

# **Automotive Carbon Fiber Market Forecasts to 2034 – Global Analysis By Fiber Type (Continuous Carbon Fiber, Long Carbon Fiber, Short Carbon Fiber, and Recycled Carbon Fiber), Resin Type (Epoxy Resin, Polyamide Resin, Polypropylene Resin, Polyurethane Resin, PEEK and High-Performance Resins, and Other Resins), Composite Type, Manufacturing Process, Vehicle Type, Application, End User, and By Geography**

<https://marketpublishers.com/r/AB6B633F809FEN.html>

Date: June 2026

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: AB6B633F809FEN

## **Abstracts**

According to Statistics MRC, the Global Automotive Carbon Fiber Market is accounted for \$3.4 billion in 2026 and is expected to reach \$6.7 billion by 2034 growing at a CAGR of 8.8% during the forecast period. Automotive carbon fiber is a lightweight, high-strength composite material used extensively in vehicle manufacturing to reduce overall weight while maintaining structural integrity and crash performance. This material is critical for meeting stringent fuel efficiency standards and enabling the transition to electric vehicles by extending battery range. The market encompasses various fiber types and resin matrices, with applications ranging from structural body panels and chassis components to interior trim and drive shafts, serving both luxury and mass-market automotive segments.

### **Market Dynamics:**

Driver:

Stringent emission regulations and fuel efficiency standards

Governments worldwide are imposing increasingly strict carbon dioxide emission targets on automakers, with non-compliance penalties reaching hundreds of millions of dollars annually. Carbon fiber composites offer weight reductions of up to 60 percent compared to traditional steel, directly translating into lower fuel consumption for internal combustion engines and extended driving range for electric vehicles. Every 10 percent reduction in vehicle weight yields approximately 7 percent improvement in fuel economy, making carbon fiber a strategic material. As regulatory deadlines approach, manufacturers are accelerating adoption to meet fleet average requirements while preserving vehicle performance and safety characteristics.

#### Restraint:

##### High material and processing costs

Carbon fiber production remains significantly more expensive than conventional automotive materials, with precursor manufacturing, carbonization, and autoclave curing requiring substantial energy investment and specialized equipment. Raw material costs for aerospace-grade continuous fiber can exceed twenty dollars per kilogram, compared to under one dollar for steel. Additionally, cycle times for carbon fiber component production are considerably longer than metal stamping, limiting manufacturing throughput. These economic factors restrict carbon fiber primarily to luxury and high-performance vehicles where cost sensitivity is lower, while mass-market adoption proceeds slowly unless breakthrough low-cost production technologies emerge.

#### Opportunity:

##### Recycled carbon fiber for secondary structural applications

Recovered carbon fiber from end-of-life components and manufacturing scrap presents a compelling opportunity to reduce material costs while supporting circular economy initiatives. Recycled carbon fiber retains approximately 80 to 90 percent of original mechanical properties at substantially lower price points, making it suitable for non-primary structural applications such as underbody shields, battery enclosures, and interior components. Several automotive manufacturers are establishing closed-loop recycling partnerships with suppliers, converting production waste into usable materials. As recycling technologies mature and regulatory pressure on end-of-life vehicle waste increases, recycled fiber adoption is expected to accelerate, creating new market segments and reducing overall dependence on virgin material.

Threat:

### Competition from alternative lightweight materials

Advanced high-strength steels, aluminum alloys, and glass fiber composites are continuously improving their performance-to-cost ratios, threatening carbon fiber market share in weight-sensitive applications. Novel aluminum formulations now achieve near-carbon-fiber stiffness at substantially lower cost and with established high-volume manufacturing processes. Glass fiber composites reinforced with nanomaterial additives are closing the mechanical performance gap while remaining significantly more affordable. Additionally, emerging natural fiber composites appeal to sustainability-focused automakers. These competing materials benefit from mature supply chains and existing manufacturing infrastructure, reducing the urgency for automakers to transition to carbon fiber despite its superior theoretical performance.

Covid-19 Impact:

The COVID-19 pandemic severely disrupted the automotive carbon fiber market through production halts, supply chain interruptions, and reduced vehicle demand during global lockdowns. Luxury and high-performance vehicle segments, which constitute primary carbon fiber consumers, experienced sharper sales declines than mass-market segments, delaying new model development programs incorporating advanced composites. However, the post-pandemic period has seen accelerated investment in vehicle lightweighting as automakers seek to compensate for the additional weight of battery systems in electrified models. The crisis also heightened focus on supply chain resilience, prompting manufacturers to diversify carbon fiber sourcing and develop regional production capabilities, ultimately strengthening market fundamentals.

