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Global High-Temperature Composite Materials Market Size Study & Forecast, by Resin Type, Fiber Type, Application, Manufacturing Process, and Regional Forecasts 2025–2035

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Abstracts

The Global High-Temperature Composite Materials Market is valued at approximately USD 7.63 billion in 2024 and is anticipated to expand at a robust compound annual growth rate (CAGR) of 6.37% over the forecast period 2025–2035. These advanced materials, engineered to withstand extreme thermal and mechanical stress, are being increasingly deployed across industries that demand durability under punishing conditions. From aerospace jet engines and automotive heat shields to turbines and structural components in defense and energy infrastructure, high-temperature composites offer the unique combination of lightweight performance and exceptional heat resistance—allowing next-generation designs to push limits previously thought unreachable.

A significant market driver is the aerospace industry's relentless pursuit of lightweighting and fuel efficiency. As both commercial aviation and defense sectors intensify their push for thermal-resistant, structurally sound materials to reduce emissions and improve fuel performance, high-temperature composites have taken center stage in component innovation. Likewise, in the automotive world—particularly in motorsports and electric vehicles—the demand for thermal management, noise reduction, and improved strength-to-weight ratios is propelling the adoption of these advanced materials. In tandem, rapid innovation in resin systems, such as polyimide and phenolic, and breakthroughs in fiber reinforcement like ceramic and boron fibers are unlocking broader design flexibility and manufacturability at scale.

Regionally, North America currently holds a commanding position in the high-

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temperature composite materials market, owing to its well-established aerospace and defense manufacturing base, continuous R&D efforts, and the presence of major market participants. Europe, driven by stringent emission norms and strong automotive and industrial engineering sectors, is also a key region fueling demand. Meanwhile, the Asia Pacific market is exhibiting the fastest growth trajectory, primarily due to rapid industrialization, rising space and defense budgets, and expanding electric vehicle production in economies such as China, Japan, and South Korea. Regional players are capitalizing on local production advantages while also engaging in strategic partnerships to align with global supply chain resilience.

Major market players included in this report are:

Solvay S.A.

BASF SE

Toray Industries, Inc.

Honeywell International Inc.

SGL Carbon SE

Mitsubishi Chemical Holdings Corporation

Owens Corning

Hexcel Corporation

Huntsman Corporation

Teijin Limited

Arkema S.A.

Renegade Materials Corporation

Avient Corporation

Ube Industries Ltd.

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Advanced Composites Inc.

Global High-Temperature Composite Materials Market Report Scope:

Historical Data – 2023, 2024

Base Year for Estimation – 2024

Forecast period – 2025–2035

Report Coverage – Revenue forecast, Company Ranking, Competitive Landscape, Growth factors, and Trends

Regional Scope – North America; Europe; Asia Pacific; Latin America; Middle East & Africa

Customization Scope – Free report customization (equivalent up to 8 analysts' working hours) with purchase. Addition or alteration to country, regional & segment scope*

The objective of the study is to define market sizes of different segments & countries in recent years and to forecast the values for the coming years. The report is designed to incorporate both qualitative and quantitative aspects of the industry within the countries involved in the study. The report also provides detailed information about crucial aspects, such as driving factors and challenges, which will define the future growth of the market. Additionally, it incorporates potential opportunities in micro-markets for stakeholders to invest, along with a detailed analysis of the competitive landscape and product offerings of key players.

The detailed segments and sub-segments of the market are explained below:

By Resin Type:

Polyimide

Phenolic

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Epoxy

Cyanate Ester

Silicone

By Fiber Type:

Carbon Fiber

Ceramic Fiber

Glass Fiber

Aramid Fiber

Boron Fiber

By Application:

Aerospace

Automotive

Industrial

Defense

Energy

By Manufacturing Process:

Compression Molding

Injection Molding

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Autoclave Molding

Resin Transfer Molding

Vacuum Infusion

By Region:

North America

U.S.

Canada

Europe

UK

Germany

France

Spain

Italy

Rest of Europe

Asia Pacific

China

India

Japan

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- Australia
- South Korea
- Rest of Asia Pacific

Latin America

- Brazil
- Mexico

Middle East & Africa

- UAE
- Saudi Arabia
- South Africa
- Rest of Middle East & Africa

Key Takeaways:

- Market Estimates & Forecast for 10 years from 2025 to 2035.
- Annualized revenues and regional level analysis for each market segment.
- Detailed analysis of geographical landscape with Country level analysis of major regions.
- Competitive landscape with information on major players in the market.
- Analysis of key business strategies and recommendations on future market approach.

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Analysis of competitive structure of the market.

Demand side and supply side analysis of the market.

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