AvaSpire® AV-742 SL30

Polyaryletherketone

Solvay Specialty Polymers

Message:

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.
This high flowing (low viscosity) grade is designed for use in the injection molding of thin, intricate or complex shapes, or parts in otherwise challenging molding configurations. If the part geometry is such that low viscosity is not a processing necessity, it is recommended that the companion grade AV-722 SL30 be considered first to take advantage of the higher molecular weight of that grade, which results in greater wear resistance as well as better overall mechanical performance in terms of toughness-related properties. The resin can be melt processed using conventional equipment and techniques.
Potential applications for AV-742 SL30 include bushings, bearings, wear strips, wear rings, rollers, and other parts used in sliding friction components. The resin is black in color in its natural state.

General Information	
Additive	Carbon Fiber + Graphite + PTFE Lubricant
Features	Flame Retardant Good Chemical Resistance Good Dimensional Stability Good Wear Resistance High Heat Resistance
Uses	Automotive Applications Bushings Thin-walled Parts Wear Strip
RoHS Compliance	Contact Manufacturer
Appearance	Black
Forms	Pellets
Processing Method	Injection Molding Machining Profile Extrusion

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.47	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	2.5	g/10 min	ASTM D1238
Molding Shrinkage [1]			ASTM D955
Flow : 3.18 mm	0.10 to 0.30	%	
Across Flow : 3.18 mm	1.6 to 1.8	%	

Water Absorption (24 hr)	0.030	%	ASTM D570
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (M-Scale)	87		ASTM D785
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			
-- [2]	13000	MPa	ASTM D638
--	15500	MPa	ISO 527-2/1A/1
Tensile Stress			
Yield	156	MPa	ISO 527-2/1A/5
-- [3]	143	MPa	ASTM D638
Tensile Elongation			
Break [4]	1.8	%	ASTM D638
Break	1.8	%	ISO 527-2/1A/5
Flexural Modulus			
--	10400	MPa	ASTM D790
--	13200	MPa	ISO 178
Flexural Strength			
--	211	MPa	ASTM D790
--	203	MPa	ISO 178
Compressive Strength	121	MPa	ASTM D695
Shear Strength	70.0	MPa	ASTM D732
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact			
--	53	J/m	ASTM D256
--	5.8	kJ/m²	ISO 180
Unnotched Izod Impact			
--	410	J/m	ASTM D4812
--	28	kJ/m²	ISO 180
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (1.8 MPa, Annealed)	276	°C	ASTM D648
Glass Transition Temperature	152	°C	ASTM D3418
Peak Melting Temperature	343	°C	ASTM D3418
CLTE - Flow (-50 to 50°C)	1.0E-5	cm/cm/°C	ASTM E831
Specific Heat			DSC
50°C	1250	J/kg/°C	
200°C	1710	J/kg/°C	
Thermal Conductivity	0.34	W/m/K	ASTM E1530
Fill Analysis	**Nominal Value**	**Unit**	
Melt Viscosity (400°C, 1000 sec^-1)	270	Pa·s	
Injection	**Nominal Value**	**Unit**	
Drying Temperature	149	°C	

Drying Time	4.0	hr
Rear Temperature	354	°C
Middle Temperature	366	°C
Front Temperature	371	°C
Nozzle Temperature	374	°C
Processing (Melt) Temp	366 to 388	°C
Mold Temperature	149 to 177	°C
Injection Rate	Fast	
Screw Compression Ratio	2.0:1.0 to 3.0:1.0	

NOTE	
1.	5" x 0.5" x 0.125" bars
2.	5.0 mm/min
3.	5.0 mm/min
4.	5.0 mm/min

Recommended distributors for this material

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