

Global Carbon Fiber Market to Hit US\$31,065.98 million, Driven by EVs, Aerospace & Renewable Energy Growth

Rising demand for lightweight, high-strength materials in automotive, aerospace, and wind energy fuels rapid carbon fiber market expansion

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EINPresswire.com/ -- The global [carbon fiber market](#) has become one of the most crucial segments of the materials and composites industry, primarily due to its exceptional strength-to-weight ratio, stiffness, and corrosion resistance. Carbon fiber is widely adopted in aerospace, automotive,

wind energy, sports & recreation, marine, and construction industries to improve performance, reduce weight, and enhance fuel efficiency. According to DataM Intelligence, the global carbon fiber market reached US\$21,849.45 million in 2024 and is projected to hit US\$31,065.98 million by 2031, growing at a CAGR of 8.5% during the forecast period (2024–2031). Rising electric

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Carbon fiber’s superior strength-to-weight ratio positions it as key for EVs, aerospace, and renewable energy; innovation in bio-based and recycled fibers will drive future growth.”

DataM Intelligence

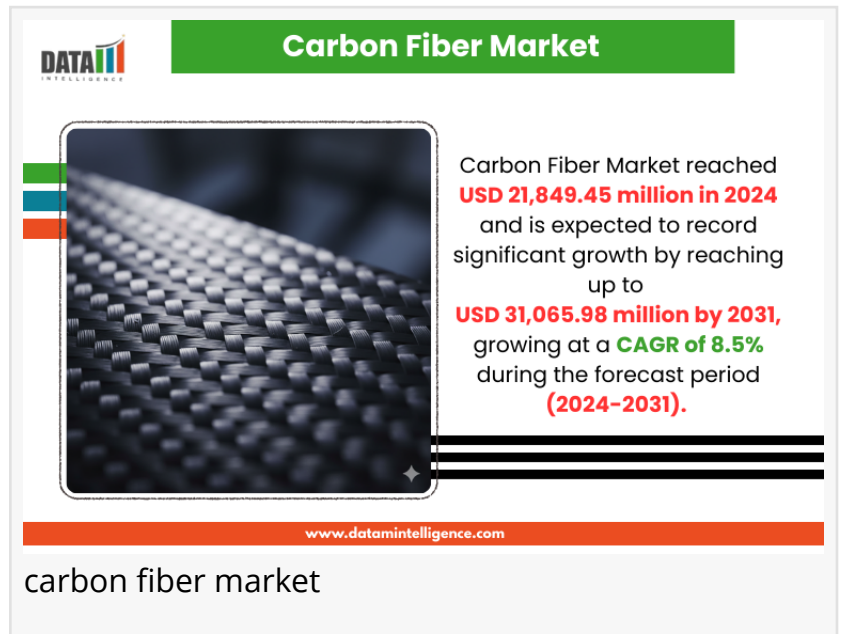
vehicle adoption, renewable energy deployment, and demand for lightweight, high-strength materials are among the strongest growth drivers.

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Asia-Pacific and North America lead the market, but for different reasons. North America dominates due to strong

aerospace, automotive, and wind energy sectors, coupled with advanced manufacturing and regulatory frameworks. Asia-Pacific is witnessing rapid adoption due to growing EV production,



renewable energy infrastructure, and government initiatives to encourage lightweight materials. Among segments, the polyacrylonitrile (PAN) fiber category is the clear leader, owing to its superior strength, stiffness, and wide industrial applications across aerospace, automotive, and wind energy industries.

Key Highlights from the Report

- Global carbon fiber market size projected to reach US\$31,065.98 million by 2031 at a CAGR of 8.5%.
- PAN-based fibers dominate, supported by aerospace, automotive, and wind energy demand.
- North America holds a significant revenue share, driven by aerospace and high-end automotive manufacturing.
- Asia-Pacific emerging as the fastest-growing region, fueled by EV adoption, renewable energy, and manufacturing expansion.
- Small tow and large tow fiber segmentation cater to different industrial applications, impacting cost and performance.
- Growing interest in recycled and bio-based carbon fibers offers new opportunities and sustainability benefits.

