Technical Data Sheet

Ryton® R-4-02 polyphenylene sulfide

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.

General

Revised: 12/21/2020

Material Status	 Commercial: Active 		
Availability	Asia Pacific	Latin America	
Availability	Europe	 North America 	
Filler / Reinforcement	 Glass Fiber, 40% Filler by W 	/eight	
Features	 Chemical Resistant 	Good Electrical Properties	
Uses	 Automotive Applications 		
RoHS Compliance	RoHS Compliant		
Automotive Specifications	• FORD ESF-M4D388-A3		
Appearance	• Black		
Forms	• Pellets		
Processing Method	 Injection Molding 		
Physical		Typical Value Unit	Test method
Density / Specific Gravity		1.69	ASTM D792
Molding Shrinkage			
Flow: 3.20 mm		0.20 %	
Across Flow: 3.20 mm		0.50 %	
Water Absorption (24 hr, 23°C)		0.020 %	ASTM D570
Mechanical		Typical Value Unit	Test method
Tensile Strength			
		152 MPa	ASTM D638
		140 MPa	ISO 527-2
Tensile Elongation			
Break		1.1 %	ASTM D638
Break		1.0 %	ISO 527-2
Flexural Modulus			
		14500 MPa	ASTM D790
		14000 MPa	ISO 178
Flexural Strength			
		207 MPa	ASTM D790
		200 MPa	ISO 178
Compressive Strength		270 MPa	ASTM D695
Poisson's Ratio		0.38	

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Impact	Typical Value Unit	Test method
Notched Izod Impact		
3.18 mm	80 J/m	ASTM D256
	8.0 kJ/m²	ISO 180/A
Unnotched Izod Impact		
3.18 mm	350 J/m	ASTM D4812
	20 kJ/m²	ISO 180
Hardness	Typical Value Unit	Test method
Rockwell Hardness	JI	ASTM D785
M-Scale	104	
R-Scale	122	
Thermal	Typical Value Unit	Test method
Deflection Temperature Under Load		ASTM D648
1.8 MPa, Unannealed	265 °C	
CLTE		ASTM E831
Flow: -50 to 50°C	2.0E-5 cm/cm/°C	
Flow: 100 to 200°C	1.5E-5 cm/cm/°C	
Transverse: -50 to 50°C	4.0E-5 cm/cm/°C	
Transverse: 100 to 200°C	8.0E-5 cm/cm/°C	
Thermal Conductivity	0.32 W/m/K	
UL Temperature Rating	200 to 220 °C	UL 746B
Electrical	Typical Value Unit	Test method
Surface Resistivity	1.0E+16 ohms	ASTM D257
Volume Resistivity	1.0E+16 ohms·cm	ASTM D257
Dielectric Strength	20 kV/mm	ASTM D149
Dielectric Constant		ASTM D150
25°C, 1 kHz	3.90	
25°C, 1 MHz	3.80	
Dissipation Factor		ASTM D150
25°C, 1 kHz	2.0E-3	
25°C, 1 MHz	2.0E-3	
Arc Resistance	125 sec	ASTM D495
Comparative Tracking Index (CTI)	PLC 4	UL 746A
Comparative Tracking Index	175 V	IEC 60112
Insulation Resistance 1 (90°C)	1.0E+11 ohms	

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polyphenylene sulfide

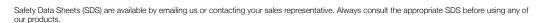
Flammability		Typical Value Unit	Test method
Flame Rating (1.6 mm)	•	V-0 5VA	UL 94
Oxygen Index		47 %	ASTM D2863

Notes

Typical properties: these are not to be construed as specifications.

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Progress beyond

¹ 95%RH, 48 hr