

AV-750 GF40 NT

AvaSpire AV-750 GF40 NT resin was developed to fill the marketplace need for a lower-priced PEEK (polyether-etherketone) system. This modified PEEK is 40% glass reinforced and 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.

AvaSpire AV-750 GF40 NT resin can be easily processed on conventional injection molding equipment.

Typical Properties of AvaSpire AV-750 GF40 NT Resin

Properties	ASTM Test Method	Typical Properties(1)			
		U.S. Customary units		SI Units	
		Value	Units	Value	Units
Mechanical					
Tensile Strength at 73°F (23°C)	D 638	25.0	kpsi	172	MPa
Tensile Strength at 482°F (250°C)	D 638	4.1	kpsi	28	MPa
Tensile Modulus	D 638	2.20	Mpsi	15.1	GPa
Tensile Elongation	D 638	1.5	%	1.5	%
Flexural Modulus at 73°F (23°C)	D 790	2.14	Mpsi	14.8	GPa
Flexural Modulus at 482°F (250°C)	D 790	0.48	Mpsi	3.3	GPa
Flexural Strength at 73°F (23°C)	D 790	34.8	kpsi	240	MPa
Flexural Strength at 482°F (250°C)	D 790	7.8	kpsi	54	MPa
Izod Impact Strength, Notched	D 256	1.0	ft-lbs/in	54	J/m
Izod Impact Strength, Unnotched	D 256	7.4	ft-lbs/in	395	J/m
Compressive Strength	D 695	33.0	kpsi	228	MPa
Shear Strength	D 732	11.4	kpsi	79	MPa
Thermal					
Deflection Temperature at 264 psi (1.8 MPA)	D 648	545	°F	285	°C
Glass Transition Temperature	D 3417	302	°F	150	°C
Melting Point	D 3417	653	°F	345	°C
Coefficient of Thermal Expansion, flow direction ⁽²⁾	E 831	8	µin/in°F	15	µm/m°C
Electrical					
Dielectric Strength	D 149	385	V/mil	16	kV/mm
Dielectric Constant at 60 Hz	D 150	3.88		3.88	
Dielectric Constant at 1 MHz	D 150	4.00		4.00	
Dissipation Factor at 60 Hz	D 150	0.0013		0.0013	
Dissipation Factor at 1 MHz	D 150	0.0036		0.0036	
Volume Resistivity	D 257	2 x 10 ¹⁸	ohm-cm	2 x 10 ¹⁸	ohm-cm
General					
Specific Gravity	D 792	1.65		1.65	
Water Absorption, 24 hr.	D 570	0.1	%	0.1	%
Melt Flow at 380°C, 2.16 kg	D 1238	2	g/10 min	2	g/10 min

⁽¹⁾ Actual properties of individual batches will vary within specification limits.

⁽²⁾ Measured over the temperature range of -50°C to 50°C

Drying

AvaSpire AV-750 GF40 NT resin must be dried completely prior to melt processing. Incomplete drying will result in defects in the formed parts ranging from surface streaks to severe bubbling. Pellets of AvaSpire AV-750 GF40 NT resin can be dried on trays in an air circulation oven or in desiccating hopper driers. Minimum drying times are 2.5 hours at 350°F (177°C) or 4 hours at 300°F (149°C). Dried resin should be handled carefully to prevent absorption of moisture from the atmosphere by employing dry containers and covered hoppers.

Injection Molding

AvaSpire AV-750 GF40 NT resin can be readily molded in most injection molding machines. Stock temperature requirements will generally range from 698°F to 743°F (370° to 395°C), depending on mold design and the type of equipment being used. Caution: Do not exceed 743°F (395°C) during processing. The material may start degrading leading to a loss of physical properties. A general purpose, 2:1 compression screw is recommended with back pressures of 20-50 psi (138-345 kPa). A moderate screw speed (75 rpm) is also recommended.

Like other semi-crystalline resins, mold temperature and cycle time are critical to achieve maximum properties and consistent dimensions. A minimum mold temperature of 350°F (177°C) is recommended with the allowable range set at 350° to 410°F (177° to 210°C).

Standard Packaging and Labeling

AvaSpire AV-750 GF40 NT resin is packaged in polyethylene buckets, cardboard boxes, or multiwall bags depending upon the order size.

Individual packages will be plainly marked with the product number, the color, the lot number, and the net weight.

Product Safety and Emergency Service

For product safety information or a Material Safety Data Sheet on a product of Solvay Advanced Polymers

1 (800) 621-4557

1 (770) 772-8880 outside of U.S.

For information or help in an emergency such as a spill, leak, fire or explosion, call day or night:

Emergency Health Information

1 (800) 621-4590

1 (770) 772-5177 outside of U.S.

Emergency Spill Information

CHEMTREC 1 (800) 424-9300

**1 (703) 527-3887 outside of U.S.
collect calls accepted**

For Additional Information

Technical Service

1 (800) 621-4557

Customer Service

1 (800) 848-9744

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