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

Category : Polymer , Thermoplastic , Polyketone

Material Notes:

AvaSpire AV-621 is an unreinforced polyaryletherketone (PAEK) that offers improved ductility and impact strength relative to PEEK while retaining most of the key performance attributes of PEEK. The AV-621 grade is the low melt flow (higher molecular weight) analog of the medium flow grade AvaSpire AV-651 that is tailored primarily for injection molding applications as well as film extrusion. AvaSpire AV-621 resin is suited for a variety of processing methods including compression molding, stock shape extrusion, as well as injection molding. AV-621 has been formulated for applications requiring a balance of chemical resistance and mechanical strength along with good part aesthetics, thereby bridging the performance gaps within the ultra polymers space. These and other properties make this resin well-suited for applications in healthcare, transportation, semiconductor, electronics, chemical processing, and other industries. AvaSpire AV-621 is easily fabricated using conventional thermoplastic melt processing techniques and standard equipment. The resin has a uniform opaque appearance with a beige color similar to that of PEEK. - AvaSpire AV-621 NTInformation provided by Solvay Specialty Polymers.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-AvaSpire-AV-621-Polyaryletherketone-PAEK-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.29 g/cc	1.29 g/cc	ASTM D792
Water Absorption	0.20 % @Time 86400 sec	0.20 % @Time 24.0 hour	ASTM D570
Viscosity	410000 cP @Shear Rate 1000 1/s, Temperature 400 °C	410000 cP @Shear Rate 1000 1/s, Temperature 752 °F	Melt; ASTM D3835
Linear Mold Shrinkage, Flow	0.0070 - 0.0090 cm/cm @Thickness 3.18 mm	0.0070 - 0.0090 in/in @Thickness 0.125 in	5" x 0.5" x 0.125"; ASTM D955
Linear Mold Shrinkage, Transverse	0.011 - 0.013 cm/cm @Thickness 3.18 mm	0.011 - 0.013 in/in @Thickness 0.125 in	5" x 0.5" x 0.125"; ASTM D955
Melt Flow	5.0 g/10 min @Load 2.16 kg, Temperature 400 °C	5.0 g/10 min @Load 4.76 lb, Temperature 752 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	93	93	M-Scale; ASTM D785
Tensile Strength	84.0 MPa	12200 psi	50 mm/min; ASTM D638
Tensile Strength, Yield	87.0 MPa	12600 psi	ISO 527-2/1A/50

Mechanical Properties	Metric	English	Comments
Elongation at Break	>= 40 %	>= 40 %	51 mm/min; ASTM D638
	>= 40 %	>= 40 %	ISO 527-2/1A/50
Elongation at Yield	5.7 %	5.7 %	ISO 527-2/50
	6.0 %	6.0 %	51 mm/min; ASTM D638
Tensile Modulus	2.90 GPa	421 ksi	50 mm/min; ASTM D638
	3.10 GPa	450 ksi	ISO 527-2/1A/1
Flexural Strength	106 MPa	15400 psi	ISO 178
	122 MPa	17700 psi	ASTM D790
Flexural Modulus	3.00 GPa	435 ksi	ISO 178
	3.10 GPa	450 ksi	ASTM D790
Compressive Strength	111 MPa	16100 psi	ASTM D695
Poissons Ratio	0.39	0.39	ASTM E132
Shear Modulus	1.04 - 1.12 GPa	151 - 162 ksi	Calculated
Shear Strength	81.0 MPa	11700 psi	ASTM D732
Izod Impact, Notched	1.00 J/cm	1.87 ft-lb/in	ASTM D256
	NB	NB	ASTM D4812
Izod Impact, Notched (ISO)	7.60 kJ/m²	3.62 ft-lb/in²	ISO 180
Izod Impact, Unnotched (ISO)	NB	NB	ISO 180

