



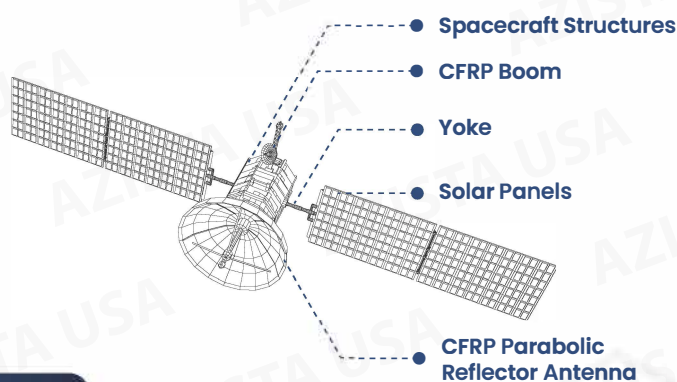
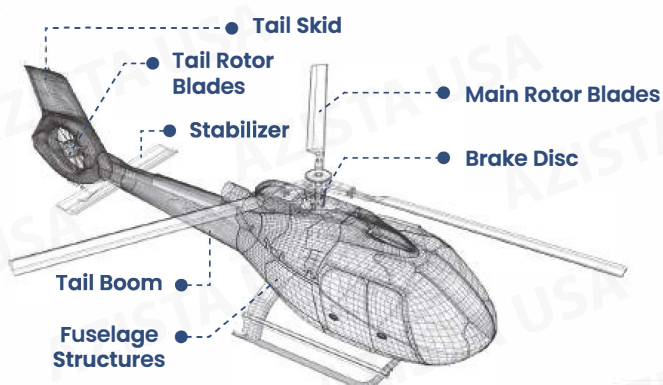
## Your Partner for Advanced Composites

- Design and Manufacture of Polymer Matrix Composites
- Intermediates – Hot Melt Prepregs and Towpregs
- Carbon Carbon and Ceramic Matrix Composites

