AXIOM MATERIALS

Design and Build with Axiom Materials

Ceramic Matrix Composites

APPLICATIONS

- Aero Engines
- Hypersonic Flight
- Rocket Launch Vehicles
- Dielectric Radomes
- Missile Skins
- Ablatives
- Fuel Cells
- EV Battery Packs

CUSTOMIZED PREPREGS

- Large Structural Parts
- Slit Tapes for AFP & ATL
- Adhesives
- Surfacing Films
- Bulk Molding Compounds

Axiom Materials is the world's largest industrial scale producer of Oxide-Oxide Ceramic Matrix Composite (CMC) pre-preg materials. The company is expanding its CMC portfolio to serve secular growth in Aerospace, Hypersonics, Electric Vehicles, Air Mobility, and Green Energy Production.

Axiom Materials operates its High Temperature Composites Center in Santa Ana, California, USA. The company produces a state-of-the-art family of Oxide-Oxide CMC materials for high temperature applications in the range of 900°F – 2200°F (482°C – 1204°C). Axiom is enhancing is current product line with the addition of C-SiC, and SiC-SiC proprietary materials for higher temperature applications up to 2700F (1485C).

Axiom has invested heavily in advanced process equipment and test labs to develop and produce an array of CMC material types:

- Woven Prepregs for large structural parts
- Unidirectional Slit Tapes for automated manufacturing using AFP and ATL equipment
- Surfacing Films for smooth finish
- Bulk Molding Compounds for complex 3-D shaped parts

The CMC materials may be processed via conventional layup and curing techniques, followed by free-standing high-temperature sinter cycles to produce components for operation in extreme environments requiring a combination of high temperature resistance and mechanical strength. Target applications include advanced aircraft engines, hypersonics, space vehicles, lithium battery containment, oil and gas piping, petrochemical tubing, and refinery furnaces and kilns.

Axiom's innovations in material science, process engineering, and technical leadership are contributing to the broader use of Ceramic Matrix Composite materials.

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TECHNICAL SUPPORT

- Application Engineering Team
- R&D Lab
- Full Test Lab
- Physical and Analytical Testing
- Composite and Mechanical Testing
- Digital Simulation
- Samples Available

CUSTOMER SERVICE

- Live Customer Support Team
- Responsive Quoting
- Short Lead Times
- Production Capacity
- Order Tracking
- Responsive Supply Chain

CMC Product Family

Product	Description	Applications	Form	Matrix Color	Max. Dry Operating Temp	Comments
AX-3605	Modified Silica S-glass Prepreg	Thermal/fire barriers, exhaust components, insulation	Woven prepreg	White on white	1200°F (650°C)	For autoclave or pressing processes. Low tack.
AX-5605	Modified Silica Carbon Prepreg	Thermal/fire barriers, exhaust components, insulation, motorsports	Woven prepreg	White on white	900°F (510°C)	For autoclave or pressing processes. Low tack.
AX-7900-312	Solvent-based CMC Prepreg	Thermal/fire barriers, exhaust components, refractory, furnace hardware, insulation	Woven prepreg	White on white	1600°F (870°C)	Low cost, low dielectric, insulation or flame barrier applications
AX-7800-610	Water-based CMC Prepreg, High-strength	Aircraft engine components, ducting, oil & gas tubing, advanced energy, motorsports	Woven prepreg	White on white	1650°F (900°C)	High-Temperature structural applications, solvent-free ceramic matrix
AX-7810-610	Solvent-based CMC Prepreg, High-strength	Aircraft engine components, ducting, oil & gas tubing, advanced energy, motorsports	Woven prepreg	White on white	1650°F (900°C)	High-Temperature structural applications
AX-7900-720	Solvent-based CMC Prepreg, Low Creep/ High Temperature	Aircraft engine components, ducting, oil & gas tubing, advanced energy, motorsports	Woven prepreg	White on white	1900°F (1037°C)	Low creep, low dielectric, high use temperature applications
AX-7820	100% Aluminum Oxide Water-based CMC Prepreg	Aircraft engine components, ducting, oil & gas tubing, advanced energy, motorsports	Woven prepreg	White on white	2200°F (1200°C)	Solvent-free ceramic matrix. Paired with Nextel™ 610 or 720 fabric.
AX-7810UD/ 900UD	Solvent-based Ceramic Matrix Composite (CMC) Unidirectional Prepreg / Slit Tape	Advanced Fiber Placement & Automated Tape Laying	Unidirectional Prepreg, AFP Tape	White on white	1900°F (1037°C)	Paired with 20kD Nextel™ 610 or 720 fiber. Low tack.
AX-8900-BMC	Ox-Ox CMC Bulk Molding Compound	Radomes, Engine Volutes, Crucibles, Nozzles, Joints	Molding Compound	Grey	1900°F (1037°C)	Lower cost, improved manufacture flexibility over pre-impregnated fabric
CerFace™	Oxide ceramic-based surfacing film reinforced with alumina paper carrier	High-temperature parts for industrial, power generation, and aero engines applications, combustors, turbine vanes, shrouds, mixers, gas filters, and furnace hardware	Supported Film	White	2200°F (1200°C)	Improved surface finish, localized impact protection, co-cures with ox-ox solvent-based prepreg.

For more information on any of our products or services please visit us on the Web at:
www.axiommaterials.com

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