Thermoplastic Composites Market Report by Fiber Type (Glass Fiber, Carbon Fiber, and Others), Product (Glass Mat Thermoplastics (GMT), Advanced Thermoplastic Composites (ATC)), Resin Type (Polypropylene (PP), Polyamide (PA), Polyether ether ketone (PEEK), and Others), End User Industry (Automotive, Aerospace and Defense, Oil and Gas, Construction, Medical, and Others), and Region 2025-2033

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Report description:

The global thermoplastic composites market size reached USD 19.3 Billion in 2024. Looking forward, IMARC Group expects the market to reach USD 30.8 Billion by 2033, exhibiting a growth rate (CAGR) of 5.06% during 2025-2033. The market is witnessing robust growth, driven by the growing demand for lightweight and high-strength products, increasing awareness about product durability and resistance to corrosion, rising cost-effectiveness and process efficiency, heightened focus on environmental sustainability, and the ongoing innovations in material technology.

Thermoplastic Composites Market Trends:
Growing demand for lightweight and high-strength products
The increasing demand for lightweight and high-strength products in industries, such as automotive and aerospace, is one of the major factors propelling the market growth. Moreover, the ability of thermoplastic composites to replace traditional materials like metals, resulting in enhanced fuel efficiency and reduced emissions in the automotive sector, is propelling the market growth. Along with this, the growing product demand in the aerospace industry, as it contributes to improved fuel economy and increased payload capacity, is creating a positive outlook for the market. Besides this, the widespread adoption of thermoplastic composites in the transportation of goods, as lighter trucks and trailers equipped with the product experience reduced fuel consumption, is boosting the market growth. Additionally, the heightened demand for materials that offer superior strength-to-weight ratios is favoring the market growth.

Increasing awareness about product durability and resistance to corrosion

The rising durability and resistance to corrosion offered by thermoplastic composites are a major factor contributing to the market growth. Additionally, the rising application of thermoplastics composites in the construction sector for bridges and infrastructure to ensure longevity and reduce maintenance costs, is enhancing the market growth. Moreover, the growing product demand in the marine sector for boat hulls and offshore structures, due to their resistance to saltwater and corrosion, is strengthening the market growth. In addition to this, the widespread adoption of thermoplastic composites in the chemical industry for equipment and pipelines that handle corrosive chemicals, owing to their non-reactive nature, is acting as a growth-inducing factor.

Rising awareness about cost-effectiveness and process efficiency of thermoplastic composites

The manufacturing processes for thermoplastic composites, such as injection molding and thermoforming, offer reduced production cycle times and material wastage compared to traditional methods like metal casting, favoring the market growth. Moreover, the increasing adoption of thermoplastic composites due to their recyclability as they are reclaimed and reused is bolstering the market growth. Besides this, their ability to optimize production processes and reduce expenses is a compelling factor that is driving the market growth. Along with this, the growing application of thermoplastic composites, as they contribute to lower transportation costs due to their reduced weight, is fostering the market growth. Besides this, the ease of molding the composites into complex shapes and structures, which results in less material wastage, is supporting the market growth.

Escalating concerns about environmental sustainability

The growing concerns about environmental sustainability, driving the adoption of thermoplastic composites due to their recyclability and reduced carbon footprint, are acting as a growth-inducing factor. Moreover, the burgeoning product utilization in industries, such as automotive and packaging to meet sustainability goals and reduce their environmental impact is strengthening the market growth. Along with this, the implementation of stringent environmental regulations, encouraging manufacturers to adopt thermoplastic composites, as it aids companies in complying and reinforcing their commitment to eco-friendly practices, is contributing to the market growth. Furthermore, the rising product utilization due to their recyclability and reduced energy consumption during manufacturing compared to traditional materials like steel and aluminum, is enhancing the market growth.

