TORAY

Toray Composite Materials America, Inc.

G-83CM PREPREG SYSTEM

G-83CM resin system provides a quick cure (290°F for 20 min) or a low temperature cure (185°F for 6 hours) with the capability to achieve class "A" surface finish. This system works well for both autoclave and fast cycle press mold processes. Quick cure cycles are used where high-cycle applications are required; lower temperature cure applications would be used where mold material is heat sensitive. G-83CM is a proven system in the automotive industry due to its fast cure and high quality Class A capability. This system works well in a variety of other applications such as industrial and aircraft grade

High Heat Tolerance
High T_g allows for high temperature part demolding reducing cycle time. Material works well with high temperature paint curing cycles.

Easy Layup
Product allows complex part layup with minimal cuts or ridge lines. It maintains a comparable class A finish through post-cure, minimizing sanding and finishing times.

Readily Available
Product is in stock and ready to ship.

Flexible Cure Methods
Cutting methods include autoclave, oven cure, or press molding. Product can be cured with or without using a dwell.

Availability:

G-83CM resin is available with numerous types of unidirectional carbon fibers and woven and glass fabrics with Fiber Areal Weight (FAW) ranging from 70 g/m^2 to 300 g/m^2 and Resin Content, (RC%) by weight percent, ranging from 24% to 44%.

www.toraycma.com
253-846-1777

G-83CM

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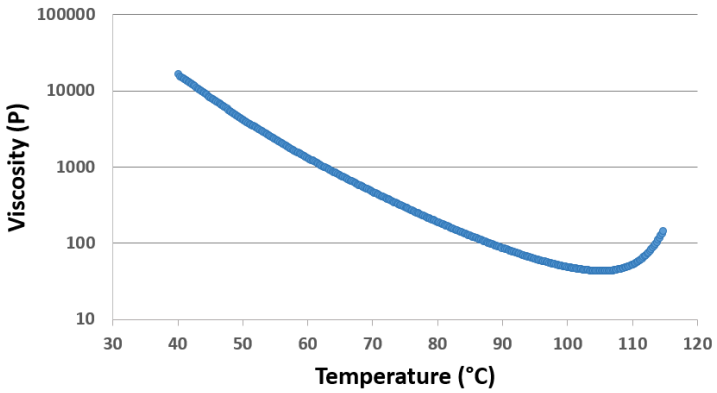
NEAT RESIN PHYSICAL PROPERTIES

PROPERTY	METHOD	UNITS	VALUE
Density	ASTM D595	g/cm³	1.212
Tg (Dry)	DMA	°F (°C)	289 (143)
Gel Time	ASTM D3532	minutes	1.7
Linear CTE	TMA	(µm/(m*°C))	69.9

RESIN VISCOSITY CURVE



NEAT RESIN MECHANICAL PROPERTIES

PROPERTY	SYMBOL	METHOD	UNITS	VALUE
Compressive Strength	F_C	ASTM D695	Ksi (Mpa)	18.5 (128)
Compressive Modulus	E_C	ASTM D695	Ksi (Mpa)	487 (3360)
Flexural Modulus	E_F	ASTM D790	Ksi (Mpa)	502 (3460)
Flexural Strength	F_f	ASTM D790	Ksi (Mpa)	21.2 (146)
Fracture Toughness	K_{1C}	ASTM D5045-99	Psi*√in (MPa* √m)	1.01 (1.11)

For more information or purchasing inquiries:
sales@toraycma.com | www.toraycma.com | 253-846-1777

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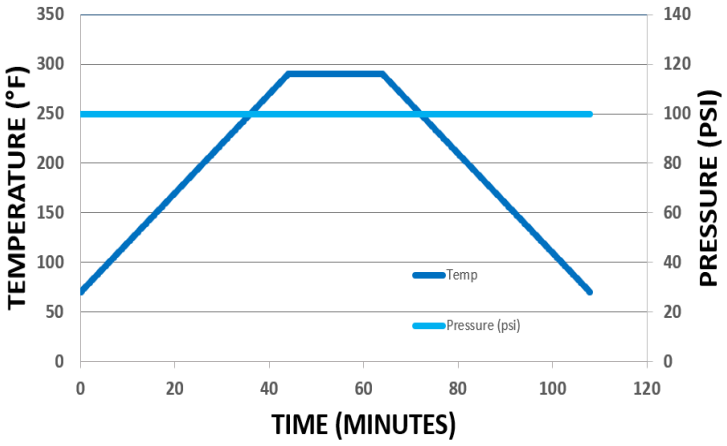
TYPICAL LAMINATE PROPERTIES WITH T700S-12K at 190 g/m² FAW and 35% RC

PROPERTY	SYMBOL	METHOD	UNITS	VALUE
0° Tensile Strength*	F_{1t}	ASTM D3039	Ksi (MPa)	448 (3090)
90° Tensile Strength	F_{2t}	ASTM D3039	Ksi (MPa)	8.6 (59)
0° Tensile Modulus*	E_{1t}	ASTM D3039	Msi (GPa)	20.5 (141)
±45° In Plane Shear Strength	F_{12}	ASTM D3518	Ksi (MPa)	20.6 (142)
Short Beam Shear Strength	SBS	ASTM D2344	Ksi (MPa)	13.0 (89.6)

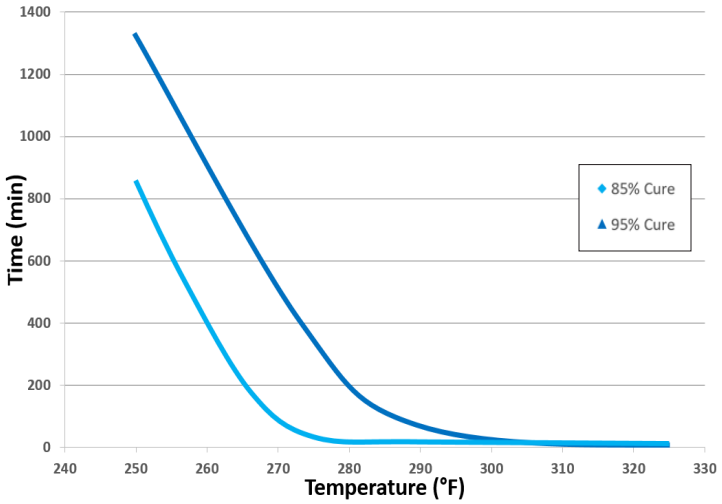
*normalized to 60% Vf

RECOMMENDED CURE CYCLE (290°F)



Cure Temperature: 290°F
Cure Time: 20 min
Ramp Rate: 5°F/min
Cure Pressure: 100 psi
Optional vent at 130°F
Cool Down Rate: 5°F/min

TIME TO 85% & 95% CURE BY CURE TEMPERATURE



STORAGE LIFE

Fridge Life:	3 months @<40°F
Freezer Life:	24 months @<10°F

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