

3900 series prepregs are a 350°F cure, highly toughened systems, used for aircraft primary structures. It is BMS8-276, BMS8-331, and Bell® Helicopter Textron Inc. 299-947-347 qualified. This resin system can come in a variety of forms including unidirectional tape for manual or automated tape layering applications, slit-tape-tow for automated fiber placement applications, and plain weave carbon and glass fabrics.

Features and Benefits

- High T_G (hot/wet and dry) resin system suitable for primary aircraft structure applications
- Highly toughened system providing excellent impact resistance
- No-bleed system
- Available in a variety of forms

Resin Data

	Property	Value	Test Method
Tension	Strength – ksi	13.9	ASTM D 638
	(MPa)	(95.8)	
	Modulus – msi	0.505	
	(GPa)	(3.48)	
	Strain (%)	4.7	
Compression	Strength – ksi	22.5	ASTM D 695
	(MPa)	(155)	
	Modulus – msi	0.459	
	(GPa)	(3.16)	
	Strain (%)	11.6	
Flexure	Strength – ksi	21.1	ASTM D 790
	(MPa)	(146)	
	Modulus – msi	0.423	
	(GPa)	(2.92)	
	Strain (%)	7.9	
K_{IC}	ksi*in ^{0.5}	1.54	ASTM D 5045-99
	(MPa*m ^{0.5})	(1.69)	

Prepreg Storage Expectancy

The prepreg material should not be stored longer than the requirements listed below:

Storage Condition	Time From Date of Manufacture in Sealed Container
At or below 10°F	months
At or below 40°F	months
At room temperature (72 ± 5°F and 65% humidity)	days

Toray Composites of America, Inc. Proprietary

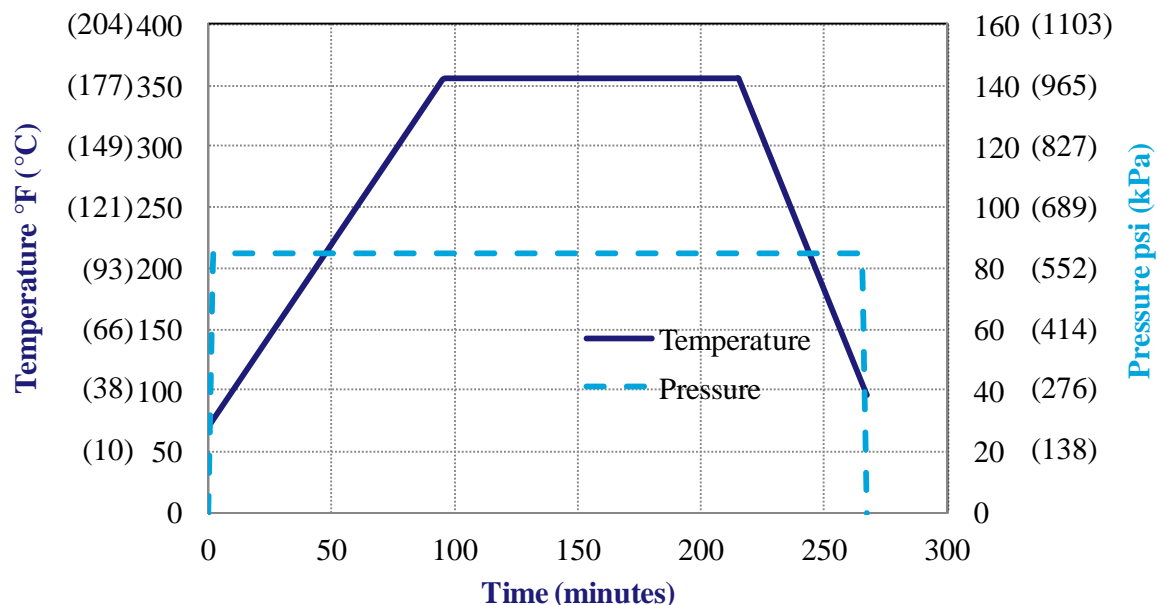
The data listed herein are lot averages and for reference purposes only. The results are not intended for specification purposes. These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

Availability

3900 series resin is available with numerous types of unidirectional carbon fibers, woven carbon and glass fabrics with Fiber Areal Weight (FAW) ranging from 70 g/m² to 300 g/m² and Resin Content, (RC %) by weight percent, ranging from 24% to 44%. Typical product configurations are listed below:

Prepreg Description	Material Designation	Resin Content weight %	FAW g/m ²	Product Width in (mm)
CF UD Tape (T800S-24K)	P2352W-19	35.5 ± 3.0	192 ± 7	60,36,24,12,6,3 (1524,914,610,305,152,76)
CF Slit Tape Tow (T800S-24K)	P2362W-19	35.0 ± 3.0	191 ± 8	0.5, 0.25, 0.125 (12.7, 6.35, 3.175)
GF Fabric (Style 108)	FGF108-29M	42.0 ± 3.5	47.5 ± 6.0	38 (965)
CF Plain Weave Fabric (T800H-6K)	FL6673G-37KT	40.0 ± 3.5	196 ± 9	38, 12, 9 (965, 305, 229)
CF Plain Weave Fabric (T400H-3K)	F4778-30H	37.0 ± 3.0	193 ± 8	38 (965)
CF Plain Weave Fabric (T700G-12K)	F6273-30K	40.0 ± 3.5	193 ± 9	38 (965)

