

LNPTM THERMOCOMPTM COMPOUND 8KF44VE

DESCRIPTION

LNP THERMOCOMP 8KF44VE is a Liquid Crystalline Polymer (LCP) based compound for Laser Direct Structuring application. Added features of this material are: High heat resistance for robust SMT processing. High stiffness and thin-wall flame retardant.

GENERAL INFORMATION	
Features	Chemical Resistance, Good Processability, High Flow, Low Warpage, Thin Wall, Laser Direct Structuring, Dimensional stability, High temperature resistance, No PFAS intentionally added
Fillers	Mineral
Polymer Types	Liquid Crystal Polymer (LCP)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Interiors
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Electrical

TYPICAL PROPERTY VALUES

PROPERTIES TYPICAL VALUES UNITS TEST METHODS MECHANICAL⁽¹⁾ MPa Tensile Stress, brk, Type I, 5 mm/min 130 ASTM D638 Tensile Strain, brk, Type I, 5 mm/min 2.2 % ASTM D638 Tensile Modulus, 5 mm/min 14500 ASTM D638 MPa Flexural Strength, 1.3 mm/min, 50 mm span 195 MPa ASTM D790 Flexural Modulus, 1.3 mm/min, 50 mm span 13500 MPa ASTM D790 Tensile Stress, break, 5 mm/min 130 MPa ISO 527 Tensile Strain, break, 5 mm/min 2.2 % ISO 527 Tensile Modulus, 1 mm/min 14000 MPa ISO 527 Flexural Strength, 2 mm/min 180 MPa ISO 178 Flexural Modulus, 2 mm/min 13300 ISO 178 MPa IMPACT (1) Izod Impact, notched, 23°C 55 ASTM D256 J/m Izod Impact, unnotched, 23°C 315 J/m ASTM D4812 Izod Impact, notched 80*10*4 +23°C 5.6 kJ/m² ISO 180/1A Izod Impact, unnotched 80*10*4 +23°C 20 kJ/m² ISO 180/1U Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm 7 kJ/m² ISO 179/1eA Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm 22 kJ/m² ISO 179/1eU THERMAL (1) HDT, 0.45 MPa, 3.2 mm, unannealed 280 °C ASTM D648 °C HDT, 1.82 MPa, 3.2mm, unannealed 250 ASTM D648 °C HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm 280 ISO 75/Be

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Revision 20231109



PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	255	°C	ISO 75/Ae
CTE, 23°C to 150°C, flow	8.0E-06	1/°C	ASTM E831
CTE, 23°C to 150°C, xflow	5.0E-05	1/°C	ASTM E831
CTE, 23°C to 150°C, flow	1.1E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	6.0E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate A/50	260	°C	ASTM D1525
Vicat Softening Temp, Rate A/120	260	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	200	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	200	°C	ASTM D1525
Vicat Softening Temp, Rate A/50	260	°C	ISO 306
Vicat Softening Temp, Rate A/120	260	°C	ISO 306
Vicat Softening Temp, Rate B/50	200	°C	ISO 306
Vicat Softening Temp, Rate B/120	200	°C	ISO 306
Melting Temperature	335	°C	ISO 11357-3
PHYSICAL ⁽¹⁾			
Density	1.76	g/cm ³	ASTM D792
Water Absorption, (23°C/24hrs)	0.01	%	ISO 62-1
Mold Shrinkage, flow ⁽²⁾	0.23	%	SABIC method
Mold Shrinkage, xflow ⁽²⁾	0.29	%	SABIC method
ELECTRICAL ⁽¹⁾			
Dielectric Constant, 1.1 GHz	4.1	-	SABIC method
Dielectric Constant, 1.9 GHz	4.0	-	SABIC method
Dielectric Constant, 5 GHz	4.1	-	SABIC method
Dielectric Constant, 10 GHz	4.0	-	SABIC method
Dielectric Constant, 20 GHz	4.0	-	SABIC method
Dissipation Factor, 1.1 GHz	0.006	-	SABIC method
Dissipation Factor, 1.9 GHz	0.006	-	SABIC method
Dissipation Factor, 5 GHz	0.005	-	SABIC method
Dissipation Factor, 10 GHz	0.004	-	SABIC method
Dissipation Factor, 20 GHz	0.005	-	SABIC method
FLAME CHARACTERISTICS (3)			
UL Yellow Card Link	E207780-104503269	-	
UL Recognized, 94V-0 Flame Class Rating	≥0.80	mm	UL 94
INJECTION MOLDING (4)			
Drying Temperature	120 – 150	°C	
Drying Time	4 - 6	Hrs	
Melt Temperature	330 - 340	°C	
Nozzle Temperature	325 - 335	°C	
Front - Zone 3 Temperature	330 - 340	°C	
Middle - Zone 2 Temperature	330 - 340	°C	
Rear - Zone 1 Temperature	280 - 300	°C	
Mold Temperature	100 – 120	°C	
Back Pressure	0.1 – 0.5	MPa	
Injection Speed	50 – 150	mm/s	
Screw Speed	80 - 100	rpm	

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- (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) 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.
- (3) 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.
- (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.

POST-PROCESSING LASER PARAMETERS

Laser Marking Power: 2-10 W Laser Marking Frequency: 40-100 KHz Laser Marking Speed: 2-4 m/s

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