The Continuous Carbon Fiber segment is expected to be the largest during the forecast period

The Continuous Carbon Fiber segment is expected to account for the largest market share during the forecast period, owing to its superior mechanical properties essential for primary structural automotive applications. Continuous fibers provide uninterrupted reinforcement across entire component lengths, delivering maximum tensile strength, stiffness, and impact resistance required for chassis frames, crash structures, and passenger safety cells. These unbroken fiber architectures enable load transmission

without stress concentration points that occur at fiber ends, critical for meeting rigorous safety standards. Although manufacturing complexity and cost remain higher than discontinuous alternatives, the performance requirements of structural applications leave no practical substitute, securing continuous carbon fiber's dominant position across luxury, motorsport, and emerging electric vehicle platforms.

The PEEK and High-Performance Resins segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the PEEK and High-Performance Resins segment is predicted to witness the highest growth rate, driven by demanding under-hood and high-temperature automotive applications where standard epoxy matrices degrade. Polyether ether ketone (PEEK) and similar thermoplastics offer exceptional thermal stability, chemical resistance, and mechanical retention at temperatures exceeding 250 degrees Celsius, making them ideal for engine compartments, turbocharger inlets, and battery thermal management systems. Unlike thermoset epoxy, PEEK-based composites enable faster manufacturing cycles through compression molding and provide recyclability advantages. As electric vehicle powertrains generate unique thermal challenges and automakers pursue extreme lightweighting, high-performance resin adoption accelerates, representing the fastest-growing matrix category throughout the forecast timeline.

### **Region with largest share:**

During the forecast period, the North America region is expected to hold the largest market share, supported by the presence of major automotive manufacturers, advanced aerospace-derived composite expertise, and substantial defense-related carbon fiber production capacity. The United States benefits from significant government investment in lightweight materials research through programs like the Institute for Advanced Composites Manufacturing Innovation. Strong demand from luxury electric vehicle manufacturers headquartered in the region, combined with domestic carbon fiber producers scaling automotive-grade products, creates a mature ecosystem. Additionally, regulatory tailwinds from Corporate Average Fuel Economy standards continue driving lightweighting investments, ensuring North America maintains its leading market position.

### **Region with highest CAGR:**

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest

CAGR, fueled by the world's largest automotive production base concentrated in China, Japan, South Korea, and India. The region's aggressive electric vehicle adoption targets, particularly China's New Energy Vehicle mandate, directly increase demand for lightweight composites to offset battery weight. Japanese carbon fiber pioneers have established extensive production capacity and application expertise, while South Korean chemical conglomerates are entering the market with competitive offerings. Rapidly rising middle-class populations are driving premium vehicle sales, further expanding carbon fiber applications. As local automakers increasingly incorporate composites into volume models, Asia Pacific emerges as the fastest-growing regional market.

### **Key players in the market**

Some of the key players in Automotive Carbon Fiber Market include Toray Industries Inc, Hexcel Corporation, Mitsubishi Chemical Group Corporation, SGL Carbon SE, Teijin Limited, BASF SE, Solvay SA, Hyosung Advanced Materials, DowAksa Advanced Composites Holdings BV, Nippon Graphite Fiber Corporation, ZOLTEK Corporation, Exel Composites Oyj, Gurit Holding AG, Kureha Corporation and Osaka Gas Chemicals Co Ltd.

### **Key Developments:**

In March 2026, At JEC World 2026, Hyosung (rebranded as HS Hyosung) debuted its 48K Large Tow carbon fiber, specifically engineered to reduce costs for high-volume automotive production and wind energy applications.

In January 2026, Toray officially implemented a global price hike of 10% to 20% for its TORAYCA™ carbon fiber and intermediate products (prepreg, fabric, laminate) to offset surging labor, logistics, and raw material costs.

In December 2025, Mitsubishi Chemical announced a significant expansion of its carbon fiber manufacturing capacity in both Japan and the United States, specifically targeting "high-end applications" including luxury automotive and next-generation mobility.

