

Global Brewing Enzymes Market - Types, Sources, Forms and Applications

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Abstracts

Global Brewing Enzymes Market Trends and Outlook

Brewing enzymes are specialized biocatalysts that accelerate and optimize key biochemical processes during beer and wine production. Derived from microbial or plant sources, these enzymes—such as alpha- and beta-amylase, beta-glucanase, protease, and xylanase—facilitate the breakdown of complex compounds like starch, proteins, and fibers into fermentable sugars and amino acids. Each plays a distinct role across the brewing stages, from malting and mashing to fermentation and clarification. For instance, alpha-amylase operates at higher temperatures to break down starch into dextrins, while beta-amylase converts dextrins into maltose at lower temperatures. Beta-glucanase improves mash run-off and filterability, proteases support yeast nutrition and clarity, and xylanase enhances starch accessibility. These enzymes help improve production efficiency, enable the use of unmalted grains and adjuncts, ensure consistency across batches, and are instrumental in crafting specialty beer varieties such as gluten-free, low-carb, or alcohol-free options.

The global brewing enzymes market is projected to grow from US\$534.1 million in 2024 to US\$792.8 million by 2030, registering a CAGR of 6.8%. This growth is driven by rising global beer consumption, increasing disposable incomes, and the proliferation of craft breweries focused on innovation and quality. Health-conscious consumers are pushing demand for better-for-you beers, which require targeted enzyme applications. Moreover, breweries—both large and small—are adopting enzymes to cut costs, increase yields, and experiment with novel ingredients. Advancements in enzyme biotechnology and integration of digital brewing technologies like AI and IoT are further supporting market expansion. However, regulatory complexity, high development costs for specialized enzymes, traditional brewer resistance, raw material price volatility, and

sensitivity to temperature or pH conditions present challenges that could limit adoption. Despite these hurdles, the efficiency and versatility of brewing enzymes continue to make them an essential tool in modern brewing operations.

Brewing Enzymes Regional Market Analysis

Asia-Pacific dominates the global brewing enzymes market with an estimated 40.7% share in 2024 and is projected to grow at a CAGR of 7.5% through 2030, making it both the largest and fastest-growing region. Rising beer consumption across China, India, Vietnam, and Thailand - driven by urbanization, increasing disposable incomes, and a youthful population - is fueling enzyme demand. The surge in craft beer popularity, especially in India, Japan, and Australia, along with the use of local raw materials like rice and sorghum, necessitates enzymes such as amylases, proteases, and beta-glucanase for efficient conversion and quality enhancement. Growing health awareness is also boosting demand for low-calorie, gluten-free beer, further driving enzyme usage. Regional breweries and global players are investing in tailored enzyme solutions and modern brewing technologies to meet Asia-Pacific's diverse brewing needs.

Brewing Enzymes Market Analysis by Type

Amylase remains the most widely used enzyme in brewing, accounting for an estimated 46.3% market share in 2024 due to its essential role in converting complex starches into fermentable sugars, a foundational step in beer and wine production. Its low production cost - especially from microbial sources - and critical function in processing both malted and unmalted grains like sorghum, corn, and rice make it indispensable for brewers worldwide. However, beta-glucanase is expected to be the fastest-growing enzyme segment, poised to register a CAGR of over 8% during 2024-2030. It plays a key role in reducing mash viscosity and improving wort filtration by breaking down beta-glucans, particularly in grains like barley and sorghum. Its demand is surging in high-volume and craft breweries alike, especially for producing low-carb, gluten-free, and clear beers across North America, Europe, and Asia-Pacific. Innovations in microbial enzyme production and tailored formulations have improved its temperature stability and brewing performance, making beta-glucanase increasingly vital in modern, efficiency-driven brewing operations.

Brewing Enzymes Market Analysis by Source

The global brewing enzymes market is largely driven by microbial-sourced enzymes, which are expected to account for 81.9% of the market in 2024 due to their scalability,

cost-effectiveness, and adaptability. Microorganisms like bacteria, fungi, and yeast can be efficiently cultivated in bioreactors under controlled conditions, enabling consistent, high-yield production of key brewing enzymes such as amylases, proteases, and beta-glucanases. Their rapid growth, minimal nutrient requirements, and ease of genetic modification allow for tailored enzyme solutions with enhanced stability, activity, and specificity across a range of brewing processes. These attributes offer brewers greater control over beer quality, texture, aroma, and clarity, facilitating consistent and customizable production. While microbial enzymes dominate, plant-sourced enzymes are projected to grow faster, with a 2024-2030 CAGR of 7.2%, fueled by rising demand for clean-label, natural brewing inputs. Advances in plant biotechnology and extraction methods are making plant-based enzymes more efficient and viable, with specific enzymes like papain proving effective in niche applications such as chill haze prevention. Additionally, plant enzymes support sustainable brewing by enabling the cost-effective use of alternative raw materials like sorghum, rice, and maize.

