

PRODUCT DATA SHEET

DESCRIPTION

Toray Cetex® TC925 FST is a value-oriented engineered thermoplastic composite, utilizing a polycarbonate compound for impact toughness and good fire resistance.

Although Toray Cetex® TC925 FST is a cost-effective material to begin with, the real cost saving on a part level lies in streamlining production with < 3 minutes per automated process cycle, cutting out most manual postprocessing and potential for error. Additionally, this material offers a very good surface quality.

Toray Cetex® TC925 FST is available as a fabric prepreg, but is typically supplied in pre-consolidated reinforced thermoplastic laminates (RTLs) of varying thicknesses and lay-ups. Laminates from natural color resin have a translucent quality. A white color option is also available.

FEATURES

- ▶ Value-oriented solutions for aircraft interiors
- ▶ Good FST performance (OSU < 25/25)
- ▶ Rapid processing with cycle times < 3 minutes
- ▶ Natural resin yields translucent laminates, bright white color option available
- ▶ Good chemical resistance
- ▶ No freezer storage required

PRODUCT TYPE

PolyCarbonate (PC) Thermoplastic Resin System

TYPICAL APPLICATIONS

- ▶ Aircraft interiors: seat shells, ducting channels, galleys, trolleys
- ▶ Rail interiors
- ▶ Facesheets for sandwich panels

SHELF LIFE

Out Life:	Indefinite at ambient temperature storage
Frozen Storage Life:	Not applicable—product does not require freezing

TYPICAL NEAT RESIN PROPERTIES

Density (specific gravity) ISO1183	1.32 g/cm ³ (82.4 lb/ft ³)
T _g (glass transition)	153°C (307°F)
T _m (melt)	N/A Amorphous
T _p (processing)	260–320°C* (500–610°F)
Vicat B/120 softening point ISO 306	146°C (295°F)

*~260°C (500°F) processing temperature if glass reinforced
For chemical fluid resistance—not Skydrol/MEK



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Cetex®

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PHYSICAL PROPERTIES

Property	8 Harness Satin (EC9 Glass Woven Prepreg)	5 Harness Satin (T300JB Carbon Woven Prepreg)	Plain Weave (Glass 7628)
Fiber areal weight (FAW)	300 g/m ² (8.85 oz/yd ²)	280 g/m ² (8.26 oz/yd ²)	200 g/m ² (5.9 oz/yd ²)
Weight per ply (PAW)	456 g/m ² (13.45 oz/yd ²)	490 g/m ² (14.45 oz/yd ²)	303 g/m ² (8.94 oz/yd ²)
Resin content by volume (RC)	50%	50%	50%
Resin content by weight	34%	43%	34%
Moisture pick up	0.35%	0.35%	0.35%
Consolidated ply thickness (CPT)	0.24 mm (0.0094")	0.31 mm (0.0122")	0.16 mm (0.006")
Specific gravity	1.93 g/cm ³ (120.5 lb/ft ³)	1.54 g/cm ³ (96.1 lb/ft ³)	1.91 g/cm ³ (119.3 lb/ft ³)

MECHANICAL DATA

EC9 Glass 300gsm FAW 8HS Woven Fabric Reinforced Laminate 34% RC				
Property	Condition	Test Method	Result	
Tensile Strength 0°	RTD	EN 2747-3	463 MPa	67 ksi
Tensile Modulus 0°	RTD	EN 2747-3	23.7 GPa	3.4 Msi
Tensile Strength 90°	RTD	EN 2747-3	407 MPa	59 ksi
Tensile Modulus 90°	RTD	EN 2747-3	24.1 GPa	3.5 Msi
Compressive Strength 0°	RTD	EN 2850A	446 MPa	65 ksi
Compressive Modulus 0°	RTD	EN 2850A	26.9 GPa	3.9 Msi
Compressive Strength 90°	RTD	EN 2850A	364 MPa	53 ksi
Compressive Modulus 90°	RTD	EN 2850A	26.3 GPa	3.8 Msi
Flexural Strength 0°	RTD	ISO 178	729 MPa	106 ksi
Flexural Modulus 0°	RTD	ISO 178	26.4 GPa	3.8 Msi
Flexural Strength 90°	RTD	ISO 178	566 MPa	82 ksi
Flexural Modulus 90°	RTD	ISO 178	23.2 GPa	3.4 Msi
In-Plane Shear Strength ±45°	RTD	EN 6031	108 MPa	16 ksi
In-Plane Shear Modulus ±45°	RTD	EN 6031	3.4 GPa	0.5 Msi

Fabric style 7581

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FLAMMABILITY PROPERTIES

EC6 Glass 300gsm FAW 8HS Woven Fabric Reinforced Laminate 34% RC					
Test	Specification	Criteria	1 Ply of 7581 PC Resin	2 Plies of 7581 PC Resin	2 Plies of 7581 White PC Resin
Flammability	60-second vertical burn FAR 25.853 (a)	152 mm	PASS	PASS	PASS
Smoke Emission	ABD0031 (F)	150/200	PASS	PASS	PASS
Toxicity	ABD0031 (F)	Ds Max 4 min (Flaming/Non-Flaming) = 150	PASS	PASS	PASS
OSU Heat Release	FAR 25.853 (d)	2-min Total HR (kW min/m ²) = 65	19.2	20.4	25.1
		Peak HR (kW/m ²) = 65	23.4	20.8	25.7

MECHANICAL DATA

Standard Modulus T300JB 3K Carbon 280gsm FAW 5HS Woven Fabric Reinforced Laminate 43% RC				
Property	Condition	Test Method	Result	
Tensile Strength 0°	RTD	EN 2597 B	806 MPa	117 ksi
Tensile Modulus 0°	RTD	EN 2597 B	56.1 GPa	8.1 Msi
Tensile Strength 90°	RTD	EN 2597 B	865 MPa	126 ksi
Tensile Modulus 90°	RTD	EN 2597 B	55.5 GPa	8.1 Msi
Compressive Strength 0°	RTD	ASTM D 6641	496 MPa	72 ksi
Compressive Modulus 0°	RTD	ASTM D 6641	50.9 GPa	7.4 Msi
Flexural Strength 0°	RTD	ISO 178	917 MPa	133 ksi
Flexural Modulus 0°	RTD	ISO 178	58.9 GPa	8.5 Msi
Flexural Strength 90°	RTD	EN 2562	739 MPa	107 ksi
Flexural Modulus 90°	RTD	EN 2562	45.2 GPa	6.6 Msi

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FLAMMABILITY PROPERTIES

Standard Modulus T300JB 3K Carbon 280gsm FAW 5HS Woven Fabric Reinforced Laminate 43% RC				
Test	Specification	Criteria	1 Ply of CD0286 PC Resin	2 Plies of CD0286 PC Resin
Flammability	60-second vertical burn FAR 25.853 (a)	152 mm	PASS	PASS
Smoke Emission	ABD0031 (F)	150/200	PASS	PASS
Toxicity	ABD0031 (F)	Ds Max 4 min (Flaming/Non-Flaming) = 150	PASS	PASS
OSU Heat Release	FAR 25.853 (d)	2-min Total HR (kW min/m ²) = 65	17.2	28.3
		Peak HR (kW/m ²) = 65	31.4	33.4

HANDLING SAFETY

Health and safety information on handling and processing Toray composite materials is described in the Safety Data Sheet available from Toray Advanced Composites. To obtain this or any other information about Toray Cetex® PC thermoplastic composite materials, contact Toray Advanced Composites.