Ryton® R-4-220NA

Syensqo - Polyphenylene Sulfide

General Information

Product Description

Ryton® R-4-220NA and R-4-220BL 40% glass fiber reinforced polyphenylene sulfide compounds provide enhanced mechanical strength after constant or repeated exposure to high temperature water.

General

Filler / Reinforcement	• Glass Fiber, 40% Filler by Weight
Features	• Good Strength
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	1.68		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 Modulus	2.32E+6	psi	ISO 527-1
Tensile Strength	27000	psi	ASTM D638
Tensile Stress	27600	psi	ISO 527-2
Tensile Elongation (Break)	1.6	%	ASTM D638
Tensile Strain (Break)	1.6	%	ISO 527-2
Flexural Modulus	2.10E+6	psi	ASTM D790
Flexural Modulus	2.03E+6	psi	ISO 178
Flexural Strength	39000	psi	ASTM D790
Flexural Stress	39900	psi	ISO 178
Compressive Strength	39900	psi	ASTM D695
Poisson's Ratio	0.37		ISO 527
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/in²	ISO 180/A
Unnotched Izod Impact (0.125 in)	12	ft·lb/in	ASTM D4812
Unnotched Izod Impact Strength	17	ft·lb/in²	ISO 180
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness			ASTM D785
M-Scale	103		
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	8.3E-6	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	4.7E-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	550	V/mil	ASTM D149
Dielectric Constant			ASTM D150
77°F, 1 kHz	3.80		
77°F, 1 MHz	3.80		
Dissipation Factor			ASTM D150
77°F, 1 kHz	2.0E-3		
77°F, 1 MHz	3.0E-3		
Arc Resistance	125	sec	ASTM D495
Comparative Tracking Index (CTI)			
--	175	V	IEC 60112
--	150	V	UL 746

Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.06 in)	V-0		UL 94
Oxygen Index	45	%	ASTM D2863

Additional Information	Nominal Value	Unit
Hydrolytic Stability [2]		
Tensile Strength Retained	> 80	%
Weight Gain	< 1.0	%

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	275 to 302	°F
Drying Time	2.0 to 4.0	hr
Rear Temperature	563 to 599	°F
Middle Temperature	581 to 617	°F
Front Temperature	599 to 653	°F
Nozzle Temperature	581 to 617	°F
Processing (Melt) Temp	608 to 626	°F
Mold Temperature	275 to 302	°F

Notes

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

[2] Test specimens aged 1000 hours in water at 140°C (284°F)