

Silicon Nitride Market Size to Reach USD 86.41 Million at a CAGR of 7% by 2032 | Reports and Data

Silicon Nitride Market increasing demand from various end-use industries such as automotive, aerospace, and medical.

NEW YORK CITY, U.S., UNITED STATES, May 5, 2023 /EINPresswire.com/ -- The [silicon nitride market](#) has witnessed substantial growth in recent years. In 2022, the global silicon nitride market size was valued at USD 47 million, and

it is expected to grow to USD 86.41 million by 2032, with a CAGR of 7% during the forecast period. The market growth is primarily driven by the increased demand for lightweight materials, downsizing, and the rising demand from the automotive and aerospace sectors.



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Rising demand in the electrical and electronics industry”

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The automotive sector is a significant contributor to the silicon nitride market growth. The use of silicon nitride in engine parts such as bearings, pistons, and valves, is becoming increasingly popular due to its superior wear resistance, strong temperature resistance, and low coefficient of thermal expansion. Additionally, the need for fuel-efficient vehicles and lightweight materials is expected

to increase the demand for silicon nitride in the automotive industry during the forecast period.

Silicon nitride is also widely used in the aerospace sector due to its superior thermal and mechanical properties. Turbine parts and heat exchangers are made from silicon nitride, and with rising investments in the aerospace sector and increasing demand for commercial aircraft, the demand for silicon nitride is expected to grow. Furthermore, the trend towards miniaturization in the electronics industry is expected to drive demand for silicon nitride as well.

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Silicon Nitride Market Segments:

The silicon nitride market can be segmented by type and application. By type, the market can be further divided into reaction bonded, hot pressed, and sintered silicon nitride. By application, the market can be categorized into automotive, aerospace and defense, medical, electrical and electronics, and others.

In terms of type, reaction-bonded silicon nitride is expected to hold the largest market share during the forecast period. Reaction-bonded silicon nitride is widely used in the production of bearings, cutting tools, and engine components due to its excellent thermal shock resistance, high wear resistance, and low cost. Additionally, hot-pressed silicon nitride is gaining popularity in the aerospace industry for its high strength and toughness.

In terms of application, the automotive sector is expected to be the largest contributor to the silicon nitride market revenue during the forecast period. This can be attributed to the material's ability to withstand high temperatures and its low coefficient of thermal expansion, making it an ideal choice for engine components such as bearings, pistons, and valves. The aerospace and defense sector is also expected to have significant market growth due to the increasing demand for lightweight materials and the superior thermal and mechanical properties of silicon nitride.

Other application areas for silicon nitride include the medical industry, where the material is used in dental implants and joint replacements due to its biocompatibility and high strength. The electrical and electronics sector is also expected to contribute to the market growth as a result of the trend towards miniaturization and the need for high-performance ceramics.

Geographically, the Asia Pacific region is expected to be the largest market for silicon nitride during the forecast period. This can be attributed to the region's rapidly expanding automotive and aerospace industries, particularly in countries like China and India. Additionally, North America and Europe are also expected to have significant market growth due to the increasing demand for lightweight materials in the aerospace industry.

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Silicon Nitride Market Strategic Developments

Several companies in the silicon nitride market are taking various strategic steps to enhance their market position. Some of the recent developments in the silicon nitride market include:

In 2021, H.C. Starck Solutions announced the expansion of its silicon nitride powder production capacity to meet the increasing demand from the automotive and electronics industries.

In 2020, CeramTec GmbH acquired Dynamic-Ceramic Limited, a UK-based advanced ceramics manufacturer. The acquisition aimed to broaden CeramTec's product portfolio and expand its market reach.

In 2020, Denka Company Limited acquired a majority stake in Energenics Europe Ltd., a UK-based industrial filter manufacturer. This acquisition aimed to expand Denka's business in the environmental and energy sectors.

In 2019, Morgan Advanced Materials acquired Advanced Composite Materials LLC, a US-based carbon fiber composites manufacturer. This acquisition aimed to expand Morgan's product portfolio and market reach in the aerospace and defense industries.

Silicon Nitride Market Competitive landscape:

Silicon nitride is a versatile ceramic compound that is known for its high melting point, high hardness, and excellent mechanical and thermal properties. It finds applications in various industries such as automotive, aerospace, and electronics, among others. The global market for silicon nitride is highly competitive, with numerous players vying for a larger market share. Among these, some of the leading players in the silicon nitride market include UBE Industries, Ltd., Denka Company Limited, H.C. Starck GmbH, CeramTec GmbH, KYOCERA Corporation, Yantai Tomley Hi-Tech Industrial Development Co. Ltd., 3M Company, Morgan Advanced Materials, CoorsTek Inc., and Toshiba Materials Co. Ltd.

These major companies are engaged in various strategic initiatives to enhance their market position. Some of these initiatives include mergers and acquisitions, expansions, product launches, and collaborations. For instance, in 2020, CeramTec GmbH acquired Dynamic-Ceramic Limited, a UK-based manufacturer of advanced ceramics, to expand its product portfolio and market reach. Similarly, in 2021, H.C. Starck Solutions announced the expansion of its production capacity for silicon nitride powder to cater to the growing demand from the automotive and electronics industries. Such initiatives by the leading players are likely to fuel the growth of the silicon nitride market over the forecast period.

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