

SiC Fibers Market Size to Grow at a CAGR of 22.2% by 2027

Growing demand from various end-use industries – influence the sic fiber market globally

NEW YORK, UNITED STATES, March 28, 2022 /EINPresswire.com/ -- The “Global [SiC Fiber Market to 2027 – Analysis and Forecasts by Form \(Continuous, Woven Cloth, Others\), Usage \(Composites, Non-Composites\), End-Use Industry \(Aerospace and Defense, Energy and Power, Industrial, Others\)”](#) The scope of study involves understanding on the factors responsible for this growth of SiC Fiber market along with the estimates and forecasts of the revenue and market share analysis and also spots the significant SiC fiber players in the market and their key developments.

The global SiC fiber market is accounted to US\$ 270.0 Mn in 2018 and is expected to grow at a CAGR of 22.2% during the forecast period 2019 – 2027, to account to US\$ 3,571.1 Mn by 2027.

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SiC fibers are produced with the help of pyrolysis of organosilicon polymers, such as polycarbosilane. Another method for the manufacturing of SiC fibers is the use of the CVD (chemical vapor deposition) method. High strength along with a lightweight, stability over high temperature, and resistance from oxidation and corrosion make it an ideal material to be across various ends use industries such as aerospace and defense, power and energy, chemical, industrial and others.

The increasing focus towards the enhancement of the performance of commercial and military aircraft is continually driving the demand for high performance structural materials in the aerospace industry. Composite materials have garnered acceptance for aviation and aerospace applications, considering the exceptional strength coupled with superior physical properties and stiffness-to-density ratios. The aerospace industry is regarded as the prime user of SiC fibers. The use of SiC Fibers is essential for application dealing in extreme mechanical loads at high temperatures (up to 1900 K in the air) and cannot be met out with any metallic material or intermetallic materials. Another most essential application field of silicon carbide composites relates to the manufacturing of such materials in spacecraft, which could possess lightweight and thermo-mechanical properties at the same time and could bear high temperatures. They are also used to manufacture thruster nozzles, reusable rocket nozzles, thermal protection systems,

and turbopump components for space vehicles. The growing application of silicon carbide fibers reinforced composites is motivating the manufacturers to replace the metal parts in aircraft with the fibers to boost the fuel efficiency of aircraft engines and used in the manufacturing of engines, thermal protection systems, and turbopumps. Companies are looking forward to expanding the application base of SiC fibers in the aerospace industry. For instance, in March 2017, it was reported that General Electric had adopted SiC fibers-based CMCs to produce its new-generation jetliner engines to improve fuel efficiency. Moreover, CFM International (a joint venture of GE Aviation and Snecma of France) along with another company manufactured fuel-efficient compact new Airbus A320neo, which also included SiC Fibers-based CMCs in its engines.

Silicon carbide fibers are known to provide a high strength-to-weight ratio as compared to other several high-performance fibers and exhibit superior performance of SiC Fibers under extreme temperature conditions. They offer excellent resistance to chemical, corrosion and oxidation, high modulus, and less thermal expansion. The composites reinforced from silicon carbide fibers reinforced enacts superior performance in hostile environmental conditions and structural applications. These composites offer superior benefits in comparison to monolithic composites and super metallic alloys and, thus, are being increasingly demanded. Silicon carbide fibers reinforced composites incorporate low thermal permeability & conductivity and can be used for a specific temperature, life, stress, and environmental conditions. The rising utility of silicon carbide fibers in several industries is leading to an increase in demand and phasing out of the metal alloys.

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Asia Pacific is the fastest growing region in the global SiC fibers market. Increasing production capacities by the major manufacturers like Ube Industries, is one of the primary reasons, in boosting the market growth in future. Developing economies like Japan and China are mainly contributing towards the market growth of SiC fibers in the Asia Pacific region. Also, the rising aerospace and defense industry is aiding towards the increasing demand for SiC fibers.

SiC Fiber Market: Competitive Analysis

The major players in the SiC fiber market include American Elements., BJS Ceramics GmbH, COI Ceramics, Inc., General Electric Company, Haydale Technologies Inc., Matech, NGS Advanced Fibers Co., Ltd, Specialty Materials, Inc., Suzhou Saifei Group Co., Ltd, and Ube Industries, Ltd. among others.

SiC Fiber Market by Form

Based on form, the global SiC fibers market has been segmented into continuous, woven cloth

and others. The continuous segment is expected to register fastest growth in global SiC fibers market during the forecasted period. The continuous SiC fibers are developed as reinforcement of ceramic matrix composites for the high-temperature structural applications. The continuous SiC fibers contain fine filaments of ultra-fine β -SiC crystals that are responsible for the strong particle bonding of the fiber. The continuous SiC fiber is widely used in the nuclear environment due to its chemical stability, high toughness, relatively low neutron absorption and mature fabrication technology.

The overall global SiC fibers market size has been derived using both primary and secondary source. The research process begins with exhaustive secondary research using internal and external sources to obtain qualitative and quantitative information related to the SiC fibers market. Also, multiple primary interviews were conducted with industry participants and commentators in order to validate data and analysis. The participants who typically take part in such a process include industry expert such as VPs, business development managers, market intelligence managers, and national sales managers, and external consultants such as valuation experts, research analysts, and key opinion leaders specializing in the SiC fibers market.

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