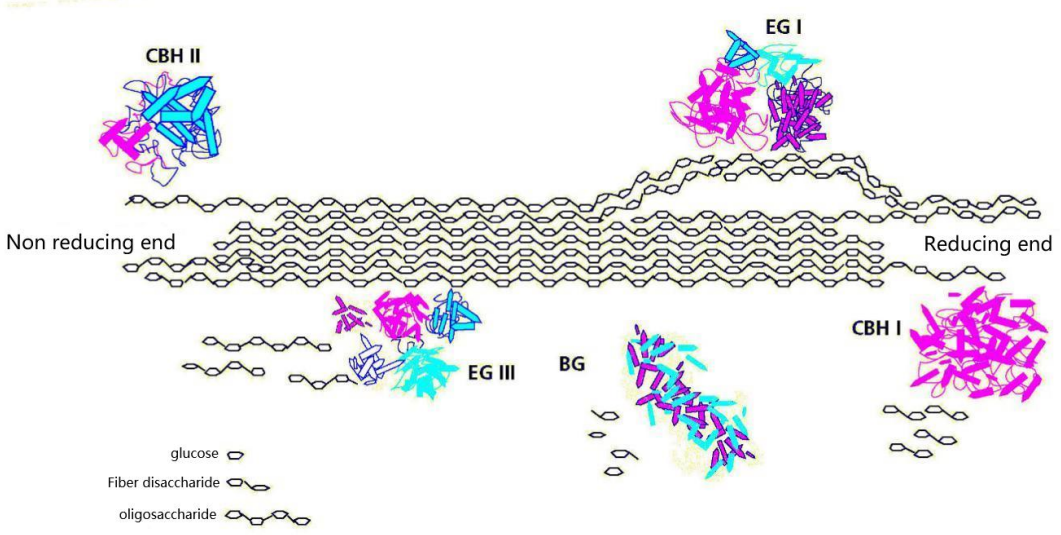
Food grade cellulase is refined from Trichoderma reesei through liquid deep fermentation, ultrafiltration and other processes. This enzyme has good temperature resistance and can exhibit good hydrolytic activity in the temperature range of 40℃ -80℃. It also has a wide pH range (4.5-6.0) and a suitable pH range. The cellulase is a light yellow solid powder product.

Mechanism of action

Cellulose is a highly polymerized polysaccharide molecule composed of glucose linked by β -1,4-glucosidic bonds. Cellulose enzyme refers to a group of enzymes that can hydrolyze the β -1,4-glucosidic bond of cellulose, turning it into cellulose disaccharides and glucose. It is not a single enzyme but a multi-component enzyme system that works synergistically. At least three main cellulases are involved in the hydrolysis process:

1. Endocellulases (EC3.2.1.4, endoglucanases) are endocellulases that can hydrolyze the non crystalline regions inside cellulose molecules, randomly hydrolyze β -1,4-glucosidic bonds, shorten long-chain cellulose molecules, and produce a large amount of small molecule cellulose with non reducing ends, as shown in the figure.
2. Extracellular beta cellulases (EC3.2.1.91, cellubiohydrolases), abbreviated as CBH enzymes, are divided into two categories: CBH I and CBH II. CBH I and CBH II hydrolyze cellulose disaccharides from the reducing and non reducing ends of the cellulose molecular chain, respectively, as shown in the figure.
3. β-1, 4-Glucosidase (EC3.2.1.21, β-glucosidase), also known as BG enzyme, can hydrolyze disaccharides and short chain oligosaccharides to produce glucose, as shown in the figure.

The cellulase mainly contains endocellulase (EG), with a small amount of exocellulase and a small amount of β-1,4-glucosidase.



Operating conditions

1. Effective temperature range: 40℃ -80℃; Effective pH range: 3.0-7.0
2. Optimal temperature range: 65℃ -75℃; Optimal pH range: 4.5-6.0

Appearance

Light yellow to brownish yellow solid powder. Due to factors such as fermentation materials and cycles, there may be slight differences in color, but it will not affect the effectiveness of use.

Standard

This product complies with the relevant provisions of GB 1886.174 "National Food Safety Standard - Food Additives - Enzyme Preparations for Food Industry". The specific product quality standards are as follows:

Project		Indicator
Fineness (40 target pass rate),%		≥80
Dry weight loss,%		≤8.0
Lead (Pb/(mg/kg)		≤5.0
Total arsenic (calculated as As)/(mg/kg)		≤3.0
Total colony count/(CFU/g)		≤50000
Coliform bacteria/(CFU/g)		≤30
Escherichia coli	(CFU/g)	< 10
	(MPN/g)	≤3.0
Salmonella (25g)		Not detected

Usage

The general recommended dosage is 0.1-3kg enzyme preparation per ton of raw materials. However, due to differences in application fields, raw material composition, and process parameters among factories, the actual addition method and amount of this product should be determined through experiments.

Note

Enzyme preparations are proteins, and inhaling dust or suspended particles may cause allergic reactions in people. If exposed to certain enzymes for a long time, it may irritate the skin, eyes, and mucous membranes; Splashing and strong agitation may cause inhalable dust. It is recommended to wear protective clothing, gloves, and eye or face protection.