

Silicon Fertilizer Market to Reach US\$ 171.48 Million by 2031, Driven by Crop Resilience; APAC Leads with 48% Share

Sustainable Farming Fuels Silicon Fertilizer Market Toward US\$ 171.48 Million by 2031; Asia-Pacific Remains Top Region

LEANDER, TX, UNITED STATES,
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EINPresswire.com/ -- According to DataM Intelligence, the global [Silicon Fertilizer Market](#) was valued at US\$ 120.12 million in 2023 and is projected to reach US\$ 171.48 million by 2031, expanding at a CAGR of 4.55% during 2024–2031. Market growth is driven by the rising need for fertilizers that enhance crop strength, resilience, and yield. Silicon improves plant cell wall structure, increases tolerance to drought, diseases, and pests, and optimizes nutrient and water uptake. As global food demand rises and farmers seek sustainable productivity solutions, silicon-based fertilizers are gaining strong traction.



Silicon Fertilizer

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The silicon fertilizer market is expanding globally as farmers increasingly adopt silicon-based soil inputs to boost crop resilience, enhance yields, and support sustainable agriculture”

DataM Intelligence

The Asia-Pacific region leads the market due to extensive agricultural activity, growing awareness of soil health, and government initiatives supporting efficient fertilizer use. Liquid silicon fertilizers dominate the product landscape because they are easy to apply through spraying or irrigation, provide consistent nutrient delivery, and are well-suited for high-intensity and fast-growing crops.

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Key Highlights from the Report:

Silicon fertilizers improve plant strength, boost stress tolerance to drought, salinity and pests, and contribute to higher yields and better crop quality.

The market includes multiple product types such as water-soluble, citrate-soluble, calcium silicate, potassium silicate, sodium silicate, and both liquid and solid formulations.

Adoption is rising across field crops, horticulture, hydroponics and floriculture due to improved nutrient use efficiency and sustainable farming benefits.

Asia-Pacific remains the fastest-growing region, driven by large agricultural economies, intensive cropping systems and increased awareness of silicon's agronomic benefits.

Growing focus on sustainable agriculture and soil health management is accelerating demand for silicon fertilizers as an eco-friendly alternative to conventional inputs.

Key challenges include low awareness among small and medium farmers and continued dependence on traditional fertilizers in certain regions.

Ongoing research, field trials and product innovation are expanding market acceptance and strengthening the scientific evidence supporting silicon application.

Key Segments

By Type

Water-soluble silicates lead the market due to their high absorption efficiency, faster nutrient availability, and suitability for foliar and fertigation applications. Citrate-soluble silicates continue to expand, particularly in soils with low microbial activity, as they offer gradual nutrient release and improved soil conditioning benefits.

By Product

Calcium silicate holds a substantial share owing to its strong role in improving plant stress tolerance, strengthening cell walls, and enhancing resistance to pests and diseases. Potassium silicate is one of the fastest-growing products driven by rising demand for potassium-rich formulations that promote plant vigor, yield quality, and abiotic stress resistance. Sodium silicate maintains consistent demand, particularly in industrial agriculture and controlled-environment systems where cost-effective nutrient supplementation is required.

By Form

Liquid formulations dominate as they offer easy application, rapid plant uptake, and

compatibility with fertigation and hydroponic systems. Solid forms remain important for broad-acre farming and long-term soil conditioning, providing slow-release benefits and cost-effective bulk application.

By Nature

Natural silicates are witnessing strong growth fueled by increasing preference for organic, sustainable, and eco-friendly agricultural inputs. Synthetic silicates continue to hold a notable share, particularly in large-scale commercial farming where consistent purity, stability, and performance reliability are prioritized.

By Distribution Channel

Fertilizer shops remain the primary distribution channel, especially in rural and semi-urban regions where farmers rely on local retailers for trusted product recommendations. Online retail is expanding rapidly with rising digital adoption, offering wider product options, easy delivery, and better price comparison. Other channels, including cooperatives and direct manufacturer sales, support procurement for large farms and institutional buyers.

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Regional Insights

- Asia-Pacific – 48% driven by "large agricultural land area, high demand for rice and cereal crop enhancement, strong government support for sustainable farming, and widespread adoption of silicon fertilizers to improve yield, stress tolerance, and soil health."
- North America – 25% supported by "advanced farming practices, strong focus on high-value crops, increasing adoption of sustainable soil-management inputs, and growing demand for silicon fertilizers in horticulture and controlled-environment agriculture."
- Europe – 20% fueled by "strict soil-health and environmental regulations, rising use of eco-friendly fertilizers, growing adoption of silicon nutrients in specialty crops, and the shift toward sustainable agricultural practices."
- Latin America – 5% driven by "expanding agricultural modernization, increasing farmer awareness of silicon's agronomic benefits, and growing need for productivity enhancement across major crop varieties."
- Middle East & Africa – 2% supported by "initial adoption of advanced fertilizers, rising investments in agricultural development, and growing interest in improving crop resilience and soil quality in arid regions."

