

**PRODUCT DATA SHEET**  
**RM-3000 BISMALIMIDE (BMI)**  
**RESIN TRANSFER MOLDING (RTM) RESIN**  
FOR HIGH PERFORMANCE AEROSPACE APPLICATIONS



Renegade Materials Corporation is a global leader in manufacturing composite materials for aerospace applications. We deliver light-weight, highly-engineered prepregs, adhesives and hybrid composite systems to enable maximum fuel efficiency in commercial and military aircraft structures.

For pricing or additional information on Renegade Materials' products, please call us at 937-350-5274 or visit our website at [www.renegadematerials.com](http://www.renegadematerials.com).

## RM-3000 BMI RTM ONE PART RTM RESIN

Developed using state-of-the-art formulating technologies, **RM-3000 BMI RTM Resin** delivers superior hot/wet performance in airframe, missile and propulsion applications at service temperatures up to 450°F. RM-3000 resin delivers improved damage tolerance at higher temperatures vs. industry-standard BMI resins. RM-3000 resin can be injected into a variety of 2-D woven as well as braids and other complex 3-D engineered preforms. RM-3000 can be used as a tackifier with the addition of solvent. RM-3000-TKF is a modified version of RM-3000 that can be impregnated into various fabric styles at a low resin content to create a more controlled tackified fabric.

Typical Properties of RM-3000 Resin		
Test	Test Method	Resin Properties
Max Viscosity During Cure	ASTM D 4440	<100 cP
Gel Time	ASTM D 4440	75 minutes
Volatile Content	ASTM D 3530/3530M	0.6%
Resin Tensile Strength	ASTM D 638	13 Ksi (90 MPa)
Resin Tensile Modulus	ASTM D 638	0.46 Msi (3.2 GPa)
Flexural Strength	ASTM D 790	21 Ksi (145 MPa)
Flexural Modulus	ASTM D 790	0.62 Msi (4.3 GPa)
Resin Flex Strain to Failure	ASTM D 790	4%
Cured Resin Density	ASTM D 792	1.26 g/cc
Glass Transition Temperature (T <sub>g</sub> ) via RDA	ASTM D 5279	Dry - 540°F (282°C)
		*Wet - 477°F (247°C)

\*Wet Conditioning - 180F water immersion for 14 days.

“Seller makes no warranty regarding the accuracy of this information. Buyers should make their own evaluation to determine suitability of any product for their own intended purposes.”

<b>Typical Mechanical Properties of RM-3000 on Carbon Braid</b>		
<b>Test</b>	<b>Test Method</b>	<b>RM-3000 on 3K Standard Modulus Carbon Biaxial Fabric (±45)</b>
<b>0° Tensile Strength</b>	ASTM D 3039	26 Ksi (173 Mpa)
<b>0° Tensile Modulus</b>	ASTM D 3039	2.3 Msi (15.9 GPa)
<b>0° Compression Strength</b>	ASTM D 6641	36 Ksi (248 MPa)
<b>0° Compression Modulus</b>	ASTM D 6641	2.5 Msi (17.2 GPa)
<b>V-Notched Shear Strength</b>	ASTM D 7078	58 Ksi (400 MPa)
<b>V-Notched Shear Modulus</b>	ASTM D 7078	4.3 Msi (29.7 GPa)
<b>Glass Transition Temperature (Tg) via DMA</b>	ASTM D 7028	Dry - 502°F (261°C)
		Wet - 362°F (183°C)

-All properties are RT Dry unless otherwise noted.

-Wet conditioning: 180°F (82°C) and 85% RH to saturation.

