KetaSpire® KT-820 SL10

Polyetheretherketone

Solvay Specialty Polymers

Message:

KetaSpire® KT-820 SL10 is a polyetheretherketone (PEEK) based compound designed to offer enhanced lubricity and reduced friction compared to standard PEEK. Unlike other grades formulated for wear resistance, this grade offers high lubricity while retaining outstanding ductility and toughness that surpasses that of unmodified high viscosity PEEK. Also, this product offers high melt flow, which allows injection molding of thin, intricate, or complex parts.

In addition to these differentiating features, this resin also offers the outstanding combination of ultra-performance attributes commonly known for PEEK. These include: mechanical strength and stiffness even at elevated temperatures, long term thermal-oxidative stability, fatigue resistance, and excellent chemical resistance to a broad range of harsh chemical environments including acids, bases, and organics.

The attractive combination of properties make KetaSpire® KT-820 SL10 suitable for applications in transportation, electronics, chemical processing, and industrial uses including oil and gas exploration and production.

General Information	
Features	Fatigue Resistant
	Flame Retardant
	Good Chemical Resistance
	Good Dimensional Stability
	Good Wear Resistance
	High Heat Resistance
Uses	Film
	Industrial Applications
	Oil/Gas Applications
	Profiles
	Rods
	Sheet
	Tubing
RoHS Compliance	RoHS Compliant
Appearance	Black
Forms	Pellets
Processing Method	Injection Molding
	Machining
	Profile Extrusion

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.35	g/cm³	ASTM D792
Molding Shrinkage			ASTM D955
Flow: 3.20 mm ¹	1.2 to 1.4	%	
Across Flow: 3.20 mm ²	1.6 to 1.8	%	
Water Absorption (24 hr)	0.10	%	ASTM D570

