PrimoSpire® PR-250

self-reinforced polyphenylene

PrimoSpire PR-250 resin is an injection molding grade of self-reinforced polyphenylene (SRP).

PrimoSpire SRP is an ultra-high performance amorphous, melt-processable polymer. The unique properties of this material are due primarily to the inherent rigid-rod structure. PrimoSpire SRP is differentiated from other thermoplastics by outstanding mechanical properties without fiber reinforcement, scratch resistance, excellent solvent resistance and exceptional low temperature performance. In addition, PrimoSpire SRP has great thermal stability, is non-combustible, has higher specific strength than many of the common structural materials and machines easily.

The outstanding mechanical, chemical, thermal and physical properties of PrimoSpire SRP make it the material of choice for a variety of applications including aircraft substructures, semiconductor components, bushings, bearings, and gears, light-weight vehicle suspensions systems and medical tubing and other devices.

- Black: PrimoSpire PR-250 BK 931
- Natural: PrimoSpire PR-250 NT

General			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • North America	• South America
Features	• Ductile • Flame Retardant	• Good Chemical Resistance • High Stiffness	• High Strength • Scratch Resistant
Uses	• Aircraft Applications • Connectors • Electrical/Electronic Applications	• Film • Gears • Housings	• Medical/Healthcare Applications • Semiconductor Molding Compounds
RoHS Compliance	• RoHS Compliant		
Appearance	• Black	• Natural Color	
Forms	• Pellets	• Powder	
Processing Method	• Compression Molding • Film Extrusion	• Injection Molding • Machining	• Profile Extrusion • Wire & Cable Extrusion

Physical	Typical Value	Unit	Test Method
Specific Gravity	1.19	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (380°C/5.0 kg)	8.0	g/10 min	ASTM D1238
Water Absorption (24 hr)	0.10	%	ASTM D570
Mechanical	**Typical Value**	**Unit**	**Test Method**
Tensile Modulus	5520	MPa	ASTM D638
Tensile Strength	152	MPa	ASTM D638
Tensile Elongation (Break)	10	%	ASTM D638
Flexural Modulus	6000	MPa	ASTM D790
Flexural Strength	234	MPa	ASTM D790
Impact	**Typical Value**	**Unit**	**Test Method**
Notched Izod Impact	59	J/m	ASTM D256
Unnotched Izod Impact	1600	J/m	ASTM D4812
Hardness	**Typical Value**	**Unit**	**Test Method**
Rockwell Hardness (B-Scale)	32		ASTM E18

Thermal	Typical Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed	151	°C	
Glass Transition Temperature	168	°C	ASTM E1356
CLTE - Flow	0.000031	cm/cm/°C	ASTM E831

Electrical	Typical Value	Unit	Test Method
Volume Resistivity	> 7.0E+15	ohm·cm	ASTM D257
Dielectric Strength	20	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.12		
1 kHz	3.11		
1 MHz	3.01		
Dissipation Factor			ASTM D150
60 Hz	0.0070		
1 kHz	0.0070		
1 MHz	0.0070		

Flammability	Typical Value	Unit	Test Method
Oxygen Index	55	%	ASTM D2863

Additional Information

Properties for PrimoSpire PR-250 BK 931 are based on limited number of production batches; final specifications not yet set.

Injection	Typical Value	Unit
Drying Temperature	149	°C
Drying Time	3.0	hr
Rear Temperature	310	°C
Middle Temperature	324	°C
Front Temperature	335	°C
Nozzle Temperature	341	°C
Processing (Melt) Temp	343 to 349	°C
Mold Temperature	129 to 146	°C
Injection Rate	Slow-Moderate	

Notes

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

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Material Safety Data Sheets (MSDS) are available by emailing us or contacting your sales representative. Always consult the appropriate MSDS before using any of our products.

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