

Metal Chelates Market Forecasts to 2032 – Global Analysis By Product Type (Primary Nutrients, Secondary Nutrients, Micronutrients, and Other Product Types), Crop Type, Formulation, Distribution Channel, Mode of Application, End User and By Geography

<https://marketpublishers.com/r/M6CB7FDD884DEN.html>

Date: September 2025

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: M6CB7FDD884DEN

Abstracts

According to Statistics MRC, the Global Metal Chelates Market is accounted for \$798.41 million in 2025 and is expected to reach \$1636.84 million by 2032 growing at a CAGR of 10.8% during the forecast period. Metal chelates are compounds resulting from the coordination of metal ions with organic ligands, producing ring-shaped complexes. These structures increase the stability and solubility of metal ions, making them more effective in various applications. Commonly used in agriculture to boost plant nutrient uptake, in industry as reaction catalysts, and in medicine for enhancing metal absorption, metal chelates play a significant role across multiple scientific and practical fields.

According to researchers from Japan, in 2022, concentrations of lead in agricultural soil in Namibia are near 3015 mg/kg. In contrast, concentrations of Zn in the soil in China are near 1140 mg/kg.

Market Dynamics:

Driver:

Rising demand for high-yield crops

With food demand surging globally, agricultural stakeholders are adopting efficient nutrient solutions to improve crop performance. Metal chelates play a vital role in enhancing micronutrient uptake, particularly in poor soils, leading to better yields. The shift toward precision farming and eco-conscious cultivation methods is boosting their use. As cultivable land declines and population rises, chelated fertilizers offer a way to optimize productivity. Market growth is further supported by advancements in sustainable chelate formulations and favorable policies promoting environmentally responsible agricultural inputs.

Restraint:

High production costs

Manufacturing involves intricate chemical procedures and costly inputs, making the final products expensive. Compliance with stringent regulations and maintaining product quality add to the financial burden. This cost barrier discourages adoption among smallholder farmers, particularly in emerging markets. Limited access to budget-friendly substitutes and insufficient understanding of the long-term agronomic value further slow the market's expansion. Consequently, despite their proven efficacy in enhancing crop yields, metal chelates struggle to gain traction in regions where affordability takes precedence over performance.

Opportunity:

Increasing applications in food fortification and animal nutrition

Chelated minerals are highly bio-available, making them effective for enriching foods and supplements aimed at combating nutrient deficiencies. Their chemical stability and efficient absorption are particularly valuable in regions with poor dietary diversity. In animal husbandry, metal chelates contribute to improved nutrient assimilation, fertility, and immunity, enhancing overall livestock performance. Increasing consumer focus on nutritional value and supportive regulations for fortified products are further propelling demand. Advances in eco-friendly chelate technologies are also widening their appeal among health-driven consumers and sustainable farming systems.

Threat:

Risk of counterfeit or low-quality products

Inferior substitutes often compromise the chemical stability and operational standards vital to sectors like agriculture, healthcare, and industry. Their presence undermines product reliability, weakens brand credibility, and complicates logistics. Inadequate formulations can hinder nutrient absorption, lower agricultural productivity, and introduce ecological risks. Regulatory enforcement remains inconsistent across borders, making it difficult to curb these issues effectively. As market demand expands, unscrupulous vendors exploit gaps in oversight, threatening the integrity of supply chains and impeding sustainable market development.

Covid-19 Impact

COVID-19 caused widespread disruption in the Metal Chelates Market, hampering production and supply due to raw material shortages and logistical bottlenecks. Agricultural usage declined amid labor constraints and unpredictable planting cycles, while industrial demand slowed. Economic uncertainty further dampened purchasing behavior, particularly in developing regions. Yet, the pandemic also sparked renewed focus on sustainable farming and nutrient optimization, encouraging innovation and positioning metal chelates for strategic growth in the post-pandemic landscape.

