Solvay Specialty Polymers KetaSpire® KT-820 Polyetheretherketone (PEEK) (Unverified Data**)

Category : Polymer , Thermoplastic , Polyketone , Polyetheretherketone (PEEK)

Material Notes:

KetaSpire KT-820 is a low flow grade of unreinforced polyetheretherketone (PEEK) supplied in a lubricated pellet form. KetaSpire PEEK is produced to the highest industry standards and is characterized by a distinct combination of properties, which include excellent wear resistance, best-in-class fatigue resistance, ease of melt processing, high purity, and excellent chemical resistance to organics, acids, and bases. These properties make it well-suited for applications in healthcare, transportation, electronics, chemical processing, and other industrial uses. KetaSpire KT-820 can be easily processed using typical injection molding and extrusion processes. This resin is also available as KetaSpire KT-820P in a natural-color coarse powder form for compounding. Pellets of KT-820 are supplied lightly dusted with the lubricant calcium stearate (0.01% level) to aid with pellet conveyance in plastication screws. The equivalent non-lubricated natural color grade of low flow KetaSpire is available as KT-820 NL. - Black: KT-820 BK 95 - Natural: KT-820 NTAdditional Information: Standard Packaging and Labeling - KetaSpire resins are packaged in polyethylene buckets or cardboard boxes depending upon the order size. Individual packages will be plainly marked with the product, color, lot number, and net weight.Injection Notes: Drying - KetaSpire resins must be dried completely prior to melt processing. Incomplete drying will result in defects in the formed part ranging from surface streaks to severe bubbling. Pellets can be dried on trays in a circulating air oven or in desiccating hopper dryer. Drying conditions recommended are 4 hours at 150°C (300°F) . Injection Molding - KetaSpire resins can be readily injection molded in most screw injection machines. A general purpose screw with a compression ratio in the range of 2.5 - 3.5 : 1 is recommended, as is minimum back pressure. Injection speeds should be as fast as possible, consistent with part appearance requirements. Mold temperatures in the range of 175°C to 205°C (350°F to 400°F) are suggested. Recommended starting point barrel temperatures are shown in the following table.Information provided by Solvay Specialty Polymers.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-KetaSpire-KT-820-Polyetheretherketone-PEEK-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.30 g/cc	1.30 g/cc	ASTM D792
Water Absorption	0.10 % @Time 86400 sec	0.10 % @Time 24.0 hour	ASTM D570
Viscosity	440000 cP @Shear Rate 1000 1/s, Temperature 400 °C	440000 cP @Shear Rate 1000 1/s, Temperature 752 °F	Melt; ASTM D3835
Linear Mold Shrinkage, Flow	0.011 - 0.013 cm/cm	0.011 - 0.013 in/in	0.125"x0.5"x5" bar; ASTM D955
Linear Mold Shrinkage, Transverse	0.013 - 0.015 cm/cm	0.013 - 0.015 in/in	0.125"x0.5"x5" bar; ASTM D955
Melt Flow	3.0 g/10 min @Load 2.16 kg, Temperature 400 °C	3.0 g/10 min @Load 4.76 lb, Temperature 752 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	97	97	M-Scale; ASTM D785
Hardness, Shore D	88 @Time 1.00 sec	88 @Time 0.000278 hour	ASTM D2240
Tensile Strength	95.0 MPa	13800 psi	50 mm/min; ASTM D638
Tensile Strength, Yield	96.0 MPa	13900 psi	ISO 527-2/1A/50
Elongation at Break	20 - 30 %	20 - 30 %	50 mm/min; ASTM D638
	20 - 30 %	20 - 30 %	ISO 527-2/1A/50
Elongation at Yield	4.9 %	4.9 %	ISO 527-2/1A/50
	5.2 %	5.2 %	50 mm/min; ASTM D638
Tensile Modulus	3.50 GPa	508 ksi	50 mm/min; ASTM D638
	3.83 GPa	555 ksi	ISO 527-2/1A/1
Flexural Strength	121 MPa	17500 psi	ISO 178
	146 MPa	21200 psi	ASTM D790
Flexural Modulus	3.70 GPa	537 ksi	ASTM D790
	3.70 GPa	537 ksi	ISO 178
Compressive Strength	118 MPa	17100 psi	ASTM D695
Poissons Ratio	0.33	0.33	ASTM E132
Shear Modulus	1.32 - 1.44 GPa	191 - 209 ksi	Calculated
Shear Strength	84.1 MPa	12200 psi	ASTM D732
Izod Impact, Notched	0.910 J/cm	1.70 ft-lb/in	ASTM D256
	NB	NB	ASTM D4812
Izod Impact, Notched (ISO)	9.20 kJ/m²	4.38 ft-lb/in²	ISO 180
Izod Impact, Unnotched (ISO)	NB	NB	ISO 180

