

PRODUCT DATA SHEET

DESCRIPTION

Toray EX-1516 cyanate ester film adhesive has been formulated to use in specific applications where low moisture absorption and/or low dielectric constant/low loss are of utmost importance. 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.

Due to the cyanate ester resin system's inherent 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-1516 film adhesive displays low outgassing and microcracking properties to assure structural integrity even after severe environmental exposure and radiation bombardment.

FEATURES

- ▶ Compatible with EX-1515 prepregs
- ▶ Excellent dielectric properties
- ▶ Low outgassing
- ▶ 121°C (250°F) cure capable
- ▶ Post curable for higher T_g
- ▶ Compatible adhesive is EX-1516

PRODUCT TYPE

121°C (250°F) Cure Toughened Cyanate Ester Film Adhesive

PRODUCT FORMS

Film Adhesive

TYPICAL APPLICATIONS

- ▶ High dimensional stability space structures
- ▶ Reflectors
- ▶ Radomes and antennae
- ▶ Radar transparent structures
- ▶ Low observables
- ▶ Aircraft structures

SHELF LIFE

Out Life: 7 days at 25°C (77°F)

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

Out life is the maximum time allowed at room temperature before cure.

TYPICAL NEAT RESIN PROPERTIES

Moisture Pickup	0.6–0.7%
Dielectric Constant (10 GHz)	2.6–2.7
Loss Tangent (10 GHz)	0.005–0.006
Outgassing (ASTM E595)	TML = 0.23% CVCM = 0.02% WVR = 0.18%



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PRODUCT DATA SHEET

EX-1516 NWFG (6061 T-6 ALUMINUM)

Property	Condition	Method	Results	
Lap Shear Strength	RTD	ASTM D 1002	29.7 MPa	4.31 ksi
T-Peel	RTD	ASTM D 1876	105.6 N/25 mm	23.6 lbs/in

EX-1516 UNSUPPORTED (6061 T-6 ALUMINUM)

Property	Condition	Method	Results	
Flatwise Tension	RTD	ASTM C 297	19.3 MPa	2.8 ksi
Flatwise Tension	ETD ₁	ASTM C 297	16.5 MPa	2.4 ksi
Flatwise Tension	ETD ₂	ASTM C 297	11.7 MPa	1.7 ksi
Flatwise Tension	CTD	ASTM C 297	17.2 MPa	2.5 ksi

ETD₁: 82°C (180°F)

ETD₂: 121°C (250°F)

CTD: -55°C (-67°F)

The above mechanical data was generated using the following cure schedule:

Ramp 1.7°C/3°F per minute from room temperature to 121°C/250°F, hold at 121°C/250°F for 5 hours.