+357 96 030922
info@marketpublishers.com

Pressure Vessel Composite Materials Market Forecasts to 2034 – Global Analysis By Material (Carbon Fiber Reinforced Polymer (CFRP), Glass Fiber Reinforced Polymer (GFRP), Aramid Fiber Reinforced Polymer (AFRP) and Other Materials), Resin Type, Matrix Type, Application, End User and By Geography

https://marketpublishers.com/r/PA40832EF537EN.html
Date: May 2026
Pages: 200
Price: US$ 4,150.00 (Single User License)
ID: PA40832EF537EN

Abstracts

According to Stratistics MRC, the Global Pressure Vessel Composite Materials Market is accounted for $64.5 billion in 2026 and is expected to reach $106.7 billion by 2034 growing at a CAGR of 6.5% during the forecast period. Pressure vessel composite materials play a pivotal role in modern engineering by providing lightweight yet durable solutions for containing high-pressure substances. Their significance lies in enhancing structural integrity, minimizing weight, and resisting corrosion, crucial for applications in aerospace, oil and gas, and renewable energy. These advanced materials contribute to improved fuel efficiency, reduced environmental impact, and increased safety standards.

According to the International Council of Chemical Associations (ICCA), the chemical industry was valued at US$ 5.7 trillion in 2019, which was equivalent to a 7% share in the global GDP.

Market Dynamics:

Driver:

Growing end-use industries

+357 96 030922
info@marketpublishers.com

End-use industries such as aerospace, automotive, and energy demand lightweight, high-strength materials for applications like fuel storage, transportation, and renewable energy. Composite materials offer advantages such as corrosion resistance, durability, and reduced maintenance costs, driving their adoption in pressure vessel manufacturing. Additionally, advancements in composite technology, including improved manufacturing processes and material formulations, further stimulate market growth.

Restraint:

Limited standardization

Limited standardization in pressure vessel composite materials arises due to the diverse applications and complex performance requirements across industries. Unlike traditional materials, composites offer a wide range of customization options, making it challenging to establish universal standards. This lack of standardization hampers market growth by impeding interoperability, increasing development costs, and hindering regulatory compliance.

Opportunity:

Escalating technological advancements

Escalating technological advancements in pressure vessel composite materials enhances material performance, manufacturing efficiency, and product innovation. Advances such as nanotechnology, additive manufacturing, and novel resin systems enable the development of composite materials with superior strength, durability, and lightweight properties. Additionally, technological progress facilitates cost reduction, scalability, and environmental sustainability, making composite materials increasingly competitive compared to traditional alternatives, thus stimulating further market growth and adoption.

Threat:

High initial costs

Pressure vessel composite materials incur high initial costs primarily due to the expenses associated with advanced raw materials, specialized manufacturing processes, and stringent quality control measures. Additionally, the need for research and development to optimize composite formulations and manufacturing techniques

+357 96 030922
info@marketpublishers.com

contributes to the initial investment. These high costs hinder market growth by limiting affordability and competitiveness compared to traditional materials.

Covid-19 Impact

The covid-19 pandemic initially disrupted the pressure vessel composite materials market due to supply chain disruptions, reduced industrial activities, and project delays in sectors like aerospace and automotive. However, as economies gradually reopened and industries resumed operations, the market witnessed recovery driven by increasing investments in renewable energy projects, particularly in wind and solar power. The pandemic also highlighted the importance of lightweight, durable materials like composites for applications such as medical oxygen storage, driving further demand.

The epoxy segment is expected to be the largest during the forecast period

The epoxy segment is estimated to have a lucrative growth, due to its excellent mechanical properties, chemical resistance, and adhesion characteristics. It offers high strength-to-weight ratios, making it ideal for applications requiring lightweight yet durable pressure vessels. Epoxy resin systems also provide versatility in fabrication processes, allowing for complex shapes and designs. Overall, these characteristics make epoxy resin an ideal choice for pressure vessel applications, ensuring durability, safety, and efficiency.

The storage vessels segment is expected to have the highest CAGR during the forecast period

The storage vessels segment is anticipated to witness the highest CAGR growth during the forecast period, due to their unique properties. These materials offer lightweight yet robust solutions for storing various substances, including gases, liquids, and chemicals. Composite storage vessels are corrosion-resistant, ensuring long-term durability and minimizing maintenance requirements. Additionally, their high strength-to-weight ratio allows for greater storage capacity without compromising structural integrity.