Key Players

Deepak Fertilisers and Petrochemicals Corporation Limited | Denka Company Limited | Edw. C. Levy Co. | Redox Bio-Nutrient | Agripower Australia Ltd | MaxSil Pty Ltd. | GREENCHEM BIOTECH | Jaipur Bio Fertilizers | Nousbo Co., Ltd. | Peptech Biosciences Ltd.

Key Highlights

- Deepak Fertilisers and Petrochemicals Corporation Limited – Holds 14.5% share of the global biofertilizers and specialty nutrients market, driven by strong chemical fertilizer production capacity and broad Indian market presence.
- Denka Company Limited – Accounts for 12.2% share, supported by high-quality specialty fertilizers and industrial chemicals for agriculture worldwide.
- Edw. C. Levy Co. – Maintains 10.8% share, recognized for micronutrient fertilizers, soil conditioners, and customized nutrient blends in North America.
- Redox Bio-Nutrient – Represents 9.6% share, focused on bio-based fertilizers and sustainable nutrient solutions for enhanced crop productivity.
- Agripower Australia Ltd – Holds 8.4% share, specializing in eco-friendly biofertilizers and nutrient solutions for Australian and export markets.
- MaxSil Pty Ltd. – Accounts for 6.9% share, known for silicate-based fertilizers and crop-strengthening solutions emphasizing soil health.
- GREENCHEM BIOTECH – Maintains 6.2% share, offering biostimulants and microbial fertilizers for high-value and sustainable crops.
- Jaipur Bio Fertilizers – Represents 5.5% share, focused on microbial fertilizers and soil enrichment solutions widely used across India.
- Nousbo Co., Ltd. – Holds 4.7% share, specializing in advanced nutrient formulations and microbial solutions for improved crop efficiency.
- Peptech Biosciences Ltd. – Accounts for 4.0% share, delivering enzyme-based fertilizers and environmentally friendly plant nutrient products.

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Key Developments

August 2025: Global adoption of silicon fertilizers increased due to rising demand for sustainable agriculture, improved crop resilience, and growing focus on soil health and yield stability.

July 2025: Advanced formulations, particularly nano-silicon and bioavailable silicon-based fertilizers, gained traction as farmers sought more efficient nutrient uptake, better stress resistance, and suitability for precision farming and hydroponics.

May 2025: Research demonstrated that silicon-enriched fertilizers enhanced disease resistance and drought tolerance in staple crops like rice and wheat, reinforcing silicon's role in improving crop resilience under climate stress.

April 2025: Hydroponics, horticulture, and floriculture applications of silicon fertilizers expanded as controlled-environment agriculture grew globally, driving demand for liquid and soluble silicon formulations.

March 2025: Sustainable and eco-friendly farming practices boosted the appeal of silicon fertilizers, which improve soil health, reduce reliance on conventional chemical fertilizers, and enhance plant stress tolerance.

Frequently Asked Questions (FAQs):

How big is the global silicon [fertilizer market](#) in terms of growth forecast?

The global silicon fertilizer market was valued at around US\$ 120.12 million in 2023, with steady growth expected over the coming years.

What is the projected CAGR for the silicon fertilizer market?

The market is projected to grow at a CAGR of 4.55% during 2024–2031.

What is the expected market size by 2031?

By 2031, the market is expected to reach approximately US\$ 171.48 million.

Which region currently leads the silicon fertilizer market?

North America is among the leading regions in the market, supported by established agricultural practices and advanced fertilizer adoption.

Conclusion:

The global Silicon Fertilizer Market is set for steady expansion as agriculture increasingly shifts toward sustainable practices and higher productivity demands. Silicon fertilizers are gaining traction due to their ability to strengthen plant structure, enhance resistance to drought and disease, and improve overall crop quality and yield. Their growing use across field crops, horticulture, hydroponics, and floriculture reflects their versatility and value in diverse farming systems.

Adoption is further supported by government initiatives promoting soil health and sustainable fertilizer use, especially in regions with intensive agricultural activity. However, limited farmer awareness, reluctance to move away from traditional fertilizer practices, and inconsistencies in product quality continue to pose challenges.

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