LNP™ THERMOCOMP™ Compound 6F006

DESCRIPTION

LNP THERMOCOMP 6F006 compound is a 30% glass fiber filled PBT/PC copolymer based compound, which has been optimized for LASER welding technology. Added features of this material include: infrared transparency, high modulus, improved warpage control, and optionally, a black color targeted for LASER transparency or for LASER absorption.

GENERAL INFORMATION	
Applications	Antenna, Auto Electrical, Battery Pack, Battery System, Bicycle, Building/Construction Sheet, Enclosure/Housing/Cover, Enclosures, Industrial Material Handling, Thermoplastic, Wireless Communications
Features	Low Warpage, IR Transparent, No PFAS intentionally added
Fillers	Glass Fiber (Total fluorine >50ppm only from inorganic fluorine)
Polymer Types	Polycarbonate + PBT (PC+PBT)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Exteriors
Consumer	Commercial Appliance, Recreational Vehicle
Hydrocarbon and Energy	Electric Vehicle
Mass Transportation	Specialty Vehicles

TYPICAL PROPERTY VALUES

Revision 20260320

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Modulus, 1 mm/min	12250	MPa	ISO 527
Tensile Strain, break, 5 mm/min	2.1	%	ISO 527
Tensile Stress, break, 5 mm/min	140	MPa	ISO 527
Flexural Modulus, 2 mm/min	10300	MPa	ISO 178
Flexural Strength, 2 mm/min	220	MPa	ISO 178
Ball Indentation Hardness, H358/30	240	MPa	ISO 2039-1
Tensile Modulus, 5 mm/min	11250	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	140	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	2.3	%	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	10300	MPa	ASTM D790
Flexural Strength, 1.3 mm/min, 50 mm span	210	MPa	ASTM D790
IMPACT [1]			
Izod Impact, notched 80*10*3 +23°C	11	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	11	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*3 +23°C	70	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	70	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	10	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	10	kJ/m²	ISO 180/1A

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, unnotched 80*10*4 +23°C	60	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	60	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	9	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	9	kJ/m²	ISO 179/1eA
Multi-Axial Instrumented Impact Total Energy, 23°C	6	J	ISO 6603-2
Multi-Axial Instrumented Impact Total Energy, -30°C	6	J	ISO 6603-2
Izod Impact, unnotched, 23°C	700	J/m	ASTM D4812
Izod Impact, notched, 23°C	80	J/m	ASTM D256
Izod Impact, notched, -30°C	75	J/m	ASTM D256
THERMAL [1]			
Vicat Softening Temp, Rate B/50	200	°C	ISO 306
Vicat Softening Temp, Rate B/120	200	°C	ISO 306
Vicat Softening Temp, Rate A/120	215	°C	ISO 306
Vicat Softening Temp, Rate A/50	215	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	195	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	215	°C	ISO 75/Bf
CTE			
23°C to 50°C, flow	2.00E-05	1/°C	ISO 11359-2
23°C to 50°C, xflow	8.00E-05	1/°C	ISO 11359-2
Ball Pressure Test			
125°C +/- 2°C	PASS	-	IEC 60695-10-2
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	215	°C	ASTM D1525
Vicat Softening Temp, Rate A/120	215	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	190	°C	ASTM D648
HDT, 0.45 MPa, 3.2 mm, unannealed	215	°C	ASTM D648
CTE, 23°C to 50°C, flow	2.50E-05	1/°C	ASTM E831
CTE, 23°C to 50°C, xflow	7.00E-05	1/°C	ASTM E831
PHYSICAL [1]			
Density	1.53	g/cm³	ISO 1183
Moisture Absorption, (23°C/50% RH/24hrs)	0.06	%	ISO 62-4
Moisture Absorption, (23°C/50% RH/Equilibrium)	0.09	%	ISO 62-4
Water Absorption, (23°C/24hrs)	0.25	%	ISO 62-1
Water Absorption, (23°C/saturated)	0.45	%	ISO 62-1
Specific Gravity	1.53	-	ASTM D792
Melt Flow Rate, 250°C/5.0 kgf	28	g/10 min	ASTM D1238
Water Absorption, (23°C/24hrs)	0.25	%	ASTM D570
Mold Shrinkage, flow [2]	0.2 – 0.4	%	SABIC method
Mold Shrinkage, xflow [2]	0.5 – 1.0	%	SABIC method
OPTICAL [1]			
Laser Transparency			
1.0 mm, LPKF TMG3	45 – 85	%	SABIC method
1.5 mm, LPKF TMG3	15 – 20	%	SABIC method
2.0 mm, LPKF TMG3	10 – 15	%	SABIC method

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
ELECTRICAL [1]			
Dissipation Factor			
77 GHz	0.009	-	SABIC method
Dielectric Constant			
77 GHz	3.5	-	SABIC method
INJECTION MOLDING [3]			
Drying Temperature	120	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.05	%	
Melt Temperature	250 – 280	°C	
Nozzle Temperature	240 – 270	°C	
Front - Zone 3 Temperature	250 – 280	°C	
Middle - Zone 2 Temperature	250 – 270	°C	
Rear - Zone 1 Temperature	250 – 260	°C	
Mold Temperature	65 – 110	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	50 – 80	rpm	
Shot to Cylinder Size	40 – 80	%	
Vent Depth	0.025 – 0.038	mm	

(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) 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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