

Solvay Specialty Polymers AvaSpire® AV-722 Polyaryletherketone (PAEK)

Category : Polymer , Thermoplastic , Polyketone

Material Notes:

AvaSpire® AV-722 is an unreinforced polyaryletherketone (PAEK) that offers improved economics relative to PEEK while retaining most of PEEK's key performance attributes. AV-722 resin has been formulated for applications requiring high chemical resistance and mechanical strength along with low moisture absorption and good barrier properties. These and other properties make this resin well-suited for applications in healthcare, transportation, electronics, chemical processing and other industries. Features: Ductile; Flame Retardant; Good Chemical Resistance; Good Dimensional Stability; Good Impact Resistance; High Heat Resistance. Uses: Aircraft Applications; Automotive Applications; Electrical/Electronic Applications; Film; Fuel Lines; Gears; Medical/Healthcare Applications; Oil/Gas Applications; Seals. Injection Molding 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-722-Polyaryletherketone-PAEK.php

Physical Properties	Metric	English	Comments
Density	1.32 g/cc	0.0477 lb/in ³	ASTM D792
Water Absorption	0.10 % @Time 86400 sec	0.10 % @Time 24.0 hour	ISO 62
Viscosity	450000 cP @Shear Rate 1000 1/s, Temperature 400 Â°C	450000 cP @Shear Rate 1000 1/s, Temperature 752 Â°F	Melt Viscosity; ASTM D3835
Linear Mold Shrinkage, Flow	0.0080 - 0.010 cm/cm @Thickness 3.18 mm	0.0080 - 0.010 in/in @Thickness 0.125 in	
Linear Mold Shrinkage, Transverse	0.012 - 0.014 cm/cm @Thickness 3.18 mm	0.012 - 0.014 in/in @Thickness 0.125 in	ASTM D955
Melt Flow	1.0 g/10 min @Load 2.16 kg, Temperature 400 Â°C	1.0 g/10 min @Load 4.76 lb, Temperature 752 Â°F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	95	95	ASTM D785
Tensile Strength	89.0 MPa	12900 psi	50 mm/min; ASTM D638
Tensile Strength, Yield	91.0 MPa	13200 psi	Type 1A, 50 mm/min; ISO 527-2
Elongation at Break	25 %	25 %	Type 1A, 50 mm/min; ISO 527-2
	25 %	25 %	50 mm/min; ASTM D638

Elongation at Yield Mechanical Properties	4.5 % Metric	4.5 % English	Type 1A, 50 mm/min; ISO 527-2 Comments
	5.0 %	5.0 %	50 mm/min; ASTM D638
Tensile Modulus	3.70 GPa	537 ksi	50 mm/min; ASTM D638
	3.90 GPa	566 ksi	1 mm/min, Type 1A; ISO 527-2
Flexural Strength	138 MPa	20000 psi	ISO 178
	141 MPa	20500 psi	ASTM D790
Flexural Modulus	3.70 GPa	537 ksi	ASTM D790
	3.80 GPa	551 ksi	ISO 178
Compressive Strength	112 MPa	16200 psi	ASTM D695
Poissons Ratio	0.43	0.43	ASTM E132
Shear Strength	79.0 MPa	11500 psi	ASTM D732
Izod Impact, Notched	0.800 J/cm	1.50 ft-lb/in	ASTM D256
Izod Impact, Unnotched	NB	NB	ASTM D256
Izod Impact, Notched (ISO)	7.00 kJ/mÂ²	3.33 ft-lb/inÂ²	ISO 180
Izod Impact, Unnotched (ISO)	NB	NB	ISO 180

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	45.0 Âµm/m-Â°C @Temperature -50.0 - 50.0 Â°C	25.0 Âµin/in-Â°F @Temperature -58.0 - 122 Â°F	1
Specific Heat Capacity	1.41 J/g-Â°C @Temperature 50.0 Â°C	0.337 BTU/lb-Â°F @Temperature 122 Â°F	ASTM C351
	1.97 J/g-Â°C @Temperature 200 Â°C	0.471 BTU/lb-Â°F @Temperature 392 Â°F	ASTM C351
Thermal Conductivity	0.220 W/m-K	1.53 BTU-in/hr-ftÂ²- Â°F	ASTM C177
Melting Point	340 Â°C	644 Â°F	ASTM D3418
Deflection Temperature at 1.8 MPa (264 psi)	161 Â°C @Thickness 3.20 mm	322 Â°F @Thickness 0.126 in	Annealed; ASTM D648
Glass Transition Temp, Tg	150 Â°C	302 Â°F	DSC

Owner Index Thermal Properties	40 % Metric	40 % English	ASTM D2863 Comments
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Electrical Properties	Metric	English	Comments
Volume Resistivity	3.10e+17 ohm-cm	3.10e+17 ohm-cm	ASTM D257
Surface Resistance	>= 1.90e+17 ohm	>= 1.90e+17 ohm	ASTM D257
Dielectric Constant	3.12	3.12	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Dielectric Strength	170 kV/mm	4320 kV/in	ASTM D149
	@Thickness 3.00 mm	@Thickness 0.118 in	
Dissipation Factor	0.0010	0.0010	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	0.0040	0.0040	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	354 Â°C	669 Â°F	
Middle Barrel Temperature	366 Â°C	691 Â°F	
Front Barrel Temperature	371 Â°C	700 Â°F	
Nozzle Temperature	374 Â°C	705 Â°F	
Mold Temperature	177 - 204 Â°C	351 - 399 Â°F	
Drying Temperature	149 Â°C	300 Â°F	
	@Time 14400 sec	@Time 4.00 hour	

Descriptive Properties	Value	Comments
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	Latin America	
	North America	
Color	Beige	

Descriptive Properties	Value	Comments
Injection Rate	Fast	
Processing Technique	Extrusion Blow Molding	
	Fiber (Spinning) Extrusion; Film Extrusion	
	Injection Blow Molding; Injection Molding	
	Machining; Profile Extrusion	
	Thermoforming; Wire & Cable Extrusion	
Screw Compression Ratio	2.5:1.0 to 3.5:1.0	

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