

Carbon Fibre Market Growth Analysis Report - Market Share, Forecast Trends and Outlook (2025-2034)

Market Report | 2025-08-11 | 177 pages | EMR Inc.

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Report description:

The global carbon fibre industry attained a value of about USD 3821.39 Million in 2024. The market is further expected to grow in the forecast period of 2025-2034 at a CAGR of 11.90% to reach USD 11763.11 Million by 2034.

Europe is Expected to Lead the Market During the Forecast Period

Europe is expected to dominate the carbon fibre market due to the presence of established automotive, aerospace, defence, and wind energy industries. Companies such as BMW, Mercedes, Fiat, and Ferrari, among others, are emphasising on building low emission, environment friendly cars, low-weight, and fuel-efficient products which will directly increase the consumption of carbon fibre. Demand for aerospace is increasing due to rising demand for commercial aviation on account of increased disposable income and globalisation. Europe has many offshore wind energy installations, especially in the United Kingdom and Germany.

Impact of COVID-19 on the Carbon Fibre Industry

The COVID-19 pandemic has disrupted the growth of the carbon fibre industry. The production of various industries such as automotive, aerospace, and construction, among others, have been disrupted. Supply chain and operations management had been adversely affected due to lockdowns and restrictions, especially in 2020. The production and sales of motor vehicles had come to a sudden halt in most parts across the world. The aerospace and defence industry, major end-user of the product, took a major hit in 2020, due to COVID-19. Demand for commodities have decreased, manufacturers from major sectors require less carbon fibres.

Carbon Fibre Market Segmentation

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Carbon fibre, also known as graphite fibre, is a composition of carbon atoms bonded together to form a long chain. They are about 5 to 10 micrometres in diameter. The carbon atoms are bonded together in crystals, aligned parallel to the long axis of the fibre as the crystal alignment gives the fibre a high strength-to-volume ratio. Thousands of fibres are bundled together to form a tow, which can be used by itself or woven into fabric. High stiffness, high tensile strength, low weight to strength ratio, high chemical resistance, high temperature tolerance, and low thermal expansion are some of the advantages of carbon fibres. These properties make it an ideal manufacturing material for various parts. The properties of a carbon fibres are close to that of steel and the weight is close to that of plastic. However, it is expensive compared to other fibres, such as plastic fibre, basalt fibre, or glass fibres.

The market can be broadly categorised on the basis of its raw material into:

- Pan-Based Carbon Fibre
- Pitch-Based Carbon Fibre and Rayon-Based Carbon Fibre

The major types of carbon fibre are:

- Continuous Carbon Fibre
- Long Carbon Fibre
- Short Carbon Fibre

The market can be broadly categorised on the basis of its end-use segments into:

- Aerospace and Defense
- Alternative Energy
- Automotive
- Construction and Infrastructure
- Sporting Goods
- Others

The major forms of carbon fibre are:

- Polymer Matrix Composites (PMC)
- Metal Matrix Composites (MMC)
- Ceramic Matrix Composites (CMC)

The EMR report looks into the regional markets of carbon fibre like:

- North America
- Europe
- Asia Pacific
- Latin America
- Middle East and Africa

Wide Applicability of Carbon Fibre in Major Industries is Driving the Market

Carbon fibres are lightweight, have tensile strength and impact resistance, which makes them fuel efficient and reliable for the

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use in aerospace and defence, sports, wind turbines, automotive, and among others. Wind turbines use carbon fibres because of the high tensile strength of carbon fibre which enables the wind turbines to withstand harsh weather conditions and lower weight enhances efficiency, consumption, and demand for renewable energy. Carbon fibre industry receives huge demand from the automotive sector owing to its superior strength-to-weight ratio which leads to weight reduction and increased fuel efficiency without compromising on the performance or safety. Carbon fibre is used in defence equipment. Polyacrylonitrile is the most versatile precursor for carbon fibre. Also known as Creslan 61, it is a synthetic semi-crystalline polymer resin. Almost 90% of carbon fibre is produced using PAN, propelling the demand for carbon fibre. Aerospace application segment contributed significantly towards the overall market share in terms of revenue as PAN-based carbon fibres make aircraft fuel-efficient. Pitch-based carbon fibres are increasingly used in satellite manufacturing. 3D printing also makes extensive use of carbon fibre.

Key Industry Players in the Global Carbon Fibre Market

The report presents a detailed analysis of the following key players in the global carbon fibre industry, looking into their capacity, market shares, and latest developments like capacity expansions, plant turnarounds, and mergers and acquisitions:

- SGL Carbon
- Hexcel Corporation
- Hyosung Advanced Materials
- Mitsubishi Chemical Carbon Fiber and Composites, Inc.
- Nippon Steel Chemical & Material Co., Ltd.
- Others

The comprehensive report looks into the macro and micro aspects of the industry. The EMR report gives an in-depth insight into the market by providing a SWOT analysis as well as an analysis of Porter's Five Forces model.

More Insights On

Activated Carbon Fibre Market

United Kingdom Carbon Fibre Market

United Kingdom Aerospace Carbon Fibre Market

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