

# PRODUCT DATA SHEET



TENCATE ADVANCED COMPOSITES

## EX-1510 Resin System

### PRODUCT TYPE

177°C (350°F) Curing Toughened  
Cyanate Ester for RTM Applications

### TYPICAL APPLICATIONS

- Aircraft Structures
- Reflectors
- Radomes and Antennae
- Low Observables
- Space Structures
- Missile Structures
- Higher Performance and High Heat Commercial Applications

### SHELF LIFE

#### Pot Life

4 hours out life 25°C (77°F)

#### Storage Life in Unopen Containers

\*\*Part A - 6 months at 25°C (77°F)  
Part B - 6 months at 25°C (77°F)

Or

\*\*Part A - 12 months at -18°C (0°F)  
Part B - 12 months at -18°C (0°F)

Revised 6/2018

All data given is based on representative samples of the materials in question. Since the method and circumstances under which these materials are processed and tested are key to their performance, and TenCate Advanced Composites has no assurance of how its customers will use the material, the corporation cannot guarantee these properties.

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### PRODUCT DESCRIPTION

TenCate EX-1510 is a highly modified two part toughened cyanate ester resin formulated to have extremely low viscosity at room temperature. Its viscosity allows resin transfer molding to take place without the application of heat to the resin. This feature provides long resin pot life, and mold filling time for difficult and/or large RTM'd structures and helps increase manufacturing efficiency and reduces waste. EX-1510 displays both excellent mechanical and thermal properties, in addition to low moisture absorption. Finally, the material is unique in that it develops full mechanical properties from its initial 177°C (350°F) cure. A free standing post cure increases the heat resistance.

### TYPICAL NEAT RESIN PHYSICAL PROPERTIES

Tg 177°C (350°F)	
Dry Tg.....	193°C (380°F)
Wet Tg.....	149°C (300°F)
Dielectric Constant.....	2.85 @ 1 MHz
Loss Tangent.....	0.005 @ 1 MHz
CTE.....	64 ppm/°C (°F)
Outgassing	
TML.....	0.82%
CVCM.....	0.01%
WVR.....	0.64%
Moisture Absorption*.....	1.4
Viscosity at 25°C (77°F).....	150 cps
Viscosity at 77°C (170°F).....	20 cps

\*At saturation after 64 hour water boil

### TYPICAL CURE PARAMETERS

2 hours at 177°C (350°F) in mold.

### MIXING

The mix ratio of EX-1510 is 100 Part A to 3 Part B by weight. Put the correct amount of Part A in the mix vessel first. Add Part B and mix using a high speed dispersion mixer. Mix for five minutes, stop and spatula the walls and bottom of mix vessel, then mix an additional five minutes

### MIXED POT LIFE

The mixed resin shall have a pot life of four hours minimum at 25°C (77°F). The pot life is the length of time a 150 gram mass of resin can be stored at a given temperature before doubling in viscosity. Any mass over 150 grams should have the temperature monitored after mixing and should have the appropriate safety procedures followed if the resin temperature increases by 17°C (30°F) over room temperature.

### CRYSTALLIZATION

\*Part A has the potential to crystallize during storage depending on storage conditions. If this occurs, Part A should be heated, at 66°C (150°F) maximum, until the material becomes de-crystallized. Multiple de-crystallization cycles (at 66°C/150°F) have not shown any decrease in the room temperature shelf life of Part A. The de-crystallization temperature 66°C (150°F) is well below the temperature required to trimerize (cure) the uncatalyzed cyanate ester resin.

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