

## PRODUCT DATA SHEET

### DESCRIPTION

Toray RS-16 is a low viscosity, low temperature curing cyanate ester resin that can be used in wet winding, RTM, and VARTM processing. Its two-part construction allows easy and long-term storage while delivering excellent processability and pot life. It is intended for lower temperature exposure with a moderate  $T_g$  requirement, and is an ideal system when used with other materials that limit the upper cure temperature. The system may also be cured using different combinations of cure/post cure temperatures and durations.

### FEATURES

- ▶ **135°C (275°F) 2-hour curing cyanate resin with optional post cure cycles**
- ▶ **RTM resin with very low viscosity at processing temperature**
- ▶ **Low viscosity at elevated temperature**
- ▶ **Two part resin: Mix Ratio 100:9 Part A to Part B**

### PRODUCT TYPE

135°C (275°F) Cyanate Ester RTM Resin System

### TYPICAL APPLICATIONS

- ▶ RTM, VARTM, Resin Infusion, Wet Winding

### SHELF LIFE

<b>Pot Life:</b>	4 hours at 75°C (167°F) 60 minutes at 100°C (212°F)
<b>Storage Life:</b> Applicable to Part A & Part B	12 months when stored refrigerated between 1°C (34°F) and 4.4°C (40°F), tightly sealed and blanketed with inert gas, or 6 months when stored at 5°C (41°F) to 25°C (77°F), tightly sealed and blanketed with inert gas
<b>DO NOT FREEZE: NO STORAGE AT 0°C (32°F) OR BELOW</b>	

### TYPICAL NEAT RESIN PROPERTIES

Resin Density	1.21 g/cc
Dry $T_g$ (DSC)	No Post Cure: 151°C (304°F) Post Cure A: 179°C (354°F) Post Cure B: 211°C (411°F) Post Cure C: 236°C (456°F) Post Cure D: 252°C (486°F)
Moisture Absorption (70°C water bath 7 days)	1.0%
Viscosity at 50°C (122°F)	500 cPs
Minimum Viscosity at 122°C (251.6°F)	20 cPs
Dielectric Constant (10 GHz)	2.85
Loss Tangent (10 GHz)	0.0082
Coefficient of Thermal Expansion	60.2ppm/°C (33.4 ppm/°F)
Outgassing per ASTM E595 (TML)	0.22%
Outgassing per ASTM E595 (CVCM)	0.01%
Outgassing per ASTM E595 (WVR)	0.13%

$T_g$  specimen cure: Ramp to 113°C (235°F) and hold for 4 hours, then ramp to 135°C (275°F) and hold for 1.5 hours  
 Post Cure A: 149°C (300°F) for 2 hours  
 Post Cure B: 177°C (350°F) for 2 hours  
 Post Cure C: 204°C (400°F) for 2 hours  
 Post Cure D: 232°C (450°F) for 2 hours



