

# **Flame-Retardant Resin Market in the Composites Industry by Resin Type (Phenolic Resin, Polyester Resin, Epoxy Resin, and Others), by Composites Type (Glass Composites and Others), by End-Use Industry (Aerospace & Defense, Transportation, Building & Construction, Electrical & Electronic, Marine, Pipe & Tank, and Others), and by Region (North America, Europe, Asia-Pacific, and Rest of the World), Trend, Forecast, Competitive Analysis, and Growth Opportunity: 2019-2024**

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## **Abstracts**

This report, from Stratview Research, studies the global flame-retardant resin market in the composites industry over the trend period from 2013 to 2018 and the forecast period from 2019 to 2024. The report provides detailed insights into the market dynamics to enable informed business decision making and growth strategy formulation based on the opportunities in the market.

### **Flame-Retardant Resin (FR Resin) Market in the Composites Industry: Highlights**

Flame-retardant resins account for approximately 25% of the total composite resins (thermoset + thermoplastic) market. As per Stratview Research, the flame-retardant resin market in the composites industry is estimated to grow at a healthy rate over the next five years to reach an estimated value of US\$ 5,735.8 million in 2024. In resin systems, flame retardancy is of paramount importance, especially where fire, smoke, and toxicity (FST) and high-temperature properties are most importantly required. It is

estimated that FR resin is likely to remain one of the most important resin types in the overall composite resins market in the foreseen future.

In end-use industries such as aerospace & defense, transportation, electronics, marine, and oil & gas, composite parts offer a wide array of advantages over metal parts, such as weight reduction, excellent strength-to-weight ratio, ability to withstand a wide range of operating temperatures, high corrosion resistance, high fatigue resistance, and ability to form complex shapes. Composite materials used in interior applications and high-temperature-resistant applications must meet FST (fire, smoke, toxicity) properties imposed by several regulatory authorities.

Several factors are cooperatively driving the demand for FR resins in major end-use industries, among which, one of the most important factors is an organic growth of the major end-use industries. Major market segments: E&E, transportation, and building & construction, are witnessing tangible growth rates over the past five years and are expected to maintain these growth momentums in the coming five years as well. This is likely to imprint a positive outlook for raw materials including FR resins.

Another trend that further proliferates to the growth of FR resins is the introduction of stringent regulations regarding FST (fire, smoke, and toxicity) performance. Composite part fabricators have no choice except using FR resins in interiors and high-temperature-resistant applications in order to meet the FST standards of various end-use industries.

The market is segmented based on the resin type as phenolic resin, polyester resin, epoxy resin, and other resins. Epoxy resin is expected to remain the largest segment of the market over the next five years, propelled by the electrical and electronics industry. The printed circuit board (PCB) is the most dominant application where FR epoxy resins are used. Other major applications of FR epoxy resins are GRE pipes for the oil & gas industry and interior applications of aircraft. This resin type is gaining traction in the composites market because of its excellent performance, such as strength, adhesiveness, versatility, moisture absorbent, and less volumetric shrinkage.

The market is also segmented based on the end-use industry type as aerospace & defense, transportation, building & construction, electrical & electronics (E&E), marine, pipe & tank, and others. E&E is expected to remain the largest segment of the market over the next five years. The segment is also likely to witness a healthy growth in the same period. PCB is the major application of FR resins in the E&E industry. PCBs are manufactured using different types of laminates, such as paper, FR-4, CEM, and polyamide. Among these types, FR-4 and CEM are the most commons, which primarily

use FR epoxy resins.

The transportation segment is projected to witness the highest growth rate over the next five years. In the transportation industry, rail, bus, and recreational vehicles are the major users of FR composite parts. In rails, FR resins are used for making interior parts, such as lavatory, seats, partitions, sidewalls, ceiling panels, doors, and windows, for high-speed trains, metro, locomotives, and monorails. In recreational vehicles, FR resins are used to make roof, sidewalls, and slide out panels.