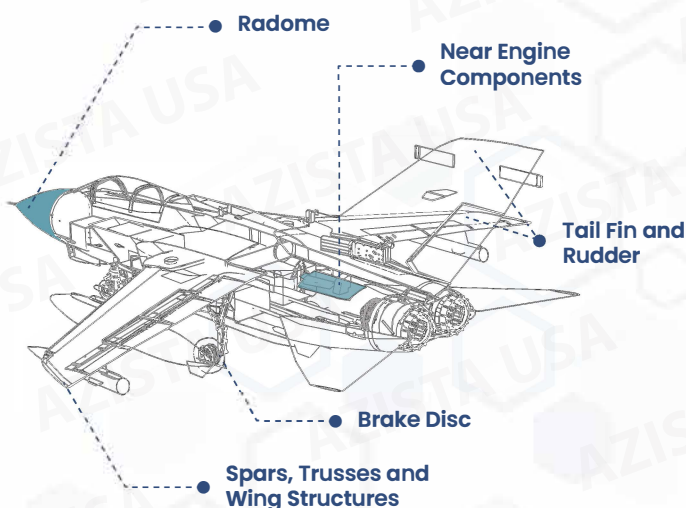
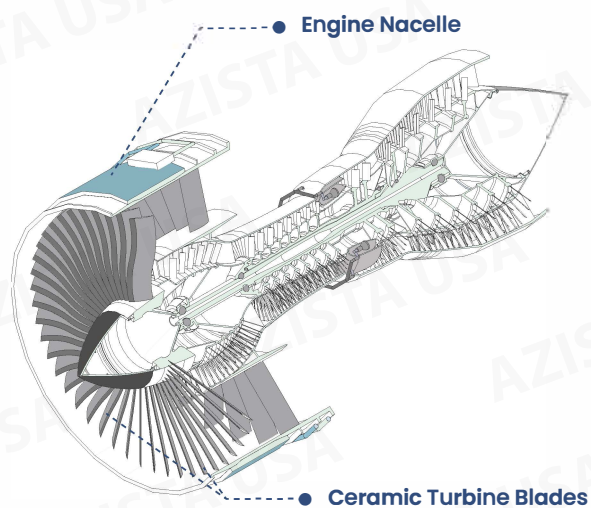
| Code     | Resin         | Features                                                                                                                                                                                                                     | Cure Cycle                                                                             | Tg              | Applications                                                                                                                                                                            |
|----------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AER 101P | Epoxy         | <ul style="list-style-type: none"> <li>Medium tack and excellent drape characteristics</li> <li>Controlled melt viscosity</li> </ul>                                                                                         | 1°C (33.8°F)/min ramp rate<br>1 hr hold at 130°C (266°F)<br>3 hr hold at 170°C (338°F) | 175°C (347°F)   | <ul style="list-style-type: none"> <li>Structural components</li> <li>Automotive components</li> <li>Sports goods</li> </ul>                                                            |
| AER 102P | Epoxy         | <ul style="list-style-type: none"> <li>Low cost high performance prepreg</li> <li>Versatile processability</li> </ul>                                                                                                        | 2°C (35.6°F)/min ramp rate<br>1 hr hold at 180°C (356°F)                               | 188°C (370.4°F) | <ul style="list-style-type: none"> <li>Automotive components</li> <li>Sports goods</li> </ul>                                                                                           |
| AER 103T | Epoxy         | <ul style="list-style-type: none"> <li>Low-temperature cure</li> <li>Outstanding environmental resistance</li> <li>Good hot/wet mechanical performance</li> </ul>                                                            | 2°C (35.6°F)/min ramp rate<br>1 hr hold at 130°C (266°F)                               | 160°C (320°F)   | <ul style="list-style-type: none"> <li>Rocket motor casing</li> <li>Type III and Type IV composite pressure vessel</li> <li>Cylindrical structures</li> </ul>                           |
| AER 103P | Epoxy         | <ul style="list-style-type: none"> <li>Low-temperature cure</li> <li>Outstanding environmental resistance</li> <li>Good hot/wet mechanical performance</li> </ul>                                                            | 2°C (35.6°F)/min ramp rate<br>1 hr hold at 130°C (266°F)                               | 159°C (318.2°F) | <ul style="list-style-type: none"> <li>Primary aircraft structures</li> <li>Helicopter blades</li> </ul>                                                                                |
| AER 104P | Epoxy         | <ul style="list-style-type: none"> <li>Low outgassing properties</li> <li>Low CTE and CME</li> <li>High-temperature resistant primary aircraft structures</li> <li>Controlled melt viscosity</li> <li>Medium tack</li> </ul> | 2°C (35.6°F)/min ramp rate<br>1 hr hold at 180°C (356°F)<br>1 hr hold at 195°C (383°F) | 212°C (413.6°F) | <ul style="list-style-type: none"> <li>Primary aircraft structures</li> <li>Spacecraft structures (CFRP skin for sandwich panels, opto-mechanical structures, trusses, etc.)</li> </ul> |
| AER 105P | Epoxy         | <ul style="list-style-type: none"> <li>Toughened resin</li> <li>Low-temperature cure</li> <li>Versatile matrix system</li> </ul>                                                                                             | 2°C (35.6°F)/min ramp rate<br>1 hr hold at 130°C (266°F)                               | 136°C (276.8°F) | <ul style="list-style-type: none"> <li>Automotive components</li> <li>Primary aircraft structures</li> </ul>                                                                            |
| AER 106P | Epoxy         | <ul style="list-style-type: none"> <li>Low-temperature cure system</li> <li>Excellent mechanical and dielectric properties</li> </ul>                                                                                        | 2°C (35.6°F)/min ramp rate<br>1 hr hold at 120°C (248°F)                               | 112°C (233.6°F) | <ul style="list-style-type: none"> <li>Radomes</li> </ul>                                                                                                                               |
| AZCE501P | Cyanate Ester | <ul style="list-style-type: none"> <li>Excellent RF properties</li> <li>Low moisture absorption</li> <li>Low CTE, CME and outgassing properties</li> </ul>                                                                   | 2°C (35.6°F)/min ramp rate<br>2 hr hold at 150°C (302°F)<br>4 hr hold at 200°C (392°F) | 195°C (383°F)   | <ul style="list-style-type: none"> <li>Radomes</li> <li>Opto-mechanical structures</li> <li>Spacecraft structures</li> </ul>                                                            |

