

# 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 Fiber \ Mineral
Features	• Good Strength
Uses	• Automotive Applications
RoHS Compliance	• RoHS Compliant
Appearance	• Black
Forms	• Pellets
Processing Method	• Injection Molding
Resin ID (ISO 1043)	• PPS-(GF+MD)65

### Physical

	Typical Value	Unit	Test method
Density / Specific Gravity	1.95		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

### Mechanical

	Typical Value	Unit	Test method
Tensile Modulus	21200	MPa	ISO 527
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



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Impact	Typical Value	Unit	Test method
Notched Izod Impact			
3.18 mm	69	J/m	ASTM D256
--	8.0	kJ/m <sup>2</sup>	ISO 180/A
Unnotched Izod Impact			
3.18 mm	270	J/m	ASTM D4812
--	20	kJ/m <sup>2</sup>	ISO 180
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)	275	V	IEC 60112
Comparative Tracking Index (CTI)	PLC 3		UL 746A
Insulation Resistance <sup>1</sup> (90°C)	1.0E+11	ohms	
Flammability	Typical Value	Unit	Test method
Flame Rating (1.6 mm)	V-0		UL 94
	5VA		
Oxygen Index	62	%	ASTM D2863



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### Additional Information

#### Hydrolytic Stability<sup>2</sup>

Tensile Strength Retained

> 75 %

Weight Gain

< 1.0 %

### Injection

Drying Temperature

135 to 150 °C

Drying Time

2.0 to 4.0 hr

Rear Temperature

295 to 315 °C

Middle Temperature

305 to 325 °C

Front Temperature

315 to 345 °C

Nozzle Temperature

305 to 325 °C

Processing (Melt) Temp

320 to 330 °C

Mold Temperature

135 to 150 °C

## Notes

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

<sup>1</sup> 95%RH, 48 hr

<sup>2</sup> Test specimens aged 1000 hours in water at 140°C (284°F)