Durometer Hardness (Shore D. 1 sec) 83				
Mochanical Nominal Value Unit Test Method Temale Modulus 3 3600 MPa ASTM D638 Temale Efrength 4 88.0 MPa ASTM D638 Temale Elongation STEM D638 ASTM D638 Break 6 60 % ASTM D638 Break 6 60 % ASTM D638 Break 6 60 % ASTM D790 Flexural Modulus 3500 MPa ASTM D790 Flexural Strength Temale Malue MPa ASTM D790 Flexural Strength Temale Malue MPa ASTM D790 Flexural Strength Temale Malue MPa ASTM D790 Flexural Strength 134 MPa Test Method Moral Malue Unit Test Method Test Method Noticed Izod Impact 170 J/m ASTM D818 Uninotched Izod Impact Nominal Value Unit Test Method Uninotched Izod Impact 155 °C ASTM D618 Fill Analysis Nominal Value	Hardness	Nominal Value	Unit	Test Method
Tensile Modulus 3	Durometer Hardness (Shore D, 1 sec)	83		ASTM D2240
Tensile Strength 4 88.0 MPa ASTM D638 Tensile Blongation Yeld 3 5.2 % ASTM D638 Break 5 60 % ASTM D638 Break 6 60 % 15.25 -2.2/LA/50 Break 6 60 % 15.25 -2.2/LA/50 Flourial Modulus 3500 MPa ASTM D790 Flourial Strength 134 MPa Yield 134 MPa Wield 134 MPa Impact Nominal Value Unit Test Method Notched Izod Impact 170 J/m ASTM D256 Unnotched Izod Impact Nominal Value Unit Test Method Delection Temperature Under Load (1.8 MPa ASTM D648 MPa MPa Test Method Test Method Delection Temperature Under Load (1.8 Nominal Value Unit Test Method Mell Viscosity (400°C, 1000 ser^-1) 150 °C Test Method Drying Temperature	Mechanical	Nominal Value	Unit	Test Method
Tensile Elongation Vicil of 3 5.2 % ASTM D638 Break 6 60 % ASTM D638 Break 6 60 % ISO 527-2/L/5/0 Flexural Modulus 350 MPa ASTM D790 Flexural Strength " ASTM D790 "** 134 MPa *** Vield 134 MPa *** Vield 134 MPa *** Vield 134 MPa *** Mosched Ized Impact Nominal Value Unit Test Method Unnotched Ized Impact 170 J/m ASTM D4812 Thermal Nominal Value Unit Test Method Dellection Temperature Under Load (1.8 MPa, Amnelled) Test Method Mell Viscosity (400°C, 1000 sec^^1) 170 Pa ASTM D483 Injection Nominal Value Unit Test Method Drying Temperature 350 "C ASTM D3835 Injection Reperature 365 "C "Test	Tensile Modulus ³	3600	MPa	ASTM D638
Yield 5 5.2 % ASTM D638 Break 6 60 % ASTM D638 Break 6 60 % ISO 527-2/1A/50 Flexural Modulus 3500 MPa ASTM D790 Flexural Strength T ASTM D790 — 134 MPa Wield 134 MPa Impact Nominal Value Unit Test Method Notched Izod Impact 170 J/m ASTM D256 Unnotched Izod Impact No Break To st Method Unnotched Izod Impact No Break To st Method Unnotched Izod Impact 175 "C ASTM D4812 Themal No minal Value Unit Test Method Deflection Temperature Under Load (1.8 "C ASTM D483 Fill Analysis Nominal Value Unit Test Method Met Viscosity (400°C, 1000 sec^1) 170 Pa 's ASTM D483 Fill Analysis Nominal Value Unit Test Method Met Viscosity (400°C, 1000 sec^1) <td>Tensile Strength ⁴</td> <td>88.0</td> <td>MPa</td> <td>ASTM D638</td>	Tensile Strength ⁴	88.0	MPa	ASTM D638
Break 6 60 % ASTM D638 Break 60 % ISO 527-2/1A/50 Flexural Modulus 3500 MPa ASTM D790 Flexural Strength — ASTM D790 — 134 MPa Yield 134 MPa Under Journal Value Unit Test Method Nothched Izod Impact No Minal Value Unit Test Method Unnotched Izod Impact No Break — ASTM D648 Thermal Nominal Value Unit Test Method Deflection Temperature Under Load (1.8 MPa, Annealed) To Pa · s ASTM D648 Fill Analysis Nominal Value Unit Test Method Mel Viscosity (400°C, 1000 sec^n-1) 170 Pa · s ASTM D335 Fill Analysis Nominal Value Unit Test Method Mel Viscosity (400°C, 1000 sec^n-1) 170 Pa · s ASTM D335 Unjoing Time 40 hr Pa · s ASTM D335 Rear Temperature 365	Tensile Elongation			
Break 60 % ISO 527-2/1A/50 Flexural Modulus 3500 MPa ASTM D790 Flexural Strength	Yield ⁵	5.2	%	ASTM D638
Flexural Modulus 3500 MPa ASTM D790 Flexural Strength 134 MPa 134 MPa Yield 134 MPa Impact Nominal Value Unit Test Method Notched Izod Impact 170 J/m ASTM D256 Unnotched Izod Impact No Break Line Method Unnotched Izod Impact Nominal Value Unit Test Method Deflection Temperature Under Load (1.8 MPa, Annealed) 155 "C ASTM D481 Fill Analysis Nominal Value Unit Test Method Melt Viscosity (400°C, 1000 sec^-1) 170 Pa-s ASTM D3835 Injection Nominal Value Unit Test Method Melt Viscosity (400°C, 1000 sec^-1) 170 Pa-s ASTM D3835 Injection Nominal Value Unit Test Method Porying Temperature 150 "C "C Middle Temperature 375 "C "C Mold Temperature 175 to 205 "C	Break ⁶	60	%	ASTM D638
