LNP™ THERMOCOMP™ COMPOUND 8MF44VG

DESCRIPTION

LNP THERMOCOMP 8MF44VG 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

Revision 20241021

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	1.5	%	ASTM D638
Tensile Modulus, 5 mm/min	9200	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	120	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	9000	MPa	ASTM D790
Tensile Stress, break, 5 mm/min	85	MPa	ISO 527
Tensile Strain, break, 5 mm/min	1.5	%	ISO 527
Tensile Modulus, 1 mm/min	9000	MPa	ISO 527
Flexural Strength, 2 mm/min	110	MPa	ISO 178
Flexural Modulus, 2 mm/min	9000	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	30	J/m	ASTM D256
Izod Impact, unnotched, 23°C	150	J/m	ASTM D4812
Izod Impact, notched 80*10*4 +23°C	3	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	10	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	3	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	8	kJ/m²	ISO 179/1eU
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	276	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	245	°C	ASTM D648
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	275	°C	ISO 75/Be

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	240	°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	1.0E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	5.5E-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	195	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	195	°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	195	°C	ISO 306
Vicat Softening Temp, Rate B/120	195	°C	ISO 306
Melting Temperature	335	°C	ISO 11357-3
PHYSICAL [1]			
Density	1.5	g/cm³	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, 1.9 GHz	3.3	-	SABIC method
Dielectric Constant, 10 GHz	3.3	-	SABIC method
Dielectric Constant, 20 GHz	3.3	-	SABIC method
Dissipation Factor, 1.9 GHz	0.003	-	SABIC method
Dissipation Factor, 10 GHz	0.003	-	SABIC method
Dissipation Factor, 20 GHz	0.003	-	SABIC method
FLAME CHARACTERISTICS [3]			
UL Yellow Card Link	E207780-104494713	-	-
UL Recognized, 94V-0 Flame Class Rating	≥3.0	mm	UL 94
UL Recognized, 94V-1 Flame Class Rating	≥2.0	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	

(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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