Ryton® R-4-02

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	• Black	
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	22000	psi	ASTM D638
Tensile Stress	20300	psi	ISO 527-2
Tensile Elongation (Break)	1.1	%	ASTM D638
Tensile Strain (Break)	1.0	%	ISO 527-2
Flexural Modulus	2.10E+6	psi	ASTM D790
Flexural Modulus	2.03E+6	psi	ISO 178
Flexural Strength	30000	psi	ASTM D790
Flexural Stress	29000	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)	1.5	ft·lb/in	ASTM D256
Notched Izod Impact Strength	3.8	ft·lb/in²	ISO 180/A
Unnotched Izod Impact (0.125 in)	6.5	ft·lb/in	ASTM D4812
Unnotched Izod Impact Strength	9.5	ft·lb/in²	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			ASTM D648
264 psi, Unannealed	509	°F	
CLTE - Flow			ASTM E831
-58 to 122°F	1.1E-5	in/in/°F	
212 to 392°F	8.3E-6	in/in/°F	
CLTE - Transverse			ASTM E831
-58 to 122°F	2.2E-5	in/in/°F	
212 to 392°F	4.4E-5	in/in/°F	
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			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 [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