



Ryton® R-4

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

Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • Latin America • North America
Filler / Reinforcement	• Glass Fiber, 40% Filler by Weight
Features	• Chemical Resistant • Good Electrical Properties
Uses	• Automotive Applications
RoHS Compliance	• RoHS Compliant
Automotive Specifications	• FORD ESF-M4D388-A3
Appearance	• Natural Color
Forms	• Pellets
Processing Method	• Injection Molding

Physical

	Typical Value	Unit	Test method
Density / Specific Gravity	1.69		ASTM D792
Molding Shrinkage			
Flow : 0.126 in	2.0E-3	in/in	
Across Flow : 0.126 in	5.0E-3	in/in	
Water Absorption (24 hr, 73°F)	0.020	%	ASTM D570

Mechanical

	Typical Value	Unit	Test method
Tensile Strength			
--	23000	psi	ASTM D638
--	21800	psi	ISO 527-2
Tensile Elongation			
Break	1.1	%	ASTM D638
Break	1.2	%	ISO 527-2
Flexural Modulus			
--	2.10E+6	psi	ASTM D790
--	2.03E+6	psi	ISO 178
Flexural Strength			
--	32000	psi	ASTM D790
--	31900	psi	ISO 178
Compressive Strength	39200	psi	ASTM D695
Poisson's Ratio	0.38		

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Impact	Typical Value	Unit	Test method
Notched Izod Impact			
0.125 in	1.7	ft·lb/in	ASTM D256
--	4.3	ft·lb/in ²	ISO 180/A
Unnotched Izod Impact			
0.125 in	7.5	ft·lb/in	ASTM D4812
--	12	ft·lb/in ²	ISO 180
Hardness	Typical Value	Unit	Test method
Rockwell Hardness			ASTM D785
M-Scale	104		
R-Scale	122		
Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed	509	°F	
CLTE			ASTM E831
Flow : -58 to 122°F	1.1E-5	in/in/°F	
Flow : 212 to 392°F	8.3E-6	in/in/°F	
Transverse : -58 to 122°F	2.2E-5	in/in/°F	
Transverse : 212 to 392°F	4.4E-5	in/in/°F	
Thermal Conductivity	2.2	Btu·in/hr/ft ² /°F	
UL Temperature Rating	392 to 428	°F	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	500	V/mil	ASTM D149
Dielectric Constant			ASTM D150
77°F, 1 kHz	3.90		
77°F, 1 MHz	3.80		
Dissipation Factor			ASTM D150
77°F, 1 kHz	2.0E-3		
77°F, 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 (194°F)	1.0E+11	ohms	

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Flammability		Typical Value	Unit	Test method
Flame Rating (0.06 in)	• •	V-0 5VA		UL 94
Oxygen Index		47	%	ASTM D2863

Notes

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

¹ 95%RH, 48 hr



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