

## PRODUCT DATA SHEET

### DESCRIPTION

Toray EM-3 is a 121°C (250°F) curing expanding epoxy film based on low density syntactic film technology. It is an effective material in generating internal pressure in closed mold applications and honeycomb filling, splicing, and stabilization.

EM-3 is available in film form from 30–91 cm (12–36”) wide with standard thicknesses from 0.0635 cm to 1.27 mm (0.025” to 0.050”). Other widths and thicknesses may be available upon request.

### FEATURES

- ▶ Fully compatible with most 121°C (250°F) curing epoxy systems
- ▶ Cures fully after 1 hour at 121°C (250°F)
- ▶ Excellent tack and drape
- ▶ Meets NASA outgassing (TML/VCM) requirements (ASTM E595)

### PRODUCT TYPE

121°C (250°F) Cure Expanding Syntactic Epoxy Film

### TYPICAL APPLICATIONS

- ▶ Internal pressure generation in closed mold operations
- ▶ Honeycomb edge filling and splicing
- ▶ Honeycomb core stabilization
- ▶ Used to fill core in closed mold operations

### SHELF LIFE

**Out Life:** 14 days at 24°C (75°F)

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

Out life is the maximum time allowed at room temperature before cure.

### TYPICAL NEAT RESIN PROPERTIES

Density (Uncured, nominal)	40.0 pcf (0.64 g/cc)
Expanded Density (Cured)	6.0 to 14.0 pcf (0.10 to 0.22 g/cc)
Volume Expansion	Approximately 3 to 8 times



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### MECHANICAL PROPERTIES

Property	Condition (RTD, ETD, ETW)	Bulk Density	Results	
Compressive Strength	RTD	6 pcf (0.10 g/cc)	0.7 MPa	100 psi
Compressive Strength	RTD	10 pcf (0.16 g/cc)	2.1 MPa	300 psi
Compressive Strength	RTD	12 pcf (0.19 g/cc)	2.9 MPa	425 psi
Compressive Strength	RTD	14 pcf (0.22 g/cc)	3.3 MPa	475 psi
Flexural Strength	RTD	6 pcf (0.10 g/cc)	0.7 MPa	100 psi
Flexural Strength	RTD	10 pcf (0.16 g/cc)	2.8 MPa	400 psi
Flexural Strength	RTD	12 pcf (0.19 g/cc)	4.5 MPa	650 psi
Flexural Strength	RTD	14 pcf (0.22 g/cc)	6.6 MPa	950 psi
Flexural Modulus	RTD	6 pcf (0.10 g/cc)	55 MPa	8 ksi
Flexural Modulus	RTD	10 pcf (0.16 g/cc)	103 MPa	15 ksi
Flexural Modulus	RTD	12 pcf (0.19 g/cc)	172 MPa	25 ksi
Flexural Modulus	RTD	14 pcf (0.22 g/cc)	241 MPa	35 ksi

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