MAKO Advanced Materials Strengthens U.S. Rocket Motor Supply Chain with Aerofin Ablative Prepregs and Molding Compounds

New options in the silica and carbon phenolic supply chain for critical materials in high temp aerospace and defense applications.

HENDERSON, NV, UNITED STATES, November 11, 2026 / EINPresswire.com/ -- MAKO Advanced Materials, a U.S. manufacturer of advanced composite materials, is supporting growing demand for domestic rocket motor manufacturing with its Aerofin P-3300X line of ablative prepregs and molding compounds. The product line includes silica phenolic and carbon phenolic systems designed for high-temperature thermal protection applications, providing manufacturers with additional sourcing options for critical aerospace and defense components.



Thermal protection in action—high-temperature ablative composite materials engineered for aerospace and defense propulsion.

MAKO Advanced Materials Logo

Increasing demand for solid rocket motors, missile systems, and hypersonic platforms has placed significant pressure on the supply chain for specialized ablative composites. These materials are used in thermal protection systems (TPS), nozzles and insulators where components must withstand extreme temperatures during propulsion, atmospheric re-entry, and other demanding operating conditions.

The production of ablative phenolic prepregs requires specialized fiber reinforcements, carefully

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> *Matt Jones*

formulated phenolic resin systems, and controlled manufacturing processes. Supply disruptions affecting any of these elements can create production bottlenecks and extend lead times for SRM (Solid Rocket Motor) manufacturers that depend on these materials.

MAKO's Aerofin product line addresses these sourcing challenges by offering alternatives to long-lead-time, legacy materials.

Aerofin Ablative Materials for Extreme Thermal Environments

The Aerofin P-3300X line includes two material systems designed to accommodate different thermal protection and manufacturing requirements.

Aerofin P-3300S: A silica phenolic system combining heat-treated silica fabric reinforcements with a silica-modified phenolic resin formulation. The material is intended for high-temperature applications requiring effective thermal protection and controlled material degradation under extreme heat exposure.

Aerofin P-3300C: A carbon phenolic system combining heat-treated carbon reinforcements with a carbon-modified phenolic resin formulation. The material is designed for demanding propulsion and aerospace applications where high-temperature performance is an important consideration.

Both systems incorporate MAKO's high-char-yield Aerofin phenolic resin formulations. During exposure to extreme temperatures, ablative materials undergo controlled thermal decomposition, producing a protective char layer that helps limit heat transfer to underlying components.

This process makes phenolic composites particularly relevant to rocket nozzles, solid rocket motor components, heat shields, re-entry vehicles, and hypersonic platforms.

Material selection depends on the thermal environment, component geometry, structural requirements, and manufacturing process. MAKO's silica and carbon phenolic options allow manufacturers to evaluate alternative reinforcement and resin combinations for their specific applications.

Multiple Material Forms Support Manufacturing Flexibility

Aerofin P-3300S and P-3300C are available in continuous-fabric broadgoods prepreg and

chopped bulk molding compound (BMC) formats, accommodating different composite manufacturing approaches.

Broadgoods prepregs consist of continuous reinforcement fabrics pre-impregnated with uniquely formulated phenolic resin. These materials can be used in processes such as tape wrapping nozzles and laminate fabrication, including the production of components requiring controlled fiber placement.

Chopped molding compounds provide an alternative format for compression molding applications. MAKO's Aerofin molding compounds use half-inch chopped material squares designed to flow and consolidate under heat and pressure during molding.

These different material forms provide manufacturing options for components with varying shapes, geometries, and production requirements.

Depending on part specifications and processing conditions, finished components may undergo additional machining to achieve required dimensions and features.

The availability of both prepreg and molding compound formats allows manufacturers to assess material selection alongside their established fabrication methods rather than relying on a single material presentation.

Addressing Supply Chain Constraints in Defense Manufacturing

The U.S. aerospace and defense industrial base depends on reliable access to specialized composite materials for propulsion and thermal protection applications.

Ablative material supply chains can be particularly vulnerable because production depends on multiple specialized inputs, including high-temperature fiber reinforcements and carefully controlled phenolic resin formulations. Limited sourcing options or extended procurement timelines can affect component manufacturing schedules.

MAKO's Aerofin line incorporates alternative reinforcement sourcing to help address these constraints.

For its silica phenolic system, the company uses heat-treated silica fabrics obtained through newer supply channels. Its carbon phenolic system includes heat-treated carbon reinforcements sourced through both established and alternative supply pathways.

These approaches are intended to provide additional domestic material availability and reduce reliance on constrained legacy supply channels.

"Reliable access to ablative materials is essential for manufacturers working on critical

propulsion and thermal protection systems," said Matt Jones, Head of Business Development, MAKO Advanced Materials. "Through Aerofin, our focus is on providing shorter lead time silica and carbon phenolic materials that give customers more sourcing flexibility while supporting the technical requirements of their applications."

The Aerofin line reflects MAKO's ongoing focus on specialty composite materials and domestic manufacturing capabilities. By combining phenolic resin formulation expertise, alternative reinforcement sourcing, and multiple material formats, the company supports manufacturers evaluating additional options for high-temperature aerospace and defense components.

Further information about Aerofin ablative prepregs and molding compounds is available at https://makobond.com/products/prepregs/.

About MAKO Advanced Materials

MAKO Advanced Materials is a U.S.-based manufacturer specializing in advanced composite prepregs, film adhesives, specialty compounds, and custom resin formulations. The company provides material solutions for aerospace, defense, and industrial applications, supported by formulation expertise, material development, testing, and domestic manufacturing capabilities.

For more information, visit https://makobond.com/.

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