PRODUCT DATA SHEET

TENCATE ADVANCED COMPOSITES

EX-1543 Film Adhesive

PRODUCT TYPE

Toughened Cyanate Ester Film Adhesive

TYPICAL APPLICATIONS

- Space Structures
- Reflectors
- Radomes and Antennae
- Radar Transparent Structures
- Low Observables
- Aircraft Structures

CURE SCHEDULE

- 2 hours at 350°F (177°C)
- Optional free-standing post cure:
  2 hours at 400°F (204°C)

SHELF LIFE

Out Life
14 days @ 77°F (25°C)

Frozen Storage Life
6 months @ <0°F (-18°C)

Out Life is the time during which the material retains enough tack, drape and handling for easy component lay-up.

Revised 2/2017

PRODUCT DESCRIPTION

TenCate's EX-1543 cyanate ester film adhesive has been formulated for use in specific applications where low moisture absorption and/or low dielectric constant/low loss are of the utmost importance. Furthermore, the preceding benefits do not come at the expense of adhesion properties. The resin system's strength and toughness when bonding solid, honeycomb, or foam core structures are comparable and often greater than high performance epoxy adhesives, especially at elevated temperatures.

Due to the cyanate ester resin system's inherently low shrinkage during cure, bonded structures will retain less inherent stress and will therefore remain dimensionally stable during thermal cycling. This factor is of extreme importance when bonding structures for use in space. Finally, like other cyanate ester based products, EX-1543 film adhesive displays low outgassing and micro-cracking properties to assure structural integrity even after severe environmental exposure.

PRODUCT FEATURES/BENEFITS

- Low moisture absorption
- Excellent dielectric properties
- Compatible with TenCate cyanate ester prepregs

NEAT RESIN PHYSICAL PROPERTIES

Moisture Pickup (at saturation) 1.0-1.1%
Dielectric Constant (10 GHz)..... 2.72
Loss Tangent (10 GHz)..... 0.009
Outgassing (TML)..... 0.41%
Outgassing (CVCM)..... 0.02%
Outgassing (WVR)..... 0.35%

SAMPLE CURED PROPERTIES

Dry T_g (DSC) with 350°F (177°C) cure ..... 376°F (191°C)
Dry T_g (DSC) with 450°F (204°C) post cure..... 457°F (236°C)
Dry T_g (DMA) with 400°F (204°C) cure..... 412°F (211°C)
Dry T_g (DSC) with 425°F (218°C) cure/post cure..... 446°F (230°C)

TENCATE EX-1543 COMMON FILM WEIGHTS/CONFIGURATIONS

Product Name	Carrier	Weight psf/gsm	Roll Quantity	Film Width
EX-1543, 0.030 psf, NWFG, 36"	10 gsm Non Woven Fg	0.030 psf/146 gsm	500 sf/46.5 sqm	36"/.91 m
EX-1543U, 0.030 psf, 36"	Unsupported	0.030 psf/146 gsm	500 sf/46.5 sqm	36"/.91 m

EX-1543, 0.030 psf (146 gsm) ADHESIVE BONDING 2024 ALUMINUM

Properties	Support	Method	Results	
Tensile Lap Shear Strength	10 gsm NWFG	ASTM D1002	2.60 ksi	17.9 MPa
Tensile Lap Shear Strength	Unsupported	ASTM D1002	2.44 ksi	16.8 MPa

TENCATE ADVANCED COMPOSITES

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