

Surge in Digital Technologies to Improve Production Augments Composites Market Growth at 7.1% CAGR by 2031

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/EINPresswire.com/ -- Composites
Market size was valued at USD 92.92
billion in 2022 and is poised to grow



from USD 99.52 billion in 2023 to USD 172.27 billion by 2031, growing at a CAGR of 7.1% in the forecast period (2024-2031).

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Composites market is growing owing to the increasing requirement for lightweight materials in defense, automotive, and aerospace sector. The high demand for chemical and corrosion resistance materials in pipe & tank and construction field is also proliferating the growth of composites market. Furthermore, increased requirement for high flames retardant and electrical resistant materials in electronics and electrical sector also fuels the growth. Lately, there has been huge development of cost-efficient carbon fibers, rapid cure resin system, and enhanced performing glass fibers, these are positively influencing the market dynamics. Light weight components are also crucial in turbines so that it can augment the conversion efficiency of the wind farms, resulting in positively impacting the demand for composites. These composites-based turbines offer less resistance to wind and can rotate easily to produce huge amount of electricity, which is aiding the market growth. Moreover, prominent market players are also investing in R&D initiatives so that they can build a wide range of products to increase profitability. Now, companies are also focusing on offering customized solutions to the clients so that they can increase their profit range and also satisfy customer demand, boosting market growth.

Top Players in the Composites Market

- Owens Corning
- Toray Industries, Inc.
- Teijin Limited
- Hexcel Corporation

- SGL Group
- · Mitsubishi Chemical Holdings Corporation
- Solvay
- · Gurit Holding AG
- Jushi Group Co., Ltd.
- Koninklijke Ten Cate BV
- Huntsman Corporation
- Cristex Composite Materials

Digitalization Leads to Easy Production of Composites Propelling Market Growth

Earlier the engineers had to manufacture composites through a complex lay-up procedure. It used to be extremely time-consuming and restricted the design geometry. Now, this has changes massively with the help of Digital Composite Manufacturing (DCM) system. This is an innovative manufacturing process where DCM creates composite parts without any help from physical labor. It has become possible to manufacture customized composites locally or globally in three dimensions with the help of DCM. These composites will have the exact strength, density, and flexibility that is required by the manufacturers. With the help of 3D printing the engineers also have the freedom to design any type of complex composites as per the requirement of their clients. DCM has also improved the performance of the composites, contributing to the growth of the market.

High Demand for Lightweight Properties to Increase Fuel Efficiency to Spur Product Demand in Next 4-5 Years

The following are the key <u>Composites Trends</u> that will shape the growth of the market in the next 5 years

In the last few years, the composites market is experiencing a flow in demand because of the rising requirement of lightweight properties across industries. Lightweight components like carbon fiber reinforced polymers (CFRP) and glass fiber reinforced polymers (GFRP) provide excellent strength-to-weight ratios, which means it has exceptional strength but less weight. This characteristic of the composites increases its efficiency and performance in transportation, automotive, and aerospace, sectors. Furthermore, composites are perfect for construction and wind energy application as they have corrosion resistant feature, h8igh durability, and design flexibility. Nowadays, many industries have started adopting composites to provide lightweight products due to the increasing focus on sustainability and strict regulatory standards, increasing market growth.

Growing Global Focus on Sustainability and Environmental Responsibility to Support Expansion of Composites Market

The rising emphasis on sustainability has become a crucial market driver for the composites

market. Recently, the awareness towards climate change and environmental degradation has intensified due to which several industries are under pressure to embrace more eco-friendly practices and materials. composites that are extracted from recycled or renewable sources provides an exceptional solution to address these problems. In most cases these composites have lower carbon footprint when compared to conventional materials like metals. Their lightweight properties also help in minimizing energy consumption and emissions during transportation. Composites also have the potential to offer durable and long-lasting products, which mitigates the need for frequent replacement and generate less waste. In several countries government bodies have started applying rules and incentives to encourage the implementation of sustainable materials, further boosting the demand of composites market.

Segments covered in Composites Market are as follows:

- Fibre Type
- o Glass Fibre Composites, Carbon Fibre Composites, Natural Fibre Composites, Others
- Resin Type
- o Thermoset Composites (Epoxy Resin, Polyester Resin, Vinyl Ester Resin, Polyurethane Resin, Other), Thermoplastic Composites (Polycarbonates, Polypropylene, Polyphenylene Sulfide, Polyetherimide, Polyetheretherketone, Polyamide, Other)
- End-use Industry
- o Aerospace & Defense (Civil, Defense), Wind Energy, Automotive & Transportation (Automotive, Recreational Vehicles, Bus, Trucks, And Other Heavy Vehicles, Metros and Monorails, Passenger Rails, High-speed and Bullet Train), Construction & Infrastructure (Marine {Powerboat, Sailboat, Cruise Ship, Others}, Pipes), Tanks & Pressure Vessels, and Electrical & Electronics, Others (Industrial, Healthcare, Sporting Goods)
- Manufacturing Process
- o Lay-up, Filament Winding, Injection Molding, Pultrusion, Compression Molding, RTM, Others

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High Demand of Composites from Aerospace Sector to Increase New Market Opportunities in the Next 10 Years

The utilization of composites in the aerospace sector has evolved and it will continue to create immense opportunities for it in the upcoming years. Nowadays, aircraft manufacturers are taking initiatives to expand the primary structures in thermoplastic, for both business jets and commercial aircraft. The airplane manufacturers were the first one to embrace the long fiber-reinforced thermoplastics technology. The most common thermoplastic composition in the sector is PEEK (polyetheretherketone) or PEI (polyetherimide) with carbon. These materials are

extremely popular in aerospace applications because of its two diverse characteristics, they can be molten and the reshaped repetitively. Thermoplastics also offer extreme level of toughness, which helps it to reduce the weigh structure but with enhanced damage tolerance.

Latest Headlines to Follow in the Composites Market

- Owens Corning signed a joint venture with Pultron Composites in August 2022. The objective of the collaboration is to manufacture fiber glass rebar.
- Teijin Automotive Technologies announced the opening of a modern composites manufacturing plant in China's Wujin National Hi-Tech Industrial Zone in February 2022.
- Masonite was acquired by Owens Corning for USD 3.9 Billion, in February 2024. The goal of this acquisition was to improve its presence in building materials and glass reinforcement sector.
- Solvay partnered with Spirit AeroSystems in June 2023. It will advance the composite development for sustainable aircraft technologies.

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Increasing Development in Material Science to Increase Applications for Composites Expanding Market Development

With the help of continuous R&D initiatives, engineers are formulating new composite materials. These solutions have improved properties like enhanced strength, durability, and thermal resistance. Developments in nanotechnology and additive manufacturing methods are further contributing to the advancement of next-generation composites. These solutions have tailored features and enhanced processing abilities. Such innovations will increase the opportunities of applications for composites. It will help manufacturers to fulfil the ever-changing demands of the consumers for lightweight, high performing materials in renewable energy, aerospace, and automotive sectors.

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