Brewing Enzymes Market Analysis by Form

Brewing Enzymes are primarily offered in Liquid and Powder forms, with demand for the former having a larger market share estimated at 66.7% in 2024. The easier dosing and blending of liquid brewing enzymes into the brewing process ensures uniform dispersion, enhancing efficiency and consistency in large-scale brewing operations. Enzymes in this form are also popular among breweries that prioritize speed and quality, as their quick dissolution in water facilitates faster enzymatic reactions during mashing and fermentation. A majority of industrial brewing systems are designed to handle liquid inputs, which reduces the need for additional processing or equipment adjustments. The wider adoption of liquid brewing enzymes can be attributed to their proven performance and effectiveness across a broad range of beer styles, especially in high-volume production of lagers and ales that are among the most widely consumed worldwide. On the other hand, the global market for Powder Brewing Enzyme will likely log a faster CAGR of 7.4% over the 2024-2030 period, a key factor for which is longer shelf life and stability even under varying storage conditions. This reduces waste and is particularly appealing to smaller or remote breweries that cannot replenish their stocks frequently. Being light and less in bulk lowers the costs of transporting and storing powder enzymes, thereby easing the distribution process. Growth in craft breweries is propelling demand for powder enzymes because of being affordable and easy to use in smaller batches. Innovations in enzyme stabilization and powder formulation are enhancing performance, giving stiff competition to liquid enzymes in terms of efficacy.

Brewing Enzymes Market Analysis by Application

Beer applications dominate the global brewing enzymes market, accounting for an estimated 78.7% share in 2024 and projected to grow at a faster CAGR of 7.6% during 2024-2030. This aligns with beer being the most widely consumed alcoholic beverage globally, with 2024 consumption estimated at 170 billion liters, valued at US\$840 billion. Enzymes like amylase, protease, and beta-glucanase are essential in beer production for starch conversion, fermentation efficiency, and clarity enhancement. The growing popularity of craft, low-carb, gluten-free, and non-alcoholic beers is driving demand for specialized enzymes such as glucoamylase and pullulanase. Enzyme use improves brewing efficiency, reduces fermentation time, and enhances product quality, making them critical for both large-scale brewers like Anheuser-Busch InBev and Heineken, and smaller craft operations. Advances in enzyme biotechnology, including genetically engineered variants, are further boosting performance, consistency, and scalability across the brewing industry.

Brewing Enzymes Market Report Scope

This report on Brewing Enzymes analyzes the global and regional markets based on Type, Source, Form and Application for the period 2021-2030 with forecasts from 2024 to 2030 in terms of value in US\$. In addition to providing profiles of major companies operating in this space, the latest corporate and industrial developments have been covered to offer a clear panorama of how and where the market is progressing.

Key Metrics

Historical Period: 2021-2024

Base Year: 2024

Forecast Period: 2024-2030

Units: Value market in US\$

Companies Mentioned: 25+

Brewing Enzymes Market by Geographic Region

North America (United States, Canada and Mexico)

Europe (France, Germany, Italy, Russia, Spain, United Kingdom and Rest of Europe)

Asia-Pacific (China, India, Japan, South Korea and Rest of Asia-Pacific)

Rest of World

Brewing Enzymes Market by Type

Amylase

Beta-Glucanase

Protease

Xylanase

Other Types [Incl. Alpha Acetolactate-Decarboxylase (ALDC), Alphasalase, Amyl Glucosidase, Beta-Glucosidase, Hydrolase and Pectinase]