### **Fiber Types Covered:**

Continuous Carbon Fiber

Long Carbon Fiber

Short Carbon Fiber

Recycled Carbon Fiber

#### Resin Types Covered:

Epoxy Resin

Polyamide Resin

Polypropylene Resin

Polyurethane Resin

PEEK and High-Performance Resins

Other Resins

#### Composite Types Covered:

Thermoset Carbon Fiber Composites

Thermoplastic Carbon Fiber Composites

#### Manufacturing Processes Covered:

Resin Transfer Molding (RTM)

Compression Molding

Injection Molding

Autoclave Molding

Pultrusion

Automated Fiber Placement

Other Manufacturing Processes

Vehicle Types Covered:

Passenger Cars

Light Commercial Vehicles

Heavy Commercial Vehicles

Sports and Performance Cars

Applications Covered:

Structural Assemblies

Body Panels

Chassis Components

Interior Components

Exterior Components

Powertrain Components

Battery Enclosures

Under-the-Hood Components

Wheels and Suspension Components

**End Users Covered:**

OEMs

Aftermarket

**Regions Covered:**

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

## Rest of the World (RoW)

### Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

### Africa

South Africa

Egypt

Morocco

Rest of Africa

### **What our report offers:**

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

## Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

### Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

### Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

### Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

## Contents

### **1 EXECUTIVE SUMMARY**

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

### **2 RESEARCH FRAMEWORK**

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
  - 2.4.1 Data Collection (Primary and Secondary)
  - 2.4.2 Data Modeling and Estimation Techniques
  - 2.4.3 Data Validation and Triangulation
  - 2.4.4 Analytical and Forecasting Approach

### **3 MARKET DYNAMICS AND TREND ANALYSIS**

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

### **4 COMPETITIVE AND STRATEGIC ASSESSMENT**

- 4.1 Porter's Five Forces Analysis
  - 4.1.1 Supplier Bargaining Power
  - 4.1.2 Buyer Bargaining Power
  - 4.1.3 Threat of Substitutes
  - 4.1.4 Threat of New Entrants

- 4.1.5 Competitive Rivalry
- 4.2 Market Share Analysis of Key Players
- 4.3 Product Benchmarking and Performance Comparison

## **5 GLOBAL AUTOMOTIVE CARBON FIBER MARKET, BY FIBER TYPE**

- 5.1 Continuous Carbon Fiber
- 5.2 Long Carbon Fiber
- 5.3 Short Carbon Fiber
- 5.4 Recycled Carbon Fiber

## **6 GLOBAL AUTOMOTIVE CARBON FIBER MARKET, BY RESIN TYPE**

- 6.1 Epoxy Resin
- 6.2 Polyamide Resin
- 6.3 Polypropylene Resin
- 6.4 Polyurethane Resin
- 6.5 PEEK and High-Performance Resins
- 6.6 Other Resins

## **7 GLOBAL AUTOMOTIVE CARBON FIBER MARKET, BY COMPOSITE TYPE**

- 7.1 Thermoset Carbon Fiber Composites
- 7.2 Thermoplastic Carbon Fiber Composites

## **8 GLOBAL AUTOMOTIVE CARBON FIBER MARKET, BY MANUFACTURING PROCESS**

- 8.1 Resin Transfer Molding (RTM)
- 8.2 Compression Molding
- 8.3 Injection Molding
- 8.4 Autoclave Molding
- 8.5 Pultrusion
- 8.6 Automated Fiber Placement
- 8.7 Other Manufacturing Processes

## **9 GLOBAL AUTOMOTIVE CARBON FIBER MARKET, BY VEHICLE TYPE**

- 9.1 Passenger Cars

- 9.2 Light Commercial Vehicles
- 9.3 Heavy Commercial Vehicles
- 9.4 Sports and Performance Cars

## **10 GLOBAL AUTOMOTIVE CARBON FIBER MARKET, BY APPLICATION**

- 10.1 Structural Assemblies
- 10.2 Body Panels
- 10.3 Chassis Components
- 10.4 Interior Components
- 10.5 Exterior Components
- 10.6 Powertrain Components
- 10.7 Battery Enclosures
- 10.8 Under-the-Hood Components
- 10.9 Wheels and Suspension Components

