

## Solvay Specialty Polymers Ryton® R-4 Polyphenylene Sulfide (PPS), 40% Glass Fiber

Category : Polymer , Thermoplastic , Polyphenylene Sulfide (PPS) , Polyphenylene Sulfide (PPS) with 40% Glass Fiber Filler

### Material Notes:

Ryton® R-4 and R-4-02 40% glass fiber reinforced polyphenylene sulfide compounds provide a good combination of mechanical and electrical properties with outstanding chemical resistance, even at elevated temperatures. Features: Good Chemical Resistance; Good Electrical Properties  
Automotive Specifications FORD ESF-M4D388-A3  
Information provided by Solvay Specialty Polymers.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Solvay-Specialty-Polymers-Ryton-R-4-Polyphenylene-Sulfide-PPS-40-Glass-Fiber.php](http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Ryton-R-4-Polyphenylene-Sulfide-PPS-40-Glass-Fiber.php)

Physical Properties	Metric	English	Comments
Density	1.69 g/cc	0.0611 lb/in <sup>3</sup>	ASTM D792
Filler Content	40 %	40 %	Glass Fiber
Water Absorption	0.020 % @Time 86400 sec	0.020 % @Time 24.0 hour	ISO 62
Linear Mold Shrinkage, Flow	0.0020 cm/cm @Thickness 3.18 mm	0.0020 in/in @Thickness 0.125 in	
Linear Mold Shrinkage, Transverse	0.0050 cm/cm @Thickness 3.20 mm	0.0050 in/in @Thickness 0.126 in	ASTM D955

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	104	104	ASTM D785
Hardness, Rockwell R	122	122	ASTM D785
Tensile Strength	159 MPa	23100 psi	ASTM D638
Tensile Stress	150 MPa	21800 psi	ISO 527-2
Elongation at Break	1.1 %	1.1 %	ASTM D638
	1.2 %	1.2 %	ISO 527-2
Flexural Strength	220 MPa	31900 psi	ISO 178
	221 MPa	32100 psi	ASTM D790
Flexural Modulus	14.0 GPa	2030 ksi	ISO 178
	14.5 GPa	2100 ksi	ASTM D790
Compressive Strength	270 MPa	39200 psi	ASTM D695

Mechanical Properties	Metric	English	Comments
Izod Impact, Notched	0.910 J/cm @Thickness 3.18 mm	1.70 ft-lb/in @Thickness 0.125 in	ASTM D256
Izod Impact, Unnotched	4.00 J/cm @Thickness 3.18 mm	7.49 ft-lb/in @Thickness 0.125 in	ASTM D256
Izod Impact, Notched (ISO)	9.00 kJ/m <sup>2</sup>	4.28 ft-lb/in <sup>2</sup>	Notch A; ISO 180
Izod Impact, Unnotched (ISO)	25.0 kJ/m <sup>2</sup>	11.9 ft-lb/in <sup>2</sup>	ISO 180

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	15.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$ @Temperature 100 - 200 $\text{Å}^\circ\text{C}$	8.33 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$ @Temperature 212 - 392 $\text{Å}^\circ\text{F}$	2
	20.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$ @Temperature -50.0 - 50.0 $\text{Å}^\circ\text{C}$	11.1 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$ @Temperature -58.0 - 122 $\text{Å}^\circ\text{F}$	2
CTE, linear, Transverse to Flow	40.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$ @Temperature -50.0 - 50.0 $\text{Å}^\circ\text{C}$	22.2 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$ @Temperature -58.0 - 122 $\text{Å}^\circ\text{F}$	TMA; ASTM E831
	80.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$ @Temperature 100 - 200 $\text{Å}^\circ\text{C}$	44.4 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$ @Temperature 212 - 392 $\text{Å}^\circ\text{F}$	TMA; ASTM E831
Thermal Conductivity	0.320 W/m-K	2.22 BTU-in/hr-ft <sup>2</sup> - $\text{Å}^\circ\text{F}$	ASTM C177
Maximum Service Temperature, Air	200 - 220 $\text{Å}^\circ\text{C}$	392 - 428 $\text{Å}^\circ\text{F}$	UL Temperature Rating
Deflection Temperature at 1.8 MPa (264 psi)	265 $\text{Å}^\circ\text{C}$	509 $\text{Å}^\circ\text{F}$	Unannealed; ASTM D648
Flammability, UL94	V-0 @Thickness 1.60 mm	V-0 @Thickness 0.0630 in	
	5VA @Thickness 1.60 mm	5VA @Thickness 0.0630 in	
Oxygen Index	47 %	47 %	ASTM D2863

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	ASTM D257

Surface Resistance Electrical Properties	1.00e+16 ohm Metric	1.00e+16 ohm English	ASTM D257 Comments
Insulation Resistance	1.00e+11 ohm @Temperature 90.0 Â°C	1.00e+11 ohm @Temperature 194 Â°F	IEC 60167
Dielectric Constant	3.8 @Frequency 1.00e+6 Hz	3.8 @Frequency 1.00e+6 Hz	ASTM D150
Dielectric Strength	3.9 @Frequency 1000 Hz	3.9 @Frequency 1000 Hz	ASTM D150
Dissipation Factor	20.0 kV/mm 0.0020 @Frequency 1000 Hz	508 kV/in 0.0020 @Frequency 1000 Hz	ASTM D149 ASTM D150
Arc Resistance	0.0020 @Frequency 1.00e+6 Hz	0.0020 @Frequency 1.00e+6 Hz	ASTM D150
Comparative Tracking Index	125 sec	125 sec	ASTM D495
	130 V	130 V	UL 746

Descriptive Properties	Value	Comments
Availability	Asia Pacific	
	Europe	
	Latin America	
	North America	
Color	Natural	
Form	Pellets	
Processing Technique	Injection Molding	
RoHS Compliance	RoHS Compliant	

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