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Thermoset Composites Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Fibre Type (Glass fibre, Carbon fibre and Others), By Resin Type (Polyester Resin, Epoxy Resin, and Others), By Manufacturing Process (Filament Winding Process, and Others), By End-User Industry (Transportation, Aerospace & D?fense, Wind Energy and Others), By Region & Competition, 2021-2031F

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Abstracts

The Global thermoset composites market is anticipated to expand from USD 46.28 billion in 2025 to USD 70.39 billion by 2031, registering a compound annual growth rate (CAGR) of 7.24%. These engineered materials consist of reinforcing fibers embedded in a thermosetting resin matrix, which undergoes irreversible curing to create a cross-linked structure known for its exceptional durability, mechanical strength, and resistance to corrosion and heat. Primary catalysts for this market expansion include the rising need for high-strength, lightweight materials to improve fuel efficiency and structural integrity in the aerospace and automotive sectors, as well as the growing use of robust turbine blades in the wind energy industry.

Additional market demand is driven by the construction industry's need for corrosion-resistant materials and the electrical and electronics sector's reliance on effective insulation. Data from the American Composites Manufacturers Association indicates that sales of glass-reinforced polyester and vinyl ester thermoset composites exceeded 1.9 billion pounds across the United States and Canada in the first half of 2025. However, the market faces a substantial obstacle in the form of limited recyclability, as the inherently cross-linked structure of thermoset composites makes them impossible to

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remold once cured.

Market Driver

A major factor propelling the global thermoset composites market is the escalating need for high-performance, lightweight materials. The defense and aerospace industries constantly look for solutions that lower structural weight while maintaining durability and strength, which ultimately improves operational efficiency and fuel economy. Because they possess exceptional rigidity, outstanding fatigue resistance, and a high strength-to-weight ratio, thermoset composites are essential for parts operating in harsh conditions. Furthermore, these materials provide thermal stability and allow for intricate design integration, exceeding the capabilities of traditional alternatives. Highlighting this trend, the March 2025 '2025 State of the Industry Report' from the American Composites Manufacturers Association noted that global carbon fiber demand hit 300 million pounds in 2024, reflecting the heavy reliance on these advanced lightweight options.

Another prominent catalyst for the market is the increasing utilization of thermoset composites in the production of traditional and electric vehicles. The transition toward these materials is fueled by the necessity to improve fuel efficiency in combustion-engine cars and compensate for the heavy battery packs in electric models. By facilitating significant weight decreases, thermoset composites directly enhance energy efficiency and extend electric driving ranges. Additionally, their natural characteristics provide superior crash safety and increased design flexibility for modern vehicle architectures. The American Composites Manufacturers Association's March 2025 '2025 State of the Industry Report' revealed that the global light vehicle composite materials market stood at 4.9 billion pounds in 2024. This growth aligns with wider industry patterns; for example, the same association reported in February 2026 that customer demand expectations within the electrical and electronics sector climbed to 43% during the fourth quarter of 2025, emphasizing robust expansion across vital applications.

Market Challenge

The restricted ability to recycle thermoset composites poses a major barrier to the market's continued expansion. Because these materials feature an inherently cross-linked chemical structure that cannot be remolded, managing them at the end of their lifecycle becomes highly problematic. This limitation actively hinders market growth, especially as various industries shift their focus toward circular economy initiatives and sustainable operations. With rising global environmental awareness and tighter

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regulations requiring materials to have distinct recycling methods, the frequent lack of such pathways for thermoset composites curbs their use in sectors prioritizing lifecycle sustainability.

The consequences of this poor recyclability are clearly reflected in current waste management statistics. The European Composites Industry Association (EuCIA) estimates that Europe will produce 914,000 tonnes of thermoset composite waste in 2025. Out of this total, a mere 25%, or roughly 228,000 tonnes, is actually available for recycling, and at most 5% of that accessible portion is actively recycled today. This massive gap between the amount of waste generated and the capacity to recycle it effectively introduces heavy environmental and financial strains, raising disposal expenses and preventing these materials from being fully integrated into eco-friendly supply chains.

Market Trends

The thermoset composites market is being significantly influenced by advancements in circularity and sustainability solutions. Motivated by the urgent need for eco-friendly materials and heightened environmental oversight, this movement includes creating bio-based resins, encouraging closed-loop recycling systems, and engineering composites to simplify their end-of-life processing. These forward-looking strategies are essential for reducing the ecological harm linked to the disposal of conventional thermosets. A September 2025 report from Composites UK and HVM Catapult noted that a United Kingdom program is specifically aiming at the roughly ?2 billion global market for end-of-life composite recycling, underscoring the sector's dedication to sustainable product lifecycles.

Another prominent trend is the rising level of automation within manufacturing operations, driven by the desire to lower expenses, increase efficiency, and improve production uniformity for thermoset composites. This shift incorporates the broader use of digital manufacturing integrations, automated fiber placement, and sophisticated robotic technologies. By streamlining complicated manufacturing procedures, reducing the need for human labor, and speeding up production timelines, these tools are vital for satisfying escalating market demand. Reflecting this shift, Hexcel Corporation's March 2026 announcement regarding the successful conclusion of its CDTI-backed EFIPreg research project revealed that a €470,993 grant was used to create aerospace prepreg tailored for scalable, high-speed aircraft manufacturing, illustrating the industry's strong momentum toward automated fabrication.

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Key Market Players

Toray Industries Inc.

PPG Industries Inc.

Owens Corning

Mitsubishi Chemical Group Corporation

Jushi Group Co. Ltd.

Teijin Limited

Chongqing Polycomp International Corporation

SGL Group

Huntsman Corporation

Hexcel Corporation

Report Scope

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

Thermoset Composites Market, By Fibre Type

Glass fibre

Carbon fibre

Others

Thermoset Composites Market, By Resin Type

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Polyester Resin

Epoxy Resin

Others

Thermoset Composites Market, By Manufacturing Process

Filament Winding Process

Others

Thermoset Composites Market, By End-User Industry

Transportation

Aerospace & D?fense

Wind Energy

Others

Thermoset Composites Market, By Region

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

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- Germany
- Spain

Asia Pacific

- China
- India
- Japan
- Australia
- South Korea

South America

- Brazil
- Argentina
- Colombia

Middle East & Africa

- South Africa
- Saudi Arabia
- UAE

Competitive Landscape

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

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Available Customizations:

Global Thermoset 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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