# **Toray MicroPly™ TCF4035**



## PRODUCT DATA SHEET

### **DESCRIPTION**

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

## **FEATURES**

- ► Lightweight core fill
- ▶ May be post cured for higher T<sub>a</sub>
- ► 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 out life $\leq$ 21°C (70°F) and $\leq$ 60% RH
Frozen Storage Life:	12 months at ≤-18°C (≤ 0°F)

Out life is the maximum time allowed at 21°C (70°F) or below and 60% or less RH before cure, after a single frozen storage cycle in the original unopened packaging at -18°C (0°F) or below for a period not exceeding the frozen storage life noted above.

## **TYPICAL NEAT RESIN PROPERTIES**

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



Contact us for more information:

North America/Asia/Pacific e explore@toraytac-usa.com

## **Toray MicroPly™ TCF4035**



## PRODUCT DATA SHEET

#### **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)

Revised 03/2020

TORAY\_MicroPly\_TCF4035\_PDS\_v4.0\_2020-03-06

Page 2/2

© 2020 Toray Advanced Composites. All data given is based on representative samples of the materials in question. Since the method and circumstances under which these materials are processed and tested are key to their performance, and Toray Advanced Composites has no assurance of how its customers will use the material, the corporation cannot guarantee these properties. Toray®, (Toray) AmberTool®, (Toray) Cetex®, (Toray) MicroPly™, and all other related characters, logos, and trade names are claims and/or registered trademarks of Toray Industries Inc. and/or its subsidiary companies in one or more countries. Use of trademarks, trade names, and other IP rights of Toray Industries Inc. without prior written approval by such is strictly prohibited.

