AvaSpire® AV-651 GF50

Polyaryletherketone

Solvay Specialty Polymers

Message:

AvaSpire® AV-651 GF50 is a 50% chopped glass fiber-reinforced polyaryletherketone (PAEK) resin. It has been specifically formulated to provide exceptionally high strength and stiffness at elevated temperatures along with very strong chemical resistance to a broad range of harsh chemical environments encountered across a wide variety of industries and engineering applications. Typical potential applications for AV-651 GF50 include orthopedic and dental instruments, under-the-hood automotive parts, and parts in the chemical and oil and gas industries. This grade is easily injection moldable into precision molded parts.
Typical property data provided are based on a limited production history.
Beige: AvaSpire® AV-651 GF50 BG 20
Black: AvaSpire® AV-651 GF50 BK 95

General Information	
Filler / Reinforcement	Glass fiber reinforced material, 50% filler by weight
Features	Good dimensional stability
	Electron beam disinfection
	Radioactive permeable
	Radiation disinfection
	Rigidity, high
	High strength
	Pressure cooker disinfection
	Good disinfection
	Ethylene oxide disinfection
	Anti-gamma radiation
	Good chemical resistance
	Fatigue resistance
	Heat resistance, high
	Steam resistance
	thermal disinfection
	Biocompatibility
	Disinfect with steam
	Flame retardancy
Uses	Electrical/Electronic Applications
	Aircraft applications
	Industrial application
	Connector
	Seals
	Application in Automobile Field
	Surgical instruments
	Dental application field

	Medical/nursing supplies
	Medical equipment
	Medical devices
RoHS Compliance	Contact manufacturer
Appearance	Black
	Beige
Forms	Particle
Processing Method	Machining
	Profile extrusion molding
	Injection molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.73	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	5.0	g/10 min	ASTM D1238
Water Absorption (24 hr)	0.10	%	ASTM D570
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus [1]	17900	MPa	ASTM D638
Tensile Strength [2]	199	MPa	ASTM D638
Tensile Elongation [3] (Break)	2.1	%	ASTM D638
Flexural Modulus	16500	MPa	ASTM D790
Flexural Strength	297	MPa	ASTM D790
Flexural Elongation at Break	2.2	%	ASTM D790
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact	110	J/m	ASTM D256
Unnotched Izod Impact	960	J/m	ASTM D4812
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (1.8 MPa, Annealed, 3.20 mm)	287	°C	ASTM D648
Glass Transition Temperature	158	°C	ASTM D3418
Peak Melting Temperature	340	°C	ASTM D3417
Fill Analysis	**Nominal Value**	**Unit**	**Test Method**
Melt Viscosity (400°C, 1000 sec^-1)	630	Pa·s	ASTM D3835
Injection	**Nominal Value**	**Unit**	
Drying Temperature	149	°C	
Drying Time	4.0	hr	
Rear Temperature	365	°C	
Middle Temperature	371	°C	
Front Temperature	377	°C	
Nozzle Temperature	382	°C	
Processing (Melt) Temp	366 - 388	°C	

Mold Temperature	160 - 190	°C
Injection Rate	Fast	
Screw Compression Ratio	2.0 : 1.0 - 3.0 : 1.0	

NOTE	
1.	5.0 mm/min
2.	5.0 mm/min
3.	5.0 mm/min

Recommended distributors for this material

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