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Ryton® R-7-220BL

polyphenylene sulfide

Ryton® R-7-220BL glass fiber and mineral filled polyphenylene sulfide compound provides enhanced mechanical strength after constant or repeated exposure to high temperature water.

General		
Material Status	• Commercial: Active	
Availability	• Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Glass\Mineral	
Features	• Good Strength	
Uses	• Automotive Applications	
RoHS Compliance	• RoHS Compliant	
Appearance	• Black	
Forms	• Pellets	
Processing Method	• Injection Molding	

Physical	Typical Value	Unit	Test method
Specific Gravity	1.95		ASTM D792
Molding Shrinkage			
Flow : 3.20 mm	0.20	%	
Across Flow : 3.20 mm	0.40	%	
Water Absorption (23°C, 24 hr)	0.020	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Strength			
--	152	MPa	ASTM D638
--	155	MPa	ISO 527-2
Tensile Elongation (Break)	1.0	%	ASTM D638 ISO 527-2
Flexural Modulus			
--	19300	MPa	ASTM D790
--	19000	MPa	ISO 178
Flexural Strength			
--	234	MPa	ASTM D790
--	240	MPa	ISO 178
Compressive Strength	295	MPa	ASTM D695
Poisson's Ratio	0.35		ISO 527

Impact	Typical Value	Unit	Test method
Notched Izod Impact			
3.18 mm	69	J/m	ASTM D256
--	8.0	kJ/m²	ISO 180/A
Unnotched Izod Impact			
3.18 mm	270	J/m	ASTM D4812
--	20	kJ/m²	ISO 180

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Hardness	Typical Value	Unit	Test method
Rockwell Hardness			ASTM D785
M-Scale	99		
R-Scale	116		

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	5.00		
25°C, 1 MHz	4.90		
Dissipation Factor			ASTM D150
25°C, 1 kHz	0.020		
25°C, 1 MHz	0.010		
Arc Resistance	185	sec	ASTM D495
Comparative Tracking Index (CTI)	175	V	UL 746
Insulation Resistance [1] (90°C)	1.0E+11	ohms	

Flammability	Typical Value	Unit	Test method
Flame Rating (1.60 mm)	• V-0 • 5VA		UL 94
Oxygen Index	62	%	ASTM D2863

Additional Information	Typical Value	Unit
Hydrolytic Stability [2]		
Tensile Strength Retained	> 75	%
Weight Gain	< 1.0	%

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Notes

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

[1] 95%RH, 48 hr

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

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