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	47.0 µm/m-°C @Temperature -50.0 - 50.0 °C	26.1 µin/in-°F @Temperature -58.0 - 122 °F	TMA; ASTM E831
Specific Heat Capacity	1.45 J/g-°C @Temperature 50.0 °C	0.347 BTU/lb-°F @Temperature 122 °F	DSC
	2.00 J/g-°C @Temperature 200 °C	0.478 BTU/lb-°F @Temperature 392 °F	DSC
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft²-°F	ASTM E1530
Melting Point	340 °C	644 °F	Peak; ASTM D3418
Deflection Temperature at 1.8 MPa	187 °C	369 °F	Annealed; 2 hours at 200°C; ASTM

Thermal Properties	Metric	English	Comments
(264 psi)	@Thickness 3.20 mm	@Thickness 0.126 in	D648
Glass Transition Temp, Tg	158 °C	316 °F	ASTM D3418
Flammability, UL94	V-0 @Thickness 0.800 mm	V-0 @Thickness 0.0315 in	UL 94
	V-0 @Thickness 1.60 mm	V-0 @Thickness 0.0630 in	UL 94
Oxygen Index	34 %	34 %	ASTM D2863

Electrical Properties	Metric	English	Comments
Volume Resistivity	6.20e+17 ohm-cm	6.20e+17 ohm-cm	ASTM D257
Surface Resistance	>= 1.90e+17 ohm	>= 1.90e+17 ohm	ASTM D257
Dielectric Constant	3.07 @Frequency 60.0 Hz	3.07 @Frequency 60.0 Hz	ASTM D150
	3.1 @Frequency 1.00e+6 Hz	3.1 @Frequency 1.00e+6 Hz	ASTM D150
	3.12 @Frequency 1000 Hz	3.12 @Frequency 1000 Hz	ASTM D150
Dielectric Strength	17.0 kV/mm @Thickness 3.00 mm	432 kV/in @Thickness 0.118 in	ASTM D149
	190 kV/mm @Thickness 0.0500 mm	4830 kV/in @Thickness 0.00197 in	Amorphous Film; ASTM D149
Dissipation Factor	0.0010 @Frequency 60.0 Hz	0.0010 @Frequency 60.0 Hz	IEC 60250
	0.0010 @Frequency 1000 Hz	0.0010 @Frequency 1000 Hz	IEC 60250
	0.0040 @Frequency 1.00e+6 Hz	0.0040 @Frequency 1.00e+6 Hz	IEC 60250

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	355 °C	671 °F	

Processing Properties	Metric	English	Comments
Middle Barrel Temperature	365 °C	689 °F	
Front Barrel Temperature	370 °C	698 °F	
Nozzle Temperature	375 °C	707 °F	
Melt Temperature	365 - 390 °C	689 - 734 °F	
Mold Temperature	150 - 180 °C	302 - 356 °F	
Drying Temperature	150 °C	302 °F	
Dry Time	4.00 hour	4.00 hour	

Descriptive Properties	Value	Comments
Appearance	Beige	
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	North America	
	South America	
Features	Ductile	
	Fatigue Resistant	
	Flame Retardant	
	Good Chemical Resistance	
	Good Dimensional Stability	
	Good Impact Resistance	
	High Heat Resistance	
Forms	Pellets	
Generic	PAEK	
Injection Rate	Fast	
Processing Method	Extrusion Blow Molding	
	Fiber (Spinning) Extrusion	
	Film Extrusion	

Descriptive Properties	Value	Comments
	Injection Blow Molding	
	Injection Molding	
	Machining	
	Profile Extrusion	
	Thermoforming	
	Wire & Cable Extrusion	
RoHS Compliance	RoHS Compliant	
Screw Compression Ratio	2.0:1.0 to 3.0:1.0	
Uses	Bearings	
	Bushings	
	Connectors	
	Medical/Healthcare Applications	
	Oil/Gas Applications	
	Semiconductor Molding Compounds	

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