

UF3369 TCR™ RESIN

TECHNICAL DATA SHEET



UF3369 Resin Summary

- Unique, Solvent-Free, Bisphenol A Epoxy Resin
- **3-Month Shelf Life** Without Refrigeration
- Resin Content, Flow During Cure and Tack Levels Tailored to Suit Your Process Needs
- **Available Reinforcement Materials: Carbon, Glass, Aramid, and Other Fibers**
- **Available Fiber Forms: Tow (Roving), Unitape, and Fabric**
- **Typical Use:** High Pressure SCBA Tanks; Rocket Motor Cases; Sporting Goods; Infrastructure Repair; etc. Used where moderately low cure temperatures are required. High translation (>85%) and performance in pressure vessels has been noted when utilizing fibers with tensile strengths greater than 700 Ksi.

Neat Resin Properties

Cure Temperature and Hold Time	121°C for 4 hours*	121°C for 1.5 hours	Test Method
Density	1.18 g/cc	1.18 g/cc	ASTM D792
Tensile Strength	92.4 MPa / 13.4 Ksi	92.4 MPa / 13.4 Ksi	ASTM D638
Tensile Modulus	3.1 GPa / 445 Ksi	3.1 GPa / 445 Ksi	ASTM D638
Elongation at Break	3.6%	5.2%	ASTM D638
Tg – from E" DMA curve	117°C / 243°F	104°C / 219°F	
Tg after 24-Hr Water-Boil	67°C / 153°F	67°C / 153°F	
Water Absorption	5.0%	5.0%	

*Highest Tg temperatures are acquired with a 4 hour hold time during cure.

Composite Properties**

	Metric	English	Test Method
0° Tensile Strength	2,500 MPa	360 Ksi	ASTM D3039
0° Tensile Modulus	160 GPa	23 Msi	ASTM D3039
0° Tensile Strain	1.6%		ASTM D3039
0° Compressive Strength	1,480 MPa	215 Ksi	SACMA SRM 1R-94
0° Compressive Modulus	103 GPa	15 Msi	SACMA SRM 1R-94
90° Tensile Strength	35 MPa	5.0 Ksi	ASTM D3039
Short Beam Strength	62 MPa	9.0 Ksi	ASTM D2344
Flexural Strength	2,000 MPa	290 Ksi	ASTM D0790

**T700 type fiber. Normalized to 60% Fiber Volume. Cured at 121°C for 4 hours.

Presented values are expected ranges based on actual test data. Since values are dependent on specimen preparation and test method, TCR Composites cannot guarantee that these properties will be obtained in all cases. The data should be used only as an indication, since part or component properties are highly dependent on user process and design. It is recommended that end users determine the suitability of this material for each application through their own testing and evaluation. TCR™ is a trademark of TCR Composites, Inc.

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Cure Profiles*

Options	Ramp Up	Hold Temperature	Hold Time (Hours)	Ramp Down
1	≤ 2.5°C/min (5°F/min)	121°C / 250°F	4	≤ 2.5 °C/min (5°F/min) to 66°C (150°F) or less
2**		121°C / 250°F	1.5	
3		110°C / 230°F	6	
4		99°C / 210°F	24	

*Higher temperatures and shorter hold times may also work, but have not yet been tested. The use of shorter cure times at the temperatures listed above can produce a well-cured, highly cross-linked and solidified resin.

**This cure cycle may not produce the maximum T_g; but will be suitable for a well-cured, highly cross-linked and solidified resin.

Storage Requirements

The preimpregnated materials manufactured from this resin shall remain sealed and stored in the original package. The material is to be stored indoors, out of the weather.

Maximum Storage Temperature	Shelf Life (Months)	Additional Life at Ambient Temperatures After Refrigeration (Months)
24°C / 75°F	3	-
32°C / 90°F	1.5	-
4°C / 40°F	6	2 (at Temps ≤ 24°C / 75°F)
-18°C / 0°F	18	3 (at Temps ≤ 24°C / 75°F)

For additional technical information regarding TCR Composites' products, please visit our website for a list of technical service contacts.

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