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AvaSpire® AV-621 GF30

polyaryletherketone

AvaSpire® AV-621 GF30 is a 30% glass fiber reinforced version of AvaSpire® AV-621. This formulation offers better dimensional stability and lower warpage than 30% glass reinforced PEEK. This resin retains most of the desirable ultra-performance attributes of glass reinforced PEEK, including chemical resistance, fatigue resistance and long term thermal oxidative stability, but the heat deflection temperature is lower than 30% GF PEEK.

The material's excellent balance of properties makes it well suited for demanding applications across a broad range of industries including healthcare, transportation, electronics, oil and gas, and chemical processing.

- Beige: AV-621 GF30 BG 20
- Black: AV-621 GF30 BK95

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Filler / Reinforcement	• Glass Fiber, 30% Filler by Weight		
Features	• Fatigue Resistant • Flame Retardant • Good Chemical Resistance	• Good Dimensional Stability • High Heat Resistance • High Stiffness	• High Strength
Uses	• Industrial Applications	• Medical Devices	• Medical/Healthcare Applications
RoHS Compliance	• Contact Manufacturer		
Appearance	• Beige	• Black	
Forms	• Pellets		
Processing Method	• Injection Molding	• Machining	• Profile Extrusion

Physical	Typical Value	Unit	Test method
Specific Gravity	1.55		ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	2.0	g/10 min	ASTM D1238
Molding Shrinkage [1]			ASTM D955
Flow : 3.18 mm	0.10 to 0.30	%	
Across Flow : 3.18 mm	0.90 to 1.1	%	
Water Absorption (24 hr)	0.20	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Modulus			
-- [2]	9900	MPa	ASTM D638
--	10600	MPa	ISO 527-2/1A/1
Tensile Stress			
Yield	158	MPa	ISO 527-2/1A/5
-- [2]	147	MPa	ASTM D638
Tensile Elongation			
Break [2]	3.2	%	ASTM D638
Break	3.2	%	ISO 527-2/1A/5

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Mechanical	Typical Value	Unit	Test method
Flexural Modulus			
--	9400	MPa	ASTM D790
--	9800	MPa	ISO 178
Flexural Strength			
--	237	MPa	ASTM D790
--	236	MPa	ISO 178
Compressive Strength	159	MPa	ASTM D695
Shear Strength	84.5	MPa	ASTM D732
Poisson's Ratio	0.43		ASTM E132

Impact	Typical Value	Unit	Test method
Notched Izod Impact			
--	120	J/m	ASTM D256
--	14	kJ/m²	ISO 180
Unnotched Izod Impact			
--	1000	J/m	ASTM D4812
--	70	kJ/m²	ISO 180

Hardness	Typical Value	Unit	Test method
Rockwell Hardness (M-Scale)	101		ASTM D785

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Annealed	217	°C	
Glass Transition Temperature	158	°C	ASTM D3418
Peak Melting Temperature	340	°C	ASTM D3418
CLTE - Flow (-50 to 50°C)	1.7E-5	cm/cm/°C	ASTM E831
Specific Heat			DSC
50°C	1290	J/kg/°C	
200°C	1660	J/kg/°C	
Thermal Conductivity	0.28	W/m/K	ASTM E1530

Electrical	Typical Value	Unit	Test method
Surface Resistivity	> 1.9E+17	ohms	ASTM D257
Volume Resistivity	2.1E+17	ohms·cm	ASTM D257
Dielectric Strength (3.00 mm)	15	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.52		
1 kHz	3.53		
1 MHz	3.48		
Dissipation Factor			ASTM D150
60 Hz	1.0E-3		
1 kHz	1.0E-3		
1 MHz	5.0E-3		

Flammability	Typical Value	Unit	Test method
Flame Rating			UL 94
0.800 mm	V-1		
1.60 mm	V-0		

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Fill Analysis	Typical Value	Unit	Test method
Melt Viscosity (400°C, 1000 sec^-1)	650	Pa·s	ASTM D3835

Injection	Typical Value	Unit
Drying Temperature	149	°C
Drying Time	4.0	hr
Rear Temperature	366	°C
Middle Temperature	371	°C
Front Temperature	377	°C
Nozzle Temperature	382	°C
Processing (Melt) Temp	366 to 388	°C
Mold Temperature	149 to 177	°C
Injection Rate	Fast	
Screw Compression Ratio	2.0:1.0 to 3.0:1.0	

Injection Notes

Back Pressure: Minimum

Notes

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

[1] 5" x 0.5" x 0.125" bars

[2] 5.0 mm/min

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