Rapid innovations in material technology

The continuous innovations in thermoplastic composite material as researchers and manufacturers develop new formulations and material properties to meet the evolving industry demand are stimulating the market growth. In line with this, rapid advancements in reinforcement materials, such as carbon fiber and glass fiber, that contribute to improved mechanical properties of thermoplastic composites are positively impacting the market growth. Additionally, the development of hybrid composites, which combine thermoplastic materials with other reinforcing elements, is broadening the market growth. Besides this, the rising advancements in thermoplastic matrices with improved heat resistance, flame retardancy, and chemical resistance that expand the application scope to industries like electronics and electrical components are boosting the market growth.

Thermoplastic Composites Industry Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the market, along with forecasts at the global, regional, and country levels for 2025-2033. Our report has categorized the market based on fiber type, product, resin type, and end user industry.

Breakup by Fiber Type:

- Glass Fiber
- Carbon Fiber
- Others

Glass fiber accounts for the majority of the market share

The report has provided a detailed breakup and analysis of the market based on the fiber type. This includes glass fiber, carbon fiber, and others. According to the report, glass fiber represented the largest segment.

Glass fiber-based thermoplastic composites hold the dominant position in the market due to their widespread use in various industries, such as automotive and construction. They are valued for their cost-effectiveness, excellent strength-to-weight ratio, and versatility. In line with this, the growing product application in the automotive sector for manufacturing components, like automotive panels, interior parts, and under-the-hood applications, is favoring the market growth. Moreover, the growing reliance

in the construction industry on glass fiber composites for reinforcing materials like rebar and construction panels, enhancing structural integrity while reducing maintenance needs, is boosting the market growth.
Carbon fiber-based thermoplastic composites are characterized by their exceptional strength and low weight. They find extensive use in high-performance applications that require enhanced rigidity and weight reduction properties. Along with this, the increasing demand for carbon-based thermoplastics composites in the aerospace industry, sports and recreational activities, and wind energy sector, is favoring the market growth.
Breakup by Product:
-Glass Mat Thermoplastics (GMT)
-Advanced Thermoplastic Composites (ATC)

Glass mat thermoplastics (GMT) holds the largest share in the industry
A detailed breakup and analysis of the market based on the product have also been provided in the report. This includes glass mat thermoplastics (GMT) and advanced thermoplastic composites (ATC). According to the report, glass mat thermoplastics (GMT) accounted for the largest market share.
Glass mat thermoplastics (GMT) hold a dominant position in the market due to their versatility and cost-effectiveness. They are widely used in the automotive industry for manufacturing interior components, such as door panels and instrument panels, owing to their excellent moldability and ability to incorporate various textures and finishes. Moreover, GMT's high strength-to-weight ratio makes it an ideal choice for automotive under-the-hood applications, contributing to improved fuel efficiency. Besides this, the widespread product demand in the construction sector for producing structural components like wall panels and roofing materials, due to their resistance to environmental factors and low maintenance requirements, is enhancing the market growth.
Advanced thermoplastic composites (ATC) are known for their exceptional mechanical properties and high-performance capabilities. They are employed in various industries that require compliance with stringent standards, such as aerospace and defense. In line with this, the increasing utilization of ATC in the aerospace sector for aircraft structures and components, providing a combination of lightweight design and strength necessary for high-altitude flight, is contributing to the market growth.
Breakup by Resin Type:
-Polypropylene (PP)
-Polyamide (PA)
-Polyether Ether Ketone (PEEK)
-Others

