

PRODUCT DATA SHEET

DESCRIPTION

Toray TCF4035 is a syntactic film compatible with 121°C (250°F) epoxy prepregs. TCF4035 is part of the Toray MicroPly™ line of syntactics and adhesives. It features a 30-day out time and is offered in a density of approximately 0.6 g/cc (40 ± 4 pounds per cubic foot). It features a higher service temperature than Toray TCF4025.

FEATURES

- ▶ **Lightweight core fill**
- ▶ **May be post cured for higher T_g**
- ▶ **Good dielectric properties**

PRODUCT TYPE

Syntactic Epoxy Film

TYPICAL APPLICATIONS

- ▶ Core fill or core close out
- ▶ Excellent for radome structure

SHELF LIFE

Out Life: 30 days at ambient

Frozen Storage Life: 12 months at -18°C (< 0°F)

Out life is the maximum time allowed at ambient temperature before cure. *Ambient is 18–22°C (65–72°F)

TYPICAL NEAT RESIN PROPERTIES

Resin Density	0.64 g/cc
T _g by DMA (E')	140°C (284°F)
Dielectric Constant	1.94 at 10 GHz
Loss Tangent	0.0176 at 10 GHz



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MECHANICAL PROPERTIES

Property	Condition	Method	Results	
Tensile Strength - (Dogbone)	RTD	ASTM C 297	21 MPa	3.10 ksi
Tensile Modulus	RTD	ASTM C 297	2.8 GPa	0.40 Msi
Compression Strength 2.5 cm x 2.5 cm (1" x 1") block	RTD	ASTM C 695	73 MPa	10.6 ksi
Compression Strength	RTD	ASTM D 6641	75 MPa	11.0 ksi
Compression Modulus	RTD	ASTM D 6641	2.4 GPa	0.35 Msi
Short Beam Shear	RTD	ASTM D 2344	4.8 GPa	0.7 ksi
3-pt Sandwich Flex Strength	RTD	ASTM D 790	26 MPa	3.8 ksi
3-pt Sandwich Flex Modulus	RTD	ASTM D 790	0.34 MPa	0.5 ksi

Provided in 30.5 x 61 cm (1ft x 2 ft) sheets, nominal thickness 0.635, 1.27, or 2.54 mm (25, 50, or 100 mils)

CURE SCHEDULE

1. Pull vacuum (> 20 in Hg) and heat 0.6–2.8°C (2–5°F)/minute to 87°C (190°F) under 1.35–1.53 bar (40–45 psi) autoclave pressure for 30–60 minutes
2. Ramp 1–2.8°C (2–5°F)/minute to 129°C (265°F)
3. Hold for more than 2 hours
4. Cool at less than 4°C (7°F) to less than 65°C (150°F)

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