Market Segmentation

The carbon fiber market is segmented by material, modulus, tow size, application, and region.

- By Material: PAN fibers dominate due to their high mechanical strength, whereas petroleum pitch, rayon, and bio-based fibers serve niche and sustainable applications.
- By Modulus: Standard, intermediate, and high modulus fibers cater to various structural and performance requirements in aerospace, automotive, and sports equipment.
- By Tow Size: Small tow fibers are used for detailed and precision applications, while large tow fibers offer cost efficiency in automotive panels and wind turbine blades.
- By Application: Automotive, aerospace & defense, and wind energy are the leading end-use segments, with sports, marine, construction, and electronics contributing smaller but steady shares.

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Regional Insights

North America dominates the global carbon fiber market, driven by aerospace and high-performance automotive demand, along with regulatory support for lightweighting and

emissions reduction. The U.S. leads with advanced manufacturing infrastructure and high R&D investment.

Asia-Pacific is projected to witness the fastest growth, fueled by rising EV production, renewable energy deployment, and government initiatives supporting lightweight material adoption. Countries like China, Japan, South Korea, and India are investing heavily in carbon fiber manufacturing and composites for domestic and export markets.

Europe remains strong, with demand driven by automotive, aerospace, and wind energy applications. Regulatory policies promoting emission reduction and sustainable materials encourage the adoption of carbon fiber composites.

Latin America, the Middle East, and Africa present emerging opportunities, particularly in infrastructure, automotive, and wind energy projects. However, high costs and supply chain limitations currently restrain widespread adoption.

Market Dynamics

Market Drivers

The market is propelled by growing demand for lightweight materials in automotive and transportation, increased aerospace and defense projects, renewable energy growth, regulatory pressures for emissions reduction, and technological innovations reducing cost and improving performance.

Market Restraints

High production costs, supply chain limitations, energy-intensive manufacturing, and recycling challenges restrain market expansion. Additionally, cost sensitivity in some applications may favor alternatives like aluminum or advanced steel.

Market Opportunities

Opportunities exist in recycled and bio-based carbon fibers, EV battery enclosures and structural components, longer and more efficient wind turbine blades, aerospace modernization programs, and regional manufacturing expansion, particularly in Asia-Pacific and emerging economies.

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Reasons to Buy the Report

- Comprehensive analysis of global carbon fiber market dynamics, trends, and forecasts.
- Detailed segmentation by material, modulus, tow size, application, and region.
- Insights into sustainability, recycled fibers, and regulatory impacts.

- Competitive landscape covering leading carbon fiber manufacturers.
- Identification of opportunities in high-growth regions like Asia-Pacific and emerging markets.

Frequently Asked Questions (FAQs)

- How big is the global carbon fiber market in 2024?
- Who are the key players in the carbon fiber market?
- What is the projected growth rate of the carbon fiber market through 2031?
- Which region dominates carbon fiber consumption worldwide?
- What are the major challenges facing carbon fiber market growth?

Company Insights

Key players in the global carbon fiber market include:

- Solvay
- Toray Industries, Inc.
- TEIJIN LIMITED
- SGL Carbon
- Zhongfu Shenying Carbon Fiber Co., Ltd.
- Mitsubishi Chemical Holdings Corporation
- BASF SE
- Hexcel Corporation
- Formosa Plastics
- DowAksa Advanced Composites Holdings BV

Recent Developments

- Solvay partnered with 9T Labs AG to mass-produce bio-based high-performance carbon fiber composites.
- Zhongfu Shenying Carbon Fiber Co. Ltd. launched a 10,000 MT production facility to meet global demand for high-performance carbon fibers.

Conclusion

The carbon fiber market remains a critical component of advanced materials and composites industries, providing lightweight, high-strength solutions across aerospace, automotive, wind energy, and other industrial applications. North America and Europe continue to dominate in revenue and technological innovation, while Asia-Pacific emerges as the fastest-growing region. With ongoing innovation in recycled and bio-based fibers and expanding industrial applications, the carbon fiber market is poised for sustained growth through 2031.

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