Recommended Autoclave Cure Cycle

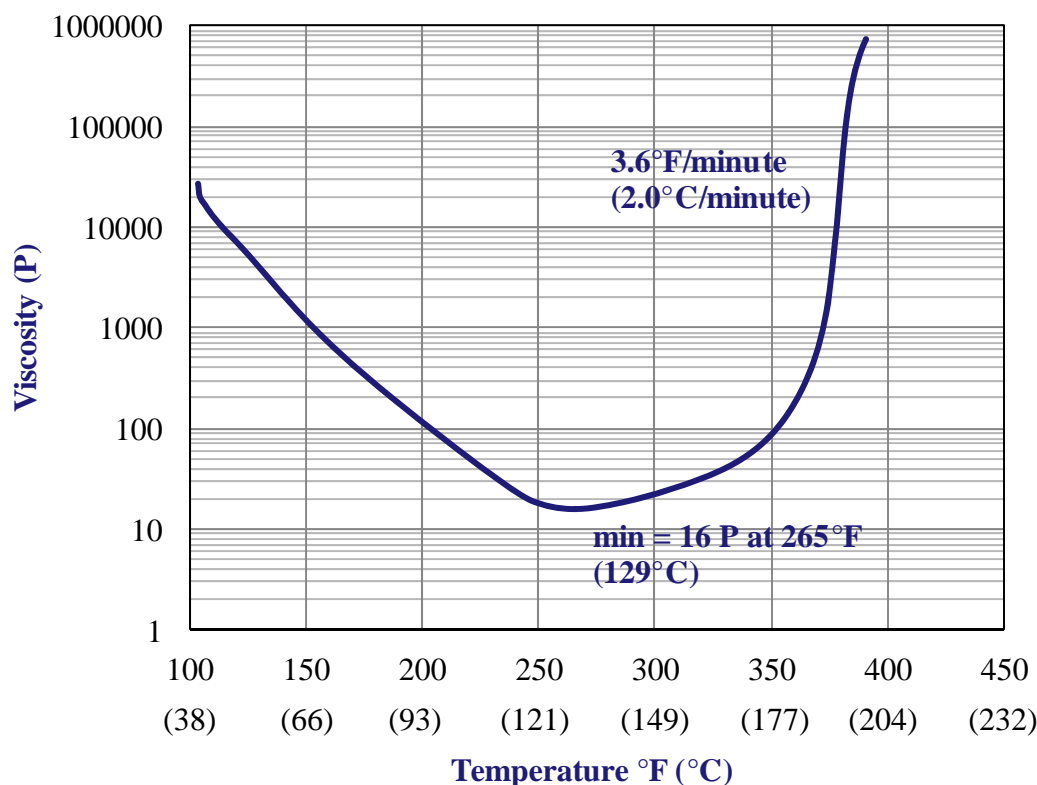


- NOTES:**
- (1) De-bulk every four plies, or as needed, when laying up material.
 - (2) A ramp rate of a 3.0 ± 2.0 °F/min (1.7 ± 1.1 °C/min) should be used to reach the cure temperature of 356 ± 10 °F (177.0 ± 5.6 °C) and then held for 120 +60/-0 minutes. The maximum recommended cool down rate is 5.0 °F/min (2.8 °C/min).
 - (3) The recommended curing pressure is 85 + 15/-0 psi (586 + 103/-0 kPa).

Toray Composites of America, Inc. Proprietary

The data listed herein are lot averages and for reference purposes only. The results are not intended for specification purposes. These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

Viscosity Profile



Typical Laminate Properties

Property		P2352W-19	FL6673G-37KT	F4778-30H	Test Method
Tension	Strength – ksi	445	128	118	ASTM D 3039
	(MPa)	(3068)	(883)	(814)	
	Modulus – msi	22.1	9.9	9.5	
	(GPa)	(152)	(68)	(65)	
Compression	Strength – ksi	206		122	SACMA SRM 1
	(MPa)	(1420)		(841)	
Open-Hole Compression	Strength – ksi	43.5	42.2	44.4	ASTM D 6484
	(MPa)	(300)	(291)	(306)	
Compression After Impact	Strength – ksi	44.7	47.5		ASTM D 7137
	(MPa)	(308)	(328)		
Open-Hole Tension	Strength – ksi	75.1	52.4	48.2	ASTM D 2344
	(MPa)	(518)	(361)	(332)	
Per Ply Thickness	Mils	7.69	8.66		
	(mm)	(0.195)	(0.220)		

Data obtained using the cure cycle listed above

The fill direction of fiber for Tension/Compression data was used for FL6673G-37KT and F4778-30H

Toray Composites of America, Inc. Proprietary

The data listed herein are lot averages and for reference purposes only. The results are not intended for specification purposes. These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to U.S. law is prohibited.