T - Towpreg, P - Prepreg

| Code        | Resin          | Features                                                                                                                                                                                                                           | Cure Cycle                                                                                                             | Tg            | Applications                                                                                                                                                                                                          |
|-------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| APR 201P    | Phenolic       | <ul style="list-style-type: none"> <li>Solvent Free Hotmelt Phenolic Prepregs</li> <li>Environment friendly</li> <li>Versatile &amp; process friendly</li> </ul>                                                                   | 2°C (35.6°F)/min ramp rate<br>2 hr hold at 100°C (212°F)<br>2 hr hold at 180°C (356°F)                                 | 170°C (338°F) | <ul style="list-style-type: none"> <li>Aircraft interiors</li> <li>Fire resistant structures for railways</li> <li>Structural components</li> </ul>                                                                   |
| AZKLM0301NX | Phthalonitrile | <ul style="list-style-type: none"> <li>High Tg resin</li> <li>Low dielectric constant &amp; loss</li> <li>Ultra High Service temperatures</li> <li>72% char yield</li> <li>RTM, Vacuum Bagging and Autoclave compatible</li> </ul> | 1°C (33.8°F)/min ramp rate<br>2 hr hold at 180°C (356°F)<br>6 hr hold at 200°C (392°F)<br>Additional post-cure cycle*  | 435°C (815°F) | <ul style="list-style-type: none"> <li>Jet engine components</li> <li>Radomes</li> <li>Thermal protection systems</li> <li>High temperature leading edges and radomes</li> <li>Precursor for CC composites</li> </ul> |
| AZKLM0402   | Phthalonitrile | <ul style="list-style-type: none"> <li>High Tg hotmelt prepregs</li> <li>Compatible with advanced manufacturing methods</li> </ul>                                                                                                 | 1 hr hold at 100°C (212°F),<br>3°C (37.4°F)/min ramp rate<br>4 hr hold at 200°C (392°F),<br>1°C (33.8°F)/min ramp rate | -             | <ul style="list-style-type: none"> <li>Near engine components</li> <li>High temperature leading edges</li> <li>Maritime structures</li> </ul>                                                                         |



#### APPLICATIONS



## Sandwich Structures

### Features

- High Tg, porous rigid core material
- Easily machinable
- Good dielectric properties at elevated temperatures
- Ablative sandwich structures



## Type IV Composite Overwrapped Pressure Vessel for Hydrogen & CNG Storage

### Features

- Hot-melt towpreg winding
- Clean and environment friendly process
- Working pressures – 350 & 700 bar
- Durable, light weight and corrosion resistant
- Design and manufacturing for automobile applications

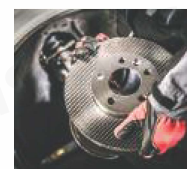


## CC & C-SiC Brake Disc

(For Aircraft & Automobile Applications)

### Features

- Novel carbon fibre preform
- Manufactured by state-of-the-art advanced thermal graded CVI process
- 2-3X faster production and better performance through CVI matrix



## Near Net Shaped CC/CMC Blocks

### Features

- Machinable blocks with TPS coating
- Near-net shaped CC/CMC blocks through PIP, CVI processes with 2D, 2.5D, 3D preform architecture
- Rapid turnaround time to manufacture critical components that can withstand 1600°C (2912°F) for long duration & 2000°C (3632°F) for short duration



## Nozzle and Throat Sections for Solid Rocket Motor

### Features

- Self-standing Polymer Matrix Composite Nozzle and C-SiC Throat
- Superior performance with 20-30% weight savings
- High production throughput

