

Controlled-release Fertilizers Market by Type (Slow Release, Coated and Encapsulated, Nitrogen Stabilizers), Function (Temperature-dependent, Water-dependent, Time-release), Product Tier, Mode of Application, End Use, and Region - Global Forecast to 2030

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Report description:

The global market for controlled-release fertilizers is estimated to be valued at USD 2.54 billion in 2025 and is projected to reach USD 3.41 billion by 2030, at a CAGR of 6.1% during the forecast period.

<https://mnmimg.marketsandmarkets.com/Images/controlled-release-fertilizers-market-overview.webp>

The controlled-release fertilizers (CRFs) market is driven by the growing need for higher crop productivity and efficient nutrient management. Farmers are increasingly adopting CRFs to provide a steady and targeted supply of nutrients, reducing the frequency of applications and optimizing plant growth. Environmental concerns, such as soil degradation, water contamination, and greenhouse gas emissions associated with conventional fertilizers, are further driving the shift toward controlled-release solutions. CRFs minimize nutrient losses through leaching and volatilization, supporting sustainable agricultural practices. Additionally, the rise of precision agriculture enables farmers to accurately monitor crop nutrient requirements, enhancing the effectiveness of CRFs and promoting their adoption across large-scale and high-value farming operations.

Technological innovations are also a major factor driving market growth, with developments in polymer-coated, multi-nutrient, and biodegradable CRFs expanding their application across diverse crops and climatic conditions. Supportive government regulations and policies that promote sustainable farming, coupled with an increasing awareness of long-term cost savings, encourage the use of controlled-release fertilizers. Strategic investments by key players in R&D, partnerships, and regional

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expansions are strengthening product portfolios and improving distribution networks. The growing demand for environmentally friendly crop inputs, alongside the need for improved soil health and resource-efficient farming, positions CRFs as a vital solution in modern agriculture, fueling sustained global market growth.

"The premium smart/hybrid controlled-release fertilizers segment will grow at a significant rate in the product tier segment during the forecast period"

Premium smart and hybrid controlled-release fertilizers are expected to experience significant growth in the product tier segment of the controlled-release fertilizers market, driven by increasing demand for high-efficiency nutrient management solutions. These advanced fertilizers combine innovative technologies, such as polymer-coated systems, biodegradable matrices, and integrated nutrient blends, to provide precise, long-term nutrient release tailored to specific crop requirements. Farmers and agribusinesses are increasingly adopting these products to enhance crop yield, reduce labor costs, and minimize nutrient losses to the environment, aligning with sustainable and precision agriculture practices. The premium segment benefits from growing awareness of the long-term economic and environmental advantages of smart CRFs, particularly in large-scale and high-value farming operations. Additionally, continuous R&D efforts, strategic partnerships, and product innovations by leading players such as ICL, Nutrien, SQM, and Yara are expanding the availability and performance of premium smart and hybrid CRFs, thereby further driving global adoption and market growth.

"The slow-release fertilizers segment will hold a significant share in the type segment during the forecast period"

Slow-release fertilizers are expected to hold a significant share in the type segment of the controlled-release fertilizers market due to their proven effectiveness in enhancing crop productivity while minimizing environmental impact. These fertilizers gradually release nutrients over time, aligning with crop nutrient uptake patterns and minimizing losses from leaching, runoff, and volatilization. Their applicability across a wide range of crops, including cereals, vegetables, fruits, and high-value plantations, makes them a preferred choice for both large-scale and smallholder farmers. The growing emphasis on sustainable agriculture and soil health further drives adoption, as slow-release fertilizers help maintain nutrient balance and improve long-term soil fertility. Technological advancements, such as polymer coatings and nutrient encapsulation, have enhanced the performance and versatility of slow-release fertilizers. Combined with rising awareness of reduced labor costs, fewer applications, and improved yield quality, slow-release fertilizers are poised to become a key growth segment within the controlled-release fertilizers market globally.

"North America holds the largest share, while Asia Pacific is expected to be the fastest growing market during the forecast period"

North America holds the largest share in the controlled-release fertilizers market, driven by its well-established agricultural sector, advanced farming practices, and high adoption of sustainable nutrient management solutions. The region features extensive farmland for row crops, horticulture, and high-value plantations, where farmers increasingly rely on CRFs to optimize nutrient use efficiency and improve crop yields. Strong R&D infrastructure and technological innovations, including polymer-coated, multi-nutrient, and biodegradable formulations, enable the delivery of tailored nutrients for diverse crops and soil conditions. Leading global players such as ICL, Nutrien, Yara, and SQM have established manufacturing facilities, distribution networks, and strategic partnerships in North America, further consolidating market dominance. Supportive government policies promoting precision agriculture, nutrient stewardship, and environmentally friendly practices also accelerate adoption. Additionally, the benefits of reduced application frequency, lower labor costs, and long-term improvements in soil health drive consistent use of CRFs across large-scale and high-value farms, reinforcing North America's position as the largest and most mature CRF market globally.

