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Composites Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Fiber Type (Carbon Fiber Composites, Glass Fiber Composites and Others), By Resin Type (Thermoplastic Composites and Thermosetting Composites), By Application (Transportation, Aerospace & Defense, Wind Energy, Electricals & Electronics, Construction, Pipes & Tanks, Marine and Others), By Manufacturing Process (Layup, Filament, Injection molding, Pultrusion, Compression molding, RTM and Others), By Region & Competition, 2021-2031F

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Abstracts

The global composites market is set to expand from USD 92.22 billion in 2025 to USD 145.61 billion by 2031, exhibiting a robust CAGR of 7.91%. These engineered materials, formed by combining two or more distinct constituents like fiber reinforcement and a polymer matrix, achieve superior mechanical properties unattainable by individual components. This growth is primarily fueled by the imperative for lightweight solutions in the aerospace and automotive industries, directly linking reduced structural weight to enhanced fuel efficiency and lower emissions. Additionally, the inherent corrosion resistance and high durability of composites bolster their extensive use in construction and infrastructure, offering longevity often lacking in traditional materials. In 2024, the global volume of the composites market reached 13.5 million tonnes. However, the industry grapples with significant hurdles, including the challenging recycling of

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thermoset materials and the high costs associated with raw material production and energy-intensive manufacturing processes, which collectively limit their widespread standardization in cost-sensitive, high-volume commercial applications.

Market Driver

The rapid expansion of the wind energy sector stands as a pivotal driver for the global composites market, particularly due to the demand for modern turbine blades. As operators increasingly seek to maximize energy capture through larger rotor diameters, the industry relies heavily on glass and carbon fiber-reinforced polymers to provide the necessary structural integrity, stiffness, and lightweight properties. This trend directly correlates with installation volumes, as substantial composite consumption is required for each new gigawatt of capacity to produce lighter, longer, and more durable blades; in 2024, the industry installed 117 GW of new wind energy capacity globally. Concurrently, the growing adoption of high-performance composites in the aerospace industry remains a critical catalyst, as these advanced materials are essential for reducing aircraft weight and improving fuel efficiency. Airframe manufacturers are increasingly integrating carbon fiber composites into primary structures like fuselages and wings to meet stringent emission targets and operational cost goals. This demand is evidenced by 766 commercial aircraft deliveries in 2024, reflecting a strong recovery that significantly drives upstream composite consumption. Despite broader economic challenges, these sectoral activities contribute to the market's resilience, which recorded a Compound Annual Growth Rate of 2.7% during the 2019-2024 cycle.

Market Challenge

The prohibitive cost of production, coupled with the technical complexity of recycling thermoset materials, constitutes a primary barrier to the broader standardization of composite technologies. Unlike metals, which benefit from established recycling infrastructure and lower energy requirements for reprocessing, polymer-based composites demand energy-intensive manufacturing cycles that significantly inflate the final component price. This economic disparity creates a formidable hurdle for price-sensitive sectors, such such as mass-market automotive and general infrastructure, impeding the adoption of composites for high-volume applications. Consequently, the market remains largely confined to specialized, lower-volume segments where performance justifies the premium, thereby capping the sector's potential for mass commercialization. The direct impact of these economic and environmental constraints is evident in regional market contractions, with Europe's total production volume of composite materials declining by approximately 5.6% to 2.416 million tonnes in 2024.

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This downward trend underscores how the dual pressures of high manufacturing costs and stringent sustainability mandates are actively reducing industrial output, as the inability to efficiently recycle these expensive materials continues to hinder growth in key commercial markets.

Market Trends

The development of advanced carbon fiber hydrogen storage tanks is rapidly emerging as a critical trend, propelled by the global transition toward zero-emission heavy-duty transport and industrial energy infrastructure. Unlike battery-electric solutions, hydrogen fuel cell systems require high-pressure Type IV vessels manufactured with high-strength carbon fiber to ensure both safety and lightweight performance for long-range mobility. This application is creating a distinct high-value sub-segment within the composites industry, effectively decoupling from traditional cyclical markets like construction to serve the burgeoning hydrogen economy. This momentum is evident in the financial performance of key market players, with Hexagon Purus's Hydrogen Mobility and Infrastructure segment recording a revenue increase of 40% year-over-year, reaching NOK 1,782 million in 2024, underscoring the surging industrial demand for composite pressure vessels. Concurrently, the acceleration of recyclable thermoplastic composite adoption is reshaping the market's material composition to address the severe end-of-life limitations of traditional thermosets. Manufacturers are increasingly pivoting toward continuous fiber-reinforced thermoplastics (CFRTP) and organosheets, which uniquely offer the ability to be remelted and reprocessed, thereby facilitating a circular economy and significantly reducing scrap waste. This shift is further incentivized by these materials' rapid processing cycles, which are better suited for high-volume automotive production rates compared to slow-curing epoxies. This structural transition is quantifiable in regional market dynamics, as thermoplastic composites increased their dominance in the European market, accounting for a 58.2% share of the total production volume in 2024, proving their resilience and growing preference over thermoset alternatives despite broader economic downturns.

Key Market Players

Huntsman International LLC

Hexcel Corporation

Teijin Limited

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SGL Carbon SE

Mitsubishi Chemical Holdings Corporation

Toray Industries, Inc.

Dow Inc.

Halocarbon LLC

Freudenberg SE

The Chemours Company

Report Scope

In this report, the Global Composites Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Composites Market, By Fiber Type

Carbon Fiber Composites

Glass Fiber Composites

Others

Composites Market, By Resin Type

Thermoplastic Composites

Thermosetting Composites

Composites Market, By Application

Transportation

Aerospace & Defense

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- Wind Energy
- Electricals & Electronics
- Construction
- Pipes & Tanks
- Marine
- Others

Composites Market, By Manufacturing Process

- Layup
- Filament
- Injection molding
- Pultrusion
- Compression molding
- RTM
- Others

Composites Market, By Region

- North America
  - United States
  - Canada
  - Mexico

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France

United Kingdom

Italy

Germany

Spain

Asia Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

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Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Composites Market.

Available Customizations:

Global Composites Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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