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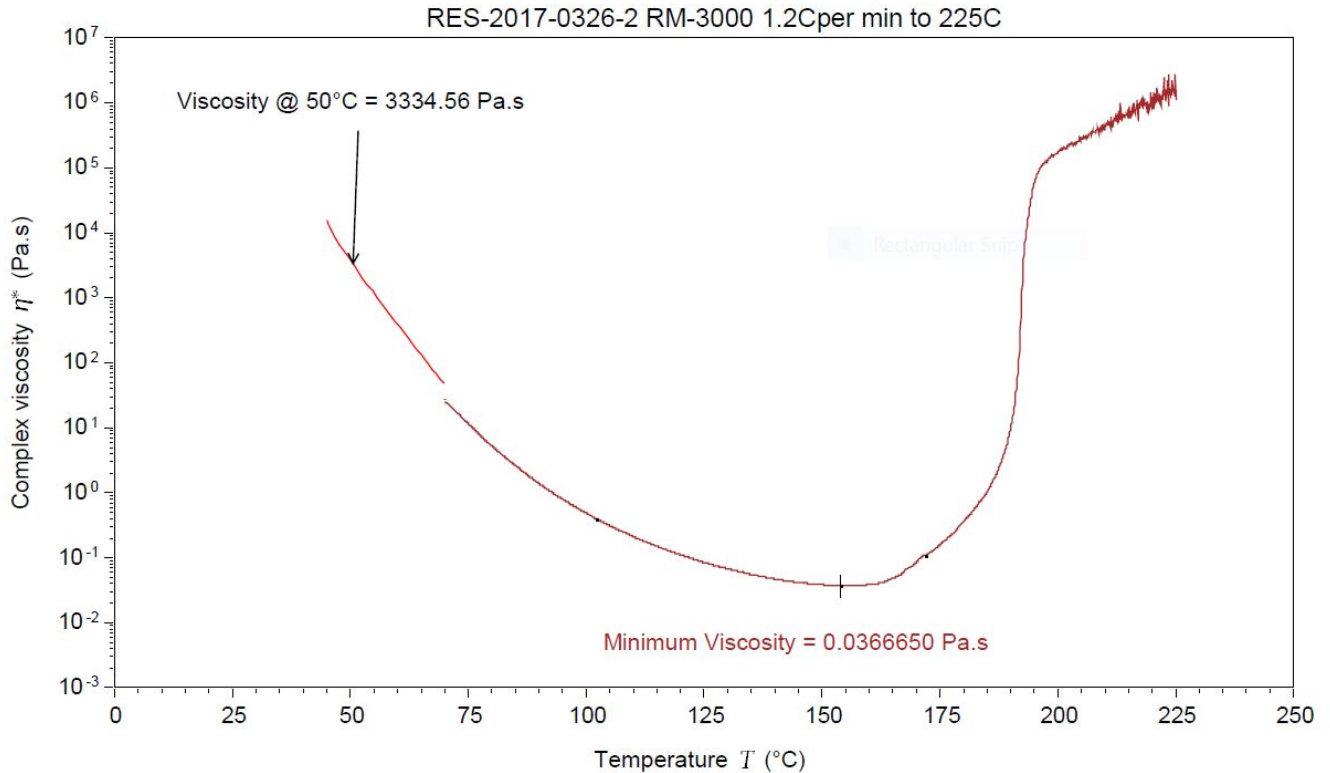
## Typical Mechanical Properties of RM-3000 on 6781 S2-Glass Fabric

Test	Units	Test Method	Condition	6781
0° Compression Strength	ksi	ASTM D6641	RT Dry	103
0° Compression Strength	ksi	ASTM D6641	350°F/Wet*	51
0° Compression Modulus	Msi	ASTM D6641	RT Dry	4.9
0° Compression Modulus	Msi	ASTM D6641	350°F/Wet*	4.1
0° Compression Strain to Failure	%	ASTM D6641	RT Dry	2.3
0° Compression Strain to Failure	%	ASTM D6641	350°F/Wet*	1.4
In-Plane Shear Strength	ksi	ASTM D3846	RT Dry	14.0
In-Plane Shear Strength	ksi	ASTM D3846	350°F/Wet*	4.8

\*Wet Conditioning 140°F/95% R.H. to saturation.

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## RM-3000 Typical Isothermal Viscosity



## RM-3000 Tackifier Options

**Liquid Tackifier:** With resin in a liquid state, add two (2) parts by weight of acetone to one (1) part by weight of RM-3000 resin. Spray or brush on tackifier as needed. Use within 7 days.

**Tackified Fabric:** Renegade Materials offers tackified fabrics with a low resin content version of RM-3000 known as RM-3000-TKF impregnated into the preform fabric. Contact us for more details.

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## **Renegade Materials Recommended Infusion Temperature and Cure Cycle for RM-3000**

- It is recommended that the user melt the resin at 160°F (71°C) before transferring to a holding reservoir.
- The holding reservoir temperature should be maintained at 200°F (93°C).
- The mold or tool temperature (prior to injecting resin) should be at 250 - 275°F (121 - 135°C) to maximize fiber wet-out.
- Evacuate the mold prior to resin injection.
- All lines and vents must be heated to prevent the resin from solidifying upon cooling.
- Cure temperature is 375°F (190°C) for 6 hours.
- Free standing post cure can be performed at 440 - 475°F (227 – 246°C) for 6 hours.

**Alternate cure cycles are available. Please contact us to discuss your specific application.**

## **Renegade Materials Recommended Storage Conditions and Shelf Life for RM-3000**

Storage Life is dependent upon storage temperature. Keep containers sealed tightly when not in use. To limit moisture pick-up, allow the container to reach room temperature prior to opening.

### **STORAGE CONDITIONS:**

- 1) At or Below 10°F (-12°C) in a Sealed Container: 12 months from Date of Shipment
- 2) Room Temperature (75 ± 10°F) Storage in a Sealed Container: 1 month

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Revision Date: 07-21-19KOA