

Global Monooxygenase Market 2026 by Manufacturers, Regions, Type and Application, Forecast to 2032

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Abstracts

According to our (Global Info Research) latest study, the global Monooxygenase market size was valued at US\$ 177 million in 2025 and is forecast to a readjusted size of US\$ 373 million by 2032 with a CAGR of 11.2% during review period.

In 2025, global monooxygenase sales volume was approximately 33 tons, with an average global market price of about USD 5,200/kg. The gross margin of major manufacturers in the industry was approximately 45%?65%.

Monooxygenase is a class of oxidoreductase that introduces one oxygen atom from molecular oxygen into a substrate molecule while reducing the other oxygen atom to water. It is an important enzyme category in biocatalytic oxidation. Its reaction functions include hydroxylation, epoxidation, Baeyer-Villiger oxidation, sulfur oxidation, and nitrogen oxidation, enabling the conversion of alkanes, aromatic compounds, alkenes, ketones, sulfur-containing substrates, and nitrogen-containing substrates into higher-value oxidized products. Compared with traditional metal oxidants or strong oxidizing agents, monooxygenase generally offers milder reaction conditions, higher selectivity, fewer side reactions, and lower environmental burden, making it particularly suitable for late-stage functionalization of complex molecules, chiral intermediate synthesis, and green oxidation process development.

The upstream of monooxygenase mainly includes microbial strain resources, enzyme gene sequences, expression vectors, fermentation media, cofactor recycling systems, enzyme engineering technologies, immobilization carriers, and enzyme formulation excipients. The midstream involves enzyme screening, directed evolution, fermentation expression, purification, immobilization treatment, cofactor regeneration system

matching, and process scale-up. Downstream applications are mainly concentrated in pharmaceutical biocatalysis, agrochemical intermediate, flavor and fragrance, specialty fine chemical, and environmental remediation.

This report is a detailed and comprehensive analysis for global Monooxygenase market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Type and by Application. As the market is constantly changing, this report explores the competition, supply and demand trends, as well as key factors that contribute to its changing demands across many markets. Company profiles and product examples of selected competitors, along with market share estimates of some of the selected leaders for the year 2025, are provided.

Key Features:

Global Monooxygenase market size and forecasts, in consumption value (\$ Million), sales quantity (Tons), and average selling prices (US\$/kg), 2021-2032

Global Monooxygenase market size and forecasts by region and country, in consumption value (\$ Million), sales quantity (Tons), and average selling prices (US\$/kg), 2021-2032

Global Monooxygenase market size and forecasts, by Type and by Application, in consumption value (\$ Million), sales quantity (Tons), and average selling prices (US\$/kg), 2021-2032

Global Monooxygenase market shares of main players, shipments in revenue (\$ Million), sales quantity (Tons), and ASP (US\$/kg), 2021-2026

The Primary Objectives in This Report Are:

To determine the size of the total market opportunity of global and key countries

To assess the growth potential for Monooxygenase

To forecast future growth in each product and end-use market

To assess competitive factors affecting the marketplace

This report profiles key players in the global Monooxygenase market based on the following parameters - company overview, sales quantity, revenue, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Codexis, Almac Group, Prozomix, InnoSyn, Nanjing Predictive Biotechnology, SyncoZymes, Asymchem, WuXi STA, Tianjin Bio-Pharmacn Biotechnology, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Market Segmentation

Monooxygenase market is split by Type and by Application. For the period 2021-2032, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value. This analysis can help you expand your business by targeting qualified niche markets.

Market segment by Type

P450 Type

Flavin-dependent Type

Non-heme Iron Type

Market segment by Reaction Function

Hydroxylation Type

Epoxidation Type

Baeyer-Villiger Oxidation Type

Heteroatom Oxidation Type

Market segment by Form

Free Enzyme Preparation

Immobilized Enzyme Preparation

Whole-cell Catalyst

Market segment by Application

Pharmaceutical Biocatalysis

Agrochemical Intermediate

Flavor and Fragrance

Environmental Remediation

Other

Major players covered

Codexis

Almac Group

Prozomix

InnoSyn

Nanjing Predictive Biotechnology

SyncoZymes

Asymchem

WuXi STA

Tianjin Bio-Pharmaceutical Biotechnology

Market segment by region, regional analysis covers

North America (United States, Canada, and Mexico)

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

Asia-Pacific (China, Japan, Korea, India, Southeast Asia, and Australia)

South America (Brazil, Argentina, Colombia, and Rest of South America)

Middle East & Africa (Saudi Arabia, UAE, Egypt, South Africa, and Rest of Middle East & Africa)

The content of the study subjects, includes a total of 15 chapters:

Chapter 1, to describe Monooxygenase product scope, market overview, market estimation caveats and base year.

Chapter 2, to profile the top manufacturers of Monooxygenase, with price, sales quantity, revenue, and global market share of Monooxygenase from 2021 to 2026.

Chapter 3, the Monooxygenase competitive situation, sales quantity, revenue, and global market share of top manufacturers are analyzed emphatically by landscape contrast.

Chapter 4, the Monooxygenase breakdown data are shown at the regional level, to show the sales quantity, consumption value, and growth by regions, from 2021 to 2032.

Chapter 5 and 6, to segment the sales by Type and by Application, with sales market share and growth rate by Type, by Application, from 2021 to 2032.

Chapter 7, 8, 9, 10 and 11, to break the sales data at the country level, with sales quantity, consumption value, and market share for key countries in the world, from 2021 to 2026. and Monooxygenase market forecast, by regions, by

Type, and by Application, with sales and revenue, from 2027 to 2032.

Chapter 12, market dynamics, drivers, restraints, trends, and Porters Five Forces analysis.

Chapter 13, the key raw materials and key suppliers, and industry chain of Monooxygenase.

Chapter 14 and 15, to describe Monooxygenase sales channel, distributors, customers, research findings and conclusion.

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