



Technology Landscape: Fire Resistant Composite Materials

Case Study

Technology Landscape

Client	Global composite material manufacturer
Industry	Automotive, Aerospace, Manufacturing, etc.
Products	Composite materials, Fire retardant fiber reinforced composites, etc.

Context

- Huge demand for improved fire and high temperature resistant composite has pushed suppliers to innovate non-halogen, lightweight and filler free fire retardant resin systems
- The Client wanted an assessment of alternate technologies (not matrix-based) for improving fire resistance of composite materials for example surfacing films, coatings, etc.

Key Business Questions

- What are the various non-halogen or halogen free flame retardant resins?
- What are the various liquid additives that can improve fire retardancy?
- What are the key advanced and alternative fire retardancy solutions commercialized in the industry?

Engagement Scope

1 Solutions Landscape

- Provided a landscape of solutions covering the following aspects
- Resin Systems
 - Fire resistant resin systems
 - High temperature resins
 - Others
- Fillers/Additive based resin systems
 - Low weight/low toxic emissions
 - Non halogenated resin systems

2 Technology Assessment

- Provided an assessment of key material technologies
- Alternative Solutions
 - Multilayer laminates
 - Graphene foams
 - Advantages & Disadvantages
 - Key Performance Indicators (KPI)
 - Others

3 Player Landscape

- Provided intelligence of competitors who are involved in the formulation and manufacturing activities
 - Material Suppliers
 - Customers/OEMs

Technology Landscape

Research Methodology

Secondary Research

- Secondary research was one of the core approaches that included web based news, products and associated materials

Patent Research

- Patents relating to halogen free resin systems with flame retardant property was conducted on commercial as well as country specific national patent databases

Scientific Literature Research

- Identified new material solutions from research, review papers and journals

Benefits to Client

- Client got an understanding of various fire retardant solutions commercialized in the industry
- The intelligence assisted the Client in identifying alternate technologies (not matrix-based) for improving fire resistance of composite materials for example surfacing films, coatings, etc.

Sample Analysis

1 Solutions Landscape

2 Technology Assessment

3 Player Landscape

Thank you

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