

Solvay Specialty Polymers Ryton® R-4 Polyphenylene Sulfide Compound (Unverified Data**)

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

Material Notes:

Natural Color Polyphenylene Sulfide Compound Ryton® R-4 is a 40% fiberglass reinforced polyphenylene sulfide compound which provides outstanding chemical resistance and mechanical properties even at elevated temperatures. Comments: Test specimen molding conditions: Stock Temperature, 315-345°C; Mold Temperature, 135°C; ASTM Values Converted to SI Units Data provided by Chevron Phillips Chemical Company LP. Solvay Specialty Polymers has acquired the Ryton product line.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Ryton-R-4-Polyphenylene-Sulfide-Compound-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Density	1.65 g/cc	0.0596 lb/in ³	ASTM D792
Water Absorption	0.050 %	0.050 %	ASTM D570
Linear Mold Shrinkage	0.0030 cm/cm	0.0030 in/in	102 mm X 102 mm X 3.2 mm Plaques, Edge Gated
Linear Mold Shrinkage, Transverse	0.0050 cm/cm	0.0050 in/in	Measured on 102 mm X 102 mm X 3.2 mm Plaques, Edge Gated
Deformation	0.79 %	0.79 %	at 266°F for 0.5 inch cube under 2 ksi load.

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	123	123	ASTM D785
Hardness, Shore D	89	89	
Tensile Strength, Ultimate	160 MPa	23200 psi	ASTM D638
Elongation at Break	1.1 %	1.1 %	ASTM D638
Modulus of Elasticity	15.2 GPa	2200 ksi	
	15.2 GPa	2200 ksi	Loading Rate 0.1 inch/min
Flexural Yield Strength	195 MPa	28300 psi	ASTM D790
Flexural Modulus	15.0 GPa	2180 ksi	ASTM D790
Compressive Yield Strength	240 MPa	34800 psi	ASTM D695
Poissons Ratio	0.38	0.38	
Fatigue Strength	56.0 MPa	8120 psi	10 Hz, ASTM Type I tensile bar
	@# of Cycles 1.00e+6	@# of Cycles 1.00e+6	

Mechanical Properties	Metric	English	Comments
Shear Strength	103 MPa	15000 psi	
Izod Impact, Notched	0.850 J/cm	1.59 ft-lb/in	ASTM D256
	0.801 J/cm	1.50 ft-lb/in	
	@Temperature -40.0 °C	@Temperature -40.0 °F	
Izod Impact, Unnotched	3.20 J/cm	5.99 ft-lb/in	ASTM D256
	2.03 J/cm	3.80 ft-lb/in	
	@Temperature -40.0 °C	@Temperature -40.0 °F	
Coefficient of Friction, Dynamic	0.55	0.55	vs. steel; 100 rpm, 29 fpm
Coefficient of Friction, Static	0.50	0.50	vs. steel
Taber Abrasion, mg/1000 Cycles	70	70	CS-10 wheel; 1 kg

Thermal Properties	Metric	English	Comments
CTE, linear	21.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	11.7 $\mu\text{in}/\text{in}\cdot\text{°F}$	Axial; ASTM E831
	@Temperature 100 - 200 °C	@Temperature 212 - 392 °F	
	21.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	11.7 $\mu\text{in}/\text{in}\cdot\text{°F}$	Axial; ASTM E831
	@Temperature -50.0 - 50.0 °C	@Temperature -58.0 - 122 °F	
CTE, linear, Transverse to Flow	45.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	25.0 $\mu\text{in}/\text{in}\cdot\text{°F}$	ASTM E831
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	84.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	46.7 $\mu\text{in}/\text{in}\cdot\text{°F}$	ASTM E831
	@Temperature 100 - 200 °C	@Temperature 212 - 392 °F	
Specific Heat Capacity	1.03 J/g-°C	0.247 BTU/lb-°F	
Thermal Conductivity	0.320 W/m-K	2.22 BTU-in/hr-ft ² -°F	
Maximum Service Temperature, Air	200 °C	392 °F	UL Temperature Index 200 / 220 per UL746B
Deflection Temperature at 1.8 MPa (264 psi)	>= 260 °C	>= 500 °F	Annealed 2 hr @ 200°C; ASTM D658
Flammability, UL94	5VA	5VA	UL94 V-0/5VA
Oxygen Index	47 %	47 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	ASTM D257
Surface Resistance	1.00e+11 ohm @Temperature 90.0 °C	1.00e+11 ohm @Temperature 194 °F	95% RH, 48 hrs
Insulation Resistance	1.00e+11 ohm	1.00e+11 ohm	Accelerated; 194°F; 95% RH; 2 days; ASTM D257
Dielectric Constant	3.8 @Frequency 1e+6 Hz	3.8 @Frequency 1e+6 Hz	ASTM D150
	3.9 @Frequency 1000 Hz	3.9 @Frequency 1000 Hz	ASTM D150
Dielectric Strength	18.0 kV/mm	457 kV/in	ASTM D149
Dissipation Factor	0.0020 @Frequency 1000 Hz	0.0020 @Frequency 1000 Hz	ASTM D150
	0.0020 @Frequency 1e+6 Hz	0.0020 @Frequency 1e+6 Hz	ASTM D150
Arc Resistance	125 sec	125 sec	ASTM D495
Comparative Tracking Index	130 V	130 V	UL 746A

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