Polypropylene (PP) represents the leading market segment
The report has provided a detailed breakup and analysis of the market based on the resin type. This includes polypropylene (PP), polyamide (PA), polyether ether ketone (PEEK), and others. According to the report, polypropylene (PP) represented the largest segment.
Polypropylene (PP) dominates the market share owing to its wide range of applications and cost-effectiveness. PP-based composites are extensively utilized in the automotive industry for manufacturing components like interior panels, bumpers, and underbody shields. Moreover, their lightweight nature contributes to enhanced fuel efficiency in vehicles. Besides this, the growing product application in the consumer goods sector for appliances and furniture, due to their durability and resistance to wear and tear, is acting as a growth-inducing factor. Furthermore, the heightened adoption of polypropylene composites in the packaging industry due to their ability to create lightweight and strong packaging materials is strengthening the market growth.
Polyamide-based thermoplastic composites are utilized in industries requiring high-temperature resistance and exceptional mechanical properties. Moreover, the widespread product demand in the aerospace sector for aircraft engine components, due to their ability to withstand elevated temperatures and high-stress conditions, is boosting the market growth. Along with this, the increasing application of polyamide-based thermoplastic components in the electronics, sports, and recreation industries is driving the market growth.
Polyether ether ketone (PEEK)-based thermoplastic composites are known for their exceptional chemical resistance and mechanical strength at high temperatures. They are widely utilized in various industries, such as oil and gas and medicine.

Moreover, the growing demand for PEEK composites in sectors that deal with extreme conditions and require material reliability is favoring the market growth.
Breakup by End User Industry:
-Automotive
-Aerospace and Defense
-Oil and Gas
-Construction
-Medical
-Others

Automotive exhibits a clear dominance in the market
A detailed breakup and analysis of the market based on the end user industry have also been provided in the report. This includes automotive, aerospace and defense, oil and gas, construction, medical, and others. According to the report, automotive accounted for the largest market share.
The automotive industry holds the largest market share, driven by the rising need for lightweight materials that enhance fuel efficiency and reduce emissions. Thermoplastic composites that are based on materials like polypropylene and glass fiber are widely used for manufacturing interior components, exterior panels, and structural elements in vehicles. Along with this, the widespread product utilization in the automotive sector, as it contributes to weight reduction, provides design flexibility, and improves crash performance, is creating a positive outlook for the market growth. Additionally, the ease of processing and recyclability of the composites align with the industry's goals of reducing environmental impact throughout the entire vehicle lifecycle.
The aerospace and defense industry relies on thermoplastic composites due to their exceptional strength-to-weight ratio, resistance to high temperatures, and durability. They are used for manufacturing aircraft components, such as interior panels, structural parts, and engine components. Moreover, thermoplastic composites' lightweight properties contribute to fuel savings and enhance aircraft performance.
In the oil and gas industry, thermoplastic composites find application in downhole tools and components owing to their non-reactive nature, durability, cost-effectiveness, and resistance to corrosion, chemicals, and extreme temperatures. They help reduce maintenance costs and extend the service life of equipment used in harsh drilling and production environments.
The construction industry utilizes thermoplastic composites for various applications, including wall panels, roofing materials, and reinforcement elements like rebar. Their durability, resistance to environmental factors, and low maintenance requirements make them a favorable choice for construction projects seeking long-lasting and sustainable solutions. Furthermore, the development of advanced composites that are easy to mold and shape, providing flexibility in construction activities, is supporting the market growth.
The medical industry leverages the biocompatibility and sterilization resistance of thermoplastic composites, particularly those based on materials like polyether ether ketone (PEEK). They are employed in the production of biocompatible implants, surgical instruments, and medical equipment. Moreover, the increasing demand for thermoplastic composites in the medical sector due to the rising healthcare advances and the development of new materials is favoring the market growth.
Breakup by Region:
-North America
o United States
o Canada
-Asia-Pacific
o China
o Japan
o India
o South Korea
o Australia

o Indonesia
o Others
- Europe
o Germany
o France
o United Kingdom
o Italy
o Spain
o Russia
o Others
- Latin America
o Brazil
o Mexico
o Others
- Middle East and Africa

