

Carbon Fiber Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The global carbon fiber market is expected to reach 123,710 million tons by the end of this year and is projected to register a CAGR of over 10% during the forecast period.

Due to COVID-19, production in various industries, including automotive, construction, aerospace, etc., decreased in 2020. The global automotive and aerospace industry has been heavily impacted by the pandemic, considering a temporary halt in end-user activities due to government-imposed lockdowns in various parts of the world. However, in the post-pandemic scenario, the industry has recovered and is expected to grow at a significant rate during the coming years.

Key Highlights

In the medium term, the major factors driving the growth of the market studied are recent advancements in the aerospace and defense sector and increasing applications in the wind energy sector.

On the flip side, supply chain security for recycled carbon fiber and the availability of substitutes have been acting as restraints to the market studied.

The increasing popularity of recycled carbon fiber and the emphasis on the usage of lignin as raw material for carbon fiber is likely to act as opportunities for the market studied over the forecast period.

In terms of volume, Asia-Pacific dominated the market studied across the world, with China accounting for most of the demand.

Carbon Fiber Market Trends

Aerospace and Defense Industry to Dominate the Market

Aerospace and defense account for the largest share of the market based on end-user industries. Over the past few years, there

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have been several new products added in this field. Carbon fibers are a perfect choice for numerous aerospace and defense applications as they provide strength, endurance, and stability as required.

In the defense industry, the use of carbon fiber-reinforced plastics (CFRP) is present in missile defense, ground defense, and military marine.

In North America, higher consumer spending and the constant aging of commercial aircraft are among the primary factors influencing the overall product penetration of carbon fibers in the aerospace industry.

In Asia, the market for carbon fibers in aerospace technology is likely to witness the highest growth rate over the forecast period due to the rising demand for commercial aircraft across the region, especially in emerging economies, including China.

COVID-19 has accelerated several pre-existing trends in aviation and aerospace, with market participants identifying sustainable technologies, industry consolidation, and environmental, social, and corporate governance (ESG) as the three biggest themes in the post-COVID-19 space.

For instance, according to the Boeing Commercial Outlook 2022-2041, the total global deliveries of new airplanes are estimated to be 41,170 by 2041. Owing to such huge expected deliveries, the demand for carbon fiber during aircraft production is likely to rise across the world.

The global defense expenditure crossed USD 2 trillion for the first time in 2021. Global spending was 0.7% higher in 2021 compared to 2020. The top five countries with the highest defense expenditure were the United States, China, India, the United Kingdom, and Russia. They accounted for 62% of the total spending. This is likely to increase the demand for carbon fiber used in defense applications.

Such trends in the aerospace and defense industries are expected to drive the carbon fiber market.

Asia-Pacific to Dominate the Market

The Asia Pacific region is expected to dominate the global market in terms of volume due to the growth of various end-user industries in countries like China and India.

The Chinese airline companies are planning to purchase about 7,690 new aircraft in the next 20 years, which were valued at approximately USD 1.2 trillion, which is further expected to raise the market demand for carbon fiber.

According to the Boeing Commercial Outlook 2022-2041, in China, around 8,485 new deliveries are likely to be made by 2041, with a market service value of USD 545 billion. Owing to such new deliveries in the country, the demand for carbon fiber is likely to rise.

According to the Stockholm International Peace Research Institute (SIPRI), India's military spending of USD 76.6 billion ranked third highest in the world. This was up by 0.9% from 2020. In a push to strengthen the indigenous arms industry, 64% of capital outlays in the military budget of 2021 were earmarked for acquisitions of domestically produced arms.

India currently has the fourth-highest wind installed capacity in the world, with a total installed capacity of 39.25 GW (as of March 31, 2021), and generated around 60.149 billion units during 2020-21. The expansion of the wind industry resulted in a strong ecosystem, project operation capabilities, and a manufacturing base of about 10,000 MW per annum.

All the aforementioned factors are expected to show a significant impact on the demand for the carbon fiber market in the region over the forecast period.

Carbon Fiber Market Competitor Analysis

The global carbon fiber market is consolidated in nature, with intense competition among the top players to increase their share in the market. The major companies in the carbon fiber market include (not in any particular order) Toray Industries Inc., SGL Carbon, Mitsubishi Chemical Corporation, Hexcel Corporation, and Teijin Limited, among other companies.

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Additional Benefits:

The market estimate (ME) sheet in Excel format

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