

## Solvay Specialty Polymers AvaSpire® AV-750 GF40 Polyaryletherketone (PAEK) (Unverified Data\*\*)

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

### Material Notes:

AvaSpire AV-750 GF40 is a 40% glass reinforced polyaryletherketone (PAEK) designed to fill the marketplace need for a lower-priced PEEK (polyetheretherketone). This resin provides the typical chemical resistance expected of PEEK while maintaining excellent elevated temperature properties. The price and performance of this resin will expand the opportunities for PEEK resins especially in the area of metal replacement for corrosion control. - Natural: AvaSpire AV-750 GF40 NT Information provided by Solvay Specialty Polymers.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Solvay-Specialty-Polymers-AvaSpire-AV-750-GF40-Polyaryletherketone-PAEK-nbspUnverified-Data.php](http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-AvaSpire-AV-750-GF40-Polyaryletherketone-PAEK-nbspUnverified-Data.php)

Physical Properties	Metric	English	Comments
Specific Gravity	1.65 g/cc	1.65 g/cc	ASTM D792
Filler Content	40 %	40 %	Glass Fiber Reinforcement
Water Absorption	0.10 % @Time 86400 sec	0.10 % @Time 24.0 hour	ASTM D570
Viscosity	450000 cP @Shear Rate 1000 1/s, Temperature 400 °C	450000 cP @Shear Rate 1000 1/s, Temperature 752 °F	Melt; ASTM D3835
Linear Mold Shrinkage, Flow	0.0010 - 0.0030 cm/cm @Thickness 3.18 mm	0.0010 - 0.0030 in/in @Thickness 0.125 in	5" x 0.5" x 0.125" bars; ASTM D955
Linear Mold Shrinkage, Transverse	0.012 - 0.014 cm/cm @Thickness 3.18 mm	0.012 - 0.014 in/in @Thickness 0.125 in	5" x 0.5" x 0.125" bars; ASTM D955
Melt Flow	7.0 g/10 min @Load 2.16 kg, Temperature 380 °C	7.0 g/10 min @Load 4.76 lb, Temperature 716 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	105	105	M-Scale; ASTM D785
Tensile Strength	191 MPa	27700 psi	50 mm/min; ASTM D638
Tensile Strength, Yield	188 MPa	27300 psi	5 nm; ISO 527-2/1A/5
Elongation at Break	1.8 %	1.8 %	5.0 mm/min; ASTM D638
	1.8 %	1.8 %	ISO 527-2/1A/5

Tensile Modulus Mechanical Properties	15.1 GPa Metric	2190 ksi English	9.0 mm/min; ASTM D638 Comments
	16.7 GPa	2420 ksi	ISO 527-2/1A/1
Flexural Strength	250 MPa	36300 psi	ISO 178
	54.0 MPa	7830 psi	ASTM D790
	@Temperature 250 °C	@Temperature 482 °F	
	253 MPa	36700 psi	ASTM D790
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Modulus	14.8 GPa	2150 ksi	ASTM D790
	15.4 GPa	2230 ksi	ISO 178
Compressive Strength	182 MPa	26400 psi	ASTM D695
Shear Strength	89.0 MPa	12900 psi	ASTM D732
Izod Impact, Notched	0.530 J/cm	0.993 ft-lb/in	ASTM D256
	5.90 J/cm	11.1 ft-lb/in	ASTM D4812
Izod Impact, Notched (ISO)	8.50 kJ/m <sup>2</sup>	4.04 ft-lb/in <sup>2</sup>	ISO 180
Izod Impact, Unnotched (ISO)	41.0 kJ/m <sup>2</sup>	19.5 ft-lb/in <sup>2</sup>	ISO 180

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	15.0 µm/m-°C	8.33 µin/in-°F	TMA; ASTM E831
	@Temperature -50.0 - 50.0 °C	@Temperature -58.0 - 122 °F	
Specific Heat Capacity	1.26 J/g-°C	0.301 BTU/lb-°F	DSC
	@Temperature 50.0 °C	@Temperature 122 °F	
	1.62 J/g-°C	0.387 BTU/lb-°F	DSC
	@Temperature 200 °C	@Temperature 392 °F	
Thermal Conductivity	0.310 W/m-K	2.15 BTU-in/hr-ft <sup>2</sup> -°F	ASTM E1530
Melting Point	345 °C	653 °F	Peak; ASTM D3418
Deflection Temperature at 1.8 MPa (264 psi)	285 °C	545 °F	Annealed; ASTM D648
Glass Transition Temp, Tg	150 °C	302 °F	ASTM D3418
Flammability, UL94	V-1	V-1	UL 94
	@Thickness 0.800 mm	@Thickness 0.0315 in	

Thermal Properties	Metric	English	Comments
	@Thickness 1.60 mm	@Thickness 0.0630 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.80e+17 ohm-cm	1.80e+17 ohm-cm	ASTM D257
Surface Resistance	>= 1.90e+17 ohm	>= 1.90e+17 ohm	ASTM D257
Dielectric Constant	3.66	3.66	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.68	3.68	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
Dielectric Strength	3.69	3.69	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dissipation Factor	19.0 kV/mm	483 kV/in	ASTM D149
	0.0010	0.0010	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
	0.0020	0.0020	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	0.0030	0.0030	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Processing Properties	Metric	English	Comments
Melt Temperature	370 - 395 °C	698 - 743 °F	
Mold Temperature	175 - 210 °C	347 - 410 °F	
Drying Temperature	150 - 175 °C	302 - 347 °F	
Dry Time	2.50 - 4.00 hour	2.50 - 4.00 hour	
Back Pressure	0.138 - 0.345 MPa	20.0 - 50.0 psi	
Screw Speed	75 rpm	75 rpm	

Descriptive Properties	Value	Comments
Appearance	Natural Color	

<b>Availability</b> Descriptive Properties	<b>Africa &amp; Middle East</b> Value	Comments
	Asia Pacific	
	Europe	
	North America	
	South America	
<b>Features</b>	Flame Retardant	
	Good Chemical Resistance	
	Good Dimensional Stability	
	High Heat Resistance	
	High Stiffness	
	High Strength	
<b>Forms</b>	Pellets	
<b>Generic</b>	PAEK	
<b>Processing Method</b>	Injection Molding	
	Machining	
	Profile Extrusion	
<b>RoHS Compliance</b>	RoHS Compliant	
<b>Screw Compression Ratio</b>	2.0:1.0	
<b>Uses</b>	Aircraft Applications	
	Electrical/Electronic Applications	
	Metal Replacement	
	Seals	

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