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High-Performance Composites Market- Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028 Segmented By Resin Type (High-Performance Thermoset Composites and High-Performance Thermoplastic Composites), By Fiber Type (Carbon fiber Composites, Aramid fiber Composites, S-Glass Composites, and Others), By Manufacturing Process (Lay-Up Process, Resin Transfer Molding Process, Compression Molding Process, and Others), By Application (Aerospace & Defense, Automotive, Medical, Wind Turbines, Construction, and Others) By Region, and Competition

https://marketpublishers.com/r/H2507ED7728AEN.html
Date: December 2022
Pages: 113
Price: US$ 4,900.00 (Single User License)
ID: H2507ED7728AEN

Abstracts

Global High-Performance Composites Market is projected to grow at an impressive rate through 2028 due to increasing demand of high strength materials. China accounted for 31.2 percent of global manufacturing output in 2021.

Composites are made up of two independent elements, fiber, and resin. The unique substance, which has features that set it apart from fiber and resin, stands out for its high stiffness, strength, and lightweight. These properties have increased demand for the substance across several industries, including aerospace, defense, and transportation. Epoxy resin is frequently used as the matrix in high-performance polymer composites for aeronautical and astronautical applications.

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High-performance composites are made from carbon, glass, aramid, quartz, ultrahigh-molecular-weight polyethylene, ceramic, boron, and new fibers like poly (p-phenylene benzothiazole) (PBO) fibers. Due to their high tensile strength, high thermal conductivity, and low weight, these materials are frequently used in various industries, including automotive, wind turbines, medical, construction, aerospace, and defense. The increased demand for glass and carbon fiber high-performance reinforced plastics in Airbus airplanes and the growing use of high-performance composites in wind turbine blades are the primary drivers of the high growth rate of the high-performance composites market.

Growing Demand for Lightweight and High-Strength Materials

Fiber and resin are two separate components that are combined to form composites. The novel substance is distinguished by high strength, stiffness, and low weight, displaying distinct qualities from fiber and resin. These characteristics have raised the demand for the product across various industries, including aerospace, defense, and automotive. Growth in the high-performance composites market is anticipated due to the rising demand for lightweight materials. Automobiles with lighter curb weights are more efficient, which reduces the need for fossil fuels. Environmental bodies like the EPA have pushed using such materials to preserve the ecological balance.

Low-Cost Substitute for Metals

High-performance composites are considered superior to conventional auto manufacturing materials like steel and aluminum, which are thought to be weaker. Furthermore, the expansion of the automotive industry and the rising popularity of aviation impact the market for high-performance composites. On the other hand, the market growth for high-performance composites is constrained by the high costs of raw materials, manufacture, and assembly. Fiber composites have been used for a very long time in aerospace and aviation applications. However, it is anticipated that the widespread usage of carbon fiber in next-generation commercial aircraft will reduce fuel consumption by about 20% while also offering advantages that will enhance passenger comfort. With high-performance composite, approximately 40% cost reduction is possible, which helps in the competitive price of the product.

Growing Technological Advancement for Sustainable Development

Advanced carbon and glass fiber-reinforced polymer (FRP) composites are particularly

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intriguing for industrial and clean-energy applications. Carbon fiber-reinforced polymer composites outperform many structural materials in terms of structural strength-to-weight ratio and corrosion resistance.

To increase the performance of industrial machinery and components, corrosion resistance and other properties can be added to composites. For instance, fiber-reinforced polymer composites may create more effective heat exchangers, fans, blowers, and other machinery that can withstand corrosive or high-temperature processes, durable pipelines and tanks, and machinery with better electrical insulation.

Market Segmentation

The global High-Performance Composites market is segmented by resin type, fiber type, manufacturing process, and application. Based on resin type, the market is divided into High-Performance Thermoset Composites and High-Performance Thermoplastic Composites. Based on fiber type, the market is divided into Carbon fiber Composites, Aramid fiber Composites, S-Glass Composites, and Others. Based on the manufacturing process, the market is segmented into Lay-Up Process, Resin Transfer Molding Process, Compression Molding Process, and Others. Based on application, the market is segmented into Aerospace & Defense, Automotive, Medical, Wind Turbines, Construction, and Others.

Market players

Solvay SA, BASF SE, Chevron Phillips Chemical Co., LLC, Toray Industries Inc., SABIC, LyondellBasell Industries N.V., Owens Corning Corporation, Honeywell International Inc., Teijin Limited, Asahi Kasei Fibers Corp are some of the key market players.

Report Scope:

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

Global High-Performance Composites market by resin type:

High-Performance Thermoset Composites

High-Performance Thermoplastic Composites Polyethylene

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Global High-Performance Composites market by fiber type:

- Carbon fiber Composites
- Aramid fiber Composites
- S-Glass Composites
- Others

Global High-Performance Composites market, by manufacturing process:

- Lay-Up Process
- Resin Transfer Molding Process
- Compression Molding Process
- Others

Global High-Performance Composites market, by application:

- Aerospace & Defense
- Automotive, Medical
- Wind Turbines
- Construction
- Others

Global High-Performance Composites Market, By Region:

- North America
  - United States

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- Canada
- Mexico

Europe

- France
- Germany
- United Kingdom
- Italy
- Spain

Asia-Pacific

- China
- India
- Japan
- South Korea
- Australia

South America

- Brazil
- Argentina
- Colombia

Middle East & Africa

- South Africa

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Saudi Arabia

UAE

Turkey

Egypt

Competitive Landscape

Company Profiles: Detailed analysis of the major companies in Global High-Performance Composites Market.

Available Customizations:

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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