

ApexShield 3000

DESCRIPTION

Cambium's high-temperature phthalonitrile coating is solvent based, sprayed at room temperature, and can be cured as low as 215°C (419°F). Suitable for addition of metallic and non-metallic fillers, ApexShield 3000 offers sustained operational performance up to 315°C (600°F) and short durations up to 427°C (800°F). The system is offered as a sprayable liquid at various viscosities.

PROPERTIES

Property	Value
Cured density	1.23 g/cc
Viscosity	45 cP
Flash point	-14°C (6°F)
Solids content	20%

SCRATCH TEST



300°C (527°F)
4 hours



400°C (725°F)
2 minutes



500°C (923°F)
15 seconds

APPLICATIONS

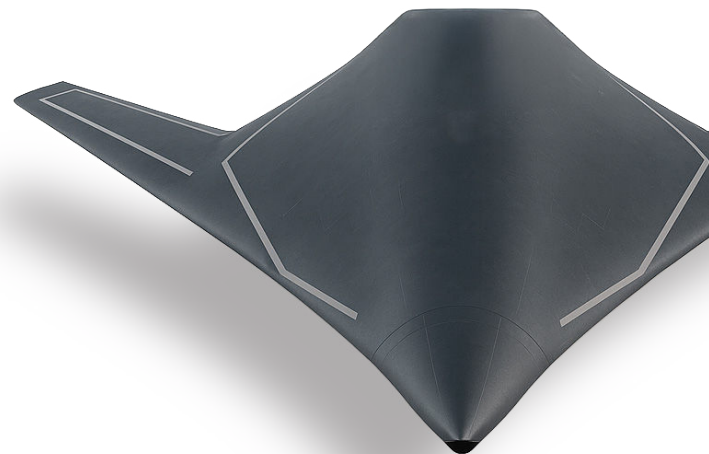
- Coating metallic and composite substrates

ADVANTAGES

- Room temperature stable, no refrigerated storage required
- Operational temperature of 315°C (600°F)

PRODUCT FORMATS

- Sprayable 1-part liquid
- Solids content can be adjusted to reach desired viscosity
- Container sizes: quarts, gallons and drums available upon request



CAMB IUM

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MECHANICAL PROPERTIES

Property	Conditioning	Test Conditions	Strength (psi)
Lap Shear Strength (ASTM D1002)	No conditioning	24°C (75°F)	1209
	No conditioning	315°C (600°F)	1156
	315°C (600°F) for 100 hours	315°C (600°F)	1082
	426°C (800°F) for 2 hours	24°C (75°F)	504
	426°C (800°F) for 2 hours	315°C (600°F)	385
	426°C (800°F) for 2 hours	426°C (800°F)	365

1. Substrate: 0.0063" Ti-6Al-4V (Grade 5) adherends
2. Surface Preparation: Grit blast, solvent wipe, no primer

PROCESSING PARAMETERS

Surface Preparation

- Grit blast or lightly abrade the substrate
- Solvent wipe using acetone to remove debris
- Final wipe with isopropyl alcohol with a lint-free cloth in one direction

Application

- Work in a well ventilated area and with appropriate PPE
- Spray gun or painted on (HVLP recommended)
- Allow to dry for 5-10 minutes between coats
- Apply subsequent coats to get to the desired thickness

Recommended Cure Cycle

Step	Temp	Rate	Hold
Ramp	215°C (419°F)	3°C/min (5°F/min)	—
Hold	215°C (419°F)	—	8 hrs
Ramp	250°C (482°F)	3°C/min (5°F/min)	—
Hold	250°C (482°F)	—	4 hrs
Cool	Ambient	1-3°C/min (2-5°F/min)	—
Ramp	315°C (600°F)	1°C/min (2°F/min)	—
Hold	315°C (600°F)	—	4 hrs
Cool	Ambient	1-3°C/min (2-5°F/min)	—

Note: The 315°C (600°F) post-cure can follow immediately without ramping down first.

STORAGE

- Store at or below 24°C (75°F) in a sealed container, DO NOT FREEZE
- Shelf life is 6 months from date of manufacture when stored in recommended conditions
- Once opened cap must be tightened to avoid evaporation

SAFETY

- ApexShield 3000 contains a flammable solvent
- Review SDS prior to use
- Utilize OSHA approved respiratory protection

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