Solvay Specialty Polymers AvaSpire® AV-722 SL30 Polyaryletherketone (PAEK) (Unverified Data**)

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

Material Notes:

AV-722 SL30 is a wear resistant grade of AvaSpire polyaryletherketone (PAEK) designed to provide low wear rates in both non-lubricated and lubricated environments. In addition to the outstanding wear resistance, the resin also offers the outstanding combination of ultra performance attributes commonly known for PEEK. These include: chemical resistance, mechanical strength and stiffness, even at elevated temperatures, as well as long-term and high-temperature thermal-oxidative stability. AV-722 SL30 is formulated with the ternary anti-friction/anti-wear additive system comprised of carbon fiber, graphite, and polytetrafluoroethylene (PTFE.) It offers wear resistance performance comparable to PEEK grades with this modifier system while being more cost-effective. This resin is a low melt flow (high viscosity) grade designed for use in injection molding of less intricate shapes or parts. By virtue of its high viscosity at low shear rates, the resin has high melt strength, and, as such, is extrudable into stock shapes such as rods, pipe, tubing and profile. The resin can be melt processed using conventional equipment and techniques. Potential applications for AV-722 SL30 include bushings, bearings, wear strips, wear rings, rollers, and other parts or components where sliding friction is encountered. The resin is black in color in its natural state.Information provided by Solvay Specialty Polymers.

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http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-AvaSpire-AV-722-SL30-Polyaryletherketone-PAEK-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.46 g/cc	1.46 g/cc	ASTM D792
Water Absorption	0.030 % @Time 86400 sec	0.030 % @Time 24.0 hour	ASTM D570
Viscosity	240000 cP @Shear Rate 1000 1/s, Temperature 400 °C	240000 cP @Shear Rate 1000 1/s, Temperature 752 °F	Melt
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	0.017 - 0.019 cm/cm @Thickness 3.18 mm	0.017 - 0.019 in/in @Thickness 0.125 in	5" x 0.5" x 0.125" bars; ASTM D955
Melt Flow	1.9 g/10 min	1.9 g/10 min	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	82	82	M-Scale; ASTM D785
Tensile Strength	136 MPa	19700 psi	5.0 mm/min; ASTM D638
Tensile Strength, Yield	151 MPa	21900 psi	ISO 527-2/1A/5

Mechanical Properties	Metric	English	Comments
Elongation at Break	2.1 %	2.1 %	5.0 mm/min; ASTM D638
	2.1 %	2.1 %	ISO 527-2/1A/5
Tensile Modulus	12.4 GPa	1800 ksi	5.0 mm/min; ASTM D638
	15.7 GPa	2280 ksi	ISO 527-2/1A/1
Flexural Strength	209 MPa	30300 psi	ISO 178
	213 MPa	30900 psi	ASTM D790
Flexural Modulus	10.2 GPa	1480 ksi	ASTM D790
	13.9 GPa	2020 ksi	ISO 178
Compressive Strength	107 MPa	15500 psi	ASTM D695
Shear Strength	71.0 MPa	10300 psi	ASTM D732
Izod Impact, Notched	0.690 J/cm	1.29 ft-lb/in	ASTM D256
	4.50 J/cm	8.43 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	7.40 kJ/m²	3.52 ft-lb/in²	ISO 180
Izod Impact, Unnotched (ISO)	30.0 kJ/m²	14.3 ft-lb/in²	ISO 180
Coefficient of Friction, Dynamic	0.080	0.080	Lubricated conditions: 800 fpm and 750 psi; ASTM D3702
	0.11	0.11	Lubricated conditions: 75 fpm and 1000 psi; ASTM D3702
	0.42	0.42	Dry conditions: 800 fpm and 31.25 psi; ASTM D3702
	0.59	0.59	Dry conditions: 200 fpm and 125 psi; ASTM D3702

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	1.34 J/g-°C @Temperature 50.0 °C	0.320 BTU/lb-°F @Temperature 122 °F	DSC
	1.81 J/g-°C @Temperature 200 °C	0.433 BTU/lb-°F @Temperature 392 °F	DSC
Thermal Conductivity	0.300 W/m-K	2.08 BTU-in/hr-ft²-°F	ASTM E1530
Melting Point	340 °C	644 °F	Peak; ASTM D3418
Deflection Temperature at 1.8 MPa	267 °C	513 °F	Annealed; 2 hours at 200°C; ASTM

(264 psi)	@Thickness 3.20 mm	@Thickness 0.126 in	D648
Thermal Properties	**Metric**	**English**	**Comments**
Glass Transition Temp, Tg	152 °C	306 °F	DSC

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	354 °C	669 °F	
Middle Barrel Temperature	366 °C	691 °F	
Front Barrel Temperature	371 °C	700 °F	
Nozzle Temperature	374 °C	705 °F	
Melt Temperature	366 - 388 °C	691 - 730 °F	
Mold Temperature	149 - 177 °C	300 - 351 °F	
Drying Temperature	149 °C	300 °F	
Dry Time	4.00 hour	4.00 hour	

Descriptive Properties	Value	Comments
Additive	Carbon Fiber + Graphite + PTFE Lubricant	
Appearance	Black	
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	North America	
	South America	
Features	Flame Retardant	
	Good Chemical Resistance	
	Good Dimensional Stability	
	Good Wear Resistance	
	High Heat Resistance	
Forms	Pellets	
Generic	PAEK	
Injection Rate	Fast	

Descriptive Properties	Value	Comments
Processing Method	Injection Molding	
	Machining	
	Profile Extrusion	
Screw Compression Ratio	2.0:1.0 to 3.0:1.0	
Uses	Automotive Applications	
	Bearings	
	Bushings	
	Oil/Gas Applications	
	Wear Strip	

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