

# 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 <sup>1</sup>			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 <sup>2</sup>	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/m <sup>2</sup>	ISO 180
Unnotched Izod Impact			
--	530	J/m	ASTM D4812
--	34	kJ/m <sup>2</sup>	ISO 180
Hardness	Typical Value	Unit	Test method
Rockwell Hardness (M-Scale)	80		ASTM D785
Durometer Hardness (Shore D, 1 sec)	86		ASTM D2240

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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 <sup>-1</sup> )	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.

<sup>1</sup> 5" x 0.5" x 0.125" bars

<sup>2</sup> 5.0 mm/min

<sup>3</sup> Dry conditions: 800 fpm and 31.25 psi (4.06 m/s and 215 kPa)

<sup>4</sup> 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).

<sup>5</sup> Lubricated conditions: 75 fpm and 1000 psi (0.38 m/s and 6895 kPa)

<sup>6</sup> Lubricated conditions: 800 fpm and 750 psi (4.06 m/s and 5171 kPa)

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