

## PRODUCT DATA SHEET

### DESCRIPTION

Toray RS-50 is a toughened low viscosity epoxy RTM resin. It features a long 4-hour pot life and a low minimum viscosity for excellent RTM and VARTM processing. It can also be used in wet winding applications.

### FEATURES

- ▶ One-part resin system
- ▶ Low minimum viscosity of 23 cps
- ▶ Long 4-hour pot life
- ▶ High hot/wet  $T_g$  of 189°C (388°F)
- ▶ 2-hour cure cycle
- ▶ Low 88–99°C (190–200°F) injection temperature

### PRODUCT TYPE

177°C (350°F) Curing Epoxy RTM Resin

### TYPICAL APPLICATIONS

- ▶ Resin

### SHELF LIFE

<b>Pot Life:</b>	4 hours at 93°C (200°F), 270 cps
<b>Frozen Storage Life:</b>	12 months at -18°C (< 0°F)

### TYPICAL NEAT RESIN PROPERTIES

Density	1.16 g/cc	
$T_g$ (Dry)	203°C (397°F)	
$T_g$ (Wet)	197°C (388°F)	
Minimum Resin Viscosity	23 cps (by DMA, 2°C/min; 4°F/min ramp rate)	
Moisture Absorption	2.1% (after 48-hour water boil)	
Resin Viscosity	82°C (180°F) 93°C (200°F) 121°C (250°F)	365 cps 193 cps 56 cps
Gel Time (at 177°C/350°F)	32 minutes	

Fracture Toughness	186 J/m <sup>2</sup> ( $G_{Ic}$ )
Flexural Strength	145 MPa (21 ksi)
Flexural Modulus	4.0 GPa (0.58 Msi)
Tensile Strength	76 MPa (11 ksi)
Tensile Modulus	3.7 GPa (0.52 Msi)



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### MECHANICAL PROPERTIES

Property	Condition	Method	Typical Results	
Flexural Strength 0°	RTD	ASTM D 7264	930.8 MPa	135 ksi
Flexural Modulus 0°	RTD	ASTM D 7264	58.6 GPa	8.5 Msi
Open-Hole Comp. Strength*	RTD	ASTM D 6484	275.8 MPa	40 ksi
Open-Hole Comp. Strength*	ETD	ASTM D 6484	222.7 MPa	32.3 ksi
Short Beam Shear Strength	RTD	ASTM D 2344	72.4 MPa	10.5 ksi
CAI*	RTD	ASTM D 7136/7137	239.9 MPa	34.8 ksi

\* Third-Party Generated Data  
ETD: 104°C (220°F)

### PROCESS PARAMETERS

▶ 2 hours at 177°C (350°F)

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