Ryton® BR111BL

Syensqo - Polyphenylene Sulfide

General Information

Product Description

Ryton® BR111BL is a black-colored glass fiber and mineral filled polyphenylene sulfide compound that provides enhanced mechanical strength with good electrical properties and outstanding chemical resistance, even at elevated temperatures.

General

Filler / Reinforcement	• Glass Fiber\Mineral		
Features	• Chemical Resistant	• Good Electrical Properties	• Good Strength
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	1.94		ASTM D792
Molding Shrinkage - Flow (0.126 in)	2.0E-3	in/in	
Molding Shrinkage - Across Flow (0.126 in)	4.0E-3	in/in	
Water Absorption (24 hr, 73°F)	0.020	%	ASTM D570
Water Absorption (Saturation, 73°F)	0.10	%	Internal Method
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			ISO 527-1
--	3.05E+6	psi	
-- [2]	3.05E+6	psi	
Tensile Stress			
--	22500	psi	ISO 527-2
--	21000	psi	ASTM D638
-- [2]	22900	psi	ISO 527-2
Tensile Elongation (Break)	1.0	%	ASTM D638
Tensile Strain			ISO 527-2
Break	1.0	%	
Break [2]	1.1	%	
Flexural Modulus	2.80E+6	psi	ASTM D790
Flexural Modulus	2.76E+6	psi	ISO 178
Flexural Strength	33000	psi	ASTM D790
Flexural Stress	34100	psi	ISO 178
Compressive Strength	42800	psi	ASTM D695
Poisson's Ratio	0.34		ISO 527

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Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179
--	3.1	ft·lb/in²	
-- [2]	3.1	ft·lb/in²	
Charpy Unnotched Impact Strength			ISO 179
--	13	ft·lb/in²	
-- [2]	13	ft·lb/in²	
Notched Izod Impact (0.125 in)	1.1	ft·lb/in	ASTM D256
Notched Izod Impact Strength	3.3	ft·lb/in²	ISO 180/A
Unnotched Izod Impact (0.125 in)	5.0	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	101		
R-Scale	119		
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	5.6E-6	in/in/°F	
CLTE - Transverse			ASTM E831
-58 to 122°F	1.7E-5	in/in/°F	
212 to 392°F	3.9E-5	in/in/°F	
Thermal Conductivity	3.5	Btu·in/hr/ft²/°F	
UL Temperature Rating	428 to 464	°F	UL 746B
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	1.0E+16	ohms	ASTM D257
Volume Resistivity	1.0E+15	ohms·cm	ASTM D257
Dielectric Strength	450	V/mil	ASTM D149
Dielectric Constant			ASTM D150
77°F, 1 kHz	4.70		
77°F, 1 MHz	4.60		
Dissipation Factor			ASTM D150
77°F, 1 kHz	2.0E-3		
77°F, 1 MHz	3.0E-3		
Arc Resistance	180	sec	ASTM D495
Comparative Tracking Index (CTI)	275	V	IEC 60112
Comparative Tracking Index (CTI)	PLC 3		UL 746A
Insulation Resistance [3] (194°F)	1.0E+10	ohms	
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating (0.06 in)	• V-0 • 5VA		UL 94
Oxygen Index	65	%	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] 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.

[3] 95%RH, 48 hr