

Solvay Specialty Polymers AvaSpire® AV-621 GF30 Polyaryletherketone (PAEK) (Unverified Data**)

Category : Polymer , Thermoplastic , Polyketone , Polyaryletherketone (PAEK), Glass Fiber Filled

Material Notes:

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
 Injection Notes: Back Pressure: Minimum
 Information provided by Solvay Specialty Polymers.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-AvaSpire-AV-621-GF30-Polyaryletherketone-PAEK-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.55 g/cc	1.55 g/cc	ASTM D792
Filler Content	30 %	30 %	Glass Fiber Reinforcement
Water Absorption	0.20 % @Time 86400 sec	0.20 % @Time 24.0 hour	ASTM D570
Viscosity	650000 cP @Shear Rate 1000 1/s, Temperature 400 °C	650000 cP @Shear Rate 1000 1/s, Temperature 752 °F	Melt; ASTM D3835
Linear Mold Shrinkage, Flow	0.0010 - 0.0030 cm/cm @Thickness 3.18 mm	0.0010 - 0.0030 in/in @Thickness 0.125 in	5" x 0.5" x 0.125" bars; ASTM D955
Linear Mold Shrinkage, Transverse	0.0090 - 0.011 cm/cm @Thickness 3.18 mm	0.0090 - 0.011 in/in @Thickness 0.125 in	5" x 0.5" x 0.125" bars; ASTM D955
Melt Flow	2.0 g/10 min @Load 2.16 kg, Temperature 400 °C	2.0 g/10 min @Load 4.76 lb, Temperature 752 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	101	101	M-Scale; ASTM D785
Tensile Strength	147 MPa	21300 psi	5.0 mm/min; ASTM D638
Tensile Strength, Yield	158 MPa	22900 psi	ISO 527-2/1A/5
Elongation at Break	3.2 %	3.2 %	5.0 mm/min; ASTM D638

Mechanical Properties	Metric	English	Comments 1A/5
Tensile Modulus	9.90 GPa	1440 ksi	5.0 mm/min; ASTM D638
	10.6 GPa	1540 ksi	ISO 527-2/1A/1
Flexural Strength	236 MPa	34200 psi	ISO 178
	237 MPa	34400 psi	ASTM D790
Flexural Modulus	9.40 GPa	1360 ksi	ASTM D790
	9.80 GPa	1420 ksi	ISO 178
Compressive Strength	159 MPa	23100 psi	ASTM D695
Poissons Ratio	0.43	0.43	ASTM E132
Shear Modulus	3.46 - 3.71 GPa	502 - 538 ksi	Calculated
Shear Strength	84.5 MPa	12300 psi	ASTM D732
Izod Impact, Notched	1.20 J/cm	2.25 ft-lb/in	ASTM D256
	10.0 J/cm	18.7 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	14.0 kJ/m ²	6.66 ft-lb/in ²	ISO 180
Izod Impact, Unnotched (ISO)	70.0 kJ/m ²	33.3 ft-lb/in ²	ISO 180

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	17.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	9.44 $\mu\text{in}/\text{in}\cdot\text{°F}$	TMA; ASTM E831
	@Temperature -50.0 - 50.0 °C	@Temperature -58.0 - 122 °F	
Specific Heat Capacity	1.29 J/g-°C	0.308 BTU/lb-°F	DSC
	@Temperature 50.0 °C	@Temperature 122 °F	
Thermal Conductivity	1.66 J/g-°C	0.397 BTU/lb-°F	DSC
	@Temperature 200 °C	@Temperature 392 °F	
Melting Point	340 °C	644 °F	Peak; ASTM D3418
Deflection Temperature at 1.8 MPa (264 psi)	217 °C	423 °F	Annealed; ASTM D648
Glass Transition Temp, Tg	158 °C	316 °F	ASTM D3418
Flammability, UL94	V-1	V-1	UL 94

Thermal Properties	@Thickness 0.800 mm Metric	@Thickness 0.0315 in English	Comments
	V-0	V-0	UL 94
	@Thickness 1.60 mm	@Thickness 0.0630 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	2.10e+17 ohm-cm	2.10e+17 ohm-cm	ASTM D257
Surface Resistance	>= 1.90e+17 ohm	>= 1.90e+17 ohm	ASTM D257
Dielectric Constant	3.48	3.48	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.52	3.52	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	3.53	3.53	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	15.0 kV/mm	381 kV/in	ASTM D149
	@Thickness 3.00 mm	@Thickness 0.118 in	
Dissipation Factor	0.0010	0.0010	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
	0.0010	0.0010	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	0.0050	0.0050	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	366 °C	691 °F	
Middle Barrel Temperature	371 °C	700 °F	
Front Barrel Temperature	377 °C	711 °F	
Nozzle Temperature	382 °C	720 °F	
Melt Temperature	366 - 388 °C	691 - 730 °F	
Mold Temperature	149 - 177 °C	300 - 351 °F	
Drying Temperature	149 °C	300 °F	

Processing Properties	Metric	English	Comments
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Descriptive Properties	Value	Comments
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Appearance	Beige	
	Black	
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	North America	
	South America	
Features	Fatigue Resistant	
	Flame Retardant	
	Good Chemical Resistance	
	Good Dimensional Stability	
	High Heat Resistance	
	High Stiffness	
	High Strength	
Forms	Pellets	
Generic	PAEK	
Injection Rate	Fast	
Processing Method	Injection Molding	
	Machining	
	Profile Extrusion	
Screw Compression Ratio	2.0:1.0 to 3.0:1.0	
Uses	Industrial Applications	
	Medical Appliances	
	Medical/Healthcare Applications	

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