AvaSpire® AV-651 GF30

Polyaryletherketone

Solvay Specialty Polymers

Message:

AvaSpire® AV-651 GF30 is a 30% glass fiber reinforced polyaryletherketone (PAEK) that has been specifically formulated to provide higher mechanical strength and stiffness than unfilled AV-651 resin. This resin offers chemical resistance nearly equivalent to glass fiber-reinforced PEEK in most chemicals, with a lower heat deflection temperature.
These properties make it well suited for applications in healthcare, transportation, electronics, chemical processing and other industrial uses.
Beige: AvaSpire® AV-651 GF30 BG 20
Black: AvaSpire® AV-651 GF30 BK 95

General Information	
UL YellowCard	E140728-100211993
Filler / Reinforcement	Glass Fiber,30% Filler by Weight
Features	Autoclave Sterilizable
	Biocompatible
	E-beam Sterilizable
	Ethylene Oxide Sterilizable
	Fatigue Resistant
	Flame Retardant
	Good Chemical Resistance
	Good Dimensional Stability
	Good Sterilizability
	Heat Sterilizable
	High Heat Resistance
	High Stiffness
	High Strength
	Radiation (Gamma) Resistant
	Radiation Sterilizable
	Radiotranslucent
	Steam Resistant
	Steam Sterilizable
Uses	Aircraft Applications
	Connectors
	Dental Applications
	Electrical/Electronic Applications
	Film
	Hospital Goods
	Industrial Applications
	Medical Devices
	Medical/Healthcare Applications

	Seals
	Surgical Instruments
Agency Ratings	ISO 10993
	ISO 10993-Part 1
RoHS Compliance	Contact Manufacturer
Appearance	Beige
	Black
Forms	Pellets
Processing Method	Injection Molding
	Machining
	Profile Extrusion

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.52	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	9.0	g/10 min	ASTM D1238
Molding Shrinkage [1]			ASTM D955
Flow : 3.18 mm	0.20 to 0.40	%	
Across Flow : 3.18 mm	1.3 to 1.5	%	
Water Absorption (24 hr)	0.20	%	ASTM D570
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (M-Scale)	101		ASTM D785
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			
-- [2]	9900	MPa	ASTM D638
--	10400	MPa	ISO 527-2/1A/1
Tensile Stress			
Yield, 5.00 mm	162	MPa	ISO 527-2/1A/5
-- [3]	156	MPa	ASTM D638
Tensile Elongation			
Break [4]	2.9	%	ASTM D638
Break	2.9	%	ISO 527-2/1A/5
Flexural Modulus			
--	9400	MPa	ASTM D790
--	9700	MPa	ISO 178
Flexural Strength			
--	234	MPa	ASTM D790
--	228	MPa	ISO 178
Compressive Strength	168	MPa	ASTM D695

Shear Strength	82.6	MPa	ASTM D732
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact			
--	110	J/m	ASTM D256
--	12	kJ/m²	ISO 180
Unnotched Izod Impact			
--	960	J/m	ASTM D4812
--	64	kJ/m²	ISO 180
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (1.8 MPa, Annealed)	213	°C	ASTM D648
Glass Transition Temperature	158	°C	ASTM D3418
Peak Melting Temperature	345	°C	ASTM D3418
CLTE - Flow (-50 to 50°C)	1.7E-5	cm/cm/°C	ASTM E831
Specific Heat			DSC
50°C	1270	J/kg/°C	
200°C	1650	J/kg/°C	
Thermal Conductivity	0.30	W/m/K	ASTM E1530
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	> 1.9E+17	ohms	ASTM D257
Volume Resistivity	2.0E+17	ohms·cm	ASTM D257
Dielectric Strength (3.00 mm)	17	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.61		
1 kHz	3.63		
1 MHz	3.58		
Dissipation Factor			ASTM D150
60 Hz	2.0E-3		
1 kHz	0.0		
1 MHz	4.0E-3		
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating			UL 94
0.800 mm	V-1		
1.60 mm	V-0		
Fill Analysis	**Nominal Value**	**Unit**	**Test Method**
Melt Viscosity (400°C, 1000 sec^-1)	410	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 to 388	°C
Mold Temperature	160 to 190	°C
Injection Rate	Fast	
Screw Compression Ratio	2.0:1.0 to 3.0:1.0	

NOTE	
1.	5" x 0.5" x 0.125" bars
2.	5.0 mm/min
3.	5.0 mm/min
4.	5.0 mm/min

Recommended distributors for this material

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