KetaSpire® KT-880 CF30

polyetheretherketone

KetaSpire® KT-880 CF30 is a high flow, 30% carbon fiber reinforced grade of polyetheretherketone (PEEK). Carbon-fiber reinforcement of KetaSpire® PEEK provides the maximum levels of mechanical properties at temperatures approaching 300°C and the lowest coefficient of linear thermal expansion within the KetaSpire® product family.

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.

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Filler / Reinforcement	• Carbon Fiber, 30% Filler by Weight		
Features	• Autoclave Sterilizable • E-beam Sterilizable • Ethylene Oxide Sterilizable • Fatigue Resistant • Flame Retardant • Good Chemical Resistance	• Good Dimensional Stability • Good Sterilizability • Heat Sterilizable • High Flow • High Heat Resistance • High Stiffness	• High Strength • 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	• FAA FAR 25.853a [1]	• ISO 10993	
RoHS Compliance	• Contact Manufacturer		
Appearance	• Black		
Forms	• Pellets		
Processing Method	• Injection Molding	• Machining	• Profile Extrusion

Physical	Typical Value	Unit	Test method
Specific Gravity	1.41		ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	11	g/10 min	ASTM D1238
Molding Shrinkage [2]			ASTM D955
Flow : 3.18 mm	0.0 to 0.20	%	
Across Flow : 3.18 mm	1.4 to 1.6	%	
Water Absorption (24 hr)	0.10	%	ASTM D570

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Mechanical	Typical Value	Unit	Test method
Tensile Modulus			
--	20900	MPa	ASTM D638
--	25400	MPa	ISO 527-2/1A/1
Tensile Stress			
Yield	218	MPa	ISO 527-2/1A/5
--	223	MPa	ASTM D638
Tensile Elongation			
Break [3]	1.7	%	ASTM D638
Break	1.7	%	ISO 527-2/1A/5
Flexural Modulus			
--	17900	MPa	ASTM D790
--	21500	MPa	ISO 178
Flexural Strength			
--	321	MPa	ASTM D790
--	319	MPa	ISO 178
Compressive Strength	188	MPa	ASTM D695
Shear Strength	103	MPa	ASTM D732

Impact	Typical Value	Unit	Test method
Notched Izod Impact			
--	64	J/m	ASTM D256
--	8.5	kJ/m²	ISO 180
Unnotched Izod Impact			
--	640	J/m	ASTM D4812
--	43	kJ/m²	ISO 180

Hardness	Typical Value	Unit	Test method
Rockwell Hardness (M-Scale)	106		ASTM D785

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Annealed	315	°C	
Glass Transition Temperature	147	°C	ASTM D3418
Peak Melting Temperature	343	°C	ASTM D3418
CLTE - Flow (-50 to 50°C)	6.7E-6	cm/cm/°C	ASTM E831
Specific Heat			DSC
50°C	1310	J/kg/°C	
200°C	1810	J/kg/°C	
Thermal Conductivity	0.37	W/m/K	ASTM C177

Flammability	Typical Value	Unit	Test method
Flame Rating			UL 94
0.800 mm	V-0		
1.60 mm	V-0		

Fill Analysis	Typical Value	Unit	Test method
Melt Viscosity (400°C, 1000 sec^-1)	450	Pa·s	ASTM D3835

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Injection	Typical Value	Unit
Drying Temperature	150	°C
Drying Time	4.0	hr
Rear Temperature	365	°C
Middle Temperature	370	°C
Front Temperature	375	°C
Nozzle Temperature	380	°C
Mold Temperature	175 to 205	°C
Injection Rate	Fast	
Screw Compression Ratio	2.5:1.0 to 3.5:1.0	

Notes

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

[1] Passes 60s VB flame, smoke and toxicity requirements.

[2] 5" x 0.5" x 0.125" bars

[3] 5.0 mm/min

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