Carbon Fiber Market Size & Share Analysis - Growth Trends and Forecast (2026 - 2031)

> **Industry:** Advanced Materials & Composites (Chemicals & Materials)
> **Source:** https://www.mordorintelligence.com/industry-reports/carbon-fiber-market

> **Scraped Date:** 2026-09-17

Executive Market Summary

Market Metric	Details
Base Market Size	USD 500 million
Projected Forecast (2031)	USD 500 million
Growth Rate (CAGR)	18.06 %
Largest Market Region	N/A
Fastest-Growing Region	N/A

Market Visualizations & Infographics

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![Major players in Carbon Fiber industry](images/chart_2.png)

![Carbon Fiber Market (2026 - 2031)](images/chart_3.png)

![Carbon Fiber Market: Market Share by Raw Material](images/chart_4.png)

![Carbon Fiber Market: Market Share by Fiber Type](images/chart_5.png)

![Carbon Fiber Market: Market Share by End-User Industry](images/chart_6.png)

![Carbon Fiber Market CAGR (%), Growth Rate by Region](images/chart_7.png)

![Carbon Fiber Market - Market Concentration](images/chart_8.png)

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![ESOMAR](images/chart_18.png)

![GPTW](images/chart_20.png)
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Comprehensive Research Analysis

Overview Points List Flex 49 Share Feature End

Market OverviewStudy Period | 2021 - 2031 |
Market Volume (2026) | 245.37 kilotons |
Market Volume (2031) | 562.77 kilotons |
Growth Rate (2026 - 2031) | 18.06 % |
Fastest Growing Market | Asia Pacific |
Largest Market | Asia Pacific |
Market Concentration | High |
Major Players*Disclaimer: Major Players sorted in no particular order

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Market Overview

Carbon Fiber Market Analysis by Mordor IntelligenceThe Carbon Fiber Market size is expected to grow from 207.83 kilotons in 2025 to 245.37 kilotons in 2026 and is forecast to reach 562.77 kilotons by 2031 at 18.06% CAGR over 2026-2031. Sustained demand from offshore wind, hydrogen pressure vessels, and battery-electric vehicles keeps utilization rates high across integrated producers in Asia-Pacific, North America, and Europe. Capacity expansions by Toray, Mitsubishi Chemical, and Chinese newcomers are easing raw-material tightness while automated fiber-placement (AFP) systems cut cycle time and labor cost, widening the customer base. Recycled fiber growth and local-content rules in India and the Middle East diversify supply chains, although high energy intensity and feedstock volatility remain headwinds. Together, these dynamics reinforce the long-run competitiveness of carbon composites versus aluminum and high-performance thermoplastics in mobility, clean-energy, and aerospace programs.

Key Report Takeaways* By raw material, polyacrylonitrile led with 95.18% volume share in 2025, accounting for the largest carbon fiber market share while the same segment is forecast to advance at an 18.91% CAGR through 2031.
* By fiber type, virgin carbon fiber secured a 62.95% share in 2025, whereas recycled carbon fiber is expected to post a 19.87% CAGR during 2026-2031.
* By application, composite materials captured 87.77% of volume in 2025, and micro-electrodes are set to expand at a 25.55% CAGR to 2031.
* By end-user industry, alternative energy held a 27.21% share in 2025, while the other end-user industries segment is projected to grow at a 25.98% CAGR over the same period.
* By geography, Asia-Pacific commanded a 44.89% share in 2025, reinforcing its dominance in the carbon fiber market share and is also forecast to be the fastest-growing region, rising at a 20.75% CAGR through 2031.

Key Market Trends

Market Trends and InsightsDrivers Impact Analysis of Carbon Fiber Market*Drivers

(~) % Impact on CAGR Forecast	Geographic Relevance	Impact Timeline

Rising production of hydrogen and CNG pressure vessels	+2.5%	Global, early focus in Europe and Asia-Pacific	Medium term (2-4 years)
Rapid deployment of offshore wind turbines	+3.2%	Europe, China, Taiwan, Japan	Long term (≥ 4 years)
Adoption of battery-pack enclosures in EVs	+2.8%	North America, Europe, China	Medium term (2-4 years)
3D automated fiber-placement lines	+1.8%	North America, European aerospace hubs	Short term (≤ 2 years)
Local-content mandates in India and MENA	+1.5%	India, United Arab Emirates, Saudi Arabia	Medium term (2-4 years)
Source: Mordor Intelligence			

Competitive Landscape

Competitive Landscape

The global carbon fiber market is highly consolidated, with the top five arbon fiber companies holding a major share of the global volume in 2025. The cost-innovation race continues to drive advancements in the market. SGL has launched a climate-friendly fiber line that reduces CO_2 emissions by 50%, addressing the growing demand from automotive and wind OEMs for low-carbon solutions. Concurrently, university-industry collaborations are focusing on innovative materials such as bitumen, lignin, and recycled feedstocks to disrupt traditional cost structures. Furthermore, strategic partnerships among resin producers, sizing specialists, and fiber manufacturers emphasize vertical integration, enabling the developmen t of specialized growth opportunities.

Carbon Fiber Industry Leaders* TORAY INDUSTRIES, INC.

* Mitsubishi Chemical Group Corporation

* Teijin Limited

* Hexcel Corporation

* SGL Carbon

* *Disclaimer: Major Players sorted in no particular order

Scope Methodology P Space

Our study defines the global carbon fiber market as the sale of continuous, semi-continuous, and chopped fibers produced from polyacrylonitrile, pitch, or rayon precursors that possess a minimum tensile strength of 3 GPa and are delivered in raw fiber form to converters or captive composite lines. Outputs are tracked in kilotons at factory gate and tied to equivalent invoice revenues where available.

Scope Exclusions: Finished composite parts (e.g., bicycle frames, pressure vessels) and activated-carbon cloth are kept outside this baseline.

Segmentation Container

* By Raw Material* Polyacrylonitrile (PAN)
* Petroleum Pitch and Rayon

* By Fiber Type* Virgin Carbon Fiber (VCF)
* Recycled Carbon Fiber (RCF)
* Others

* By Application* Composite Materials
* Textiles
* Micro-Electrodes
* Catalysis

* By End-User Industry* Aerospace and Defense
* Alternative Energy
* Automotive
* Construction and Infrastructure
* Sporting Goods
* Other End-user Industries

* By Geography* Asia-Pacific* China
* Japan
* India
* South Korea
* Rest of Asia-Pacific

* North America* United States
* Canada
* Mexico

* Europe* Germany
* United Kingdom
* France
* Italy

* Rest of Europe

* South America* Brazil
* Argentina
* Rest of South America

* Middle-East and Africa* Saudi Arabia
* United Arab Emirates
* South Africa
* Egypt
* Rest of Middle-East and Africa

Frequently Asked Questions

What is the projected demand for carbon fiber in 2031?

The carbon fiber market size is expected to reach 562.77 kilotons by 2031, reflecting an 18.06% CAGR from 2026 levels.

Which region is forecast to expand fastest?

Asia-Pacific is projected to grow at a 20.75% CAGR through 2031, supported by precursor capacity, offshore wind, and automotive programs.

How quickly is recycled carbon fiber growing?

Recycled grades are forecast to post a 19.87% CAGR between 2026 and 2031 as automotive and wind customers seek circular materials.

Why is polyacrylonitrile the dominant precursor?

PAN offers a 50-55% carbon yield and tensile strengths above 4,800 MPa, which keeps supply economics favorable despite rising energy costs.

What technology is reducing composite cycle time?

Automated fiber-placement with laser consolidation lowers layup cycles by up to 70%, bringing part costs within reach for automotive volumes.