

Silicon Carbide - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2024 - 2029)

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Abstracts

The Silicon Carbide Market size is estimated at USD 3.30 billion in 2024, and is expected to reach USD 6.77 billion by 2029, growing at a CAGR of greater than 10% during the forecast period (2024-2029).

Key Highlights

The major factors driving the market studied are strong demand from the steel manufacturing and steel processing industry and rapidly growing demand from the electronics industry.

Some factors restraining the demand for the market include fluctuating costs of raw materials like coal and petroleum coke. Moreover, the availability of substitutes such as gallium nitride might also cause challenges.

The rising penetration of electric vehicles is expected to offer various opportunities for the growth of the market.

Asia-Pacific dominated the market globally, with the most significant consumption from countries such as China, India, and Japan.

Silicon Carbide Market Trends

Increasing Usage in Electronics and Semiconductor Segment

Silicon carbide is a semiconductor containing silicon and carbon. Grains of silicon carbide can be molded together to form very hard ceramics that are used in applications

requiring high endurance.

Silicon carbide is widely used in manufacturing semiconductors due to its properties, like the ability to work at high temperature, high voltage, or both, and reduced form factor.

According to the World Semiconductor Trade Statistics (WSTS), the revenue of the global semiconductor market is expected to register USD 588.36 billion, 13.12% higher than USD 520.13 billion in 2023. This will result in a substantial boost in the demand for silicon carbide in the segment in 2024. As semiconductors are one of the most crucial components of electronic devices, the market is expected to witness a substantial boost during the forecast period.

In North America, especially in the United States, the electronics industry is expected to grow at a moderate rate. An increase in the demand for new technological products is expected to help the market expansion in the coming years.

The German electronic industry is Europe's biggest and the fifth-largest, globally. The electrical and electronics industry accounted for 11% of the total German industrial production and about 3% of the country's gross domestic product (GDP).

The United Kingdom is the largest European market for high-end consumer electronics products, with about 18,000 UK-based electronics companies in the market.

According to Canalys, the global smartwatch market is expected to grow by 17% in value in 2024 compared to 2023. This trend of globally increasing demand for electronics is expected to propel the market's growth during the forecast period.

Due to all the factors mentioned above for silicon carbide, its market is expected to grow rapidly during the forecast period.

Asia-Pacific to Dominate the Market

Asia-Pacific is expected to dominate the market for silicon carbide during the forecast period. In countries like China, India, and Japan, due to the increasing demand for advanced and upgraded technology across various sectors, including electronics, automotive, and defense, the demand for silicon carbide has been increasing in the

region.

China is one of the major consumers of semiconductors, and it is trying to ramp up semiconductor production. Semiconductors are a key area of the Made in China 2025 plan, a government initiative that aims to boost the production of higher-value products. China is aiming to produce 70% of the semiconductors it uses by 2025.

According to reports from the Department of Electronics and Information Technology, over 2,000 semiconductor chips are designed in India every year. The increasing production of semiconductors may propel the silicon carbide market in the future.

The India Electronics and Semiconductor Association (IESA) signed an MoU with the Singapore Semiconductor Industry Association (SSIA) to establish and develop trade and technical cooperation between the electronics and semiconductor industries of both countries. This is expected to result in the development of various breakthrough semiconductor manufacturing technologies that may further increase the scope for the consumption of silicon carbide in semiconductor manufacturing in India.

The government launched new schemes to promote electronics production in India: the Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS) and the Scheme for Modified Electronics Manufacturing Clusters (EMC 2.0) alongside the Production Linked Incentive (PLI). According to the PLI scheme, the government is likely to offer incentives as manufacturers increase production in India, with USD 5.5 billion available over five years. This is likely to boost the country's production of electronics.

The Indian automotive industry is worth more than USD 100 billion, contributes 8% of the country's total exports, and accounts for 2.3% of the Indian GDP. It is expected to become the third-largest in the world by 2025.

In March 2024, China announced a 7.2% increase in its defense budget to about USD 233 billion. The country's recent plans are to build a fully modern military on par with the United States by 2027. The country has been investing in aircraft carriers and stealth aircraft in the past few years. Moreover, it plans to increase the number of aircraft carriers to about five to six worldwide, including Beijing's backyard, the South China Sea (SCS).

The factors mentioned above, coupled with government support, contribute to the increasing demand in the region during the forecast period.

Silicon Carbide Industry Overview

The silicon carbide market is partially consolidated, with players accounting for a significant market share. Some key market players (not in any particular order) include Saint-Gobain, Imerys, Tokai Carbon Co. Ltd, Schunk Ingenieurkeramik GmbH, and Morgan Advanced Materials.

Additional Benefits:

The market estimate (ME) sheet in Excel format

3 months of analyst support

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