

Solvay Specialty Polymers AvaSpire® AV-630 Polyaryletherketone (PAEK)

Category : Polymer , Thermoplastic , Polyketone

Material Notes:

AvaSpire® AV-630 is an unreinforced polyaryletherketone (PAEK) developed as an alternative to low melt flow PEEK for the extrusion of ultra-thin films. Films with thicknesses as low as 0.2 mils (5 microns) can be successfully melt extruded out of AV-630 using conventional thermoplastics film extrusion equipment. Films of AV-630 offer certain performance advantages over comparable PEEK film. These include improved toughness and ductility, a higher retention of mechanical integrity at temperatures above 150°C, better acceptance of adhesives and improved flame propagation resistance properties. Ultra-thin films (

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-AvaSpire-AV-630-Polyaryletherketone-PAEK.php

Physical Properties	Metric	English	Comments
Density	1.30 g/cc	0.0470 lb/in ³	ASTM D792
Water Absorption	0.20 %	0.20 %	ISO 62
	@Time 86400 sec	@Time 24.0 hour	
Melt Flow	7.0 g/10 min	7.0 g/10 min	ASTM D1238
	@Load 2.16 kg, Temperature 400 °C	@Load 4.76 lb, Temperature 752 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	92	92	ASTM D785
Tensile Strength	92.0 MPa	13300 psi	50 mm/min; ASTM D638
Tensile Strength, Yield	89.0 MPa	12900 psi	Type 1A, 50 mm/min; ISO 527-2
Elongation at Break	50 - 80 %	50 - 80 %	Type 1A, 50 mm/min; ISO 527-2
	50 - 80 %	50 - 80 %	50 mm/min; ASTM D638
Elongation at Yield	5.4 %	5.4 %	Type 1A, 50 mm/min; ISO 527-2
	6.0 %	6.0 %	50 mm/min; ASTM D638
Tensile Modulus	3.30 GPa	479 ksi	50 mm/min; ASTM D638
	3.40 GPa	493 ksi	1 mm/min, Type 1A; ISO 527-2
Flexural Strength	127 MPa	18400 psi	ASTM D790
	128 MPa	18600 psi	ISO 178
Flexural Modulus	0.320 GPa	46.4 ksi	ASTM D790

Mechanical Properties	3.30 GPa Metric	479 ksi English	ISO 178 Comments
Compressive Strength	110 MPa	16000 psi	ASTM D695
Shear Strength	79.0 MPa	11500 psi	ASTM D732
Izod Impact, Notched	0.910 J/cm	1.70 ft-lb/in	ASTM D256
Izod Impact, Unnotched	NB	NB	ASTM D256
Izod Impact, Notched (ISO)	7.00 kJ/m ²	3.33 ft-lb/in ²	ISO 180
Izod Impact, Unnotched (ISO)	NB	NB	ISO 180

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	1.39 J/g- ^o C	0.332 BTU/lb- ^o F	ASTM C351
	@Temperature 50.0 ^o C	@Temperature 122 ^o F	
	1.96 J/g- ^o C	0.468 BTU/lb- ^o F	ASTM C351
	@Temperature 200 ^o C	@Temperature 392 ^o F	
Thermal Conductivity	0.230 W/m-K	1.60 BTU-in/hr-ft ² - ^o F	ASTM C177
Melting Point	340 ^o C	644 ^o F	ASTM D3418
Deflection Temperature at 1.8 MPa (264 psi)	181 ^o C	358 ^o F	Annealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Glass Transition Temp, Tg	158 ^o C	316 ^o F	DSC
Oxygen Index	38 %	38 %	ASTM D2863

Electrical Properties	Metric	English	Comments
Volume Resistivity	6.20e+17 ohm-cm	6.20e+17 ohm-cm	ASTM D257
Surface Resistance	>= 1.90e+17 ohm	>= 1.90e+17 ohm	ASTM D257
Dielectric Strength	180 kV/mm	4570 kV/in	Amorphous Film; ASTM D149
	@Thickness 0.0600 mm	@Thickness 0.00236 in	

Processing Properties	Metric	English	Comments
Drying Temperature	149 ^o C	300 ^o F	
	@Time 14400 sec	@Time 4.00 hour	

Descriptive Properties	Value	Comments
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	Latin America	
	North America	
Color	Natural	
Form	Pellets	
Processing Technique	Extrusion Blow Molding	
	Fiber (Spinning) Extrusion; Film Extrusion	
	Injection Blow Molding; Injection Molding	
	Machining; Profile Extrusion	
	Thermoforming; Wire & Cable Extrusion	

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