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Food-grade α-Amylase (Mesophilic), Type AAS

Product Number: FE31

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

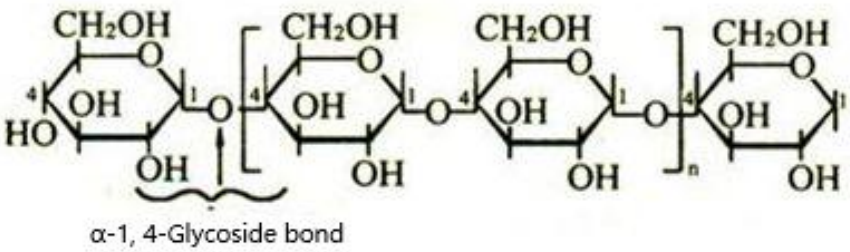
Component	FE31
Food-grade α-Amylase (Mesophilic), Type AAS	25kg/barrel

Description

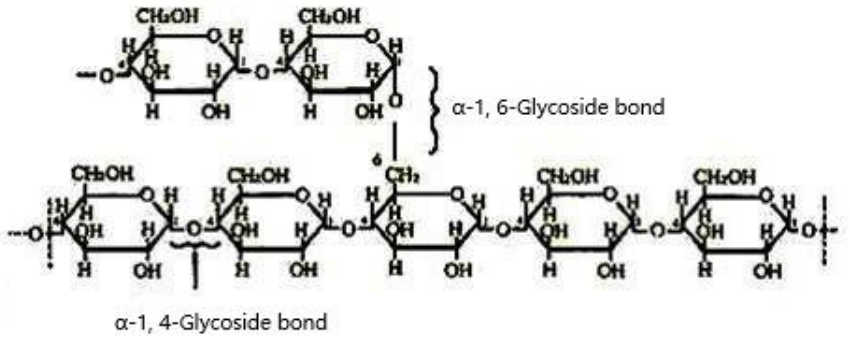
Food grade α-amylase (medium temperature AAS type) is a highly efficient biological enzyme preparation made by liquid deep fermentation and refining of excellent strain Bacillus subtilis. It can effectively hydrolyze the α-1,4-glucoside bonds inside starch, glycogen, and their degradation products, produce dextrin and a small amount of oligosaccharides, and rapidly reduce the viscosity of gelatinous starch solution. α-amylase (medium temperature AAS type) is a light yellow brown solid powder product.

Mechanism of action

Starch is a carbohydrate formed by the polymerization of glucose molecules, divided into two categories: linear starch and branched starch. Straight chain starch is composed of glucose units connected by α-1,4-glycosidic bonds. The oxygen on the carbon atom at position 1 of the preceding glucose is linked to the carbon atom at position 4 of the following glucose, and this process is repeated to form straight chain starch. Branched chain starch is also composed of glucose units, and the branched chain is linked to the straight chain through the carbon atom at position 6, which is the α-1,6-glycosidic bond. This is the basic composition of branched chain starch. The schematic diagram of the structure is as follows:



The structure of amylose



Structure of amylopectin

α-amylase can randomly hydrolyze the α-1,4 glycosidic bonds of starch, producing dextrin and a small amount of oligosaccharides, causing the viscosity of the gelatinous starch solution to rapidly decrease. Excessive hydrolysis can produce a small amount of glucose and maltose.

Operating conditions

1. Effective temperature range: 40℃ -70℃; Effective pH range: 5.0-7.0
2. Optimal temperature range: 50℃ -65℃; Optimal pH range: 5.5-6.5

Appearance

Light yellow to light yellow brown solid powder. Due to factors such as fermentation materials and cycles, there may be slight differences in color, but it does 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 recommended dosage is 0.1-0.4kg of 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.