KetaSpire® KT-820 SL30
polyetheretherketone

KetaSpire® KT-820 SL30 is a polyetheretherketone (PEEK) compound designed to provide a balance of excellent mechanical properties, wear resistance and low coefficient of friction in both dry and externally lubricated applications. The resin is formulated with a ternary anti-friction/anti-wear additive system comprised of carbon fiber, graphite, and polytetrafluoroethylene (PTFE).

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 transportation, electronics, chemical processing, and industrial uses including oil and gas exploration and production. The resin is black in color in its natural state.

General		
Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Additive	• Carbon Fiber + Graphite + PTFE Lubricant	
Features	• Chemical Resistant • Fatigue Resistant • Flame Retardant	• Good Dimensional Stability • High Heat Resistance • Wear Resistant
Uses	• Aircraft Applications • Bearings • Bushings • Film • Gears	• Industrial Applications • Profiles • Rods • Sheet • Tubing
RoHS Compliance	• Contact Manufacturer	
Appearance	• Black	
Forms	• Pellets	
Processing Method	• Injection Molding • Machining	• Profile Extrusion

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.45		ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	2.4	g/10 min	ASTM D1238
Molding Shrinkage[1]			ASTM D955
Flow : 3.18 mm	0.10 to 0.30	%	
Across Flow : 3.18 mm	1.5 to 1.7	%	
Water Absorption (24 hr)	0.14	%	ASTM D570

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Mechanical	Typical Value	Unit	Test method
Tensile Modulus			
-- [2]	11000	MPa	ASTM D638
--	14400	MPa	ISO 527-1/1A/1
Tensile Stress			
Yield	150	MPa	ISO 527-2/1A/5
--	133	MPa	ASTM D638
Tensile Elongation			
Break [2]	2.8	%	ASTM D638
Break	2.8	%	ISO 527-2/1A/5
Flexural Modulus			
--	10500	MPa	ASTM D790
--	14900	MPa	ISO 178
Flexural Strength			
--	221	MPa	ASTM D790
--	218	MPa	ISO 178
Compressive Strength	110	MPa	ASTM D695
Shear Strength	70.3	MPa	ASTM D732
Coefficient of Friction			ASTM D3702
-- [3]	0.25		
-- [4]	0.30		
-- [5]	0.090		
-- [6]	0.080		

Impact	Typical Value	Unit	Test method
Notched Izod Impact			
--	69	J/m	ASTM D256
--	9.0	kJ/m²	ISO 180
Unnotched Izod Impact			
--	530	J/m	ASTM D4812
--	34	kJ/m²	ISO 180

Hardness	Typical Value	Test method
Rockwell Hardness (M-Scale)	80	ASTM D785
Durometer Hardness (Shore D, 1 sec)	86	ASTM D2240

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed	291	°C	
1.8 MPa, Annealed	291	°C	
Glass Transition Temperature	152	°C	ASTM D3418
Peak Melting Temperature	342	°C	ASTM D3418
CLTE - Flow			ASTM E831
0 to 150°C	2.2E-5	cm/cm/°C	
-50 to 50°C	2.2E-5	cm/cm/°C	
Specific Heat			DSC
50°C	1360	J/kg/°C	
200°C	1840	J/kg/°C	
Thermal Conductivity	0.40	W/m/K	ASTM E1530

Flammability	Typical Value	Unit	Test method
Flame Rating			UL 94
0.8 mm	V-0		
1.6 mm	V-0		

Fill Analysis	Typical Value	Unit	Test method
Melt Viscosity (400°C, 1000 sec^-1)	270	Pa·s	ASTM D3835

Injection	Typical Value	Unit
Drying Temperature	150	°C
Drying Time	4.0	hr
Rear Temperature	366	°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	

Injection Notes
Back Pressure: minimum

Notes

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

[1] 5" x 0.5" x 0.125" bars

[2] 5.0 mm/min

[3] Dry conditions: 800 fpm and 31.25 psi (4.06 m/s and 215 kPa

[4] Dry conditions: 200 fpm and 125 psi (1.02 m/s and 862 kPa). Not recommended at 50 fpm and 500 psi (0.25 m/s and 3447 kPa).

[5] Lubricated conditions: 75 fpm and 1000 psi (0.38 m/s and 6895 kPa)

[6] Lubricated conditions: 800 fpm and 750 psi (4.06 m/s and 5171 kPa)

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