

LNPT[™] THERMOTUF[™] COMPOUND WF0087N

DESCRIPTION

LNP THERMOTUF WF0087N (experimental grade name as ER017086) is a flame retardant PBT/glass fiber compound for nano-molding technology (NMT) application. Added features of this material include: VO 1.1mm Eco-FR, NIA-PFAS, colorable, high modulus, good metal bonding force, good surface quality, high impact strength, and good color stability during anodizing process.

GENERAL INFORMATION	
Features	Chemical Resistance, High Flow, Dielectrics, Non halogenated flame retardant, Nano molding technology, High stiffness/Strength, Impact resistant, No PFAS intentionally added
Fillers	Glass Fiber
Polymer Types	Polybutylene Terephthalate (PBT)
Processing Techniques	Injection Molding
INDUSTRY	SUB INDUSTRY
Electrical and Electronics	Mobile Phone - Computer - Tablets

TYPICAL PROPERTY VALUES

Revision 20260626

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL ⁽¹⁾			
Tensile Stress, brk, Type I, 5 mm/min	150	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	2.3	%	ASTM D638
Tensile Modulus, 5 mm/min	13000	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	220	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	12000	MPa	ASTM D790
Tensile Stress, break, 5 mm/min	147	MPa	ISO 527
Tensile Strain, break, 5 mm/min	2.1	%	ISO 527
Tensile Modulus, 1 mm/min	13000	MPa	ISO 527
Flexural Strength, 2 mm/min	216	MPa	ISO 178
Flexural Modulus, 2 mm/min	12500	MPa	ISO 178
Bonding strength (TRI) , 5 mm/min, Type A	30	MPa	ISO 19095
IMPACT ⁽¹⁾			
Izod Impact, notched, 23°C	130	J/m	ASTM D256
Izod Impact, notched, -30°C	135	J/m	ASTM D256
Izod Impact, unnotched, 23°C	750	J/m	ASTM D4812
Izod Impact, notched 80*10*4 +23°C	14	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	15	kJ/m ²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	42	kJ/m ²	ISO 180/1U
THERMAL ⁽¹⁾			
HDT, 0.45 MPa, 3.2 mm, unannealed	216	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	194	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	219	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	201	°C	ISO 75/Af

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
CTE			
-40°C to 40°C, flow	2.2E-05	1/°C	ASTM E831
-40°C to 40°C, xflow	6.1E-05	1/°C	ASTM E831
60°C to 120°C, flow	1.1E-05	1/°C	ASTM E831
60°C to 120°C, xflow	1.0E-04	1/°C	ASTM E831
-40°C to 40°C, flow	1.9E-05	1/°C	ISO 11359-2
-40°C to 40°C, xflow	5.2E-05	1/°C	ISO 11359-2
60°C to 120°C, flow	1.5E-05	1/°C	ISO 11359-2
60°C to 120°C, xflow	9.6E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	193	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	193	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	193	°C	ISO 306
Vicat Softening Temp, Rate B/120	193	°C	ISO 306
Relative Temp Index, Elec ⁽²⁾	75	°C	UL 746B
Relative Temp Index, Mech w/impact ⁽²⁾	75	°C	UL 746B
Relative Temp Index, Mech w/o impact ⁽²⁾	75	°C	UL 746B
PHYSICAL ⁽¹⁾			
Density	1.58	g/cm ³	ISO 1183
Melt Flow Rate			
275°C/5 kgf	32	g/10 min	ASTM D1238
Melt Volume Rate			
275°C/5 kg	24	cm ³ /10 min	ISO 1133
Water Absorption, (23°C/24hrs)	0.03	%	ISO 62-1
Moisture Absorption, (23°C/50% RH/24hrs)	0.01	%	ISO 62-4
Mold Shrinkage, flow ⁽³⁾	0.3 – 0.45	%	SABIC method
Mold Shrinkage, xflow ⁽³⁾	0.45 – 0.6	%	SABIC method
ELECTRICAL ⁽¹⁾			
Dielectric Constant			
1.1 GHz	3.61	-	SABIC method
1.9 GHz	3.63	-	SABIC method
5 GHz	3.64	-	SABIC method
10 GHz	3.67	-	SABIC method
Dissipation Factor			
1.1 GHz	0.0071	-	SABIC method
1.9 GHz	0.0075	-	SABIC method
5 GHz	0.0067	-	SABIC method
10 GHz	0.0071	-	SABIC method
FLAME CHARACTERISTICS ⁽²⁾			
UL Yellow Card Link	E207780-10969902	-	-
UL Recognized, 94V-0 Flame Class Rating	≥1.1	mm	UL 94
INJECTION MOLDING ⁽⁴⁾			
Drying Temperature	100 – 120	°C	
Drying Time	2 – 4	Hrs	
Maximum Moisture Content	0.02	%	
Hopper Temperature	40 – 60	°C	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Melt Temperature	250 – 270	°C	
Nozzle Temperature	255 – 275	°C	
Front - Zone 3 Temperature	250 – 275	°C	
Middle - Zone 2 Temperature	250 – 275	°C	
Rear - Zone 1 Temperature	240 – 260	°C	
Mold Temperature ⁽⁵⁾	100 – 160	°C	

- (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.
- (5) Suggest to use narrow mold temperature 140C~160C for NMT application.

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