

North America Carbon Fiber - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2024 - 2029)

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Abstracts

The North America Carbon Fiber Market size is estimated at 52.06 kilotons in 2024, and is expected to reach 118.15 kilotons by 2029, growing at a CAGR of greater than 17% during the forecast period (2024-2029).

The COVID-19 pandemic disrupted the North American carbon fiber market. Lockdown measures, production halts, and reduced consumer spending led to a decline in demand for carbon fiber composites used in vehicle components, aircraft structures, and other applications. Many companies postponed or canceled orders for carbon fiber materials amid economic uncertainty. As lockdown measures were eased and economic activities resumed, the demand for carbon fiber in North America began to recover. Industries such as automotive, aerospace, and construction, which are significant consumers of carbon fiber, gradually resumed operations, driving demand for carbon fiber products.

The increased demand for lighter and more fuel-efficient vehicles, increased use of carbon fiber in the aerospace and defense industries, and rise in the use of carbon fiber for renewable energy are the main factors driving the North American carbon fiber market.

However, high investments in research and development activities in this sector and the availability of substitutes are expected to hinder the growth of the carbon fiber market.

Opportunities for the future come from the growing demand for recycled carbon fiber and the increasing focus on using lignin as the primary raw material for

carbon fiber.

The United States had the most significant share of the market, and this is likely to stay valid for the upcoming years.

North America Carbon Fiber Market Trends

Aerospace and Defense Industry to Dominate the Market

Carbon fiber is valued in the aerospace and defense sectors for its exceptional strength-to-weight ratio. Aircraft and defense systems require materials that are both strong and lightweight to maximize performance and fuel efficiency. Carbon fiber composites offer these characteristics, allowing manufacturers to reduce the weight of aircraft and defense equipment without compromising structural integrity or performance.

Aerospace and defense applications often require materials that can endure extreme conditions like high temperatures, pressure, and mechanical stress. Carbon fiber composites exhibit excellent resistance to these factors, making them suitable for critical components such as aircraft fuselages, wings, rotor blades, and ballistic protection systems.

The aerospace and defense sectors in North America represent significant markets for carbon fiber manufacturers. The demand from these industries often drives large-scale production facilities and investments in research and development. Companies in North America, including major aerospace manufacturers and defense contractors, have invested heavily in carbon fiber technology to meet the growing demand for lightweight and high-performance materials.

According to the estimate released by the Aerospace Industries Association, the American aerospace and defense industry generated total sales of over USD 952 billion in 2022, which increased by almost 6.7% compared to 2021.

Furthermore, according to the estimate released by the Aerospace Industries Association (AIA), aerospace and defense industry exports increased by 4.4% in 2022 to a total value of USD 104.8 billion.

Aerospace and defense contracts typically involve long-term agreements and partnerships between manufacturers, suppliers, and government agencies. Carbon fiber

suppliers often establish strategic relationships with aerospace and defense companies to secure long-term contracts for the supply of materials. These partnerships contribute to the dominance of the aerospace and defense industry in the North American carbon fiber market.

In view of these factors, the aeronautics and defense sector is projected to prevail over the regional market during the forecast period, enabling the carbon fiber market in this region to grow at an exponential rate.

United States to Dominate the Market

The United States is home to some of the world's largest and most advanced aerospace and defense companies, including Boeing, Lockheed Martin, Northrop Grumman, and Raytheon. These companies have significant demand for carbon fiber materials for aircraft, spacecraft, missiles, and defense systems.

The United States has a robust research and development infrastructure focused on carbon fiber technology. Leading universities, national laboratories, and private research institutions conduct extensive research on carbon fiber materials, manufacturing processes, and applications. This investment in R&D contributes to innovation and technological advancements in the carbon fiber industry.

According to the data released by the Bureau of Economic Analysis (BEA), the US automotive industry sold approximately 15.5 million units of light vehicles in 2023. Retail sales of about 3.12 million passenger cars and slightly over 12.4 million light vehicles were included in that number.

The United States has a significant manufacturing base for carbon fiber materials and composites. Several major carbon fiber producers, including Hexcel Corporation, Toray Industries, and Solvay, have manufacturing facilities in the United States. These companies supply carbon fiber products to various industries, that include aerospace, automotive, wind energy, and sporting goods.

Carbon fiber composites are majorly being used in the construction sector for applications such as reinforcing concrete structures, bridge components, and building facades. Carbon fiber reinforcement can enhance the strength, durability, and seismic resistance of infrastructure projects.

According to the United States Census Bureau, USD 939.17 billion was spent on public construction in the US construction sector in 2022. Comparing 2022 to 2021, when the total amount spent on public construction was USD 365.32 billion, the construction sector showed a rise.

In the coming years, all of these factors are expected to have a significant impact on the demand for carbon fiber in this region.

North America Carbon Fiber Industry Overview

The North American carbon fiber market is highly consolidated. The major companies include (not in particular order) Mitsubishi Chemical Carbon Fiber and Composites Inc., SGL Carbon, Solvay, TEIJIN LIMITED, and Toray Industries Inc.

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