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AvaSpire® AV-722

polyaryletherketone

AvaSpire® AV-722 is an unreinforced polyaryletherketone (PAEK) that offers improved economics relative to PEEK while retaining most of PEEK's key performance attributes. AV-722 resin has been formulated for applications requiring high chemical resistance and mechanical strength along with low moisture absorption and good barrier properties.

These and other properties make this resin well-suited for applications in healthcare, transportation, electronics, chemical processing and other industries.

- Beige: AvaSpire® AV-722 BG 20

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• Ductile • Flame Retardant	• Good Chemical Resistance • Good Dimensional Stability	• Good Impact Resistance • High Heat Resistance
Uses	• Aircraft Applications • Automotive Applications • Electrical/Electronic Applications	• Film • Fuel Lines • Gears	• Medical/Healthcare Applications • Oil/Gas Applications • Seals
RoHS Compliance	• Contact Manufacturer		
Appearance	• Beige		
Forms	• Pellets		
Processing Method	• Extrusion Blow Molding • Fiber (Spinning) Extrusion • Film Extrusion	• Injection Blow Molding • Injection Molding • Machining	• Profile Extrusion • Thermoforming • Wire & Cable Extrusion

Physical	Typical Value	Unit	Test method
Specific Gravity	1.32		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 : 3.18 mm	0.80 to 1.0	%	
Across Flow : 3.18 mm	1.2 to 1.4	%	
Water Absorption (24 hr)	0.10	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Modulus			
-- [2]	3700	MPa	ASTM D638
--	3900	MPa	ISO 527-2/1A/1
Tensile Stress			
Yield	91.0	MPa	ISO 527-2/1A/50
-- [2]	89.0	MPa	ASTM D638

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Mechanical	Typical Value	Unit	Test method
Tensile Elongation			
Yield [2]	5.0	%	ASTM D638
Yield	4.5	%	ISO 527-2/1A/50
Break [2]	25	%	ASTM D638
Break	25	%	ISO 527-2/1A/50
Flexural Modulus			
--	3700	MPa	ASTM D790
--	3800	MPa	ISO 178
Flexural Strength			
--	141	MPa	ASTM D790
--	138	MPa	ISO 178
Compressive Strength	112	MPa	ASTM D695
Shear Strength	79.0	MPa	ASTM D732
Poisson's Ratio	0.43		ASTM E132

Impact	Typical Value	Unit	Test method
Notched Izod Impact			
--	80	J/m	ASTM D256
--	7.0	kJ/m²	ISO 180
Unnotched Izod Impact	No Break		ASTM D4812 ISO 180

Hardness	Typical Value	Unit	Test method
Rockwell Hardness (M-Scale)	95		ASTM D785

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load [3]			ASTM D648
1.8 MPa, Annealed, 3.20 mm	161	°C	
Glass Transition Temperature	150	°C	ASTM D3418
Peak Melting Temperature [4]	340	°C	ASTM D3418
CLTE - Flow (-50 to 50°C)	0.000045	cm/cm/°C	ASTM E831
Specific Heat			DSC
50°C	1410	J/kg/°C	
200°C	1970	J/kg/°C	
Thermal Conductivity	0.22	W/m/K	ASTM E1530

Electrical	Typical Value	Unit	Test method
Surface Resistivity	> 1.9E+17	ohm	ASTM D257
Volume Resistivity	3.1E+17	ohm·cm	ASTM D257
Dielectric Strength			ASTM D149
0.0500 mm, Amorphous Film	170	kV/mm	
3.00 mm	19	kV/mm	
Dielectric Constant			ASTM D150
60 Hz	3.12		
1 MHz	3.06		
Dissipation Factor			ASTM D150
60 Hz	0.0010		
1 MHz	0.0040		

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Flammability	Typical Value	Unit	Test method
Oxygen Index	40	%	ASTM D2863

