

Solvay Specialty Polymers KetaSpire® KT-851 NL Polyetheretherketone (PEEK) (Unverified Data**)

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

Material Notes:

KetaSpire KT-851 NL resin is a depth-filtered grade of polyetheretherketone (PEEK) supplied in non-lubricated, natural-color pellet form and is specially designed for use in extruded wire insulation coating. KT-851 NL offers the needed balance of properties and processability for applying thin insulation coatings onto copper or other conducting wire using a continuous extrusion process to achieve a robust insulation coating that is capable of withstanding the harsh use environments of many industrial applications. KetaSpire PEEK is produced to the highest industry standards and is characterized by a distinct combination of properties, which include excellent chemical resistance to organics, acids and bases, best in class fatigue resistance, excellent wear resistance, ease of melt processing and high purity. A lubricated form of this resin is available as KT-851 in natural color (NT). The pellets in the lubricated versions are supplied with a very light dusting (0.01%) of calcium stearate to aid with conveying through single screw extruder-based processing equipment. Additional 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-851-NL-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	380000 cP @Shear Rate 1000 1/s, Temperature 400 °C	380000 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	ASTM D955
Linear Mold Shrinkage, Transverse	0.013 - 0.015 cm/cm	0.013 - 0.015 in/in	ASTM D955
Melt Flow	10 g/10 min @Load 2.16 kg, Temperature 400 °C	10 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	88	ASTM D2240
	@Time 1.00 sec	@Time 0.000278 hour	
Tensile Strength	96.0 MPa	13900 psi	ASTM D638
Tensile Strength, Yield	95.0 MPa	13800 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	4.8 %	4.8 %	ISO 527-2/1A/50
	5.2 %	5.2 %	50 mm/min; ASTM D638
Tensile Modulus	3.60 GPa	522 ksi	1.0 mm/min; ASTM D638
	3.85 GPa	558 ksi	ISO 527-2/1A/1
Flexural Strength	112 MPa	16200 psi	ISO 178
	152 MPa	22000 psi	ASTM D790
Flexural Modulus	3.62 GPa	525 ksi	ISO 178
	3.90 GPa	566 ksi	ASTM D790
Compressive Strength	121 MPa	17500 psi	ASTM D695
Shear Strength	91.5 MPa	13300 psi	ASTM D732
Izod Impact, Notched	0.690 J/cm	1.29 ft-lb/in	ASTM D256
	NB	NB	ASTM D4812
Izod Impact, Notched (ISO)	7.50 kJ/m ²	3.57 ft-lb/in ²	ISO 180
Izod Impact, Unnotched (ISO)	NB	NB	ISO 180

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	43.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	23.9 $\mu\text{in}/\text{in}\cdot\text{°F}$	TMA; ASTM E831
	@Temperature -50.0 - 50.0 °C	@Temperature -58.0 - 122 °F	
Specific Heat Capacity	1.35 $\text{J}/\text{g}\cdot\text{°C}$	0.323 $\text{BTU}/\text{lb}\cdot\text{°F}$	DSC
	@Temperature 50.0 °C	@Temperature 122 °F	
	1.95 $\text{J}/\text{g}\cdot\text{°C}$	0.466 $\text{BTU}/\text{lb}\cdot\text{°F}$	

Thermal Properties	Metric @ Temperature 200 °C	English @ Temperature 392 °F	DSC Comments
Thermal Conductivity	0.240 W/m-K	1.67 BTU-in/hr-ft ² -°F	ASTM E831
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

Electrical Properties	Metric	English	Comments
Volume Resistivity	2.50e+17 ohm-cm	2.50e+17 ohm-cm	ASTM D257
Surface Resistance	>= 1.90e+17 ohm	>= 1.90e+17 ohm	ASTM D257
Dielectric Strength	200 kV/mm @Thickness 0.0500 mm	5080 kV/in @Thickness 0.00197 in	Amorphous Film; ASTM D149

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	
Appearance	Natural Color	
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	North America	
	South America	

Descriptive Properties Features	Value Ductile	Comments
	Fatigue Resistant	
	Flame Retardant	
	Good Chemical Resistance	
	Good Dimensional Stability	
	Good Impact Resistance	
	High Heat Resistance	
Forms	Pellets	
Generic	PEEK	
Injection Rate	Fast	
Processing Method	Injection Molding	
	Machining	
	Profile Extrusion	
Screw Compression Ratio	2.5:1.0 to 3.5:1.0	
Uses	Electrical/Electronic Applications	
	Oil/Gas Applications	
	Wire Jacketing	

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