AvaSpire® AV-722 SL30

Polyaryletherketone

Melt Mass-Flow Rate (MFR)

1.9

Solvay Specialty Polymers

Message:

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.

General Information			
Additive	Carbon Fiber + Graphite + PTFE Lul	bricant	
Features	Flame Retardant		
	Good Chemical Resistance		
	Good Dimensional Stability		
	Good Wear Resistance		
	High Heat Resistance		
Uses	Automotive Applications		
	Bearings		
	Bushings		
	Oil/Gas Applications		
	Wear Strip		
RoHS Compliance	Contact Manufacturer		
Appearance	Black		
Forms	Pellets		
Processing Method	Injection Molding		
	Machining		
	Profile Extrusion		
Multi-Point Data	Isothermal Stress vs. Strain (ISO 11403-1)		
	Viscosity vs. Shear Rate (ISO 11403-2)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.46	g/cm ³	ASTM D792

g/10 min

ASTM D1238

Molding Shrinkage ¹			ASTM D955
Flow : 3.18 mm	0.10 to 0.30	%	
Across Flow : 3.18 mm	1.7 to 1.9	%	
Water Absorption (24 hr)	0.030	%	ASTM D570
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	82		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
²	12400	MPa	ASTM D638
	15700	MPa	ISO 527-2/1A/1
Tensile Stress			
Yield	151	MPa	ISO 527-2/1A/5
3	136	MPa	ASTM D638
Tensile Elongation			
Break ⁴	2.1	%	ASTM D638
Break	2.1	%	ISO 527-2/1A/5
Flexural Modulus			
	10200	MPa	ASTM D790
	13900	MPa	ISO 178
Flexural Strength			
	213	MPa	ASTM D790
	209	MPa	ISO 178
Compressive Strength	107	MPa	ASTM D695
Shear Strength	71.0	MPa	ASTM D732
Coefficient of Friction			ASTM D3702
5	0.11		
6	0.080		
7	0.42		
8	0.59		
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact			
	69	J/m	ASTM D256
	7.4	kJ/m²	ISO 180
Unnotched Izod Impact			
	450	J/m	ASTM D4812
	30	kJ/m²	ISO 180
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load ⁹ (1.8 MPa, Annealed, 3.20 mm)	267	°C	ASTM D648
Glass Transition Temperature	152	°C	DSC
Peak Melting Temperature	340	°C	ASTM D3418
Specific Heat			DSC

50°C	1340	J/kg/°C	
200°C	1810	J/kg/°C	
Thermal Conductivity	0.30	W/m/K	ASTM E1530
Fill Analysis	Nominal Value	Unit	
Melt Viscosity (400°C, 1000 sec^-1)	240	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		
5.	Lubricated conditions: 75 fpm and 1000 psi (0.38 m/s and 6895 kPa)		
6.	Lubricated conditions: 800 fpm and 750 psi (6.06 m/s and 5171 kPa)		
7.	Dry conditions: 800 fpm and 31.25 psi (4.06 m/s and 215 kPa)		
8.	Dry conditions: 200 fpm and 125 psi (1.02 m/s and 862 kPa). Not recommended at 50 fpm and 500 psi (0.25 m/s and 3447 kPa).		
9.	2 hours at 200°C		

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