AvaSpire® AV-621

Polyaryletherketone

Solvay Specialty Polymers

Message:

AvaSpire® AV-621 is an unreinforced polyaryletherketone (PAEK) that offers improved ductility and impact strength relative to PEEK while retaining most of the key performance attributes of PEEK. The AV-621 grade is the low melt flow (higher molecular weight) analog of the medium flow grade AvaSpire® AV-651 that is tailored primarily for injection molding applications as well as film extrusion. AvaSpire® AV-621 resin is suited for a variety of processing methods including compression molding, stock shape extrusion, as well as injection molding.
AV-621 has been formulated for applications requiring a balance of chemical resistance and mechanical strength along with good part aesthetics, thereby bridging the performance gaps within the ultra polymers space. These and other properties make this resin well-suited for applications in healthcare, transportation, semiconductor, electronics, chemical processing, and other industries.
AvaSpire® AV-621 is easily fabricated using conventional thermoplastic melt processing techniques and standard equipment. The resin has a uniform opaque appearance with a beige color similar to that of PEEK.
AvaSpire® AV-621 NT

General Information	
UL YellowCard	E140728-100211989
Features	Ductile Fatigue Resistant Flame Retardant Good Chemical Resistance Good Dimensional Stability Good Impact Resistance High Heat Resistance
Uses	Bearings Bushings Connectors Medical/Healthcare Applications Oil/Gas Applications Semiconductor Molding Compounds
RoHS Compliance	RoHS Compliant
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
Multi-Point Data	Isothermal Stress vs. Strain (ISO 11403-1) Viscosity vs. Shear Rate (ISO 11403-2)

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.29	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	5.0	g/10 min	ASTM D1238
Molding Shrinkage [1]			ASTM D955
Flow : 3.18 mm	0.70 to 0.90	%	
Across Flow : 3.18 mm	1.1 to 1.3	%	
Water Absorption (24 hr)	0.20	%	ASTM D570
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (M-Scale)	93		ASTM D785
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			
-- [2]	2900	MPa	ASTM D638
--	3100	MPa	ISO 527-2/1A/1
Tensile Stress			
Yield	87.0	MPa	ISO 527-2/1A/50
-- [3]	84.0	MPa	ASTM D638
Tensile Elongation			
Yield [4]	6.0	%	ASTM D638
Yield	5.7	%	ISO 527-2/50
Break [5]	> 40	%	ASTM D638
Break	> 40	%	ISO 527-2/1A/50
Flexural Modulus			
--	3100	MPa	ASTM D790
--	3000	MPa	ISO 178
Flexural Strength			
--	122	MPa	ASTM D790
--	106	MPa	ISO 178
Compressive Strength	111	MPa	ASTM D695
Shear Strength	81.0	MPa	ASTM D732
Poisson's Ratio	0.39		ASTM E132
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact			
--	100	J/m	ASTM D256
--	7.6	kJ/m²	ISO 180
Unnotched Izod Impact	No Break		ASTM D4812, ISO 180
Thermal	**Nominal Value**	**Unit**	**Test Method**

Deflection Temperature Under Load [6] (1.8 MPa, Annealed, 3.20 mm)	187	°C	ASTM D648
Glass Transition Temperature	158	°C	ASTM D3418
Peak Melting Temperature	340	°C	ASTM D3418
CLTE - Flow (-50 to 50°C)	4.7E-5	cm/cm/°C	ASTM E831
Specific Heat			DSC
50°C	1450	J/kg/°C	
200°C	2000	J/kg/°C	
Thermal Conductivity	0.20	W/m/K	ASTM E1530
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	> 1.9E+17	ohms	ASTM D257
Volume Resistivity	6.2E+17	ohms·cm	ASTM D257
Dielectric Strength			ASTM D149
0.0500 mm, Amorphous Film	190	kV/mm	
3.00 mm	17	kV/mm	
Dielectric Constant			ASTM D150
60 Hz	3.07		
1 kHz	3.12		
1 MHz	3.10		
Dissipation Factor			IEC 60250
60 Hz	1.0E-3		
1 kHz	1.0E-3		
1 MHz	4.0E-3		
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating			UL 94
0.800 mm	V-0		
1.60 mm	V-0		
Oxygen Index	34	%	ASTM D2863
Fill Analysis	**Nominal Value**	**Unit**	**Test Method**
Melt Viscosity (400°C, 1000 sec^-1)	410	Pa·s	ASTM D3835
Injection	**Nominal Value**	**Unit**	
Drying Temperature	150	°C	
Drying Time	4.0	hr	
Rear Temperature	355	°C	
Middle Temperature	365	°C	
Front Temperature	370	°C	
Nozzle Temperature	375	°C	
Processing (Melt) Temp	365 to 390	°C	
Mold Temperature	150 to 180	°C	
Injection Rate	Fast		
Screw Compression Ratio	2.0:1.0 to 3.0:1.0		
NOTE			

1.	5" x 0.5" x 0.125"
2.	50 mm/min
3.	50 mm/min
4.	51 mm/min
5.	51 mm/min
6.	2 hours at 200°C

Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China