AvaSpire® AV-722 SL30
polyaryletherketone

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		
Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Additive	• Carbon Fiber + Graphite + PTFE Lubricant	
Features	• Chemical Resistant • Flame Retardant • Good Dimensional Stability	• High Heat Resistance • Wear Resistant
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

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.46		ASTM D792
Melt Mass-Flow Rate (MFR)	1.9	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

Mechanical	Typical Value	Unit	Test method
Tensile Modulus			
-- [2]	12400	MPa	ASTM D638
--	15700	MPa	ISO 527-1/1A/1
Tensile Stress			
Yield	151	MPa	ISO 527-2/1A/5
-- [2]	136	MPa	ASTM D638
Tensile Elongation			
Break [2]	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
-- [3]	0.42		
-- [4]	0.59		
-- [5]	0.11		
-- [6]	0.080		

Impact	Typical 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

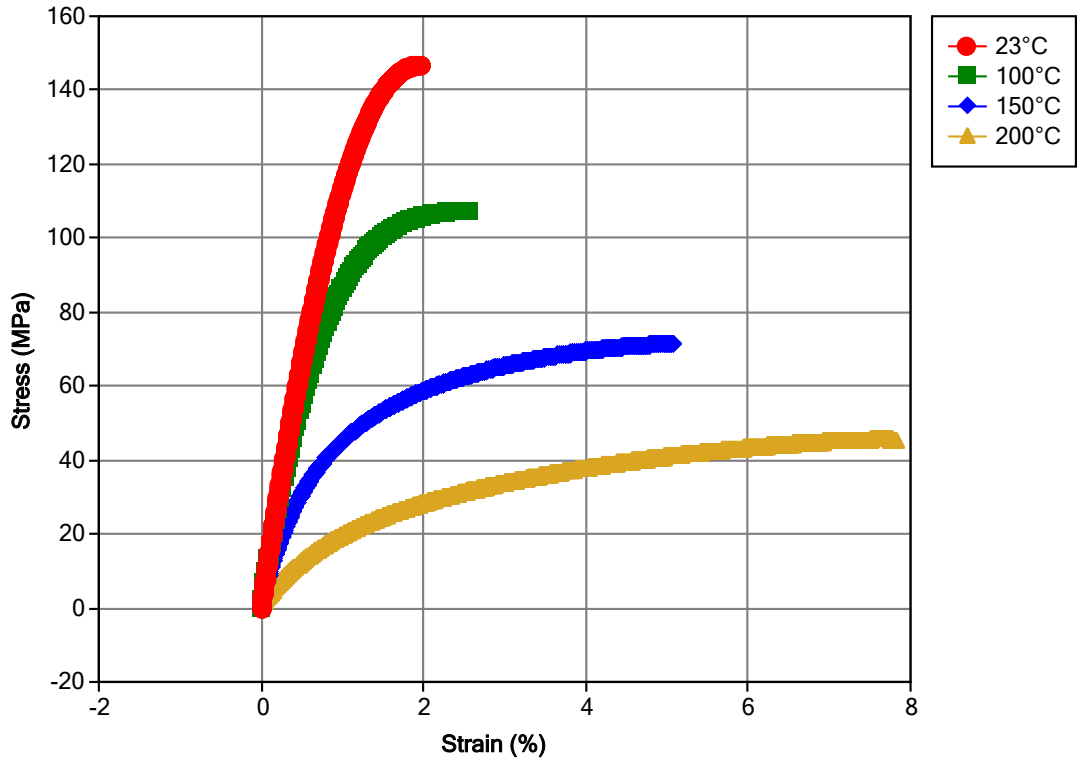
Hardness	Typical Value	Unit	Test method
Rockwell Hardness (M-Scale)	82		ASTM D785

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load [7]			ASTM D648
1.8 MPa, Annealed, 3.20 mm	267	°C	
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

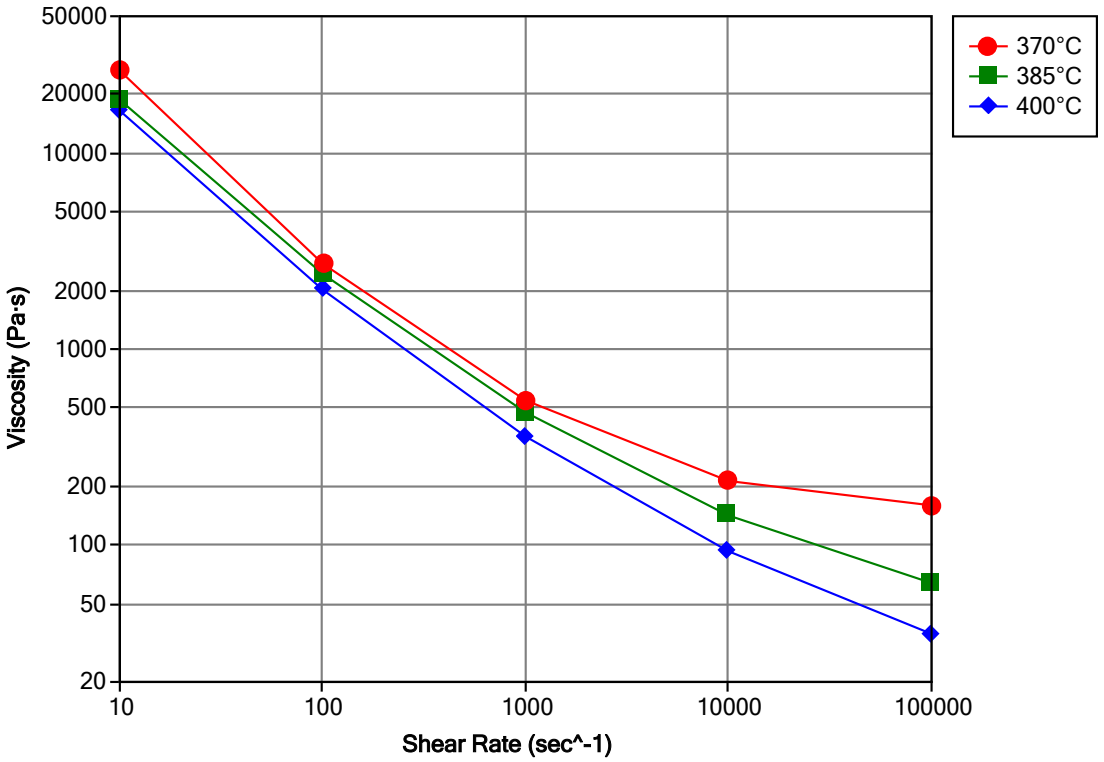
Fill Analysis	Typical Value	Unit
Melt Viscosity (400°C, 1000 sec^-1)	240	Pa·s

Injection	Typical 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	

Isothermal Stress vs. Strain (ISO 11403)



Viscosity vs. Shear Rate (ISO 11403)



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Notes

Typical properties: these are not to be construed as specifications.

[1] 5" x 0.5" x 0.125" bars

[2] 5.0 mm/min

[3] Dry conditions: 800 fpm and 31.25 psi (4.06 m/s and 215 kPa)

[4] 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).

[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] 2 hours at 200°C

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