Technical Data Sheet

Ryton® BR111BL

polyphenylene sulfide

Ryton® BR111BL Ryton® BR111 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

Material Status	• Commercial: Active	
Availability	• Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Glass Fiber\Mineral	
Features	• Chemical Resistant • Good Electrical Properties	• Good Strength
Uses	• Automotive Applications	
RoHS Compliance	• RoHS Compliant	
Automotive Specifications	• PSA Peugeot-Citroën SPA X62 4142	• PSA Peugeot-Citroën SPA X62 5104
Appearance	• Black	
Forms	• Pellets	
Processing Method	• Injection Molding	

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.94		ASTM D792
Molding Shrinkage			
Flow : 3.20 mm	0.20	%	
Across Flow : 3.20 mm	0.40	%	
Water Absorption			
24 hr, 23°C	0.020	%	ASTM D570
Saturation, 23°C	0.10	%	Internal Method

Mechanical	Typical Value	Unit	Test method
Tensile Modulus [1]	21000	MPa	ISO 527-1
Tensile Stress			
--	155	MPa	ISO 527-2
-- [1]	158	MPa	ISO 527-2
--	145	MPa	ASTM D638
Tensile Elongation			
Break	1.0	%	ASTM D638 ISO 527-2
Break [1]	1.1	%	ISO 527-2
Flexural Modulus			
--	19300	MPa	ASTM D790
--	19000	MPa	ISO 178

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Mechanical	Typical Value	Unit	Test method
Flexural Strength			
--	228	MPa	ASTM D790
--	235	MPa	ISO 178
Compressive Strength	295	MPa	ASTM D695
Poisson's Ratio	0.34		ISO 527

Impact	Typical Value	Unit	Test method
Charpy Notched Impact Strength	6.6	kJ/m²	ISO 179
Charpy Unnotched Impact Strength			ISO 179
--	28	kJ/m²	
-- [1]	27	kJ/m²	
Notched Izod Impact			
3.18 mm	59	J/m	ASTM D256
--	7.0	kJ/m²	ISO 180/A
Unnotched Izod Impact			
3.18 mm	270	J/m	ASTM D4812
--	20	kJ/m²	ISO 180

Hardness	Typical Value	Unit	Test method
Rockwell Hardness			ASTM D785
M-Scale	101		
R-Scale	119		

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed	265	°C	
CLTE			ASTM E831
Flow : -50 to 50°C	1.5E-5	cm/cm/°C	
Flow : 100 to 200°C	1.0E-5	cm/cm/°C	
Transverse : -50 to 50°C	3.0E-5	cm/cm/°C	
Transverse : 100 to 200°C	7.0E-5	cm/cm/°C	
Thermal Conductivity	0.51	W/m/K	
UL Temperature Rating	220 to 240	°C	UL 746B

Electrical	Typical Value	Unit	Test method
Surface Resistivity	1.0E+16	ohms	ASTM D257
Volume Resistivity	1.0E+15	ohms·cm	ASTM D257
Dielectric Strength	18	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
25°C, 1 kHz	4.70		
25°C, 1 MHz	4.60		
Dissipation Factor			ASTM D150
25°C, 1 kHz	2.0E-3		
25°C, 1 MHz	3.0E-3		
Arc Resistance	180	sec	ASTM D495

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Electrical	Typical Value	Unit	Test method
Comparative Tracking Index (CTI)			
--	225	V	UL 746A
--	275	V	IEC 60112
Insulation Resistance [2] (90°C)	1.0E+10	ohms	

Flammability		Typical Value	Unit	Test method
Flame Rating (1.6 mm)	•	V-0		UL 94
	•	5VA		
Oxygen Index		65	%	ASTM D2863

Notes

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

[1] 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.

[2] 95%RH, 48 hr

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