In terms of region, Asia-Pacific is likely to remain the largest and the fastest-growing market during the forecast period in terms of both value and volume. The demand for FR resins in the region is driven by a host of factors including a gradual shift of the E&E industry from the developed economies to the developing Asian economies, increasing demand for high-speed and metro rails, development of commercial and regional aircraft indigenously, and increasing oil & gas activities. The region is likely to remain the most attractive market in the foreseeable future.

North America is likely to remain the second-largest market over the next five years in terms of both value and volume. The region is the largest FR resin market for various end-use industries including marine, A&D, pipe & tank, and building & construction. It is estimated that the region is expected to maintain its undisputed leadership in these end-use industries in the foreseeable future as well.

Europe is likely to maintain its third-leading position in the market during the forecast period in terms of both value and volume. Building & construction and ground transportation are the growth engines of the region's market. Recovery of the European construction market and high demand for high-speed trains and metro rails are fuelling the region's growth.

The market is encircled by a well robust supply chain with the presence of several large-to-small-sized players. Hexion Inc., Olin Corporation, Nan Ya Plastics, Ashland Global Specialty Chemicals Inc., Huntsman Corporation, Polynt Reichhold, Group, Sumitomo Bakelite Co., Ltd., Georgia-Pacific Industries Ltd., and AOC, LLC are some of the major players in FR resins market for the composites industry. Development of innovative resin systems and formation of strategic alliances and mergers and acquisitions are some of the key strategies adopted by major companies in order to gain competitive advantage over others.

## Research Methodology

This report offers high-quality insights and is the outcome of detailed research methodology comprising extensive secondary research, rigorous primary interviews with industry stakeholders and validation and triangulation with Stratview Research's internal database and statistical tools. More than 700 authenticated secondary sources, such as company annual reports, fact book, press release, journals, investor presentation, white papers, patents, and articles, have been leveraged to gather the data. We conducted 10 detailed primary interviews with the market players across the value chain in all four regions and with industry experts to obtain both qualitative and quantitative insights.

## Report Features

This report provides market intelligence in the most comprehensive way. The report structure has been kept such that it offers maximum business value. It provides critical insights into the market dynamics and will enable strategic decision making for the existing market players as well as those willing to enter the market. The following are the key features of the report:

Market structure: Overview, industry life cycle analysis, supply chain analysis

Market environment analysis: Growth drivers and constraints, Porter's five forces analysis, SWOT analysis

Market trend and forecast analysis

Market segment trend and forecast

Competitive landscape and dynamics: Market share, Product portfolio, Product launches, etc.

Attractive market segments and associated growth opportunities

Emerging trends

Strategic growth opportunities for the existing and new players

Key success factors

The global flame-retardant resin market in the composites industry is segmented into the following categories:

## Flame-Retardant Resin Market in the Composites Industry by Resin Type:

Phenolic Resin (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Polyester Resin (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Epoxy Resin (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Other Resins (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

## Flame-Retardant Resin Market in the Composites Industry by Composite Type:

Glass Composites (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Other Composites (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

## Flame-Retardant Resin Market in the Composites Industry by End-Use Industry Type:

Aerospace & Defense (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Transportation (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Marine (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Building & Construction (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Electrical & Electronic (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Pipe & Tank (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Others (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

## Flame-Retardant Resin Market in the Composites Industry by Region:

North America (Country Analysis: the USA, Canada, and Mexico)

Europe (Country Analysis: Germany, France, the UK, Russia, and Rest of Europe)

Asia-Pacific (Country Analysis: China, Japan, South Korea, India, and Rest of Asia-Pacific)

Rest of the world (Sub-Region Analysis: Latin America, the Middle East, and Others)

## Report Customization Options

With this detailed report, Stratview Research offers one of the following free customization options to our respectable clients:

### Company Profiling

Detailed profiling of additional market players (up to three players)

SWOT analysis of key players (up to three players)

### Market Segmentation

Current market segmentation of any one of the end-use industry types by Resin type

### Competitive Benchmarking

Benchmarking of key players on the following parameters: Product portfolio, geographical reach, regional presence, and strategic alliances

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- 9.10. Sumitomo Bakelite Co., Ltd.

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