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 BK 95

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	• Chemical Resistant • Fatigue Resistant • Flame Retardant • Good Dimensional Stability	• High Heat Resistance • High Stiffness • High Strength
Uses	• Industrial Applications • Medical Devices	• Medical/Healthcare Applications
Agency Ratings	• ISO 10993 [1]	
RoHS Compliance	• Contact Manufacturer	
Appearance	• Beige	• Black
Forms	• Pellets	
Processing Method	• Injection Molding • Machining	• Profile Extrusion

Physical	Typical Value	Unit	Test method
Density / 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 [2]			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			
-- [3]	9900	MPa	ASTM D638
--	10600	MPa	ISO 527-1/1A/1

AvaSpire® AV-621 GF30
polyaryletherketone

Mechanical	Typical Value	Unit	Test method
Tensile Stress			
Yield	158	MPa	ISO 527-2/1A/5
-- [3]	147	MPa	ASTM D638
Tensile Elongation			
Break [3]	3.2	%	ASTM D638
Break	3.2	%	ISO 527-2/1A/5
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

AvaSpire® AV-621 GF30
polyaryletherketone

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
0.8 mm	V-1		
1.6 mm	V-0		

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] Only AvaSpire® AV-621 BG20 is ISO 10993 tested

[2] 5" x 0.5" x 0.125" bars

[3] 5.0 mm/min

AvaSpire® AV-621 GF30
polyaryletherketone

www.syensqo.com

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

Neither Syensqo nor any of its affiliates makes any warranty, express or implied, including merchantability or fitness for use, or accepts any liability in connection with this product, related information or its use. Some applications of which Syensqo's products may be proposed to be used are regulated or restricted by applicable laws and regulations or by national or international standards and in some cases by Syensqo's recommendation, including applications of food/feed, water treatment, medical, pharmaceuticals, and personal care. Only products designated as part of the Solviva® family of biomaterials may be considered as candidates for use in implantable medical devices. The user alone must finally determine suitability of any information or products for any contemplated use in compliance with applicable law, the manner of use and whether any patents are infringed. The information and the products are for use by technically skilled persons at their own discretion and risk and does not relate to the use of this product in combination with any other substance or any other process. This is not a license under any patent or other proprietary right.

All trademarks and registered trademarks are property of the companies that comprise the Syensqo or their respective owners.

© 2024 2023 Syensqo. All rights reserved.