LNP™ KONDUIT™ Compound 8TF29E

DESCRIPTION

LNP KONDUIT 8TF29E compound is based on Liquid Crystal Polymer (LCP) resin containing 10% glass fibers proprietary thermal filler. Added features of this grade include: Thermally Conductive, Electrically Insulative, High flow, Low Moisture absorption, Low CTE values. This product is available in dark colours only.

GENERAL INFORMATION	
Features	High Flow, Low Moisture Absorption, High temperature resistance, Thermally conductive/Electrically isolative, No PFAS intentionally added
Fillers	Glass Fiber (Total fluorine >50ppm only from inorganic fluorine)
Polymer Types	Liquid Crystal Polymer (LCP)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Electrical and Electronics	Electronic Components
Industrial	Material Handling

TYPICAL PROPERTY VALUES

Revision 20261106

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, brk, Type I, 5 mm/min	90	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	1.8	%	ASTM D638
Tensile Modulus, 5 mm/min	13950	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	130	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	14200	MPa	ASTM D790
Tensile Stress, break, 5 mm/min	77	MPa	ISO 527
Tensile Strain, break, 5 mm/min	1.6	%	ISO 527
Tensile Modulus, 1 mm/min	13450	MPa	ISO 527
Flexural Strength, 2 mm/min	110	MPa	ISO 178
Flexural Modulus, 2 mm/min	14300	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	47	J/m	ASTM D256
Izod Impact, notched, -30°C	40	J/m	ASTM D256
Izod Impact, unnotched, 23°C	200	J/m	ASTM D4812
Izod Impact, unnotched, -30°C	230	J/m	ASTM D4812
Izod Impact, notched 80*10*3 +23°C	5.2	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	4.6	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*3 +23°C	13.3	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	11.2	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	5.2	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	4.5	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	10.8	kJ/m²	ISO 180/1U

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, unnotched 80*10*4 -30°C	10.3	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	5.6	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	5.1	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	13.3	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	10.4	kJ/m²	ISO 179/1eU
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	5.1	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	4.4	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	12	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	8.7	kJ/m²	ISO 179/1eU
Instrumented Dart Impact Total Energy, 23°C	7.3	J	ASTM D3763
Instrumented Dart Impact Energy @ peak, 23°C	4.2	J	ASTM D3763
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	280	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	252	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	280	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	254	°C	ISO 75/Af
CTE, 23°C to 150°C, flow	1.0E-05	1/°C	ASTM E831
CTE, 23°C to 150°C, xflow	4.0E-05	1/°C	ASTM E831
CTE, 23°C to 150°C, flow	0.5E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	3.8E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	190	°C	ISO 306
Vicat Softening Temp, Rate B/120	193	°C	ISO 306
Thermal Conductivity in-plane, 25*0.4mm disc	9	W/m-K	ASTM E1461-07
Thermal Conductivity through-plane, 10*10*3mm sample	2	W/m-K	ASTM E1461-07
Relative Temp Index, Elec [2]	130	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	130	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	130	°C	UL 746B
PHYSICAL [1]			
Specific Gravity	1.78	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.02	%	ISO 62-1
Melt Flow Rate			
345°C/2.16 kgf	10	g/10 min	ASTM D1238
Mold Shrinkage, flow [3]	0.1	%	SABIC method
Mold Shrinkage, xflow [3]	0.2	%	SABIC method
ELECTRICAL [1]			
Surface Resistivity	1.E+14	Ω	ASTM D257
Volume Resistivity	1.E+15	Ω.cm	ASTM D257
Comparative Tracking Index (UL) {PLC} [2]	2	PLC Code	UL 746A
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E207780-10232385	-	-
UL Recognized, 94V-0 Flame Class Rating	≥0.3	mm	UL 94
INJECTION MOLDING [4]			
Drying Temperature	140 – 150	°C	
Drying Time	4 – 6	Hrs	
Melt Temperature	340 – 345	°C	

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Nozzle Temperature	340 – 350	°C	
Front - Zone 3 Temperature	340 – 350	°C	
Middle - Zone 2 Temperature	330 – 340	°C	
Rear - Zone 1 Temperature	280 – 300	°C	
Mold Temperature	100 – 120	°C	
Back Pressure	0.1 – 0.4	MPa	
Screw Speed	80 – 100	rpm	

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

(3) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(4) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

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