

Solvay Specialty Polymers AvaSpire® AV-722 CF30 Polyaryletherketone (PAEK) (Unverified Data**)

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

Material Notes:

AvaSpire AV-722 CF30 is a 30% carbon fiber reinforced version of AvaSpire AV-722. This formulation offers improved part economics relative to 30% carbon fiber reinforced PEEK while retaining most of the desirable high performance attributes of carbon fiber reinforced PEEK. Those attributes include chemical resistance, fatigue resistance, and long term thermal oxidative stability. The excellent balance of properties of AV-722 CF30 makes this grade well suited for a broad range of applications across a number of industries, including healthcare, transportation, electronics, oil and gas and chemical processing. The melt processing behavior of AV-722 CF30 is overall very similar to that of 30% CF reinforced PEEK. Injection Notes: Back Pressure: Minimum Information provided by Solvay Specialty Polymers.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-AvaSpire-AV-722-CF30-Polyaryletherketone-PAEK-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.42 g/cc	1.42 g/cc	ASTM D792
Filler Content	30 %	30 %	Carbon Fiber Reinforcement
Water Absorption	0.10 % @Time 86400 sec	0.10 % @Time 24.0 hour	ASTM D570
Viscosity	470000 cP @Shear Rate 1000 1/s, Temperature 400 °C	470000 cP @Shear Rate 1000 1/s, Temperature 752 °F	Melt
Linear Mold Shrinkage, Flow	0.00 - 0.0020 cm/cm @Thickness 3.18 mm	0.00 - 0.0020 in/in @Thickness 0.125 in	5" x 0.5" x 0.125" bars; ASTM D955
Linear Mold Shrinkage, Transverse	0.014 - 0.016 cm/cm @Thickness 3.18 mm	0.014 - 0.016 in/in @Thickness 0.125 in	5" x 0.5" x 0.125" bars; ASTM D955
Melt Flow	0.80 g/10 min @Load 2.16 kg, Temperature 400 °C	0.80 g/10 min @Load 4.76 lb, Temperature 752 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	107	107	M-Scale; ASTM D785
Tensile Strength	200 MPa	29000 psi	5.0 mm/min; ASTM D638
Tensile Strength, Yield	224 MPa	32500 psi	ISO 527-2/1A/5
Elongation at Break	1.5 %	1.5 %	5.0 mm/min; ASTM D638

Mechanical Properties	Metric	English	Comments 1A/5
Tensile Modulus	22.0 GPa	3190 ksi	5.0 mm/min; ASTM D638
	26.6 GPa	3860 ksi	ISO 527-2/1A/1
Flexural Strength	304 MPa	44100 psi	ASTM D790
	334 MPa	48400 psi	ISO 178
Flexural Modulus	19.3 GPa	2800 ksi	ASTM D790
	25.0 GPa	3630 ksi	ISO 178
Compressive Strength	170 MPa	24700 psi	ASTM D695
Poissons Ratio	0.44	0.44	ASTM E132
Shear Modulus	7.64 - 9.24 GPa	1110 - 1340 ksi	Calculated
Shear Strength	98.0 MPa	14200 psi	ASTM D732
Izod Impact, Notched	0.530 J/cm	0.993 ft-lb/in	ASTM D256
	5.30 J/cm	9.93 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	8.50 kJ/m ²	4.04 ft-lb/in ²	ISO 180
Izod Impact, Unnotched (ISO)	39.0 kJ/m ²	18.6 ft-lb/in ²	ISO 180

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	6.00 $\mu\text{m/m-}^{\circ}\text{C}$	3.33 $\mu\text{in/in-}^{\circ}\text{F}$	TMA; ASTM E831
	@Temperature -50.0 - 50.0 $^{\circ}\text{C}$	@Temperature -58.0 - 122 $^{\circ}\text{F}$	
Specific Heat Capacity	1.28 J/g- $^{\circ}\text{C}$	0.306 BTU/lb- $^{\circ}\text{F}$	DSC
	@Temperature 50.0 $^{\circ}\text{C}$	@Temperature 122 $^{\circ}\text{F}$	
	1.74 J/g- $^{\circ}\text{C}$	0.416 BTU/lb- $^{\circ}\text{F}$	DSC
	@Temperature 200 $^{\circ}\text{C}$	@Temperature 392 $^{\circ}\text{F}$	
Thermal Conductivity	0.340 W/m-K	2.36 BTU-in/hr-ft ² - $^{\circ}\text{F}$	ASTM C177
Melting Point	340 $^{\circ}\text{C}$	644 $^{\circ}\text{F}$	Peak (major component); ASTM D3418
Deflection Temperature at 1.8 MPa (264 psi)	276 $^{\circ}\text{C}$	529 $^{\circ}\text{F}$	Annealed; ASTM D648
Glass Transition Temp, Tg	150 $^{\circ}\text{C}$	302 $^{\circ}\text{F}$	ASTM D3418

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	366 °C	691 °F	
Middle Barrel Temperature	371 °C	700 °F	
Front Barrel Temperature	377 °C	711 °F	
Nozzle Temperature	382 °C	720 °F	
Mold Temperature	177 - 204 °C	351 - 399 °F	
Drying Temperature	149 °C	300 °F	
Dry Time	4.00 hour	4.00 hour	

Descriptive Properties	Value	Comments
Appearance	Black	
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	North America	
	South America	
Features	Flame Retardant	
	Good Chemical Resistance	
	Good Dimensional Stability	
	High Heat Resistance	
	High Stiffness	
	High Strength	
Forms	Pellets	
Generic	PAEK	
Injection Rate	Fast	
Processing Method	Injection Molding	
	Machining	
	Profile Extrusion	

Descriptive Properties		Value	Comments
Uses		Automotive Applications	
		Gears	
		Industrial Applications	

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