

Chevron Phillips Ryton® R-4 04 PPS (Polyphenylene Sulfide) (discontinued **)

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

Material Notes:

Ryton® PPS is used in many electronic and automotive applications because of its high strength, favorable electrical properties, and high temperature stability. Data provided by the manufacturer. Solvay Specialty Polymers has acquired the Ryton product line. This product was discontinued prior to the acquisition and is listed under the Chevron Phillips name for historical purposes.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Chevron-Phillips-Ryton-R-4-04-PPS-Polyphenylene-Sulfide-nbspdiscontinued-.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

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	123	123	
Tensile Strength, Ultimate	145 MPa	21000 psi	ASTM D638
Tensile Strength, Yield	145 MPa	21000 psi	ASTM D638
Elongation at Break	1.1 %	1.1 %	ASTM D638
Modulus of Elasticity	15.0 GPa	2180 ksi	ASTM D638
Flexural Yield Strength	186 MPa	27000 psi	ASTM D790
Flexural Modulus	14.0 GPa	2030 ksi	ASTM D790
Compressive Yield Strength	179 MPa	26000 psi	ASTM D695
Poissons Ratio	0.384	0.384	
Fatigue Strength	58.0 MPa @# of Cycles 1.00e+6	8410 psi @# of Cycles 1.00e+6	10 Hz, ASTM Type I tensile bar
Shear Modulus	5.42 GPa	786 ksi	Calculated
Shear Strength	90.0 MPa	13100 psi	ASTM D732
Izod Impact, Notched	0.740 J/cm	1.39 ft-lb/in	ASTM D256
Izod Impact, Unnotched	3.20 J/cm	5.99 ft-lb/in	ASTM D256

Thermal Properties	Metric	English	Comments
	12.0 µm/m-°C	6.67 µin/in-°F	

CTE, linear Thermal Properties	Metric @ Temperature 100 °C	English @ Temperature 212 °F	Comments
	18.0 µm/m-°C	10.0 µin/in-°F	
	@Temperature -100 °C	@Temperature -148 °F	
	40.0 µm/m-°C	22.2 µin/in-°F	In machine direction.
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	100 µm/m-°C	55.6 µin/in-°F	
	@Temperature 250 °C	@Temperature 482 °F	
CTE, linear, Transverse to Flow	22.0 µm/m-°C	12.2 µin/in-°F	
	@Temperature 250 °C	@Temperature 482 °F	
	30.0 µm/m-°C	16.7 µin/in-°F	
	@Temperature -100 °C	@Temperature -148 °F	
	40.0 µm/m-°C	22.2 µin/in-°F	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	80.0 µm/m-°C	44.4 µin/in-°F	
	@Temperature 100 °C	@Temperature 212 °F	
Specific Heat Capacity	1.00 J/g-°C	0.239 BTU/lb-°F	Estimated from similar grades.
Thermal Conductivity	0.290 W/m-K	2.01 BTU-in/hr-ft ² -°F	Estimated from similar grades.
Melting Point	285 °C	545 °F	
Maximum Service Temperature, Air	210 °C	410 °F	UL temperature Index 200/220°C (400/430°F)
Deflection Temperature at 1.8 MPa (264 psi)	>= 260 °C	>= 500 °F	ASTM D648
Glass Transition Temp, Tg	88.0 °C	190 °F	
Flammability, UL94	5VA	5VA	V-0/5VA UL-94 Rating
Oxygen Index	50 %	50 %	Estimated from similar grades.; ASTM D2863

Electrical Properties	Metric	English	Comments
Electrical Resistivity	4.50e+16 ohm-cm	4.50e+16 ohm-cm	ASTM D257
Surface Resistance	1.00e+13 ohm	1.00e+13 ohm	95% RH, 48 hrs
	@Temperature 90.0 °C	@Temperature 194 °F	
Insulation Resistance	1.00e+11 ohm	1.00e+11 ohm	Accelerated; 194°F; 95% RH; 2 days; ASTM D257

Electrical Properties	Metric	English	Comments
Dielectric Constant	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	ASTM D150
	4.1	4.1	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	14.0 kV/mm	356 kV/in	ASTM D149
Dissipation Factor	0.0022	0.0022	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
	0.0036	0.0036	ASTM D150
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Arc Resistance	124 sec	124 sec	ASTM D495
Comparative Tracking Index	160 V	160 V	UL 746A

Processing Properties	Metric	English	Comments
Melt Temperature	304 - 343 °C	579 - 649 °F	

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