



Toray Composite Materials America, Inc.

## G-85FR PREPREG SYSTEM

G-85FR is a new resin system developed specifically to meet the needs of the automotive industry. A 30 minute cure time at 325°F makes it suitable for high throughput processes, and its flame retardancy and high heat tolerance make it ideal for racing applications. This system also offers easy handleability, and the capability to achieve a class "A" surface finish.



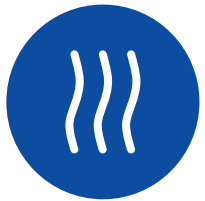
### Flame Retardant

Flame retardant material without filler allows for maximum mechanical performance. Material is compliant to SFI specification 56.1 flammability testing at single ply thickness. Meets UL94 V-0.



### Resin Chemistry

A latency time of 0.5 to 3 minutes allows resin to flow through a part without reaching the gel point.



### High Heat Tolerance

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



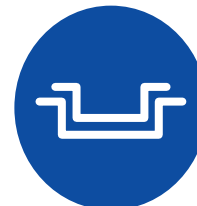
### Easy Layup

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

Curing methods include autoclave, oven cure, or press molding. Product can be cured from 250 °F to 325 °F depending upon tooling capability.

### Availability:

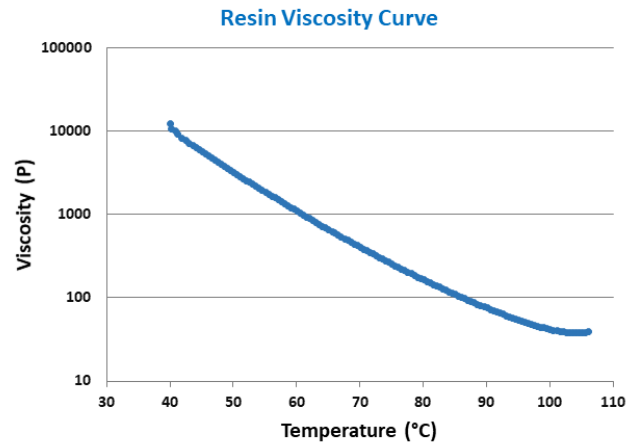
G-85FR resin is available with numerous types of unidirectional carbon fibers, woven, Aramid and glass fabrics with Fiber Areal Weight (FAW) ranging from 70 g/m<sup>2</sup> to 665g/m<sup>2</sup> and Resin Content, (RC%) by weight percent, ranging from 24% to 44%.



## NEAT RESIN PHYSICAL PROPERTIES

PROPERTY	METHOD	UNITS	VALUE
Density	ASTM D595	g/cm <sup>3</sup>	1.233
Tg (Dry)	DMA	°F (°C)	340 (171)
Gel Time	ASTM D3532	minutes	1.3
Linear CTE	TMA	(µm/(m*°C))	69.1

## RESIN VISCOSITY CURVE



## TYPICAL LAMINATE PROPERTIES WITH T300B-3K-40B 2X2 TWILL AT 204 g/m<sup>2</sup> FAW AND 42% RC (Cured by 325 °F x 30 min)

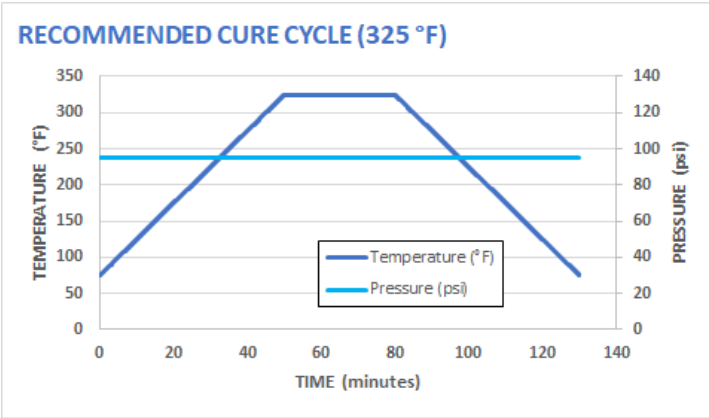
Property	Symbol	Method	Units	Value
90° Tensile Strength*	F2t	ASTM D3039	Ksi (MPa)	81.6 (562.6)
90° Tensile Modulus	E2t	ASTM D3039	Msi (GPa)	8.52 (58.7)
90° Compressive Strength*	F2c	ASTM D695	Ksi (MPa)	94.2 (649.5)
Flexural Strength	Ff	ASTM D790	Ksi (MPa)	103.1 (710.8)
Flexural Modulus	Ef	ASTM D790	Msi (GPa)	6.11 (42.1)
Shear Strength	F12	ASTM D5379	Ksi (MPa)	22.5 (155.1)
Shear Modulus	G12	ASTM D5379	Msi (GPa)	0.47 (3.2)
Interlaminar Shear Strength	ILSS	ASTM D2344	Ksi (MPa)	12.2 (84.1)
Vertical Burn Length <sup>^</sup>	-	SFI 56.1	inch (cm)	4.7 (11.9)
Vertical Burn Flame Time <sup>^</sup>	-	SFI 56.1	seconds	0.0
Vertical Burn Drip Flame Time <sup>^</sup>	-	SFI 56.1	seconds	ND (no drips)
Horizontal Burn Length <sup>^</sup>	-	SFI 56.1	inch (cm)	1.5 (3.8)
Horizontal Burn Flame Time <sup>^</sup>	-	SFI 56.1	seconds	0.4

\*Normalized to Vf 60%

<sup>^</sup> Cured by 250 °F x 60 min for Flammability coupons

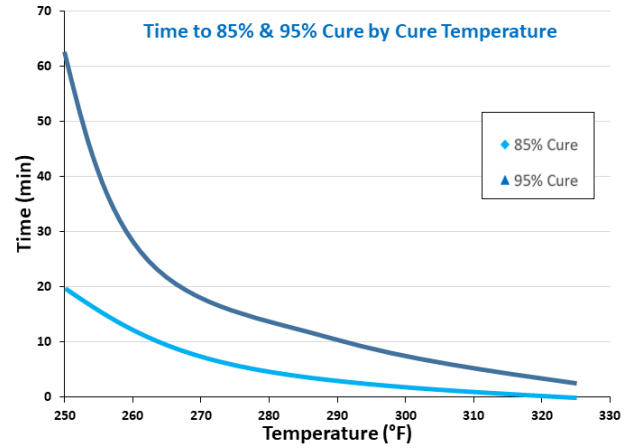
**For more information or purchasing inquiries:**  
[sales@toraycma.com](mailto:sales@toraycma.com) | [www.toraycma.com](http://www.toraycma.com) | 253-846-1777

**RECOMMENDED CURE CYCLE (325°F)**



Cure Temperature: 325°F  
 Cure Time: 30 min  
 Ramp Rate: 5°F/min  
 Cure Pressure: 95 psi  
 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

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

*The data listed herein are lot averages, for reference purposes only, and are offered AS-IS without warranty. The results are not intended for specification purposes.  
 WARNING - This document may contain technical data whose export is restricted by the Export Administration Act of 1979, as amended, Title 50, U.S.C., App. 2401 et seq.  
 Violations of these export laws are subject to severe criminal penalties.*