

Solvay Specialty Polymers AvaSpire® AV-742 SL30 Polyaryletherketone (PAEK)

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

Material Notes:

AV-742 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 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-742 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. Features: Flame Retardant; Good Chemical Resistance; Good Dimensional Stability; Good Wear Resistance; High Heat Resistance. Uses: Automotive Applications; Bushings; Thin-walled Parts; Wear Strip. Information provided by Solvay Specialty Polymers.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-AvaSpire-AV-742-SL30-Polyaryletherketone-PAEK.php

Physical Properties	Metric	English	Comments
Density	1.47 g/cc	0.0531 lb/in ³	ASTM D792
Water Absorption	0.030 % @Time 86400 sec	0.030 % @Time 24.0 hour	ISO 62
Viscosity	270000 cP @Shear Rate 1000 1/s, Temperature 400 Â°C	270000 cP @Shear Rate 1000 1/s, Temperature 752 Â°F	Melt Viscosity; 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	
Linear Mold Shrinkage, Transverse	0.016 - 0.018 cm/cm @Thickness 3.18 mm	0.016 - 0.018 in/in @Thickness 0.125 in	ASTM D955
Melt Flow	2.5 g/10 min @Load 2.16 kg, Temperature 400 Â°C	2.5 g/10 min @Load 4.76 lb, Temperature 752 Â°F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	87	87	ASTM D785
Tensile Strength	143 MPa	20700 psi	5 mm/min; ASTM D638
Tensile Strength, Yield	156 MPa	22600 psi	5 mm/min, Type 1A; ISO 527-2
Elongation at Break	1.8 %	1.8 %	Type 1A, 5 mm/min; ISO 527-2

Mechanical Properties	Metric	English	Comments
Tensile Modulus	13.0 GPa	1890 ksi	5 mm/min; ASTM D638
	15.5 GPa	2250 ksi	1 mm/min, Type 1A; ISO 527-2
Flexural Strength	203 MPa	29400 psi	ISO 178
	211 MPa	30600 psi	ASTM D790
Flexural Modulus	10.4 GPa	1510 ksi	ASTM D790
	13.2 GPa	1910 ksi	ISO 178
Compressive Strength	121 MPa	17500 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
Izod Impact, Unnotched	4.10 J/cm	7.68 ft-lb/in	ASTM D256
Izod Impact, Notched (ISO)	5.80 kJ/m ²	2.76 ft-lb/in ²	ISO 180
Izod Impact, Unnotched (ISO)	28.0 kJ/m ²	13.3 ft-lb/in ²	ISO 180

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	10.0 Åµm/m-Å°C @Temperature -50.0 - 50.0 Å°C	5.56 Åµin/in-Å°F @Temperature -58.0 - 122 Å°F	1
Specific Heat Capacity	1.25 J/g-Å°C @Temperature 50.0 Å°C	0.299 BTU/lb-Å°F @Temperature 122 Å°F	ASTM C351
	1.71 J/g-Å°C @Temperature 200 Å°C	0.409 BTU/lb-Å°F @Temperature 392 Å°F	ASTM C351
Thermal Conductivity	0.340 W/m-K	2.36 BTU-in/hr-ftÅ²-Å°F	ASTM C177
Melting Point	343 Å°C	649 Å°F	ASTM D3418
Deflection Temperature at 1.8 MPa (264 psi)	276 Å°C	529 Å°F	Annealed; ASTM D648
Glass Transition Temp, Tg	152 Å°C	306 Å°F	DSC

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	354 Å°C	669 Å°F	

Processing Properties	Metric	English	Comments
Front Barrel Temperature	371 Â°C	700 Â°F	
Nozzle Temperature	374 Â°C	705 Â°F	
Melt Temperature	366 - 388 Â°C	691 - 730 Â°F	
Mold Temperature	149 - 177 Â°C	300 - 351 Â°F	
Drying Temperature	149 Â°C	300 Â°F	
	@Time 14400 sec	@Time 4.00 hour	

Descriptive Properties	Value	Comments
Additive	Carbon Fiber + Graphite + PTFE Lubricant	
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	Latin America	
	North America	
Color	Black	
Form	Pellets	
Injection Rate	Fast	
Processing Technique	Injection Molding; Machining; Profile Extrusion	
Screw Compression Ratio	2.0:1.0 to 3.0:1.0	

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