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Thermoplastic Composite for the Automotive Market Report: Trends, Forecast and Competitive Analysis to 2030

https://marketpublishers.com/r/TA9D5B982F58EN.html
Date: December 2024
Pages: 150
Price: US$ 4,850.00 (Single User License)
ID: TA9D5B982F58EN

Abstracts

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Thermoplastic Composite For Automotive Trends and Forecast

The future of the global thermoplastic composite for the automotive market looks promising with opportunities in the exterior, interior, power train system, chassis system, and under-body system markets. The global thermoplastic composite for the automotive market is expected to grow with a CAGR of 3.3% from 2024 to 2030. The major drivers for this market are the increasing demand for lightweight materials to improve fuel efficiency, the growing focus on electric and autonomous vehicles globally, and stringent regulations on vehicle emissions and safety standards.

> Lucintel forecasts that, within the fiber type category, glass fiber is expected to witness higher growth over the forecast period.
>
> Within the application category, the interior is expected to witness the highest growth.
>
> In terms of regions, APAC is expected to witness the highest growth over the forecast period.

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Emerging Trends in the Thermoplastic Composite For Automotive Market

The thermoplastic composite for the automotive market is going through important changes, so to speak. New trends indicate a growing emphasis on sustainability, advanced material technology, and policy management. Here are the five key trends, that are expected to dominate thermoplastic composite for the automotive market of the future:

Lightweight Materials for Fuel Efficiency: Vehicle makers are adopting thermoplastic composites in a bid to cut down the weight of the vehicles and enhance fuel economy while reducing emission levels. This trend is vital as manufacturers try to adhere to the new tough fuel efficiency policies that are being implemented in various countries.

Incorporation of Recycled Materials: To provide better environmental management, manufacturers of automobiles are adopting the use of recycled thermoplastic materials in components of their cars. This further brings down the wastage created as well as the carbon footprint by helping brands meet regulatory recycling requirements.

Expanding Application in Electric Vehicles (EVs): More thermoplastic composites are applied in electric vehicle components such as battery pack housings, liners, and load-carrying parts aimed at ensuring energy efficiency and weight reduction of the vehicle as a whole.

Robust and Continuous Improvement of Production: Progress in the fields of injection molding, 3D printer construction, and automated plants is increasing productivity and the volume of production of thermoplastic composites, which leads to quicker and cheaper production.

Customization and Design Flexibility: When compared to traditional materials like metals Thermoplastics offer more freedom in design. This trend helps automotive companies to produce more complex and beautiful shapes while ensuring functional efficiency.

These trends are redefining thermoplastic composites for the automotive market by encouraging the wider uptake of lightweight, environmentally friendly, and performance-based materials in all classes of vehicles particularly electric vehicles.

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Recent Developments in the Thermoplastic Composite For Automotive Market

The automotive thermoplastic composite market is growing more swiftly within short periods due to new and improved technologies and materials. Out of these Five developments led to this turn-around in the thermoplastic sheet for face shield manufacturing.

Adoption of High Performance Polymers: The use of thermoplastic composites has become more advanced in the automotive sector and companies are starting to use advanced thermoplastic materials like PEEK and polyamide for more demanding automotive needs. These polymers exhibit enhanced mechanical properties such as superior impact resistance and high temperature stability leading to longer life of parts and components used in the automotive industry.

3d Printing and Additive Manufacturing: The advent of 3D printing technology in the automobile sector has enabled uniqueness in the design of thermoplastic composite parts by facilitating the manufacture of hybrid thermoplastic composite. The use of this technology has cut the prototyping time and costs while making it possible to create complex and lighter designs.

Sustainability Initiatives with Recycled Composites: Exerted pressure on reaching sustainability aims has led to more replaced Pacem TM composites being used in the vehicle construction industry. These materials not only reduce carbon footprint but also help car manufacturers towards achieving rigorous emission targets.

Electric Vehicle Applications: Electric vehicle manufacturers employ maximum thermoplastic composites, using them for battery enclosures, whizzes, and chassis components for energy efficiency and weight reduction.

Automated Production Technologies: Labor costs and waste were reduced by advances in thermoplastic composite automation manufacturing processes such as robots and better molding, increasing production efficiency, accuracy, and flexibility.

These trends help the industry move closer to more efficient, environmentally friendly,

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and high-quality thermoplastic composite materials for the automotive industry which will guarantee further usage and acceptance in the market.

Strategic Growth Opportunities for Thermoplastic Composite For Automotive Market

There are several growth prospects are being offered by the thermoplastic composite in the automotive market, which is continuously adapting due to changing consumer behavior and environmental concerns. Here are five major growth prospects:

Electric Vehicles (EVs): There is an increased opportunity for thermoplastic composites in the electric vehicle market with regards to battery enclosures, body panels, and interiors, in boosting energy efficiency, thus the trend of weight reduction.

