

EB-AMYLZYME™ (ALPHA AMYLASE IP)

NATURE'S TECHNOLOGY ADAPTED FOR MODERN SCIENCE

www.enzymebio.com

Enzymes represent one of nature's most efficient biological technologies, enabling precise biochemical transformations under mild physiological conditions.

Advances in modern biotechnology now allow enzymes to be isolated, purified, and standardized without compromising their intrinsic biological advantages.

EB-AmylZyme™, an Alpha Amylase IP manufactured by Enzyme Bioscience, exemplifies this integration of natural enzymatic efficiency with pharmaceutical-grade quality and regulatory compliance.

This document presents the scientific basis, mechanism of action, functional benefits, applications, and technical specifications of EB-AmylZyme™ for use in pharmaceutical, nutraceutical, and clinical nutrition formulations.

INTRODUCTION



Long before the advent of industrial chemistry, biological systems evolved enzymatic mechanisms capable of catalyzing complex reactions with remarkable specificity and efficiency.

Modern science has successfully adapted these natural systems through controlled fermentation and advanced processing technologies, enabling the production of enzymes with defined activity, purity, and stability.

Alpha Amylase is one of the most extensively studied digestive enzymes and plays a central role in carbohydrate metabolism. Its pharmacopoeial recognition and broad application profile make it a cornerstone ingredient in regulated digestive formulations.

ALPHA AMYLASE: ROLE IN CARBOHYDRATE DIGESTION

Alpha Amylase is a hydrolytic enzyme responsible for initiating the digestion of dietary starch. It catalyzes the cleavage of internal α -1,4-glycosidic linkages in polysaccharides, converting complex starch molecules into maltose, dextrins, and oligosaccharides. These products are subsequently processed by downstream enzymes, enabling efficient absorption and utilization.

As a primary enzyme in carbohydrate metabolism, Alpha Amylase supports:

- Efficient energy release
- Metabolic balance
- Optimized digestive performance



ITS INCLUSION IN DIGESTIVE FORMULATIONS IS SUPPORTED BY EXTENSIVE PHARMACOPOEIAL ACCEPTANCE AND CLINICAL USE.

RATIONALE FOR ALPHA AMYLASE SUPPLEMENTATION

EFFICIENT BREAKDOWN OF COMPLEX CARBOHYDRATES

Alpha Amylase initiates starch digestion, reducing the digestive burden on the gastrointestinal tract. By converting complex carbohydrates into absorbable sugars, it enhances digestive efficiency and nutrient availability.

SUPPORT FOR ENERGY AVAILABILITY AND METABOLIC EFFICIENCY

Carbohydrates serve as a primary energy source. Alpha Amylase facilitates their conversion into usable sugars, contributing to improved energy release and metabolic performance particularly relevant in clinical nutrition and digestive support products.

REDUCTION OF DIGESTIVE DISCOMFORT

Incomplete carbohydrate digestion may result in bloating, gas, and gastrointestinal discomfort. Alpha Amylase minimizes undigested starch residues, supporting improved gut tolerance and digestive comfort.

PHARMACOPOEIAL ACCEPTANCE

Alpha Amylase IP is standardized and widely accepted for pharmaceutical applications. Compliance with Indian Pharmacopoeia ensures:

- Defined assay and identification methods
- Consistent enzymatic potency
- Reliable quality for regulated use

COMPATIBILITY WITH MULTI-ENZYME SYSTEMS

Alpha Amylase is highly compatible with protease, lipase, and pancreatin, making it suitable for comprehensive multi-enzyme digestive formulations.



MECHANISM OF ACTION

Alpha Amylase functions as an endo-acting enzyme, hydrolyzing internal α -1,4-glycosidic bonds within starch molecules. This enzymatic activity results in rapid starch liquefaction and efficient carbohydrate hydrolysis.

KEY FUNCTIONAL CHARACTERISTICS INCLUDE:

1

Rapid starch
breakdown

**2**

High catalytic
efficiency

**3**

Stable activity under
physiological
conditions

These properties make Alpha Amylase indispensable for effective carbohydrate digestion.

APPLICATIONS



PHARMACEUTICAL INDUSTRY

- Digestive aid formulations
- Carbohydrate digestion support products



NUTRACEUTICALS AND HEALTH SUPPLEMENTS

- Digestive enzyme blends
- Energy and metabolism support formulations



CLINICAL AND SPECIALIZED NUTRITION

- Support for carbohydrate malabsorption
- Nutritional management in digestive insufficiency



TECHNICAL SPECIFICATIONS

PRODUCT NAME:

Alpha Amylase IP (1:2000), IP (1:1200), IP (1:800)

SHELF LIFE:

3 years from date of manufacture

TEST	SPECIFICATION
Identification	Cream to Light Brown Color Powder With Characteristics Odor
Solubility	Soluble in Water
Loss on Drying	NMT 5 %
Microbial Limit – E.coli Salmonella	Should be Absent/g Should be Absent/10g
Assay	NLT 1:2000 U/g, 1:1200, 1:800

QUALITY, SAFETY, AND COMPLIANCE

EB-AmylZyme™ is manufactured under stringent GMP-controlled conditions. Each batch undergoes comprehensive testing for enzymatic activity, microbial limits, and safety parameters in compliance with Indian Pharmacopoeia requirements, ensuring consistency and regulatory confidence.

HANDLING, STORAGE, AND PACKAGING

- Store in a cool, dry place away from heat, light, and moisture
- Avoid excessive humidity to preserve enzymatic activity

Standard Packaging: 25 kg drum
Custom Packaging: Available upon request

CONCLUSION

EB-AmylZyme™ represents a scientifically validated, pharmacopoeial-grade Alpha Amylase designed to support efficient carbohydrate digestion across pharmaceutical, nutraceutical, and clinical nutrition applications. Backed by robust quality systems and application-focused development, it reflects Enzyme Bioscience's commitment to precision, reliability, and customer trust.



REGULATORY DISCLAIMER

EB-AmylZyme™ (Alpha Amylase IP) is intended for B2B use only. Final formulation suitability, claims, and regulatory compliance are the sole responsibility of the customer in accordance with applicable local regulations.