## **11 GLOBAL AUTOMOTIVE CARBON FIBER MARKET, BY END USER**

- 11.1 OEMs
- 11.2 Aftermarket

## **12 GLOBAL AUTOMOTIVE CARBON FIBER MARKET, BY GEOGRAPHY**

- 12.1 North America
  - 12.1.1 United States
  - 12.1.2 Canada
  - 12.1.3 Mexico
- 12.2 Europe
  - 12.2.1 United Kingdom
  - 12.2.2 Germany
  - 12.2.3 France
  - 12.2.4 Italy
  - 12.2.5 Spain
  - 12.2.6 Netherlands
  - 12.2.7 Belgium
  - 12.2.8 Sweden
  - 12.2.9 Switzerland
  - 12.2.10 Poland
  - 12.2.11 Rest of Europe

## 12.3 Asia Pacific

12.3.1 China

12.3.2 Japan

12.3.3 India

12.3.4 South Korea

12.3.5 Australia

12.3.6 Indonesia

12.3.7 Thailand

12.3.8 Malaysia

12.3.9 Singapore

12.3.10 Vietnam

12.3.11 Rest of Asia Pacific

## 12.4 South America

12.4.1 Brazil

12.4.2 Argentina

12.4.3 Colombia

12.4.4 Chile

12.4.5 Peru

12.4.6 Rest of South America

## 12.5 Rest of the World (RoW)

12.5.1 Middle East

12.5.1.1 Saudi Arabia

12.5.1.2 United Arab Emirates

12.5.1.3 Qatar

12.5.1.4 Israel

12.5.1.5 Rest of Middle East

12.5.2 Africa

12.5.2.1 South Africa

12.5.2.2 Egypt

12.5.2.3 Morocco

12.5.2.4 Rest of Africa

## 13 STRATEGIC MARKET INTELLIGENCE

13.1 Industry Value Network and Supply Chain Assessment

13.2 White-Space and Opportunity Mapping

13.3 Product Evolution and Market Life Cycle Analysis

13.4 Channel, Distributor, and Go-to-Market Assessment

## **14 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES**

- 14.1 Mergers and Acquisitions
- 14.2 Partnerships, Alliances, and Joint Ventures
- 14.3 New Product Launches and Certifications
- 14.4 Capacity Expansion and Investments
- 14.5 Other Strategic Initiatives

## **15 COMPANY PROFILES**

- 15.1 Toray Industries Inc
- 15.2 Hexcel Corporation
- 15.3 Mitsubishi Chemical Group Corporation
- 15.4 SGL Carbon SE
- 15.5 Teijin Limited
- 15.6 BASF SE
- 15.7 Solvay SA
- 15.8 Hyosung Advanced Materials
- 15.9 DowAksa Advanced Composites Holdings BV
- 15.10 Nippon Graphite Fiber Corporation
- 15.11 ZOLTEK Corporation
- 15.12 Exel Composites Oyj
- 15.13 Gurit Holding AG
- 15.14 Kureha Corporation
- 15.15 Osaka Gas Chemicals Co Ltd

## List Of Tables

### LIST OF TABLES

Table 1 Global Automotive Carbon Fiber Market Outlook, By Region (2023–2034) (\$MN)

Table 2 Global Automotive Carbon Fiber Market Outlook, By Fiber Type (2023–2034) (\$MN)

Table 3 Global Automotive Carbon Fiber Market Outlook, By Continuous Carbon Fiber (2023–2034) (\$MN)

Table 4 Global Automotive Carbon Fiber Market Outlook, By Long Carbon Fiber (2023–2034) (\$MN)

Table 5 Global Automotive Carbon Fiber Market Outlook, By Short Carbon Fiber (2023–2034) (\$MN)

Table 6 Global Automotive Carbon Fiber Market Outlook, By Recycled Carbon Fiber (2023–2034) (\$MN)

Table 7 Global Automotive Carbon Fiber Market Outlook, By Resin Type (2023–2034) (\$MN)

Table 8 Global Automotive Carbon Fiber Market Outlook, By Epoxy Resin (2023–2034) (\$MN)

Table 9 Global Automotive Carbon Fiber Market Outlook, By Polyamide Resin (2023–2034) (\$MN)

Table 10 Global Automotive Carbon Fiber Market Outlook, By Polypropylene Resin (2023–2034) (\$MN)

Table 11 Global Automotive Carbon Fiber Market Outlook, By Polyurethane Resin (2023–2034) (\$MN)

Table 12 Global Automotive Carbon Fiber Market Outlook, By PEEK and High-Performance Resins (2023–2034) (\$MN)

