LNP™ THERMOCOMP™ Compound DF002

DF-1002

DESCRIPTION

LNP THERMOCOMP DF002 compound is based on Polycarbonate (PC) resin containing 10% glass fiber.

GENERAL INFORMATION	
Features	High stiffness/Strength, No PFAS intentionally added
Fillers	Glass Fiber (Total fluorine >50ppm only from inorganic fluorine)
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Building and Construction	Building Component
Consumer	Personal Accessory
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 5 mm/min	81	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	75	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	3.9	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	5.6	%	ASTM D638
Tensile Modulus, 50 mm/min	4250	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	138	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	4110	MPa	ASTM D790
Tensile Stress, yield, 5 mm/min	80	MPa	ISO 527
Tensile Stress, break, 5 mm/min	74	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	3.8	%	ISO 527
Tensile Strain, break, 5 mm/min	5.7	%	ISO 527
Tensile Modulus, 1 mm/min	4170	MPa	ISO 527
Flexural Modulus, 2 mm/min	3950	MPa	ISO 178
IMPACT [1]			
Izod Impact, unnotched, 23°C	883	J/m	ASTM D4812
Izod Impact, notched, 23°C	81	J/m	ASTM D256
Multiaxial Impact	10	J	ISO 6603
Instrumented Dart Impact Total Energy, 23°C	18	J	ASTM D3763
Izod Impact, unnotched 80*10*4 +23°C	54	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	8	kJ/m²	ISO 180/1A
THERMAL [1]			

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT, 0.45 MPa, 3.2 mm, unannealed	146	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	141	°C	ASTM D648
CTE, -30°C to 30°C, flow	4.5E-05	1/°C	ASTM D696
CTE, -30°C to 30°C, xflow	5.3E-05	1/°C	ASTM D696
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	146	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	141	°C	ISO 75/Af
Relative Temp Index, Elec (2)	125	°C	UL 746B
Relative Temp Index, Mech w/impact (2)	115	°C	UL 746B
Relative Temp Index, Mech w/o impact (2)	125	°C	UL 746B
PHYSICAL (1)			
Density	1.29	g/cm³	ASTM D792
Moisture Absorption, (23°C/50% RH/24 hrs)	0.14	%	ASTM D570
Mold Shrinkage, flow, 24 hrs (3)	0.4 – 0.6	%	ASTM D955
Mold Shrinkage, xflow, 24 hrs (3)	0.6 – 0.8	%	ASTM D955
Density	1.29	g/cm³	ISO 1183
Moisture Absorption (23°C / 50% RH)	0.2	%	ISO 62
ELECTRICAL (2)			
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
Hot-Wire Ignition (HWI), PLC 0	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 2	≥3	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 4	≥1.5	mm	UL 746A
FLAME CHARACTERISTICS (2)			
UL Yellow Card Link	E121562-101344533	-	-
UL Recognized, 94V-1 Flame Class Rating	≥3	mm	UL 94
UL Recognized, 94V-2 Flame Class Rating	≥1.5	mm	UL 94
INJECTION MOLDING (4)			
Drying Temperature	120	°C	
Drying Time	4	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	305 – 325	°C	
Front - Zone 3 Temperature	320 – 330	°C	
Middle - Zone 2 Temperature	310 – 320	°C	
Rear - Zone 1 Temperature	295 – 305	°C	
Mold Temperature	80 – 110	°C	
Back Pressure	0.2 – 0.3	MPa	
Screw Speed	30 – 60	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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