Asia Pacific is expected to be the fastest-growing market for controlled-release fertilizers due to rising food demand, expanding agricultural activities, and increasing awareness of sustainable farming practices. Rapid population growth, coupled with the need to enhance crop yields on limited arable land, is driving the adoption of nutrient-efficient solutions such as CRFs. Technological advancements, including polymer-coated and biodegradable fertilizers, are being increasingly adopted to improve nutrient use efficiency and reduce environmental impact in the region. Countries such as China, India, Japan, and Southeast Asian nations are witnessing growing investments in modern farming practices, precision agriculture, and fertilizer innovation, which are accelerating the market's growth. Supportive government initiatives promoting sustainable agriculture and efficient fertilizer use, along with increasing participation of global players in regional distribution and partnerships, further boost market potential.

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Break-up of primaries

In-depth interviews were conducted with chief executive officers (CEOs), directors, and other executives from various key organizations operating in the controlled-release fertilizers market:

- By Company Type: Tier 1 - 25%, Tier 2 - 45%, and Tier 3 - 30%
- By Designation: Directors- 20%, Managers - 50%, Executives - 30%
- By Region: North America - 25%, Europe - 30%, Asia Pacific - 20%, South America - 15%, and Rest of the World - 10%

Prominent companies in the market include Yara (Norway), Nutrien Ltd. (Canada), Mosaic (US), ICL (Israel), Nufarm (Australia), Kingenta (China), ScottsMiracle-Gro (US), Koch Industries (US), Helena Chemicals (US), SQM (Chile), Haifa Negev Technologies Ltd. (Israel), JCAM AGRI Co., Ltd. (Japan), COMPO EXPERT (Germany), The Andersons Inc. (US), and Van Iperen International (Netherlands).

Other players include OCI Nitrogen (Netherlands), DeltaChem (Germany), AgroLiquid (US), SK Specialties (Malaysia), Pursell Agri-Tech (US), Simonis Fertilizer BV (Netherlands), Florikan ESA LLC (US), BION International (Netherlands), Aglukon (Germany), and Nousbo Co Ltd (South Korea).

Research Coverage

This research report categorizes the controlled-release fertilizers market by type (coated & encapsulated, nitrogen stabilizers, and slow-release), function (temperature-dependent release systems, water-dependent release systems, microbe-activated release systems, time-released systems, pH-dependent release systems, and others), product tier (basic coated fertilizers, advanced polymer/resin coated fertilizers, and premium smart/hybrid controlled-release fertilizers), mode of application (foliar, fertigation, soil, and others), end use (agriculture and non-agriculture), and region (North America, Europe, Asia Pacific, South America, and Rest of the World). The report's scope encompasses detailed information on drivers, restraints, challenges, and opportunities that influence the growth of the controlled-release fertilizers market.

A detailed analysis of key industry players was conducted to provide insights into their business overview, services, key strategies, contracts, partnerships, agreements, new service launches, mergers and acquisitions, and recent developments related to the controlled-release fertilizers market. This report provides a competitive analysis of emerging startups in the controlled-release fertilizers market ecosystem. Furthermore, the study also covers industry-specific trends, including technology analysis, ecosystem and market mapping, and patent and regulatory landscapes, among others.

Reasons to buy this report

The report will help market leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the overall controlled-release fertilizers and the subsegments. It will help stakeholders understand the competitive landscape and gain more insights to better position their businesses and plan suitable go-to-market strategies. The report also helps stakeholders understand the pulse of the market, providing them with information on key market drivers, restraints, challenges, and opportunities.

It provides insights into the following pointers:

- Analysis of key drivers (Rise in sustainable agriculture), restraints (High production costs compared to conventional fertilizers), opportunities (Development of biodegradable and bio-based coating materials), and challenges (Inconsistency and variable performance) influencing the growth of the controlled-release fertilizers market
- Product Launch/Innovation: Detailed insights on R&D activities and product launches in the controlled-release fertilizers market
- Market Development: Comprehensive information about lucrative markets - analysis of the controlled-release fertilizers market across varied regions
- Market Diversification: Exhaustive information about new services, untapped geographies, recent developments, and investments in the controlled-release fertilizers market
- Competitive Assessment: In-depth assessment of market shares, growth strategies, product offerings, brand/product comparisons, and product footprints of leading players such as Yara (Norway), Nutrien Ltd. (Canada), Mosaic (US), ICL (Israel), Nufarm (Australia), Kingenta (China), and others in the controlled-release fertilizers market

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