Table 13 Global Automotive Carbon Fiber Market Outlook, By Other Resins (2023–2034) (\$MN)

Table 14 Global Automotive Carbon Fiber Market Outlook, By Composite Type (2023–2034) (\$MN)

Table 15 Global Automotive Carbon Fiber Market Outlook, By Thermoset Carbon Fiber Composites (2023–2034) (\$MN)

Table 16 Global Automotive Carbon Fiber Market Outlook, By Thermoplastic Carbon Fiber Composites (2023–2034) (\$MN)

Table 17 Global Automotive Carbon Fiber Market Outlook, By Manufacturing Process (2023–2034) (\$MN)

Table 18 Global Automotive Carbon Fiber Market Outlook, By Resin Transfer Molding

(RTM) (2023–2034) (\$MN)

Table 19 Global Automotive Carbon Fiber Market Outlook, By Compression Molding (2023–2034) (\$MN)

Table 20 Global Automotive Carbon Fiber Market Outlook, By Injection Molding (2023–2034) (\$MN)

Table 21 Global Automotive Carbon Fiber Market Outlook, By Autoclave Molding (2023–2034) (\$MN)

Table 22 Global Automotive Carbon Fiber Market Outlook, By Pultrusion (2023–2034) (\$MN)

Table 23 Global Automotive Carbon Fiber Market Outlook, By Automated Fiber Placement (2023–2034) (\$MN)

Table 24 Global Automotive Carbon Fiber Market Outlook, By Other Manufacturing Processes (2023–2034) (\$MN)

Table 25 Global Automotive Carbon Fiber Market Outlook, By Vehicle Type (2023–2034) (\$MN)

Table 26 Global Automotive Carbon Fiber Market Outlook, By Passenger Cars (2023–2034) (\$MN)

Table 27 Global Automotive Carbon Fiber Market Outlook, By Light Commercial Vehicles (2023–2034) (\$MN)

Table 28 Global Automotive Carbon Fiber Market Outlook, By Heavy Commercial Vehicles (2023–2034) (\$MN)

Table 29 Global Automotive Carbon Fiber Market Outlook, By Sports and Performance Cars (2023–2034) (\$MN)

Table 30 Global Automotive Carbon Fiber Market Outlook, By Application (2023–2034) (\$MN)

Table 31 Global Automotive Carbon Fiber Market Outlook, By Structural Assemblies (2023–2034) (\$MN)

Table 32 Global Automotive Carbon Fiber Market Outlook, By Body Panels (2023–2034) (\$MN)

Table 33 Global Automotive Carbon Fiber Market Outlook, By Chassis Components (2023–2034) (\$MN)

Table 34 Global Automotive Carbon Fiber Market Outlook, By Interior Components (2023–2034) (\$MN)

Table 35 Global Automotive Carbon Fiber Market Outlook, By Exterior Components (2023–2034) (\$MN)

Table 36 Global Automotive Carbon Fiber Market Outlook, By Powertrain Components (2023–2034) (\$MN)

Table 37 Global Automotive Carbon Fiber Market Outlook, By Battery Enclosures (2023–2034) (\$MN)

Table 38 Global Automotive Carbon Fiber Market Outlook, By Under-the-Hood Components (2023–2034) (\$MN)

Table 39 Global Automotive Carbon Fiber Market Outlook, By Wheels and Suspension Components (2023–2034) (\$MN)

Table 40 Global Automotive Carbon Fiber Market Outlook, By End User (2023–2034) (\$MN)

Table 41 Global Automotive Carbon Fiber Market Outlook, By OEMs (2023–2034) (\$MN)

Table 42 Global Automotive Carbon Fiber Market Outlook, By Aftermarket (2023–2034) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

## I would like to order

Product name: Automotive Carbon Fiber Market Forecasts to 2034 – Global Analysis By Fiber Type (Continuous Carbon Fiber, Long Carbon Fiber, Short Carbon Fiber, and Recycled Carbon Fiber), Resin Type (Epoxy Resin, Polyamide Resin, Polypropylene Resin, Polyurethane Resin, PEEK and High-Performance Resins, and Other Resins), Composite Type, Manufacturing Process, Vehicle Type, Application, End User, and By Geography

Product link: <https://marketpublishers.com/r/AB6B633F809FEN.html>

Price: US\$ 4,150.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/AB6B633F809FEN.html>