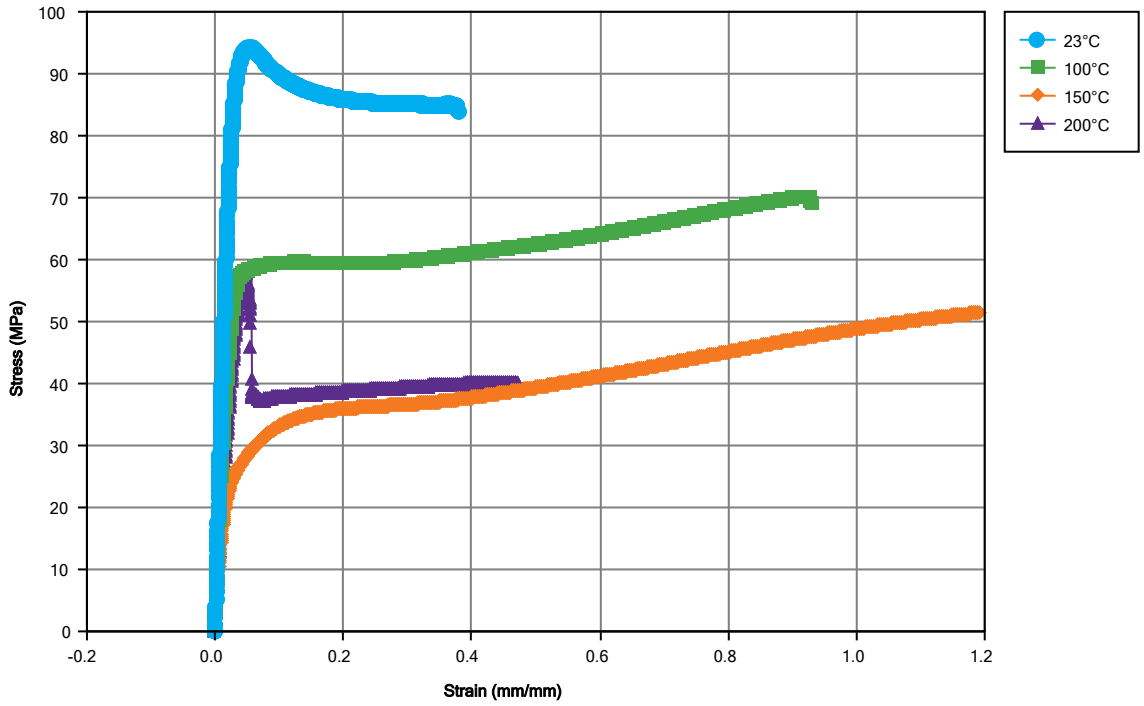
Fill Analysis	Typical Value	Unit
Melt Viscosity (400°C, 1000 sec^-1)	450	Pa·s

Injection	Typical 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
Mold Temperature	177 to 204	°C
Injection Rate	Fast	
Screw Compression Ratio	2.5:1.0 to 3.5:1.0	

Injection Notes

Back Pressure: Minimum

Isothermal Stress vs. Strain (ISO 11403-1)



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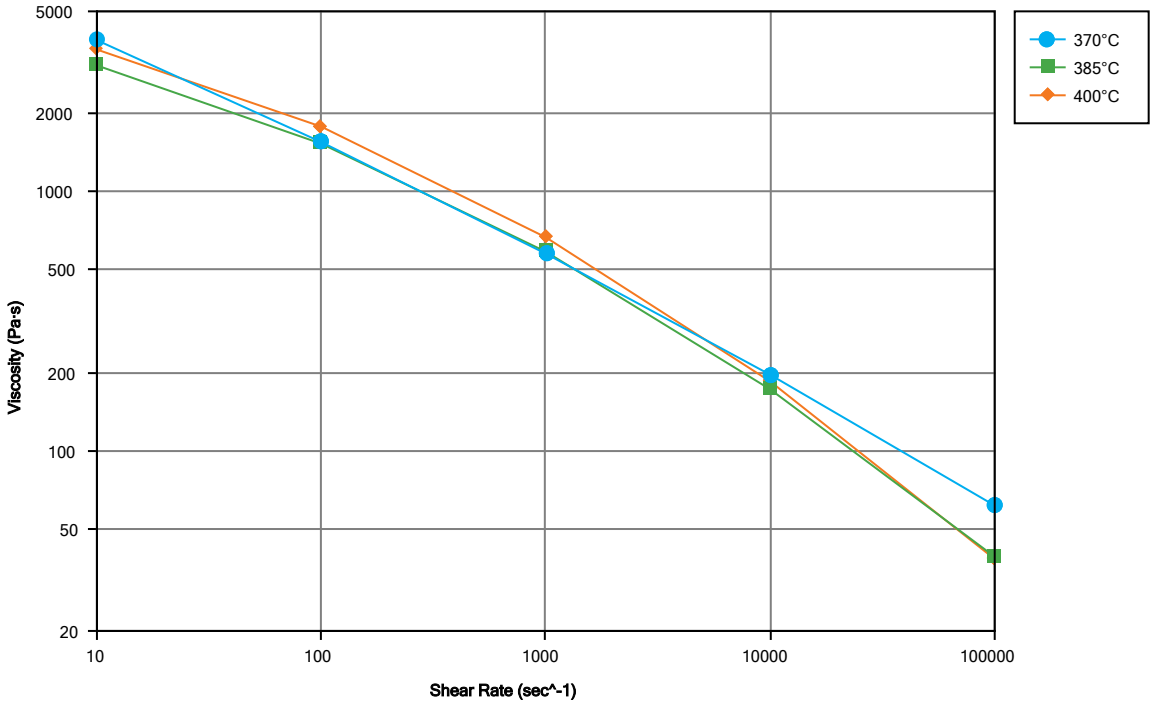
Viscosity vs. Shear Rate (ISO 11403-2)



Notes

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

[1] 5" x 0.5" x 0.125"

[2] 50 mm/min

[3] 2 hours at 200°C

[4] For major component

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