The micronutrients segment is expected to be the largest during the forecast period

The micronutrients segment is expected to account for the largest market share during the forecast period, due to their effectiveness in improving nutrient uptake in challenging soil conditions. Innovations in chelation agents such as EDTA, DTPA, and newer biodegradable options are enhancing delivery efficiency. The market is also shaped by trends in precision agriculture and eco-conscious farming practices. Recent advancements include sustainable formulations and regulatory support for organic inputs, all contributing to improved crop performance and heightened awareness of soil health management.

The agriculture segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the agriculture segment is predicted to witness the highest growth rate, due to the growing need for effective micronutrient solutions in poor and alkaline soils. Breakthroughs in chelation technologies like EDTA, DTPA, and newer biodegradable compounds are boosting nutrient absorption and efficiency. Notable innovations include sustainable, bio-based formulations and more economical production techniques. The market is also being shaped by precision farming, climate-

adaptive practices, and organic agriculture, with rising AgTech investments and supportive regulations accelerating adoption and technological progress.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share due to growing concerns over crop micronutrient deficiencies and the push for higher agricultural productivity. Innovations in chelation technologies like biodegradable compounds and advanced foliar delivery are enhancing product performance. Notable trends include integration with drip irrigation and expansion into livestock feed. Recent developments feature eco-conscious chelates tailored to varied soil conditions, and diversification into sectors such as personal care and pulp & paper, reflecting broader industrial adoption across the region.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, owing to the rise of sustainable agriculture and precision nutrient management. Breakthroughs in eco-friendly chelation agents and optimized delivery systems are improving nutrient absorption while minimizing environmental harm. Key trends include adoption in organic farming and integration with smart irrigation technologies. Recent developments highlight affordable, crop-specific chelates and targeted product rollouts by leading companies, addressing micronutrient challenges across diverse soil types in the U.S., Canada, and Mexico.

Key players in the market

Some of the key players profiled in the Metal Chelates Market include BASF SE, Ava Chemicals Pvt. Ltd., Yara International ASA, Protex International, Nouryon, Van Iperen International, Mitsubishi Chemical Corporation, Deretil Agronutritional, Innospec Inc., Shandong IRO Chelating Chemical Co., Ltd., Nufarm Limited, Valagro S.p.A., Haifa Group, Syngenta AG, Akzo Nobel N.V.

Key Developments:

In May 2025, Yara and Mexico PepsiCo have announced a long-term partnership for the supply of crop nutrition programs in Latin America to help decarbonize the food value chain, demonstrating Yara's ability to capitalize on its unique product portfolio by commercializing low carbon products profitably.

In April 2025, BASF and Hagihara Industries, Inc., have joined forces to develop highly durable polyolefin yarns for artificial turf used in sports arenas, including football stadiums, baseball fields, and tennis courts. After three years of collaborative research and development, the two companies have created an advanced formulation with a series of Tinuvin® grades that significantly enhances the durability of synthetic grass, making it less susceptible to damage from sun exposure and ensuring it retains its vibrant color.

Product Types Covered:

Primary Nutrients

Secondary Nutrients

Micronutrients

Other Product Types

Crop Types Covered:

Cereals and Grains

Turf and Ornamentals

Oilseeds and Pulses

Fruits and Vegetables

Other Crop Types

Formulations Covered:

Liquid Chelates

Granular Chelates

Powder Chelates

Distribution Channels Covered:

Direct Sales

Online Platforms

Distributors & Retailers

Mode of Applications Covered:

Soil Application

Hydroponics

Foliar Spray

Fertigation

End Users Covered:

Agriculture

Water Treatment

Animal Nutrition

Pulp and Paper

Pharmaceuticals

Personal Care & Cosmetics

Other End Users

Regions Covered:**North America**

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free

Metal Chelates Market Forecasts to 2032 – Global Analysis By Product Type (Primary Nutrients, Secondary Nutrie...

customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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