LNP™ THERMOCOMP™ Compound DF003E

DF-1003 EM

DESCRIPTION

LNP THERMOCOMP DF003E compound is based on Polycarbonate (PC) resin containing 15% glass fiber. Added features of this grade include: Easy Molding.

GENERAL INFORMATION	
Features	Good Processability, 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 20240805

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yield	82	MPa	ASTM D638
Tensile Stress, break	77	MPa	ASTM D638
Tensile Strain, yield	3.2	%	ASTM D638
Tensile Strain, break	5	%	ASTM D638
Tensile Modulus, 50 mm/min	4820	MPa	ASTM D638
Flexural Modulus	4130	MPa	ASTM D790
Tensile Stress, yield	82	MPa	ISO 527
Tensile Stress, break	78	MPa	ISO 527
Tensile Strain, yield	3.3	%	ISO 527
Tensile Strain, break	4.4	%	ISO 527
Tensile Modulus, 1 mm/min	4750	MPa	ISO 527
Flexural Stress	130	MPa	ISO 178
Flexural Modulus	4300	MPa	ISO 178
IMPACT [1]			
Izod Impact, unnotched, 23°C	907	J/m	ASTM D4812
Izod Impact, notched, 23°C	80	J/m	ASTM D256
Instrumented Dart Impact Energy @ peak, 23°C	20	J	ASTM D3763
Multiaxial Impact	6	J	ISO 6603
Izod Impact, unnotched 80*10*4 +23°C	55	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	7	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	143	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	138	°C	ASTM D648
CTE, -40°C to 40°C, flow	3.42E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	6.84E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	3.50E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	6.80E-05	1/°C	ISO 11359-2
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	144	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	139	°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	1.31	g/cm³	ASTM D792
Moisture Absorption, (23°C/50% RH/24 hrs)	0.1	%	ASTM D570
Mold Shrinkage, flow, 24 hrs [3]	0.4 – 0.6	%	ASTM D955
Mold Shrinkage, xflow, 24 hrs [3]	0.5 – 0.7	%	ASTM D955
Mold Shrinkage, flow, 24 hrs [3]	0.54	%	ISO 294
Mold Shrinkage, xflow, 24 hrs [3]	0.63	%	ISO 294
Density	1.31	g/cm³	ISO 1183
ELECTRICAL [1] [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 Yellow Card Link 2	E207780-101343856	-	-
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	

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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) 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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