Flexural Strength	Break	60	%	ISO 527-2/1A/50
134 MPa Yield 134 MPa Impact Nominal Value Unit Test Method Notched Izod Impact 170 J/m ASTM D256 Unnotched Izod Impact No Break LaSTM D4812 Thermal Nominal Value Unit Test Method Deflection Temperature Under Load (1.8 MPa, Annealed) Nominal Value Unit Test Method Fill Analysis Nominal Value Unit Test Method Melt Viscosity (400°C, 1000 sec^*-1) 170 Pa·s ASTM D648 Fill Analysis Nominal Value Unit Test Method Melt Viscosity (400°C, 1000 sec^*-1) 170 Pa·s ASTM D648 Polying Temperature 150 °C C Projuing Time 4.0 hr Rear Temperature 365 °C Middle Temperature 370 °C C Nozzle Temperature 380 °C Mold Temperature 380 °C Injection Rate Fast <t< td=""><td>Flexural Modulus</td><td>3500</td><td>MPa</td><td>ASTM D790</td></t<>	Flexural Modulus	3500	MPa	ASTM D790
Yield 134 MPa Impact Nominal Value Unit Test Method Notched Izod Impact 170 J/m ASTM D256 Unnotched Izod Impact No Break	Flexural Strength			ASTM D790
Mominal Value Unit		134	MPa	
Notched Izod Impact 170 J/m ASTM D256 Unnotched Izod Impact No Break Test Method Unit Test Method Deflection Temperature Under Load (1.8 MPa, Annealed) 155 °C ASTM D648 Fill Analysis Nominal Value Unit Test Method Melt Viscosity (400°C, 1000 sec^-1) 170 Pa 's ASTM D3835 Injection Nominal Value Unit Dyving Temperature 150 °C Dyving Temperature 365 °C Dyving Time 4.0 hr Rear Temperature 375 °C Middle Temperature 375 °C Middle Temperature 375 °C Mozzle Temperature 380 °C Mold Temperature 380 °C Mold Temperature 175 to 205 °C Injection Rate Fast Screw Compression Ratio 2.51.0 to 3.51.0 NOTE 1. 5" x 0.5" x 0.125" bars 2. 5" x 0.5" x 0.125" bars 3. 50 mm/min 4. 50 mm/min 5. 50 mm/min 5. 50 mm/min	Yield	134	MPa	
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Deflection Temperature Under Load (1.8 MPa, Annealed) 155 °C ASTM D648 Fill Analysis Nominal Value Unit Test Method Melt Viscosity (400°C, 1000 sec^-1) 170 Pars ASTM D3835 Injection Nominal 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 NOTE 1 1. 5" x 0.5" x 0.125" bars 2. 5" x 0.5" x 0.125" bar 3. 50 mm/min 4. 50 mm/min	Unnotched Izod Impact	No Break		ASTM D4812
MPa, Annealed) 155 °C ASTM D648 Fill Analysis Nominal Value Unit Test Method Melt Viscosity (400°C, 1000 sec^-1) 170 Pa · s ASTM D3835 Injection Nominal Value Unit Drying Temperature 150 °C Drying Time 4.0 hr Rear Temperature 365 °C Middle Temperature 370 °C Front Temperature 380 °C Nozzle Temperature 175 to 205 °C Injection Rate Fast Screw Compression Ratio 25:1.0 to 3.5:1.0 NOTE 1 1. 5" x 0.5" x 0.125" bars 2. 5" x 0.5" x 0.125" bar 3. 50 mm/min 4. 50 mm/min	Thermal	Nominal Value	Unit	Test Method
Fill Analysis Nominal Value Unit Test Method Melt Viscosity (400°C, 1000 sec^-1) 170 Pa·s ASTM D3835 Injection Nominal 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 NOTE **X 0.5" x 0.125" bars 2. 5" x 0.5" x 0.125" bar 3. 50 mm/min 4. 50 mm/min	Deflection Temperature Under Load (1.8 MPa, Annealed)	155	°C	ASTM D648
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Injection Nominal 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 NOTE 1. 2. 5" x 0.5" x 0.125" bars 2. 5" x 0.5" x 0.125" bar 3. 50 mm/min 4. 50 mm/min	Melt Viscosity (400°C, 1000 sec^-1)	170	Pa·s	ASTM D3835
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 NOTE 1. 5" x 0.5" x 0.125" bars 2. 2. 5" x 0.5" x 0.125" bar 3. 50 mm/min 4. 50 mm/min 50 mm/min	Injection	Nominal Value	Unit	
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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 NOTE 1. 5" x 0.5" x 0.125" bars 2. 5" x 0.5" x 0.125" bar 3. 50 mm/min 4. 50 mm/min 5. 50 mm/min	Middle Temperature	370	°C	
Mold Temperature 175 to 205 °C Injection Rate Fast	Front Temperature	375	°C	
Injection Rate Fast Screw Compression Ratio 2.5:1.0 to 3.5:1.0 NOTE 1. 5" x 0.5" x 0.125" bars 2. 5" x 0.5" x 0.125" bar 3. 50 mm/min 4. 50 mm/min 5. 50 mm/min	Nozzle Temperature	380	°C	
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5. 50 mm/min	4.			
	5.	50 mm/min		
e.e. ,	6.	50 mm/min		

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