

Solvay Specialty Polymers AvaSpire® AV-755 SL45 Polyaryletherketone (PAEK) (Unverified Data**)

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

Material Notes:

AV-755 SL45 is a wear resistant grade of AvaSpire polyaryletherketone (PAEK) designed to provide low wear rates and high pressure-velocity (PV) tolerance in lubricated wear environments. Like the other members of the AvaSpire AV-700 series, AV-755 SL45 offers more attractive economics than PEEK while retaining most of PEEK's key attributes. In addition to the outstanding wear resistance, the resin also offers the outstanding combination of chemical resistance, mechanical strength and stiffness at elevated temperatures, as well as long-term and high temperature thermal-oxidative stability. AV-755 SL45 is formulated with a binary anti-friction/anti-wear additive system comprised of carbon fiber and graphite. By virtue of its additive system, this resin also offers, exceptionally high stiffness and very low moisture absorption. Potential applications for AV-755 SL45 include bushings, bearings, wear strips, wear rings, rollers, and other parts used in sliding friction components. This high flow (low viscosity) resin is black. 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-755-SL45-Polyaryletherketone-PAEK-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.53 g/cc	1.53 g/cc	ASTM D792
Water Absorption	0.010 % @Time 86400 sec	0.010 % @Time 24.0 hour	ASTM D570
Viscosity	600000 cP @Shear Rate 1000 1/s, Temperature 400 °C	600000 cP @Shear Rate 1000 1/s, Temperature 752 °F	Melt; ASTM D3835
Linear Mold Shrinkage, Flow	0.00 - 0.0020 cm/cm @Thickness 3.18 mm	0.00 - 0.0020 in/in @Thickness 0.125 in	5" x 0.5" x 0.125" bars; ASTM D955
Linear Mold Shrinkage, Transverse	0.012 - 0.014 cm/cm @Thickness 3.18 mm	0.012 - 0.014 in/in @Thickness 0.125 in	5" x 0.5" x 0.125" bars; ASTM D955
Melt Flow	1.0 g/10 min @Load 2.16 kg, Temperature 400 °C	1.0 g/10 min @Load 4.76 lb, Temperature 752 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	88	88	M-Scale; ASTM D785
Tensile Strength	169 MPa	24500 psi	5.0 mm/min; ASTM D638
Tensile Strength, Yield	173 MPa	25100 psi	ISO 527-2/1A/5

Mechanical Properties	Metric	English	Comments
	0.90 %	0.90 %	ISO 527-2/1A/5
Tensile Modulus	30.4 GPa	4410 ksi	ISO 527-2/1A/1
	33.6 GPa	4870 ksi	5.0 mm/min; ASTM D638
Flexural Strength	250 MPa	36300 psi	ASTM D790
	266 MPa	38600 psi	ISO 178
Flexural Modulus	25.9 GPa	3760 ksi	ASTM D790
	30.2 GPa	4380 ksi	ISO 178
Compressive Strength	120 MPa	17400 psi	ASTM D695
Shear Strength	70.0 MPa	10200 psi	ASTM D732
Izod Impact, Notched	0.530 J/cm	0.993 ft-lb/in	ASTM D256
	3.20 J/cm	5.99 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	6.80 kJ/m ²	3.24 ft-lb/in ²	ISO 180
Izod Impact, Unnotched (ISO)	25.0 kJ/m ²	11.9 ft-lb/in ²	ISO 180
Coefficient of Friction, Dynamic	0.050	0.050	Lubricated conditions: 800 fpm and 750 psi; ASTM D3702
	0.12	0.12	Lubricated conditions: 75 fpm and 1000 psi; ASTM D3702
	0.34	0.34	Dry conditions: 800 fpm and 31.25 psi; ASTM D3702

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	7.00 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ @Temperature -50.0 - 50.0 $^{\circ}\text{C}$	3.89 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ @Temperature -58.0 - 122 $^{\circ}\text{F}$	TMA; ASTM E831
Specific Heat Capacity	1.17 J/g- $^{\circ}\text{C}$ @Temperature 50.0 $^{\circ}\text{C}$	0.280 BTU/lb- $^{\circ}\text{F}$ @Temperature 122 $^{\circ}\text{F}$	DSC
	1.61 J/g- $^{\circ}\text{C}$ @Temperature 200 $^{\circ}\text{C}$	0.385 BTU/lb- $^{\circ}\text{F}$ @Temperature 392 $^{\circ}\text{F}$	DSC
Thermal Conductivity	0.700 W/m-K	4.86 BTU-in/hr-ft ² - $^{\circ}\text{F}$	ASTM E1530
Melting Point	343 $^{\circ}\text{C}$	649 $^{\circ}\text{F}$	Peak; ASTM D3418
	278 $^{\circ}\text{C}$	532 $^{\circ}\text{F}$	

Thermal Properties	Metric	English	Comments
Deflection Temperature at 1.8 MPa (204 psi)	@ Thickness 3.20 mm	@ Thickness 0.126 in	Annealed: 2 hours at 200°C; ASTM D645
Glass Transition Temp, Tg	152 °C	306 °F	ASTM D3418

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 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 on Molding	Comments
	Machining	
	Profile Extrusion	
RoHS Compliance	RoHS Compliant	
Screw Compression Ratio	2.0:1.0 to 3.0:1.0	
Uses	Automotive Applications	
	Bearings	
	Bushings	
	Rollers	
	Seals	
	Thrust Washer	
	Wear Strip	

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