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	43.0 µm/m-°C @Temperature -50.0 - 50.0 °C	23.9 µin/in-°F @Temperature -58.0 - 122 °F	TMA; ASTM E831

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	1.56 J/g-°C	0.373 BTU/lb-°F	DSC
	@Temperature 50.0 °C	@Temperature 122 °F	
	2.15 J/g-°C @Temperature 200 °C	0.514 BTU/lb-°F @Temperature 392 °F	DSC
Thermal Conductivity	0.240 W/m-K	1.67 BTU-in/hr-ft²-°F	ASTM E1530
Melting Point	340 °C	644 °F	Peak; ASTM D3418
Deflection Temperature at 1.8 MPa (264 psi)	157 °C @Thickness 3.20 mm	315 °F @Thickness 0.126 in	Annealed; 2 hours at 200°C; ASTM D648
Glass Transition Temp, Tg	150 °C	302 °F	ASTM D3418
Flammability, UL94	V-1 @Thickness 0.800 mm	V-1 @Thickness 0.0315 in	UL 94
	V-0 @Thickness 1.60 mm	V-0 @Thickness 0.0630 in	UL 94
Oxygen Index	37 %	37 %	ASTM D2863

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.60e+17 ohm-cm	1.60e+17 ohm-cm	ASTM D257
Surface Resistance	>= 1.90e+17 ohm	>= 1.90e+17 ohm	ASTM D257
Dielectric Constant	3.05 @Frequency 1.00e+6 Hz	3.05 @Frequency 1.00e+6 Hz	ASTM D150
	3.06 @Frequency 60.0 Hz	3.06 @Frequency 60.0 Hz	ASTM D150
	3.1 @Frequency 1000 Hz	3.1 @Frequency 1000 Hz	ASTM D150
Dielectric Strength	15.0 kV/mm @Thickness 3.00 mm	381 kV/in @Thickness 0.118 in	ASTM D149
	200 kV/mm @Thickness 0.0508 mm	5080 kV/in @Thickness 0.00200 in	Amorphous Film; ASTM D149
Dissipation Factor	0.0010 @Frequency 1000 Hz	0.0010 @Frequency 1000 Hz	ASTM D150

Electrical Properties	Metric	English	Comments
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	0.0030 @Frequency 1.00e+6 Hz	0.0030 @Frequency 1.00e+6 Hz	ASTM D150

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	355 °C	671 °F	
Middle Barrel Temperature	365 °C	689 °F	
Front Barrel Temperature	370 °C	698 °F	
Nozzle Temperature	375 °C	707 °F	
Mold Temperature	175 - 205 °C	347 - 401 °F	
Drying Temperature	150 °C	302 °F	
Dry Time	4.00 hour	4.00 hour	

Descriptive Properties	Value	Comments
Additive	Lubricant	
Agency Ratings	ISO 10993	
	ISO 10993-Part 1	
Appearance	Black	
	Natural Color	
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	North America	
	South America	
Features	Autoclave Sterilizable	
	Ductile	
	E-beam Sterilizable	
	Ethylene Oxide Sterilizable	

Descriptive Properties	Value	Comments
	Fatigue Resistant	
	Flame Retardant	
	Good Chemical Resistance	
	Good Dimensional Stability	
	Good Impact Resistance	
	Good Sterilizability	
	Heat Sterilizable	
	High Heat Resistance	
	Radiation (Gamma) Resistant	
	Radiation Sterilizable	
	Radiotranslucent	
	Steam Resistant	
	Steam Sterilizable	
Forms	Pellets	non-lubricated
Generic	PEEK	
Injection Rate	Fast	
Processing Method	Extrusion Blow Molding	
	Film Extrusion	
	Injection Molding	
	Machining	
	Profile Extrusion	
	Thermoforming	
	Wire & Cable Extrusion	
RoHS Compliance	RoHS Compliant	
Screw Compression Ratio	2.5:1.0 to 3.5:1.0	
Uses	Aircraft Applications	
	Automotive Applications	
	Connectors	

Descriptive Properties	Value	Comments
	Dental Applications	
	Electrical/Electronic Applications	
	Film	
	Gears	
	Hospital Goods	
	Housings	
	Industrial Applications	
	Medical Appliances	
	Medical/Healthcare Applications	
	Oil/Gas Applications	
	Pump Parts	
	Seals	
	Surgical Instruments	
	Tubing	

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