Brewing Enzymes Market by Source

Microbial

Plant

Brewing Enzymes Market by Form

Liquid

Powder

Brewing Enzymes Market by Application

Beer

Wine

Contents

PART A: GLOBAL MARKET PERSPECTIVE

1. INTRODUCTION

- Customized Premixes Outline
- Customized Premixes Defined
- Customized Premixes Nutrient Types
 - Amino Acids
 - Minerals
 - Nucleotides
 - Nutraceuticals
 - Vitamins
 - Other Nutrient Types (Primarily Mixtures & Phytochemicals)
- Customized Premixes Formulations
 - Liquid
 - Powder
- Customized Premixes Functions
 - Bone Health
 - Digestion
 - Energy
 - Immunity
 - Skin Health
 - Other Functions
- Customized Premixes Applications
 - Animal Feed
 - Dietary Supplements
 - Food & Beverages
 - Bakery & Confectionery
 - Beverages
 - Cereals
 - Dairy Products
 - Infant Foods
 - Nutrition Products
 - Pharmaceuticals
 - Personal Care Products

2. KEY MARKET TRENDS

3. KEY MARKET PLAYERS

Archer-Daniels-Midland Co
Barentz International BV
BI Nutraceuticals
Brenntag SE
Cargill, Inc.
Chemische Fabrik Budenheim KG
Coalescence LLC
Corbion NV
DPO International Sdn. Bhd.
DSM-Firmenich
Evonik
Farbest Brands Corp
Fenchem Biotek Ltd
Glanbia PLC
Hella Australia Pty Ltd
Hexagon Nutrition Pvt Ltd
Jubilant Ingrevia Ltd
LycoRed Corp
Nutra Blend Innovations
Nutreco NV
Piramal Enterprises Ltd
Prinova Group LLC
Pristine Organics Pvt Ltd
Provimi Animal Nutrition India Pvt. Ltd.
SternVitamin GmbH & Co KG
Utrix S.A.L
Vitablend Nederland BV
Watson, Inc.
Wright Enrichment, Inc.

4. KEY BUSINESS & PRODUCT TRENDS

5. GLOBAL MARKET OVERVIEW

Global Customized Premixes Market Overview by Nutrient Type
Customized Premixes Nutrient Type Market Overview by Global Region

Amino Acids
Minerals
Nucleotides
Nutraceuticals
Vitamins
Other Nutrient Types (Primarily Mixtures & Phytochemicals)
Global Customized Premixes Market Overview by Formulation
Customized Premixes Formulation Market Overview by Global Region
Liquid
Powder
Global Customized Premixes Market Overview by Function
Customized Premixes Function Market Overview by Global Region
Bone Health
Digestion
Energy
Immunity
Skin Health
Other Functions
Global Customized Premixes Market Overview by Application
Customized Premixes Application Market Overview by Global Region
Animal Feed
Dietary Supplements
Food & Beverages
Bakery & Confectionery
Beverages
Cereals
Dairy Products
Infant Foods
Nutrition Products
Pharmaceuticals
Personal Care Products

PART B: REGIONAL MARKET PERSPECTIVE

Global Customized Premixes Market Overview by Geographic Region

REGIONAL MARKET OVERVIEW

6. NORTH AMERICA

Global Brewing Enzymes Market - Types, Sources, Forms and Applications

North American Customized Premixes Market Overview by Geographic Region
North American Customized Premixes Market Overview by Nutrient Type
North American Customized Premixes Market Overview by Formulation
North American Customized Premixes Market Overview by Function
North American Customized Premixes Market Overview by Application
Country-wise Analysis of North American Customized Premixes Market
The United States
United States Customized Premixes Market Overview by Nutrient Type
United States Customized Premixes Market Overview by Formulation
United States Customized Premixes Market Overview by Function
United States Customized Premixes Market Overview by Application
Canada
Canadian Customized Premixes Market Overview by Nutrient Type
Canadian Customized Premixes Market Overview by Formulation
Canadian Customized Premixes Market Overview by Form
Canadian Customized Premixes Market Overview by Application
Mexico
Mexican Customized Premixes Market Overview by Nutrient Type
Mexican Customized Premixes Market Overview by Formulation
Mexican Customized Premixes Market Overview by Function
Mexican Customized Premixes Market Overview by Application

7. EUROPE

European Customized Premixes Market Overview by Geographic Region
European Customized Premixes Market Overview by Nutrient Type
European Customized Premixes Market Overview by Formulation
European Customized Premixes Market Overview by Function
European Customized Premixes Market Overview by Application
Country-wise Analysis of European Customized Premixes Market
France
French Customized Premixes Market Overview by Nutrient Type
French Customized Premixes Market Overview by Formulation
French Customized Premixes Market Overview by Function
French Customized Premixes Market Overview by Application
Germany
German Customized Premixes Market Overview by Nutrient Type
German Customized Premixes Market Overview by Formulation

