

Ryton® R-4

Syensqo - Polyphenylene Sulfide

General Information

Product Description

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

Filler / Reinforcement	• Glass Fiber, 40% Filler by Weight
Features	• Chemical Resistant • Good Electrical Properties
Uses	• Automotive Applications
RoHS Compliance	• RoHS Compliant
Appearance	• Natural Color
Forms	• Pellets
Processing Method	• Injection Molding

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.69		ASTM D792
Molding Shrinkage - Flow (0.126 in)	2.0E-3	in/in	
Molding Shrinkage - Across Flow (0.126 in)	5.0E-3	in/in	
Water Absorption (24 hr, 73°F)	0.020	%	ASTM D570
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength	23000	psi	ASTM D638
Tensile Stress	21800	psi	ISO 527-2
Tensile Elongation (Break)	1.1	%	ASTM D638
Tensile Strain (Break)	1.2	%	ISO 527-2
Flexural Modulus	2.10E+6	psi	ASTM D790
Flexural Modulus	2.03E+6	psi	ISO 178
Flexural Strength	32000	psi	ASTM D790
Flexural Stress	31900	psi	ISO 178
Compressive Strength	39200	psi	ASTM D695
Poisson's Ratio	0.38		
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (0.125 in)	1.7	ft·lb/in	ASTM D256
Notched Izod Impact Strength	4.3	ft·lb/in ²	ISO 180/A
Unnotched Izod Impact (0.125 in)	7.5	ft·lb/in	ASTM D4812
Unnotched Izod Impact Strength	12	ft·lb/in ²	ISO 180
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	104		
R-Scale	122		

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Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load 264 psi, Unannealed	509	°F	ASTM D648
CLTE - Flow -58 to 122°F 212 to 392°F	1.1E-5 8.3E-6	in/in/°F in/in/°F	ASTM E831
CLTE - Transverse -58 to 122°F 212 to 392°F	2.2E-5 4.4E-5	in/in/°F in/in/°F	ASTM E831
Thermal Conductivity	2.2	Btu·in/hr/ft²/°F	
UL Temperature Rating	392 to 428	°F	UL 746B
Electrical	Nominal 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 77°F, 1 kHz 77°F, 1 MHz	3.90 3.80		ASTM D150
Dissipation Factor 77°F, 1 kHz 77°F, 1 MHz	2.0E-3 2.0E-3		ASTM D150
Arc Resistance	125	sec	ASTM D495
Comparative Tracking Index (CTI)	PLC 4		UL 746A
Comparative Tracking Index	175	V	IEC 60112
Insulation Resistance ² (194°F)	1.0E+11	ohms	
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.06 in)	V-0 5VA		UL 94
Oxygen Index	47	%	ASTM D2863

Notes

¹ Typical properties: these are not to be construed as specifications.

² 95%RH, 48 hr