AvaSpire® AV-755 SL45

Polyaryletherketone

Solvay Specialty Polymers

Message:

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.

General Information			
Additive	Carbon fiber graphite lubricant		
Features	Good dimensional stability		
	Good chemical resistance		
	Good wear resistance		
	Heat resistance, high		
	Flame retardancy		
Uses	Bushing		
	Wear strip		
	Roller		
	Seals		
	Application in Automobile Field		
	Thrust washer		
	Bearing		
RoHS Compliance	RoHS compliance		
Appearance	Black		
Forms	Particle		
Processing Method	Machining		
	Profile extrusion molding		
	Injection molding		
Multi-Point Data	Isothermal Stress vs. Strain (ISO 11403-1)		
	Viscosity vs. Shear Rate (ISO 11403-2)		
Physical	Nominal Value	Unit	Test Method

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.53	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16			
kg)	1.0	g/10 min	ASTM D1238

Molding Shrinkage ¹			ASTM D955
Flow: 3.18mm	0.0 - 0.20	%	ASTM D955
Transverse flow: 3.18mm	1.2 - 1.4	%	ASTM D955
Water Absorption (24 hr)	0.010	%	ASTM D570
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	88		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
2	33600	MPa	ASTM D638
	30400	MPa	ISO 527-2/1A/1
Tensile Stress			
Yield	173	MPa	ISO 527-2/1A/5
3	169	MPa	ASTM D638
Tensile Elongation			
Fracture ⁴	0.90	%	ASTM D638
Fracture	0.90	%	ISO 527-2/1A/5
Flexural Modulus			
	25900	MPa	ASTM D790
	30200	MPa	ISO 178
Flexural Strength			
	250	MPa	ASTM D790
	266	MPa	ISO 178
Compressive Strength	120	MPa	ASTM D695
Shear Strength	70.0	MPa	ASTM D732
Coefficient of Friction			ASTM D3702
5	0.050		ASTM D3702
6	0.12		ASTM D3702
7	0.34		ASTM D3702
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact			
	53	J/m	ASTM D256
	6.8	kJ/m²	ISO 180
Unnotched Izod Impact			
	320	J/m	ASTM D4812
	25	kJ/m²	ISO 180
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load ⁸ (1.8 MPa, Annealed, 3.20 mm)	278	°C	ASTM D648
Glass Transition Temperature	152	°C	ASTM D3418
Peak Melting Temperature	343	°C	ASTM D3418
CLTE - Flow (-50 to 50°C)	7.0E-6	cm/cm/°C	ASTM E831
Specific Heat			DSC

50°C	1170	J/kg/°C	DSC
200°C	1610	J/kg/°C	DSC
Thermal Conductivity	0.70	W/m/K	ASTM E1530
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (400°C, 1000 sec^-1)	600	Pa·s	ASTM D3835
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 - 388	°C	
Mold Temperature	149 - 177	°C	
Injection Rate	Fast		
Screw Compression Ratio	2.0 : 1.0 - 3.0 : 1.0		
Injection instructions			
Back Pressure: Minimum			
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.	Lubrication conditions: 800 fpm , 750 psi (6.06 m/s , 5171 kPa)		
6.	Lubrication conditions: 75 fpm, 1000 psi (0.38 m/s , 6895 kPa)		
7.	Drying conditions: 800 fpm,31.25 psi (4.06 m/s,215 kPa). 50 fpm,500 psi (0.25 m/s,3447 kPa) is not recommended.		
8.	200°C,2 hours		

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