

FC2301 Datasheet

Properties	Metric	English	Test Method
Density	1.20 g/cm ³	0.443 lb/in ³	ASTM E792
Tensile Strength	81.5 MPa	11.8 kpsi	ASTM D638
Tensile Modulus	2.76 GPa	400 kpsi	ASTM D638
Elongation (at Max. Tensile Strength)	5.10%		ASTM D638
Elongation (at break)	6.70%		ASTM D638
Fracture Toughness	0.77 MPa*m ^{1/2}	701 psi*in ^{1/2}	ASTM D5045
DMA – Dry Glass Transition			
Glass Transition - E' onset	95°C	203°F	ASTM E1640
Glass Transition - E'' Peak	103°C	217°F	ASTM E1640
Glass Transition - tan δ	114°C	237°F	ASTM E1640
Water Absorption**	2.90%		ASTM D570

*Cure Cycle: 120°C 2hr

**Measured after 24-hour water boil

Typical Fiber Performance in a Pressure Vessel*

Manufacture	Fiber	Filament Count	Certified Fiber Strength	Delivered Fiber Strength	Translation
Tairyfil	TC780	12K	5378 MPa (780 kpsi)	5118 MPa (742 kpsi)	95%
Tairyfil	TC780	24K	5378 MPa (780 kpsi)	4894 MPa (710 kpsi)	91%

*Cure Cycle: 120°C 2hr

Cure Profile

Option	Ramp Up	Hold Temperature	Hold time	Ramp Down	Tg*
1	≤ 3°C/min	120 °C	2 hours	≤3°C/min to 60°C or less	103°C
2		120 °C	4 hours		107°C
3		150 °C	1 hour		100°C

*Measured from E'' Peak of DMA



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Advanced Material Systems Corporation

ADD. : No. 78, Changshou Rd., Guishan Dist., Taoyuan City, 333032, Taiwan 333032
TEL. : 886-3-3492303 FAX: 886-3-3493863