KetaSpire® KT-880FP
polyetheretherketone

KetaSpire® KT-880FP is the high-flow grade of unreinforced polyetheretherketone (PEEK) supplied in a natural color fine powder form for compression molding and other uses that can benefit from the fine powder 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.

The resin is also available as KetaSpire KT-880 NT in a natural-color pellet form for injection molding.

General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Features	• Autoclave Sterilizable • Biocompatible • Chemical Resistant • Ductile • E-beam Sterilizable • Ethylene Oxide Sterilizable • Fatigue Resistant • Flame Retardant • 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
Agency Ratings	• ISO 10993	• ISO 10993-1
RoHS Compliance	• RoHS Compliant	
Appearance	• Black	• Natural Color
Forms	• Pellets [1]	
Processing Method	• Extrusion Blow Molding • Fiber (Spinning) Extrusion • Film Extrusion • Injection Molding	• Machining • Profile Extrusion • Thermoforming • Wire & Cable Extrusion

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Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.30		ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	36	g/10 min	ASTM D1238
Molding Shrinkage [2]			ASTM D955
Flow : 0.318 mm	1.4 to 1.6	%	
Across Flow : 3.18 mm	1.5 to 1.7	%	
Water Absorption (24 hr)	0.10	%	ASTM D570
Particle Size - D50	30.0 to 45.0	µm	

Mechanical	Typical Value	Unit	Test method
Tensile Modulus			
-- [3]	3700	MPa	ASTM D638
--	4000	MPa	ISO 527-1/1A/1
Tensile Stress			
Yield	102	MPa	ISO 527-2/1A/50
-- [4]	100	MPa	ASTM D638
Tensile Elongation			
Yield [5]	5.2	%	ASTM D638
Yield	5.0	%	ISO 527-2/1A/50
Break [5]	10 to 20	%	ASTM D638
Break	10 to 20	%	ISO 527-2/1A/50
Flexural Modulus			
--	3800	MPa	ASTM D790
--	3900	MPa	ISO 178
Flexural Strength			
--	153	MPa	ASTM D790
--	134	MPa	ISO 178
Compressive Strength	123	MPa	ASTM D695
Shear Strength	95.1	MPa	ASTM D732
Poisson's Ratio	0.37		ASTM E132

Impact	Typical Value	Unit	Test method
Notched Izod Impact			
--	53	J/m	ASTM D256
--	4.9	kJ/m²	ISO 180
Unnotched Izod Impact	No Break		ASTM D4812 ISO 180

Hardness	Typical Value	Unit	Test method
Rockwell Hardness (M-Scale)	102		ASTM D785

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Annealed	160	°C	
Glass Transition Temperature	147	°C	ASTM D3418
Peak Melting Temperature	343	°C	ASTM D3418
CLTE - Flow (-50 to 50°C)	5.0E-5	cm/cm/°C	ASTM E831
Specific Heat			DSC
50°C	1330	J/kg/°C	
200°C	1930	J/kg/°C	
Thermal Conductivity	0.25	W/m/K	ASTM E1530

Electrical	Typical Value	Unit	Test method
Surface Resistivity	> 1.9E+17	ohms	ASTM D257
Volume Resistivity	3.8E+17	ohms·cm	ASTM D257
Dielectric Strength (3.00 mm)	15	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.10		
1 kHz	3.01		
1 MHz	3.07		
Dissipation Factor			ASTM D150
60 Hz	1.0E-3		
1 kHz	1.0E-3		
1 MHz	3.0E-3		

Fill Analysis	Typical Value	Unit	Test method
Melt Viscosity (400°C, 1000 sec^-1)	150	Pa·s	ASTM D3835

Additional Information

The particle size distribution is such that no particle is larger than 149 microns, and less than 2% of the weight of the material is larger than 106 microns.

Injection	Typical 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
Mold Temperature	175 to 205	°C
Injection Rate	Fast	
Screw Compression Ratio	2.5:1.0 to 3.5:1.0	

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Notes

Typical properties: these are not to be construed as specifications.

[1] Pellets are supplied lightly dusted with the lubricant calcium stearate (0.01% level). For non-lubricated, natural color grade, order KT-880 NL.

[2] 5" x 0.5" x 0.125"

[3] 1.0 mm/min

[4] 51 mm/min

[5] 50 mm/min

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