

For more information and technical assistance contact:

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The Woodlands, TX 77387-4910  
877.798.6666



## Ryton<sup>®</sup> R-7 Polyphenylene Sulfide Resins

Ryton<sup>®</sup> R-7 PPS is polyphenylene sulfide compounded with glass fibers and mineral fillers to produce an injection moldable high temperature engineering compound with the inherent cost savings of thermoplastics.

Nominal Engineering Properties <sup>(1)</sup>	R-7	R-7 02	Test Method
Tensile Strength, Ksi	21.0	20.0	ASTM D638
Elongation, %	1.0	0.9	ASTM D638
Flexural Strength, Ksi	31.0	29.0	ASTM D790
Flexural Modulus, Msi	2.4	2.4	ASTM D790
Notched Izod Impact, ft-lb/in, 1/8 in specimen	1.4	1.3	ASTM D256
Unnotched Izod Impact, ft-lb/in, 1/8 in specimen	5.0	4.5	ASTM D256
Compressive Strength, Ksi	37.0	37.0	ASTM D695
Heat Deflection Temperature 264 psi, °F <sup>(2)</sup>	>500	>500	ASTM D648
UL Temperature Index, °C	200 / 220	200 / 220	UL 746B
Coefficient of Linear Thermal Exp., X 10 <sup>6</sup> in/in °C			ASTM E831
Axial Direction, -50°C to 50°C	20	20	
Axial Direction, 100°C to 200°C	15	15	
Transverse Direction, -50°C to 50°C	30	30	
Transverse Direction, 100°C to 200°C	70	70	
Flammability Rating	V-0 / 5VA	V-0 / 5VA	UL 94
Thermal Conductivity, BTU in/hr ft <sup>2</sup> F	4.2	4.2	
Dielectric Strength, V/mil	450	450	ASTM D149
Dielectric Constant, 78° F			ASTM D150
1kHz	4.2	4.2	
1MHz	4.0	4.0	
Dissipation Factor, 78°F			ASTM D150
1 kHz	0.050	0.050	
1 MHz	0.010	0.010	
Volume Resistivity, ohm.cm	1 x 10 <sup>15</sup>	1 x 10 <sup>15</sup>	ASTM D257
Arc Resistance, sec	150	150	ASTM D495
Comparative Tracking Index, V	225	225	UL 746A
Insulation Resistance, ohm (90°C, 95% RH, 48 hr)	1 x 10 <sup>12</sup>	1 x 10 <sup>12</sup>	
Mold Shrinkage <sup>(3)</sup> in/in, Flow/Transverse	0.002 / 0.004	0.002 / 0.004	
Density, g/cc	1.90	1.90	ASTM D792
Water Absorption, %	0.02	0.02	ASTM D570
Color	Natural	Black	

(1) Test specimen molding conditions: Stock Temperature, 600 - 650° F; Mold Temperature, 275° F

(2) Annealed 2 hours at 400° F

(3) Measured on 4 in X 4 in X 1/8 in Plaques, Edge Gated

The nominal properties reported herein are typical of the product but do not reflect normal testing variances and therefore should not be used for specification purposes.

MSDS #440880

Revision Date January, 2005

Another quality product from



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Nominal Engineering Properties <sup>(5)</sup>	R-7	R-7 02	Method
Tensile Strength, MPa	140	135	ISO 527
Elongation, %	1.0	0.9	ISO 527
Flexural Strength, MPa	205	195	ISO 178
Flexural Modulus, GPa	16	16	ISO 178
Notched Izod Impact, kJ/m <sup>2</sup>	7.0	6.0	ISO 180A
Unnotched Izod Impact, kJ/m <sup>2</sup>	18	17	ISO 180A
Compressive Strength, MPa	255	255	ISO 604
Heat Deflection Temperature 1.8 MPa, °C <sup>(6)</sup>	>260	>260	ISO 75
UL Temperature Index, °C	200 / 220	200 / 220	UL 746B
Coefficient of Linear Thermal Exp., X 10 <sup>6</sup> in/in °C			ISO 11359-2
Axial Direction, -50°C to 50°C	20	20	
Axial Direction, 100°C to 200°C	15	15	
Transverse Direction, -50°C to 50°C	30	30	
Transverse Direction, 100°C to 200°C	70	70	
Flammability Rating	V-0 / 5VA	V-0 / 5VA	UL 94
Thermal Conductivity, W/m.K	0.60	0.60	
Dielectric Strength, kV/mm	18	18	ASTM D149
Dielectric Constant, 25°C			ASTM D150
1kHz	4.2	4.2	
1MHz	4.0	4.0	
Dissipation Factor, 25°C			ASTM D150
1 kHz	0.050	0.050	
1 MHz	0.010	0.010	
Volume Resistivity, ohm.cm	1 x 10 <sup>15</sup>	1 x 10 <sup>15</sup>	ASTM D257
Arc Resistance, sec	150	150	ASTM D495
Comparative Tracking Index, V	225	225	UL 746A
Insulation Resistance, ohm (90°C, 95% RH, 48 hr)	1 x 10 <sup>12</sup>	1 x 10 <sup>12</sup>	
Mold Shrinkage <sup>(7)</sup> m/m, Flow/Transverse	0.002 / 0.004	0.002 / 0.004	
Density, g/cc	1.90	1.90	ISO 1183A
Water Absorption, %	0.02	0.02	ASTM D570
Color	Natural	Black	

(5) Test specimen molding conditions: Stock Temperature, 315 - 345 ° F; Mold Temperature, 135 ° C

(6) Annealed 2 hours at 200 ° C

(7) Measured on 102 mm X 102 mm X 3.2 mm Plaques, Edge Gated

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