Lightweighting in Mass-market Vehicles: As the automotive manufacturers aim at fuel efficiency compliance, the trend of lightweight vehicles is being adopted in the mass-sedan, SUVs, and truck categories increasing the usage of thermoplastic composites.

Interior and Exterior Applications: Thermoplastics are used for both interior (dashboard, seat) and exterior (bumper, fender) components, which means more design flexibility for the manufacturers; strength, and less weight.

Sustainability and Recycling: More and more limitations on carbon emissions through environments and recycling make plastics thermoplastic composites which are appealing to manufacturers as a way to achieve environmental objectives gaining streets.

Automated Manufacturing Systems: The automation of production processes as well as the use of novel molding technology creates an opportunity for thermoplastic composites as it facilitates cheaper production of many complexes and great-performing parts.

These strategic opportunities are about to change things in the thermoplastic composites of the automotive market, bringing novel approaches and encouraging active use of composites in different types of vehicles and vehicle components.

Thermoplastic Composite For Automotive Market Driver and Challenges

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The technological demand, economic demand, and even changes in the legal environment drive the thermoplastic composite market in the automotive industry. Nevertheless, there are still challenges, such as high costs for raw materials and a shortage of suppliers. Here is an overview of key drivers and challenges:

The factors responsible for driving the thermoplastic composite market for the automotive industry include:

Environmental Regulations: With global tightening of emission limits and increasing fuel economy requirements, manufacturers are finding it essential to use lightweight vehicle thermoplastic composites to overcome the challenges of overall vehicle weight.

Electrification of the Automotive Industry and the Increased Adoption of EVs: To optimize battery performance, the plastics and composites used in vehicles must be lighter, which leads to a higher consumption of thermoplastic composites.

Environmental Issues: The use of recyclable and bio-based composites creates opportunities for growth as automotive manufacturers seek to reduce their carbon footprint.

Economic Factors: Better molding and 3D printing technologies are enabling thermoplastic composites to be produced at lower costs, making them more widely adopted by manufacturers.

Shifting Consumer Preferences: The potential for this material comes from the changing lifestyles and demands of consumers, who are seeking larger, more powerful cars with greater fuel efficiency and reduced weight, all of which are addressed by advanced thermoplastic composites.

Challenges in the thermoplastic composite market for the automotive industry include:

High Price of Raw Materials: The production cost of thermoplastic composites is still relatively high compared to metal materials, which makes it difficult to penetrate price-sensitive markets.

Limited Number of Suppliers: The existence of only a few suppliers of high-

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performance thermoplastics in the current market limits the growth of the market.

Technological Issues: Some production processes, such as those involved with 3D printing, require certain levels of investment in skilled labor and equipment, which may be a barrier for small companies.

While the factors mentioned encourage market expansion, issues such as material cost and the need for sufficient suppliers should be addressed to achieve greater market acceptance and stability.

List of Thermoplastic Composite Companies for the Automotive Market

Companies in the market compete on the basis of product quality offered. Major players in this market focus on expanding their manufacturing facilities, R&D investments, infrastructural development, and leverage integration opportunities across the value chain. Through these strategies thermoplastic composite companies for the automotive market cater increasing demand, ensure competitive effectiveness, develop innovative products & technologies, reduce production costs, and expand their customer base. Some of the thermoplastic composite companies for the automotive market profiled in this report include-

Toray Industries

Solvay

Celanese Corporation

SABIC

BASF SE

DuPont

LANXESS

Thermoplastic Composite For Automotive by Segment

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The study includes a forecast for the global thermoplastic composite for automotive by resin type, material type, fiber type, application, and region.

Thermoplastic Composite for the Automotive Market by Resin Type [Analysis by Value from 2018 to 2030]:

PP

PA

PBT

Others

Thermoplastic Composite for the Automotive Market by Material Type [Analysis by Value from 2018 to 2030]:

SFT

LFT

GMT

CFT

Thermoplastic Composite for the Automotive Market by Fiber Type [Analysis by Value from 2018 to 2030]:

Glass Fiber

Carbon Fiber

Others

Thermoplastic Composite for the Automotive Market by Application [Analysis by Value

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from 2018 to 2030]:

Exterior

Interior

Power Train System

Chassis System

Under Body System

Others

Thermoplastic Composite For Automotive Market by Region [Analysis by Value from 2018 to 2030]:

North America

Europe

Asia Pacific

The Rest of the World

Country Wise Outlook for the Thermoplastic Composite For Automotive Market

The thermoplastic composites market for the automotive sector has seen key geographical markets ‘galloping’ due to the growing demand for lighter and stronger materials to enhance vehicle performance, and fuel economy, and reduce environmental impact. This is further supported by the development of materials and tightening emissions regulations. There are notable activities within the United States, China, Germany, India, and Japan, each showing distinct regional characteristics with different levels of growth, technologies, and strategies.

