

## Solvay Specialty Polymers KetaSpire<sup>®</sup> KT-880 Polyetheretherketone (PEEK)

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

### Material Notes:

KetaSpire<sup>®</sup> KT-880 is a high flow grade of unreinforced polyetheretherketone (PEEK) supplied in pellet form. KetaSpire<sup>®</sup> 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. Features: Autoclave Sterilizable; Biocompatible; Ductile; E-beam Sterilizable; Ethylene Oxide Sterilizable; Fatigue Resistant; Flame Retardant; Good Chemical Resistance; Good Dimensional Stability; Good Impact Resistance; Good Sterilizability; Heat Sterilizable; High Flow; High Heat Resistance; Radiation (Gamma) Resistant; Radiation Sterilizable; Radiotranslucent; Steam Resistant; Steam Sterilizable. Uses: Aircraft Applications; Connectors; Dental Applications; Electrical/Electronic Applications; Film; Hospital Goods; Industrial Applications; Medical Devices; Medical/Healthcare Applications; Oil/Gas Applications; Pump Parts; Seals; Surgical Instruments. Information provided by Solvay Specialty Polymers.

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Physical Properties	Metric	English	Comments
Density	1.30 g/cc	0.0470 lb/in <sup>3</sup>	ASTM D792
Water Absorption	0.10 % @Time 86400 sec	0.10 % @Time 24.0 hour	ISO 62
Viscosity	150000 cP @Shear Rate 1000 1/s, Temperature 400 Å°C	150000 cP @Shear Rate 1000 1/s, Temperature 752 Å°F	Melt Viscosity; ASTM D3835
Linear Mold Shrinkage, Flow	0.014 - 0.016 cm/cm @Thickness 3.18 mm	0.014 - 0.016 in/in @Thickness 0.125 in	
Linear Mold Shrinkage, Transverse	0.015 - 0.017 cm/cm @Thickness 3.18 mm	0.015 - 0.017 in/in @Thickness 0.125 in	ASTM D955
Melt Flow	36 g/10 min @Load 2.16 kg, Temperature 400 Å°C	36 g/10 min @Load 4.76 lb, Temperature 752 Å°F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	102	102	ASTM D785
Tensile Strength	100 MPa	14500 psi	50 mm/min; ASTM D638
Tensile Strength, Yield	102 MPa	14800 psi	50 mm/min; ISO 527-2
Elongation at Break	10 - 20 %	10 - 20 %	Type 1A, 50 mm/min; ISO 527-2

Mechanical Properties	Metric %	English %	Comments ; ASTM D638
Elongation at Yield	5.0 %	5.0 %	Type 1A, 50 mm/min; ISO 527-2
	5.2 %	5.2 %	50 mm/min; ASTM D638
Tensile Modulus	3.70 GPa	537 ksi	1.0 mm/min; ASTM D638
	4.00 GPa	580 ksi	1 mm/min, Type 1A; ISO 527-2
Flexural Strength	134 MPa	19400 psi	ISO 178
	153 MPa	22200 psi	ASTM D790
Flexural Modulus	3.80 GPa	551 ksi	ASTM D790
	3.90 GPa	566 ksi	ISO 178
Compressive Strength	123 MPa	17800 psi	ASTM D695
Poissons Ratio	0.37	0.37	ASTM E132
Shear Strength	95.1 MPa	13800 psi	ASTM D732
Izod Impact, Notched	0.530 J/cm	0.993 ft-lb/in	ASTM D256
Izod Impact, Unnotched	NB	NB	ASTM D256
Izod Impact, Notched (ISO)	4.90 kJ/m <sup>2</sup>	2.33 ft-lb/in <sup>2</sup>	ISO 180
Izod Impact, Unnotched (ISO)	NB	NB	ISO 180

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	50.0 Åµm/m-Å°C @Temperature -50.0 - 50.0 Å°C	27.8 Åµin/in-Å°F @Temperature -58.0 - 122 Å°F	1
Specific Heat Capacity	1.33 J/g-Å°C @Temperature 50.0 Å°C	0.318 BTU/lb-Å°F @Temperature 122 Å°F	ASTM C351
	1.93 J/g-Å°C @Temperature 200 Å°C	0.461 BTU/lb-Å°F @Temperature 392 Å°F	ASTM C351
Thermal Conductivity	0.250 W/m-K	1.74 BTU-in/hr-ftÅ²-Å°F	ASTM C177
Melting Point	343 Å°C	649 Å°F	ASTM D3418
Deflection Temperature at 1.8 MPa (264 psi)	160 Å°C	320 Å°F	Annealed; ASTM D648

Glass Transition Temp, Tg Thermal Properties	147 Â°C Metric	297 Â°F English	DSC Comments
Flammability, UL94	V-0  @Thickness >=3.00 mm	V-0  @Thickness >=0.118 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	3.80e+17 ohm-cm	3.80e+17 ohm-cm	ASTM D257
Surface Resistance	>= 1.90e+17 ohm	>= 1.90e+17 ohm	ASTM D257
Dielectric Constant	3.01  @Frequency 1000 Hz	3.01  @Frequency 1000 Hz	ASTM D150
	3.07  @Frequency 1.00e+6 Hz	3.07  @Frequency 1.00e+6 Hz	ASTM D150
Dielectric Strength	3.1  @Frequency 60.0 Hz	3.1  @Frequency 60.0 Hz	ASTM D150
	15.0 kV/mm  @Thickness 3.00 mm	381 kV/in  @Thickness 0.118 in	ASTM D149
Dissipation Factor	0.0010  @Frequency 60.0 Hz	0.0010  @Frequency 60.0 Hz	ASTM D150
	0.0010  @Frequency 1000 Hz	0.0010  @Frequency 1000 Hz	ASTM D150
	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 Â°C	671 Â°F	
Middle Barrel Temperature	365 Â°C	689 Â°F	
Front Barrel Temperature	370 Â°C	698 Â°F	
Nozzle Temperature	375 Â°C	707 Â°F	
Mold Temperature	175 - 205 Â°C	347 - 401 Â°F	
Drying Temperature	150 Â°C  @Time 14400 sec	302 Â°F  @Time 4.00 hour	

Descriptive Properties	Value	Comments
Agency Ratings	ISO 10993; ISO 10993-Part 1	
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	Latin America	
	North America	
Color	Black; Natural	
Form	Pellets	
Injection Rate	Fast	
Processing Technique	Extrusion Blow Molding; Fiber (Spinning) Extrusion	
	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	

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