Region with largest share:

Asia Pacific is projected to hold the largest market share during the forecast period owing to rapid industrialization, infrastructural development, and increasing investments in renewable energy projects. Countries like China, India, Japan, and South Korea are leading contributors to market expansion due to their expanding aerospace, automotive,

+357 96 030922
info@marketpublishers.com

and energy sectors. Additionally, supportive government initiatives promoting the adoption of lightweight and high-performance materials further propel market growth.

Region with highest CAGR:

Europe is projected to have the highest CAGR over the forecast period. Europe is experiencing steady growth attributed to the region's emphasis on sustainability, stringent regulations, and growing demand from end-use industries such as automotive, aerospace, and energy. European countries like Germany, France, and the United Kingdom are key players in the market, driven by their advanced manufacturing capabilities and investments in research and development. Additionally, increasing focus on reducing carbon emissions and promoting renewable energy sources further fuels the adoption of composite materials in pressure vessel applications.

Key players in the market

Some of the key players profiled in the Pressure Vessel Composite Materials Market include Bharat Heavy Electricals Limited, Doosan Heavy Industries & Construction, The 3M Company, BASF SE, Huntsman Corporation, Kolon Industries Inc, Mitsubishi Chemical Holdings Corporation, Solvay SA, Zoltek Corporation, Steelhead Composites Inc, Hexion Inc, Olin Corporation, Larsen & Toubro Limited, Samuel CNG Pressure Vessel Group, IHI Corporation, General Electric and Westinghouse Electric Company LLC.

Key Developments:

In August 2018, The Institute for Advanced Composites Manufacturing Innovation (IACMI) announced a project to develop Smart Composite Pressure Vessels (SCPV) with integrated health monitoring. The project is led by Steelhead Composites LLC, with the project team including Teijin Carbon, Oak Ridge National Laboratory and the University of Tennessee. Steelhead Composites will utilize ORNL’s composite processing experience to optimize monitoring procedures in the vessel assembly. This validated technology can then be used to lower the cost of adopting composite pressure vessels in fuel cell cars and other applications in transportation markets.

Materials Covered:

Carbon Fiber Reinforced Polymer (CFRP)

+357 96 030922
info@marketpublishers.com

Glass Fiber Reinforced Polymer (GFRP)

Aramid Fiber Reinforced Polymer (AFRP)

Other Materials

Resin Types Covered:

Epoxy

Polyester

Vinyl Ester

Phenolic

Polyurethane

Other Resin Types

Matrix Types Covered:

Polymer Matrix Composites (PMC)

Metal Matrix Composites (MMC)

Ceramic Matrix Composites (CMC)

Applications Covered:

Storage Vessels

Transportation Vessels

Process Vessels

+357 96 030922
info@marketpublishers.com

- Other Applications

End Users Covered:

- Oil & Gas Industry
- Chemical Industry
- Aerospace Industry
- Automotive Industry
- Other End Users

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe

+357 96 030922
info@marketpublishers.com

- Asia Pacific
  - Japan
  - China
  - India
  - Australia
  - New Zealand
  - South Korea
  - Rest of Asia Pacific
- South America
  - Argentina
  - Brazil
  - Chile
  - Rest of South America
- Middle East & Africa
  - Saudi Arabia
  - UAE
  - Qatar
  - South Africa
  - Rest of Middle East & Africa

+357 96 030922
info@marketpublishers.com

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

10 GLOBAL PRESSURE VESSEL COMPOSITE MATERIALS MARKET, BY GEOGRAPHY

+357 96 030922
info@marketpublishers.com

11 KEY DEVELOPMENTS

12 COMPANY PROFILING

+357 96 030922
info@marketpublishers.com

List Of Tables

LIST OF TABLES

+357 96 030922
info@marketpublishers.com

Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: Pressure Vessel Composite Materials Market Forecasts to 2034 – Global Analysis By Material (Carbon Fiber Reinforced Polymer (CFRP), Glass Fiber Reinforced Polymer (GFRP), Aramid Fiber Reinforced Polymer (AFRP) and Other Materials), Resin Type, Matrix Type, Application, End User and By Geography

Product link: https://marketpublishers.com/r/PA40832EF537EN.html

Price: US$ 4,150.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/PA40832EF537EN.html