United States: The U.S. automotive market is quickly adopting thermoplastic composites as manufacturers look for ways to reduce the weight of materials to

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comply with increasing fuel economy and emission standards. Manufacturers such as Ford Motor Company, General Motors Company, and Tesla, Inc. have adopted the use of thermoplastics for parts including bumpers and dashboards. In addition, companies are focusing on new manufacturing processes, such as injection molding, which enhance productivity and scalability.

China: As far as automotive thermoplastic composites are concerned, China is at the forefront, supported by strong investment from both domestic and foreign investors. Domestic players such as BYD and Geely are embedding lightweight materials into their EV models to achieve better performance and lower energy consumption. The active encouragement of the government for the uptake of electric cars, as well as measures to cut carbon emissions, supports the use of thermoplastic composites. Advances in extrusion and compression molding technologies are offering cost advantages, enabling adoption by mid-tier manufacturers.

Germany: Over the decades, Germany has maintained its position at the top of the automotive industry, placing great emphasis on the use of thermoplastic composite technology. Major manufacturers such as Volkswagen, BMW, and Mercedes-Benz are increasingly using thermoplastic composites to achieve both weight reduction and ecological objectives. These industries also serve as hubs for innovation in advanced polymers and multi-material systems. Furthermore, European regulations that promote sustainability are forcing the industry to switch to more eco-friendly composite materials.

India: The Indian automotive industry is witnessing swift growth in thermoplastic composite adoption due to demand for both local consumption and exports. The growing demand for cheaper and lighter materials for compact vehicles and electric cars is opening up new avenues. Indian manufacturers such as Tata Motors and Mahindra are making efforts to use thermoplastics to produce lighter vehicles that consume less fuel, catering to price-sensitive markets.

Japan: An apparent trend in the Japanese automotive industry is the gradual and favorable adoption of thermoplastic composites, with companies like Nissan, Toyota, and Honda using them in various applications. These companies are incorporating thermoplastic composites into body components, truck interiors, and battery enclosures, aiming to reduce weight and enhance fuel efficiency despite stringent eco-requirements. Japan’s push for innovation is also fueling the demand for high-performance thermoplastics, particularly for

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electric and hybrid vehicles.

Features of Global Thermoplastic Composite for the Automotive Market

Market Size Estimates: Thermoplastic composite for the automotive market size estimation in terms of value ($B).

Trend and Forecast Analysis: Market trends (2018 to 2023) and forecast (2024 to 2030) by various segments and regions.

Segmentation Analysis: Thermoplastic composite for the automotive market size by various segments, such as by resin type, material type, fiber type, application, and region in terms of value ($B).

Regional Analysis: Thermoplastic composite for the automotive market breakdown by North America, Europe, Asia Pacific, and Rest of the World.

Growth Opportunities: Analysis of growth opportunities in different resin types, material types, fiber types, applications, and regions for the thermoplastic composite for the automotive market.

Strategic Analysis: This includes M&A, new product development, and competitive landscape of the thermoplastic composite for the automotive market.

Analysis of competitive intensity of the industry based on Porter’s Five Forces model.

If you are looking to expand your business in this or adjacent markets, then contact us. We have done hundreds of strategic consulting projects in market entry, opportunity screening, due diligence, supply chain analysis, M & A, and more.

This report answers following 11 key questions:

Q.1. What are some of the most promising, high-growth opportunities for the thermoplastic composite for the automotive market by resin type (PP, PA, PBT, and others), material type (SFT, LFT, GMT, and CFT), fiber type (glass fiber, carbon fiber, and others), application (exterior, interior, power train system, chassis system, under body system, and others), and region (North America, Europe, Asia Pacific, and the Rest of the World)?

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Q.2. Which segments will grow at a faster pace and why?

Q.3. Which region will grow at a faster pace and why?

Q.4. What are the key factors affecting market dynamics? What are the key challenges and business risks in this market?

Q.5. What are the business risks and competitive threats in this market?

Q.6. What are the emerging trends in this market and the reasons behind them?

Q.7. What are some of the changing demands of customers in the market?

Q.8. What are the new developments in the market? Which companies are leading these developments?

Q.9. Who are the major players in this market? What strategic initiatives are key players pursuing for business growth?

Q.10. What are some of the competing products in this market and how big of a threat do they pose for loss of market share by material or product substitution?

Q.11. What M&A activity has occurred in the last 5 years and what has its impact been on the industry?

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