Asia Pacific leads the market, accounting for the largest thermoplastic composites market share
The market research report has also provided a comprehensive analysis of all the major regional markets, which include North America (the United States and Canada); Asia Pacific (China, Japan, India, South Korea, Australia, Indonesia, and others); Europe (Germany, France, the United Kingdom, Italy, Spain, Russia, and others); Latin America (Brazil, Mexico, and others); and the Middle East and Africa. According to the report, Asia Pacific accounted for the largest market share.
Asia Pacific dominates the market due to the region's thriving automotive and construction industries. Moreover, rapid industrialization and urbanization, leading to increased demand for thermoplastic composites in construction applications, such as roofing materials and structural components, is creating a positive outlook for the market growth. Along with this, the expanding automotive sector in the region and the growing focus on lightweight automotive components to improve fuel efficiency and reduce emissions are contributing to the market growth. In addition to this, the increasing availability of raw materials and a skilled workforce in the region is providing a thrust to the market growth.
Europe represents a significant market for thermoplastic composites, driven by its robust automotive and aerospace industries. Moreover, the rising focus on lightweight materials to meet stringent emission standards, leading to the adoption of thermoplastic composites in vehicle manufacturing, is favoring the market growth. Additionally, the growing product adoption to meet sustainability and stringent environmental regulations is boosting the market growth.
North America is a key player in the market due to the increasing aerospace, automotive, and oil and gas industries. In line with this, the growing demand for thermoplastic composites in the aerospace sector, as manufacturers incorporate the product into aircraft structures due to its lightweight and durable properties, is fostering the market growth.
Latin America is a growing market for thermoplastic composites due to the increasing product demand in industries, such as construction and automotive for multiple applications, such as roofing, body panels, and vehicle exterior. In line with this, the rising adoption of thermoplastic composites in infrastructure applications is favoring the market growth.
The Middle East and Africa (MEA) region is gradually adopting thermoplastic composites in the construction and oil and gas sectors, due to their resistance to extreme temperatures and environmental conditions and durability. Besides this, the growing infrastructure development and exploration activities in the oil and gas sector are driving the market growth.
Leading Key Players in the Thermoplastic Composites Industry:
The major players in the market are engaged in various strategies to maintain their competitive edge and meet the evolving industry demand. They are focusing on R&D efforts to enhance the performance characteristics of thermoplastic composites. Moreover, key manufacturers are developing advanced formulations, incorporating new reinforcement materials, and improving processing techniques to meet the specific needs of diverse end-user industries. Besides this, they are expanding their production capacities and global presence through strategic acquisitions and partnerships. In addition to this, the leading companies are investing in eco-friendly manufacturing processes and recyclability of thermoplastic composites to align with global environmental

regulations and customer preferences.
The market research report has provided a comprehensive analysis of the competitive landscape. Detailed profiles of all major companies have also been provided. Some of the key players in the market include:
-Arkema S.A.
-Avient Corporation
-BASF SE
-Celanese Corporation
-DuPont de Nemours Inc.
-Hexcel Corporation
-Koninklijke DSM N.V.
-Lanxess AG
-Mitsubishi Chemical Advanced Materials (Mitsubishi Chemical Holdings Corporation)
-PPG Industries Inc.
-SABIC (Saudi Arabian Oil Co.)
-Solvay S.A.

Key Questions Answered in This Report:
-How has the global thermoplastic composites market performed so far, and how will it perform in the coming years?
-What are the drivers, restraints, and opportunities in the global thermoplastic composites market?
-What is the impact of each driver, restraint, and opportunity on the global thermoplastic composites market?
-What are the key regional markets?
-Which countries represent the most attractive thermoplastic composites market?
-What is the breakup of the market based on the fiber type?
-Which is the most attractive fiber type in the thermoplastic composites market?
-What is the breakup of the market based on the product?
-Which is the most attractive product in the thermoplastic composites market?
-What is the breakup of the market based on the resin type?
-Which is the most attractive resin type in the thermoplastic composites market?
-What is the breakup of the market based on the end user industry?
-Which is the most attractive end user industry in the thermoplastic composites market?
-What is the competitive structure of the market?
-Who are the key players/companies in the global thermoplastic composites market?

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