Ryton® R-4-200NA

Syensqo - Polyphenylene Sulfide

General Information

Product Description

Ryton® R-4-200NA and R-4-200BL 40% glass fiber reinforced polyphenylene sulfide compounds provide enhanced mechanical strength and low maintenance molding using conventional molding equipment

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 [2] (0.126 in)	2.0E-3	in/in	Internal Method
Molding Shrinkage - Across Flow [2] (0.126 in)	5.0E-3	in/in	Internal Method
Water Absorption (24 hr)	0.020	%	ASTM D570
Water Absorption (24 hr, 73°F)	0.030	%	ISO 62
Water Absorption (Saturation, 73°F)	0.26	%	Internal Method
Water Absorption (Equilibrium, 73°F, 50% RH)	0.25	%	Internal Method
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	2.28E+6	psi	ISO 527-1
Tensile Stress			
--	29000	psi	ISO 527-2
--	28000	psi	ASTM D638
-- [3]	28100	psi	ISO 527-2
Tensile Strain			
Break	1.7	%	ISO 527-2
Break	1.6	%	ASTM D638
Break [3]	1.8	%	ISO 527-2
Flexural Modulus	2.10E+6	psi	ASTM D790
Flexural Modulus	2.03E+6	psi	ISO 178
Flexural Stress			
--	41300	psi	ISO 178
--	39000	psi	ASTM D790
Compressive Strength	39900	psi	ASTM D695
Shear Strength	13900	psi	ASTM D732
Poisson's Ratio	0.40		ISO 527

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Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179
--	4.1	ft·lb/in²	
-- [3]	4.2	ft·lb/in²	
Charpy Unnotched Impact Strength			ISO 179
--	25	ft·lb/in²	
-- [3]	25	ft·lb/in²	
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	19	ft·lb/in²	ISO 180
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness			ASTM D785
M-Scale	100		
R-Scale	120		
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed	509	°F	
Melting Temperature	536	°F	ISO 11357-3
CLTE - Flow			ASTM E831
-58 to 122°F	8.3E-6	in/in/°F	
212 to 392°F	5.6E-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	2.3	Btu·in/hr/ft²/°F	ASTM E1530
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	3.90		
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 [4] (194°F)	1.0E+11	ohms	
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating (0.06 in)	V-0		UL 94
Oxygen Index	57	%	ASTM D2863

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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] Measured on 102 mm x 102 mm x 3.2 mm plaques, edge gated.

[3] Conditioned data is meant to simulate 23°C 50% RH equilibrium values. Conditioning of specimens was achieved per ISO 1110 by exposing specimens for 11 days, 70°C and 62% RH.

[4] 95%RH, 48 hr