

Silicon Carbide Market to Reach USD \$5.81 Billion by 2029 at 17% CAGR

The Business Research Company's Silicon Carbide Global Market Report 2025 – Market Size, Trends, And Global Forecast 2025-2034

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Silicon Carbide Global Market Report 2025

How Big Is The [Silicon Carbide Market](#) In 2025?

The expansion of the silicon carbide market has been swift in the past few years. Its value is

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expected to escalate from \$2.68 billion in 2024 to \$3.1 billion in 2025, marking a compound annual growth rate (CAGR) of 15.7%. The notable growth during the historic period is ascribed to its increasing use in the electronics and semiconductor industry, applications requiring high temperature and high power, as well as the superior properties of silicon carbide. This material has also found adoption in automotive power electronics, applications in renewable energy conversion and storage, and also in military and aerospace sectors.

The market size for silicon carbide is projected to witness quick expansion in the approaching years, growing to \$5.81 billion by 2029 with a compound annual growth rate (CAGR) of 17.0%. This growth during the prediction period can be credited to the broadening of electric vehicle manufacturing, wide bandgap semiconductors for energy conservation, 5g communication and rf devices, solar converters and power administration, quantum technologies, and superconductors, as well as SiC powered devices for industrial use. Key trends that are anticipated to arise during this period include SiC-on-Insulator (SiCOI) tech for integrated circuits, SiC substrates targeted at high-power density uses, SiC-based light devices and sensors, SiC composite materials directed towards aerospace, components for SiC-based quantum computing, and SiC power modules designed for grid incorporation.

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What Are The Key Driving Factors For The Growth Of The Silicon Carbide Market?

The rising popularity of electric vehicles is contributing tremendously to the expansion of the silicon carbide market. Electric Vehicles (EVs), which operate on rechargeable batteries that generate minimal sound and absence of exhaust, are deemed environmentally friendly. Silicon Carbide (SiC) is utilized in these vehicles as it is a semiconductor that can accommodate high voltages up to 1200 volts and has superior heat conductivity, which optimizes efficiency while simultaneously reducing weight and cost of the vehicle. For instance, as reported by the International Energy Agency, a France-based independent intergovernmental organization, in June 2024, electric car sales are witnessing robust growth, nearing 14 million units in 2023. The market share of electric cars in overall vehicle sales has surged from around 4% in 2020 to a striking 18% in 2023. This robust trajectory in EV sales is expected to sustain into 2024, with the first three months alone seeing over 3 million electric cars sold. Hence, the growing interest in electric vehicles is anticipated to fuel the growth of the silicon carbide market in the future.

Who Are The Key Players In The [Silicon Carbide Industry](#)?

Major players in the Silicon Carbide include:

- Infineon Technologies AG
- Cree Inc.
- ROHM Co. Ltd.
- ESK-SiC GmbH
- ESD-SiC BV
- Grindwell Norton Limited
- Entegris Inc.
- Saint-Gobain Ceramic Materials GmbH
- AGSCO Corporation
- Carborundum Universal Limited

What Are The Key Trends Shaping The Silicon Carbide Industry?

Major corporations in the silicon carbide market are prioritizing the development of innovations like compact and lightweight elements to decrease weight and size, aspects integral for maximizing vehicle efficiency and lowering energy usage. Compact and lightweight elements imply parts or devices engineered to occupy less room and be less heavy, often to boost portability, efficacy, or cut down on material costs. As an example, STMicroelectronics NV, a semiconductor producer based in Switzerland, rolled out Generation 4 SiC MOSFETs in September 2024 with the intention to improve electric vehicle (EV) traction inverters. This latest generation of silicon carbide power tech provides substantial enhancements in power efficiency, resilience, and density. Specifically designed for future EV traction inverters, it augments driving range by enhancing energy efficacy. Moreover, the design decreases component size and weight, thereby improving vehicle performance. Cutting-edge innovations like these are projected to

persist until 2027.

What Segments Are Covered In The Silicon Carbide Market Report?

The silicon carbide market covered in this report is segmented –

- 1) By Product: Black Silicon Carbide, Green Silicon Carbide
- 2) By Device Type: SiC Discrete Device, SiC Bare Die
- 3) By Application: Steel, Automotive, Aerospace, Military And Defense, Electrical And Electronics, Healthcare, Other Applications

Subsegments:

- 1) By Black Silicon Carbide: Crystalline Black Silicon Carbide, Metallurgical Black Silicon Carbide, Industrial Black Silicon Carbide
- 2) By Green Silicon Carbide: Micro Grit Green Silicon Carbide, Macro Grit Green Silicon Carbide, Industrial Green Silicon Carbide

View the full silicon carbide market report:

<https://www.thebusinessresearchcompany.com/report/silicon-carbide-global-market-report>

Which Region Is Expected To Lead The Silicon Carbide Market By 2025?

In 2024, the Silicon Carbide market was dominated by the Asia-Pacific region, which is anticipated to continue growing. The review of the Silicon Carbide Market consists of regions such as Asia-Pacific, Western and Eastern Europe, North and South America, Middle East, and Africa.

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