

## DESCRIPTION

TCF4001 cyanate ester syntactic foam is unique in the industry due to its combination of low density and good structural properties. The material does not require pressure during cure to achieve its mechanical properties, and can be machined to shape if required. TCF4001 can be packed into tooling cavities.

## FEATURES

- › **Compatible with TC420 prepregs**
- › **Excellent high temperature performance**
- › **Post curable for higher  $T_g$**

## PRODUCT TYPE

177°C (350°F) Cure, Cyanate Ester Syntactic Foam

## TYPICAL APPLICATIONS

- › Low moisture pickup
- › Low outgassing foam core for space structures
- › Aircraft interiors
- › Net molded foam parts
- › High temperature potting
- › Ablatives
- › High temperature tooling masters
- › High temperature tooling backup structures

## NEAT RESIN PROPERTIES

Density	0.35-0.42 g/cc (22–26 pcf nominal)
Cure Temperature	177°C (350°F) for 120 minutes. 232°C (450°F) Optional post cure 60-90 minutes.
Dielectric Constant	1.554 at 10 GHz
Loss Tangent	0.0123 at 10 GHz

## SHELF LIFE

<b>Out Life:</b>	Up to 14 days at ambient
<b>Frozen Storage Life:</b>	6 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)

\* Out life tested by handling and cure evaluation. Users may need to separately evaluate out life limits on thicker, more complex parts.



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## MECHANICAL PROPERTIES

Properties	Condition	Method	Results	
Tensile Strength - 22–26 pcf	RTD	ASTM C297	990 - 1100 psi	6.8 - 7.6 MPa
Compressive Strength - 22–26 pcf	RTD	ASTM C297	1800 - 2300 psi	12.4 - 15.9 MPa

Data above represents limited lot data and is not specification values.

Two inch cylindrical specimens tested at 25°C (77°F) with 2 hour cure at 177°C (350°F) followed by a 60–90 minute post cure at 232°C (450°F).

## TYPICAL CURE PARAMETERS

- › 350°F (177°C) for 120 minutes
- › Optional post cure of 60-90 minutes at 450°F (232°C), use slow heat up rates for thick parts to prevent exotherm.