

PRODUCT DATA SHEET

DESCRIPTION

Toray Cetex® TC940 is a thermoplastic composite using a semi-crystalline polyethylene terephthalate (PET) matrix resin. This product offers good impact resistance and stiffness, at a relatively low cost. It is typically used in recreational and sporting goods applications because of its exceptional durability and high interlaminar short beam shear results.

FEATURES

- ▶ Good toughness
- ▶ Good chemical and solvent resistance
- ▶ Lightweight
- ▶ Excellent clarity and toughness
- ▶ Good overall strength



PRODUCT TYPE

Engineered Polyethylene Terephthalate Composite

TYPICAL APPLICATIONS

- ▶ Industrial applications
- ▶ Recreational applications
- ▶ Sporting goods

SHELF LIFE

Indefinite at 25°C (77°F)

TYPICAL NEAT RESIN PROPERTIES

Density	1.3 g/cc
Tensile Strength	79 MPa (11.5 ksi)
Tensile Modulus	0.7 GPa (0.1 Msi)
Elongation at Break	70%
Strain at Yield	15%
UL94 Flammability	HB
Melt Temperature	215°C (419°F)
Heat Deflection Temperature	70°C (158°F) at 0.46 MPa (66 psi)



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MECHANICAL PROPERTIES

Properties	Condition	Method	Typical Results	
Tensile Strength 0°	RTD	ASTM D 3039	960 MPa	139 ksi
Tensile Modulus 0°	RTD	ASTM D 3039	32.0 GPa	4.6 Msi
Flexural Strength 0°	RTD	ASTM D 790	1215 MPa	176 ksi
Flexural Modulus 0°	RTD	ASTM D 790	32.2 GPa	4.7 Msi
Compressive Strength 0°	RTD	ASTM D 3410	329 MPa	48 ksi
Short Beam Shear ILSS	RTD	ASTM D 2344	41 MPa	6.0 ksi

Toray Cetex® TC940 Fiberglass Fiber PET Unitape

Resin content by weight at 40%. Composite density 1.89 g/cm³.
Tape width 166 mm (6.5"). Tape thickness 0.26 mm (0.010").

MECHANICAL PROPERTIES

Properties	Condition	Method	Typical Results	
Tensile Strength 0°	RTD	ASTM D 3039	1272 MPa	184 ksi
Tensile Modulus 0°	RTD	ASTM D 3039	94.2 GPa	13.7 Msi
Flexural Strength 0°	RTD	ASTM D 790	825 MPa	120 ksi
Flexural Modulus 0°	RTD	ASTM D 790	80.2 GPa	11.6 Msi
Compressive Strength 0°	RTD	ASTM D 3410	271 MPa	39 ksi
Short Beam Shear ILSS	RTD	ASTM D 2344	35.8 MPa	5.2 ksi

Toray Cetex® TC940 Carbon Fiber PET Unitape

Resin content by weight at 40%. Composite density 1.53 g/cm³.
Tape width 166 mm (6.5"). Tape thickness 0.25 mm (0.010").
Recommended processing temperature is 254–277°C (490–530°F)