KetaSpire® KT-820 NL
polyetheretherketone

KetaSpire® KT-820 NL is a low flow grade of unreinforced polyetheretherketone (PEEK) supplied in non-lubricated, natural-color pellet 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.

This resin is also available as KetaSpire® KT-820P in a natural-color coarse powder form for compounding.

A lubricated form of the resin is available as KT-820 in either natural (NT) or black (BK 95). The lubricated version is lightly dusted with calcium stearate (0.01% level) to aid with pellet conveyance in plastication screws.

General		
Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Features	• Chemical Resistant • Ductile • Fatigue Resistant • Flame Retardant	• Good Dimensional Stability • Good Impact Resistance • High Heat Resistance
Uses	• Aircraft Applications • Automotive Applications • Electrical/Electronic Applications • Film	• Industrial Applications • Medical/Healthcare Applications • Oil/Gas Applications
Agency Ratings	• ISO 10993	
RoHS Compliance	• RoHS Compliant	
Appearance	• Natural Color	
Forms	• Pellets [1]	
Processing Method	• Injection Molding • Machining	• Profile Extrusion

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.30		ASTM D792
Melt Mass-Flow Rate (MFR) (400°C/2.16 kg)	3.0	g/10 min	ASTM D1238
Molding Shrinkage			ASTM D955
Flow	1.5	%	
Across Flow	1.8	%	
Water Absorption (24 hr)	0.10	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Modulus			
-- [2]	3500	MPa	ASTM D638
--	3830	MPa	ISO 527-1/1A/1
Tensile Stress			
Yield	96.0	MPa	ISO 527-2/1A/50
-- [2]	95.0	MPa	ASTM D638
Tensile Elongation			
Yield [2]	5.2	%	ASTM D638
Yield	4.9	%	ISO 527-2/1A/50
Break [2]	20 to 30	%	ASTM D638
Break	20 to 30	%	ISO 527-2/1A/50
Flexural Modulus	3700	MPa	ASTM D790
Flexural Strength	146	MPa	ASTM D790

Impact	Typical Value	Unit	Test method
Notched Izod Impact	91	J/m	ASTM D256
Unnotched Izod Impact	No Break		ASTM D4812

Hardness	Typical Value	Unit	Test method
Durometer Hardness (Shore D, 1 sec)	88		ASTM D2240

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed	157	°C	
Glass Transition Temperature	150	°C	ASTM D3418
Peak Melting Temperature	340	°C	ASTM D3418
CLTE - Flow (-50 to 50°C)	4.3E-5	cm/cm/°C	ASTM E831

Additional Information

Standard Packaging and Labeling

- KetaSpire resins are packaged in polyethylene buckets or cardboard boxes depending upon the order size. Individual packages will be plainly marked with the product, color, lot number, and net weight.

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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Injection Notes

Drying

- KetaSpire resins must be dried completely prior to melt processing. Incomplete drying will result in defects in the formed part ranging from surface streaks to severe bubbling. Pellets can be dried on trays in a circulating air oven or in desiccating hopper dryer. Drying conditions recommended are 4 hours at 150°C (300°F) .

Injection Molding

- KetaSpire resins can be readily injection molded in most screw injection machines. A general purpose screw with a compression ratio in the range of 2.5 - 3.5 : 1 is recommended, as is minimum back pressure. Injection speeds should be as fast as possible, consistent with part appearance requirements. Mold temperatures in the range of 175°C to 205°C (350°F to 400°F) are suggested. Recommended starting point barrel temperatures are shown in the following table.

Notes

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

[1] Pellets are non-lubricated. Order KT-820 NT (natural) or KT-820 BK 95 (black) for calcium stearate lubricated pellets.

[2] 50 mm/min

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Safety Data Sheets (SDS) are available by emailing us or contacting your sales representative. Always consult the appropriate SDS before using any of our products.

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