German Customized Premixes Market Overview by Function
German Customized Premixes Market Overview by Application
Italy
Italian Customized Premixes Market Overview by Nutrient Type
Italian Customized Premixes Market Overview by Formulation
Italian Customized Premixes Market Overview by Function
Italian Customized Premixes Market Overview by Application
Russia
Russian Customized Premixes Market Overview by Nutrient Type
Russian Customized Premixes Market Overview by Formulation
Russian Customized Premixes Market Overview by Function
Russian Customized Premixes Market Overview by Application
Spain
Spanish Customized Premixes Market Overview by Nutrient Type
Spanish Customized Premixes Market Overview by Formulation
Spanish Customized Premixes Market Overview by Function
Spanish Customized Premixes Market Overview by Application
United Kingdom
United Kingdom Customized Premixes Market Overview by Nutrient Type
United Kingdom Customized Premixes Market Overview by Formulation
United Kingdom Customized Premixes Market Overview by Function
United Kingdom Customized Premixes Market Overview by Application
Rest of Europe
Rest of Europe Customized Premixes Market Overview by Nutrient Type
Rest of Europe Customized Premixes Market Overview by Formulation
Rest of Europe Customized Premixes Market Overview by Function
Rest of Europe Customized Premixes Market Overview by Application

8. ASIA-PACIFIC

Asia-Pacific Customized Premixes Market Overview by Geographic Region
Asia-Pacific Customized Premixes Market Overview by Nutrient Type
Asia-Pacific Customized Premixes Market Overview by Formulation
Asia-Pacific Customized Premixes Market Overview by Function
Asia-Pacific Customized Premixes Market Overview by Application
Country-wise Analysis of Asia-Pacific Customized Premixes Market
China
Chinese Customized Premixes Market Overview by Nutrient Type
Chinese Customized Premixes Market Overview by Formulation

Chinese Customized Premixes Market Overview by Function
Chinese Customized Premixes Market Overview by Application
India
Indian Customized Premixes Market Overview by Nutrient Type
Indian Customized Premixes Market Overview by Formulation
Indian Customized Premixes Market Overview by Function
Indian Customized Premixes Market Overview by Application
Japan
Japanese Customized Premixes Market Overview by Nutrient Type
Japanese Customized Premixes Market Overview by Formulation
Japanese Customized Premixes Market Overview by Function
Japanese Customized Premixes Market Overview by Application
South Korea
South Korean Customized Premixes Market Overview by Nutrient Type
South Korean Customized Premixes Market Overview by Formulation
South Korean Customized Premixes Market Overview by Function
South Korean Customized Premixes Market Overview by Application
Rest of Asia-Pacific
Rest of Asia-Pacific Customized Premixes Market Overview by Nutrient Type
Rest of Asia-Pacific Customized Premixes Market Overview by Formulation
Rest of Asia-Pacific Customized Premixes Market Overview by Function
Rest of Asia-Pacific Customized Premixes Market Overview by Application

9. SOUTH AMERICA

South American Customized Premixes Market Overview by Geographic Region
South American Customized Premixes Market Overview by Nutrient Type
South American Customized Premixes Market Overview by Formulation
South American Customized Premixes Market Overview by Function
South American Customized Premixes Market Overview by Application
Country-wise Analysis of South American Customized Premixes Market
Argentina
Argentine Customized Premixes Market Overview by Nutrient Type
Argentine Customized Premixes Market Overview by Formulation
Argentine Customized Premixes Market Overview by Function
Argentine Customized Premixes Market Overview by Application
Brazil
Brazilian Customized Premixes Market Overview by Nutrient Type
Brazilian Customized Premixes Market Overview by Formulation

Brazilian Customized Premixes Market Overview by Form
Brazilian Customized Premixes Market Overview by Application
Rest of South America
Rest of South American Customized Premixes Market Overview by Nutrient Type
Rest of South American Customized Premixes Market Overview by Formulation
Rest of South American Customized Premixes Market Overview by Function
Rest of South American Customized Premixes Market Overview by Application

10. MIDDLE EAST & AFRICA

Middle East & Africa Customized Premixes Market Overview by Nutrient Type
Middle East & Africa Customized Premixes Market Overview by Formulation
Middle East & Africa Customized Premixes Market Overview by Form
Middle East & Africa Customized Premixes Market Overview by Application

PART C: GUIDE TO THE INDUSTRY

PART D: ANNEXURE

1. RESEARCH METHODOLOGY

2. FEEDBACK

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