

Starch Processing Enzymes



ANTOZYME
BIOTECH PVT. LTD.

Quality Over Everything

About Us

Antozyme Biotech PVT. LTD. is a well integrated enzyme manufacturing and formulation organization. Antozyme biotech work with innovative customer across the globe, helping them produce more from the less, make their products stand out and reduce cost.

Antozyme provide a Eco-friendly enzymes from small to large scale quantities for a variety of industries, such as food, starch, distillery, brewery, waste water treatment, agriculture, detergent and pharmaceuticals.

Introduction to Enzymes

Enzymes are organic catalyst produced within the living organisms which speed up chemical reactions, by lowering the activation energy, in the living organisms but themselves remain unchanged at end of the reaction.

In molecular terms, the enzyme combines with substrate molecule to form an enzyme-substrate complex. In such close contact the substrate molecules may be distorted and hence easily react to form an enzyme-product complex which split the release product molecule and the enzyme.

Enzymes are classified into six categories based on the types of reaction catalyzed, that is, oxidoreductase, transferase, hydrolases, lyase, ligase and isomerase.

Each enzyme should be uniquely identified by their enzyme classification number. Enzymes are named with the use of letters and numbers: EC plus four number representing four compartment.

Our Products



**Starch
Processing
Enzymes**



**Sugar
Processing
Enzymes**



**Distillery
Processing
Enzymes**



**Brewery
Enzymes**



**Wine
Processing
Enzymes**



**Pharmaceuticals
Enzymes**



**Detergent
Enzymes**



**Waste Water
Treatment
Enzymes**



**Enzyme
Used in
Animal Feed**



**Enzyme
Used
in Biodiesel**



**Food
Enzymes**

Starch Processing

Basic introduction

Antozyme Biotech PVT. LTD. is a well integrated enzymes manufacturing and formulation organization. Antozyme biotech offers enzyme based biodegradable formulation to increase production efficiency and yield. Enzyme based formulations enhance the process and utilize the resources at fullest. Apart from remedial actions, these are also required for conversion of polymer to monomer.

Product name:-

Catazyme-AA-HT

A process was explored for continuous enzymatic liquefaction of corn starch at high concentration and subsequently saccharification to glucose. The process appears to be quite efficient for conversion of starch to glucose and enzymatic liquefaction and should be readily adaptable to industrial fermentation processes. Preliminary work indicated that milled corn or other cereal grains also can be suitably converted by such a process.



Application of Catazyme-AA-HT:-

- Catazyme-AA-HT is used in the starch industry to continuously liquefy starch, wet milled corn and wheat starch for the production of low dextrose starch syrups.
- Because Catazyme-AA-HT has high heat stability and pH tolerance and low calcium requirements.
- In the ethanol industry, it is used for high temperature liquefaction of starch containing grain mashes for production of neutral spirit
- **Temperature and pH range of Catazyme-AA-HT:-**

Temperature:- 80 to 90 °C

pH:- 5.3 to 5.8

Product characteristic of Catazyme-AA-HT:-

Brown colour liquid

Benefits of Catazyme-AA-HT:-

- ✓ Excellent thermal stability for liquefaction of steam jet cooker starch.
- ✓ Produces low viscosity, liquid dextrose syrup in 90 minutes at 80-90 °C.
- ✓ Whole corn or grain liquefaction at pH 5.5 and 80-90 °C.
- ✓ Increase wort yield and grain adjunct cooking capacity.

Dosage of Catazyme-AA-HT:-

The optimized dosage of Catazyme AA-HT depends on nature and dry solids % of the substrate liquefied, final starch syrup dextrose equivalent required, liquefied time, the final dosage to be optimized at the plant.

Catazyme-GA

Glucoamylase is one of the oldest and widely used biocatalyst in food industries. The process involved incorporation of a thermostable, high temperature alpha amylase for liquefaction and, subsequently, of a glucoamylase into the continuous mixer under conditions conducive to rapid enzymatic hydrolyses. Catazyme- GA an exo alpha-amylase, hydrolyses 1-4 alpha glucosidic bonds of liquefied starch, the prolonged action of Catazyme-GA produced large amount of glucose.



Application of Catazyme-GA:-

- The major application of glucoamylase is the saccharification of partially processed starch/dextrin to glucose, which is an essential substrate for numerous fermentation process and range of food and beverages industries.
- It is used in the distillery and fuel ethanol industries for saccharification, simultaneously saccharification and fermentation of whole grain mashes.

Temperature and Ph range of Catazyme-GA:-

Temperature:- 62 to 68°C

Ph:- 4.5 to 5.2

Benefits of Catazyme-GA:-

- ✓ Excellent thermal and pH stability .
- ✓ Produce high dextrose equivalent.
- ✓ Produced fermentation of non-GMO.
- ✓ All natural and non-synthetic ingredients.

Product characteristic of Catazyme-GA:-

Brown colour liquid

Dosage of Catazyme-GA:-

The optimize dosage of Catazyme GA depends on nature and dry solids % of the starch, nature of the substrate to saccharified, final starch syrup dextrose equivalent required, sacchrification temperature and time, the final dosage to be optimized at the plant.

Catazyme-BA

Catazyme-BA is used in the production of maltose syrup and prevention retro gradation of rice cake confectionary. However until now the supply source for beta amylase has been limited to edible plant such as barley, wheat and soyabean. Considering the current worldwide demand alternative sources for a stable and constant enzyme supply is done by microbial beta-Amylase.



Application of Catazyme-BA:-

- Catazyme BA is used to particularly in the starch processing industry and for broad range of industrial application.
- Catazyme BA is used in the production of maltose syrup.
- Maltose is used as a sweetener in candy, confectionary, ice cream and other food processing maltose, compared to glucose, has a full-bodied taste, has a lowered reaction rate and resistant to crystal.



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- **Benefits of Catazyme-BA:-**
 - ✓ Produced high maltose syrup.
 - ✓ Prevent contamination.
 - ✓ Produced by fermentation of non GMO.
 - ✓ All natural and non-synthetic ingredients.
 - ✓ Excellent thermal stability post liquification of starch slurry.

Product characteristic of Catazyme-BA:-

Brown colour liquid

Dosage of Catazyme-BA:-

The optimize dosage of Catazyme GA depends on nature and dry solids % of the starch, nature of the substrate to saccharified, final starch syrup maltose equivalent required, reaction temperature and time(30-120 mins), the final dosage to be optimized at the plant.

Packaging:-

Catazyme-AA-HT, Catazyme-GA, and Catazyme-BA are available in 25kg, 50kg and 100kg drums.

Storage:-

Catazyme-AA-HT, Catazyme-GA, and Catazyme-BA should be stored in a cool, dry place. Storage in unopened containers, at or 5°C, helps to maintain maximum activity if stored over long periods.

Under these conditions the activity loss after one year should be more than 5 to 10%.

Extended storage under adverse conditions, including high temperature may required the use of higher than recommended dosage.

Handling:-

Liquid enzyme preparation are dust free, however, in appropriate handling may cause the formation of aerosol or dust. Avoid formation of aerosols and dust from dried out or spilled enzymes.



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