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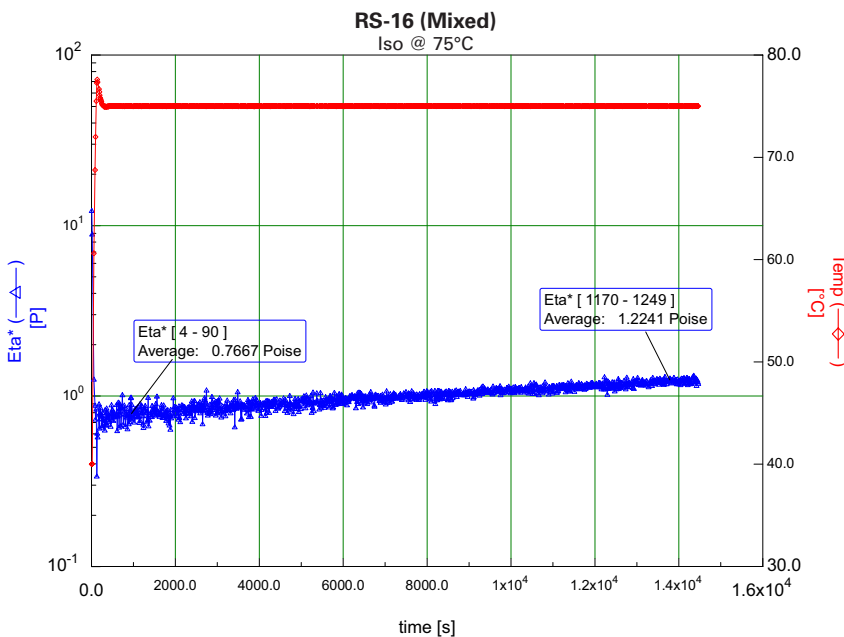
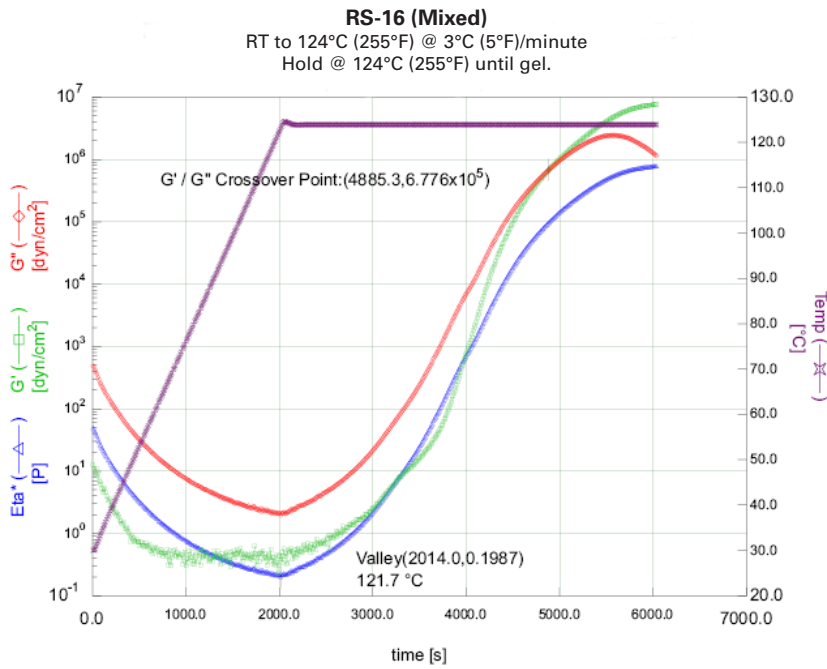
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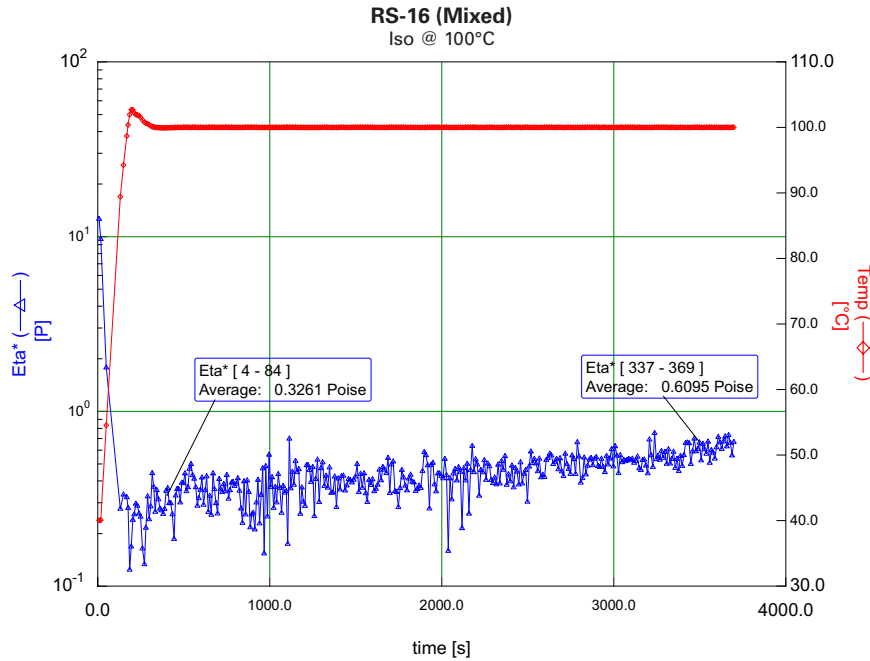
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### NEAT RESIN MECHANICAL PROPERTIES

Property	Condition	Method	Typical Results	
Flexural Modulus	RTD	ASTM D 7264	4.1 GPa	592 ksi
Flexural Strength	RTD	ASTM D 7264	159 MPa	23.1 ksi
Flexural Strain	RTD	Calculation	4.1%	



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