

# AvaSpire® AV-848 GF30

## polyaryletherketone

AvaSpire® AV-848 GF30 is a 30% glass fiber-reinforced, high-temperature, polyaryletherketone (PAEK) that has been specifically formulated to provide several performance advantages over comparable grades of reinforced PEEK. These include improved dimensional stability, higher stiffness and lower CLTE from 150°C to 240°C, and lower modulus for greater flexibility at room temperature.

High temperature AV-848 GF30 provides design engineers with an alternative to reinforced PEEK,

specifically in demanding applications that require superior toughness, higher structural integrity, and exceptional chemical resistance.

AvaSpire® PAEK can be easily processed using standard thermoplastic melt processing techniques, including injection molding and extrusion.

- Natural: AvaSpire® AV-848 GF30 NT

### General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Glass Fiber, 30% Filler by Weight	
Features	• Chemical Resistant • Fatigue Resistant • Flame Retardant • Good Dimensional Stability	• High Heat Resistance • High Stiffness • High Strength
Uses	• Oil/Gas Applications	• Seals
RoHS Compliance	• Contact Manufacturer	
Appearance	• Natural Color	
Forms	• Pellets	
Processing Method	• Injection Molding • Machining	• Profile Extrusion

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.53		ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	9.0	g/10 min	ASTM D1238
Molding Shrinkage <sup>1</sup>			ASTM D955
Flow : 3.18 mm	0.20 to 0.40	%	
Across Flow : 3.18 mm	0.50 to 0.70	%	
Water Absorption (24 hr)	0.10	%	ASTM D570

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Mechanical	Typical Value	Unit	Test method
Tensile Modulus <sup>2</sup>	10600	MPa	ASTM D638
Tensile Strength <sup>2</sup>	168	MPa	ASTM D638
Tensile Elongation <sup>2</sup> (Break)	2.3	%	ASTM D638
Flexural Modulus	9900	MPa	ASTM D790
Flexural Strength	239	MPa	ASTM D790
Compressive Strength	139	MPa	ASTM D695
Shear Strength	84.8	MPa	ASTM D732

Impact	Typical Value	Unit	Test method
Notched Izod Impact	69	J/m	ASTM D256
Unnotched Izod Impact	960	J/m	ASTM D4812

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load <sup>3</sup> 1.8 MPa, Annealed, 3.20 mm	257	°C	ASTM D648
Glass Transition Temperature	158	°C	DSC
Peak Melting Temperature	340	°C	ASTM D3418
Specific Heat 50°C	1300	J/kg/°C	DSC
200°C	1700	J/kg/°C	
Thermal Conductivity	0.29	W/m/K	ASTM E1530

Electrical	Typical Value	Unit	Test method
Surface Resistivity	> 1.9E+17	ohms	ASTM D257
Volume Resistivity	1.8E+17	ohms-cm	ASTM D257
Dielectric Strength (3.00 mm)	18	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.74		
1 MHz	3.69		
Dissipation Factor			ASTM D150
60 Hz	2.0E-3		
1 MHz	6.0E-3		

Fill Analysis	Typical Value	Unit	Test method
Melt Viscosity (400°C, 1000 sec <sup>-1</sup> )	60.0	Pa·s	ASTM D3835

Injection	Typical Value	Unit
Drying Temperature	149	°C
Drying Time	4.0	hr
Rear Temperature	366	°C
Middle Temperature	371	°C
Front Temperature	377	°C
Nozzle Temperature	382	°C
Processing (Melt) Temp	382 to 404	°C
Mold Temperature	166 to 193	°C

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Injection	Typical Value	Unit
Injection Rate	Fast	
Screw Compression Ratio	2.0:1.0 to 3.0:1.0	

Injection Notes
Back Pressure: Minimum

## Notes

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

<sup>1</sup> 5" x 0.5" x 0.125" bars

<sup>2</sup> 5.0 mm/min

<sup>3</sup> 2 hours at 200°C

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