Silicon Carbide Market Global Research Report: By Product (Black And Green Silicon Carbide), Application (Steel & Energy, Automotive, Aerospace & Aviation, Military & Defense, Electronics & Semiconductors, Medical & Healthcare, & Others) and Region Forecast Till 2023

Synopsis of Silicon Carbide Market:
Silicon carbide (SIC) (CAS NO. 409-21-2) is also known as carbrundum and is a compound of silica and carbon. SIC is one of the hard material, which has outstanding performance, power switching frequency, and power rating as compared to silicon. Moreover, it has potential to deliver high power switching application in extreme environment. Silicon carbide is wide gap semiconductor material which is used in semiconductor electronics devices that operate at high temperature or high voltage or both. This property has made silicon carbide to highly preferable in end-use applications

Aforementioned properties associated with silicon carbide, specifically, the ability to operate at high temperature has positively impacted the growth of the market. Over the last seven years, the global silicon carbide market has witnessed steady growth and it is moving towards growth expansion mode. Growth in this market is attributed to strong demand from steel manufacturing and steel processing industry along with its recycling units. Steel industries in Asia Pacific are expected to contribute a major part in the coming years. Growing automotive industry across the globe also playing an essential role in the global growth. As per the OICA, China emerged as a global leader in the automotive production with annual growth of over 8%, due to which market is expected to have a high gain in the coming years. Over the last few years, substitution of existing pure silicon technology is increasing year by year, thereby strengthening global demand for silicon carbide. Although, the growth in this market is held back by high cost associated with devices made by silicon carbide. Due to low manufacturing yield and low manufacturing volume, the devices made by silicon carbide are being sold at relatively higher prices, which has posed as growth restraints. Nevertheless, the growing electronics and semiconductor application are expected to offer healthy growth to key industry participants in this market.

Global Silicone Carbide Market share by Product (%) (2016)
Regional Analysis

The global silicon carbide market is spanned across five key regions: Asia Pacific, Europe, Latin America, North America, and the Middle East & Africa. As of 2016, Asia Pacific emerged as one of the most promising markets across the globe and has recorded largest market shares both in terms value and volume. By acquiring more than half of the global market, Asia Pacific is expected to continue its lead over the forecast period as well. Increasing sales of various driver segment such as steel and energy, electronics, and semiconductors and automotive are responsible for the growth this region. India and China are collectively driving the Asia Pacific market on account of growing steel and energy demands driven by industrial and infrastructural development. North America is another growth attractive market and is driven by the automotive demand. The region is anticipated to grow significantly due to massive demand for commercial vehicles. The U.S. is one of the five largest commercial vehicle producing markets across the due the growing demand for silicon carbide. Europe to undergo steady growth in the coming years including major market such as Russia, Germany, and the Netherlands. Established aerospace and aviation industry have significantly driven the regional growth.

Segmentation

The global silicon carbide market is majorly segmented on the basis of product, application, and by region. Market segmentation on the basis of products, includes black silicon carbide, green silicon carbide, and others (refractory, coated, metallurgical, metallurgical briquettes and micro grit). On the basis of application, the market is segmented into steel and energy, automotive, aerospace and aviation, military and defense, electronics and semiconductors, medical and healthcare, and others. Steel and energy is the prominent segment for which silicon carbide is largely used followed by electronics and semiconductors and automobile segment. While the medical and healthcare applications are anticipated to register the highest growth over next five years.

Based on the regions, the market is segmented into North America, APAC, Europe, Latin America and the Middle East and Africa. Asia Pacific is the dominant region and largest market among all.

Key Players

Some of the key players in the global silicon carbide market are Grindwell Norton (India), ESK SIC GmbH, Dow Chemical Company (US), Carborundum Universal (India), Entegris Inc (US), Norstel AB (Sweden), Renesas Electronics Corporation (Japan), ROHM Co Ltd (Japan), Toshiba Corporation (Japan), Microsemi Corporation (US) and others

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