

LNPTTM THERMOTUFTM Compound WF008NAQ

DESCRIPTION

LNP THERMOTUF WF008NAQ (experimental grade name as ER008997) is a PBT/glass fiber compound for nano-molding technology (NMT) application. Added features of this material include: high modulus, low dielectric constant (Dk), high metal bonding force, good impact, and good color stability during anodizing.

GENERAL INFORMATION	
Features	Chemical Resistance, Nano molding technology, High stiffness/Strength, Impact resistant, No PFAS intentionally added
Fillers	Glass Fiber (Total fluorine >50ppm only from inorganic fluorine)
Polymer Types	Polybutylene Terephthalate (PBT)
Processing Techniques	Injection Molding
INDUSTRY	SUB INDUSTRY
Consumer	Personal Accessory

TYPICAL PROPERTY VALUES

Revision 20260402

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL ⁽¹⁾			
Tensile Stress, brk, Type I, 5 mm/min	133	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	3	%	ASTM D638
Tensile Modulus, 5 mm/min	10100	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	201	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	9500	MPa	ASTM D790
Tensile Stress, break, 5 mm/min	135	MPa	ISO 527
Tensile Strain, break, 5 mm/min	2.8	%	ISO 527
Tensile Modulus, 1 mm/min	10100	MPa	ISO 527
Flexural Strength, 2 mm/min	206	MPa	ISO 178
Flexural Modulus, 2 mm/min	9500	MPa	ISO 178
Bonding Strength ("T" treatment, shear type)	32	MPa	ISO 19095
IMPACT ⁽¹⁾			
Izod Impact, notched, 23°C	150	J/m	ASTM D256
Izod Impact, notched, -30°C	130	J/m	ASTM D256
Izod Impact, unnotched, 23°C	1000	J/m	ASTM D4812
Izod Impact, notched 80*10*4 +23°C	14.7	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	13.3	kJ/m ²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	55	kJ/m ²	ISO 180/1U
Charpy Impact, notched, 23°C	15.5	kJ/m ²	ISO 179/2C
Charpy Impact, notched, -30°C	14.3	kJ/m ²	ISO 179/2C
Charpy Impact, unnotched, 23°C	60	kJ/m ²	ISO 179/2C
THERMAL ⁽¹⁾			
HDT, 0.45 MPa, 3.2 mm, unannealed	222	°C	ASTM D648

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT, 1.82 MPa, 3.2mm, unannealed	205	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	222	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	205	°C	ISO 75/Af
CTE			
-40°C to 40°C, flow	2.2E-05	1/°C	ASTM E831
-40°C to 40°C, xflow	8.3E-05	1/°C	ASTM E831
50°C to 120°C, flow	1.3E-05	1/°C	ASTM E831
50°C to 120°C, xflow	1.6E-04	1/°C	ASTM E831
-40°C to 40°C, flow	2.0E-05	1/°C	ISO 11359-2
-40°C to 40°C, xflow	8.5E-05	1/°C	ISO 11359-2
50°C to 120°C, flow	1.1E-05	1/°C	ISO 11359-2
50°C to 120°C, xflow	1.9E-04	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	201	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	198	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	201	°C	ISO 306
Vicat Softening Temp, Rate B/120	199	°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	1.51	g/cm ³	ISO 1183
Melt Flow Rate			
275°C/5 kgf	15	g/10 min	ASTM D1238
Melt Volume Rate			
275°C/5 kg	12	cm ³ /10 min	ISO 1133
Water Absorption, (23°C/24hrs)	0.04	%	ISO 62-1
Moisture Absorption, (23°C/50% RH/24hrs)	0.02	%	ISO 62-4
Mold Shrinkage, flow ⁽³⁾	0.2	%	SABIC method
Mold Shrinkage, xflow ⁽³⁾	0.7	%	SABIC method
ELECTRICAL ⁽¹⁾			
Dielectric Constant			
1.1 GHz	3.3	-	SABIC method
1.9 GHz	3.31	-	SABIC method
5 GHz	3.35	-	SABIC method
10 GHz	3.35	-	SABIC method
20 GHz	3.32	-	SABIC method
Dissipation Factor			
1.1 GHz	0.0077	-	SABIC method
1.9 GHz	0.0076	-	SABIC method
5 GHz	0.0072	-	SABIC method
10 GHz	0.0069	-	SABIC method
20 GHz	0.0071	-	SABIC method
FLAME CHARACTERISTICS ⁽²⁾			
UL Yellow Card Link	E207780- 10659684	-	-
UL Recognized, 94HB Flame Class Rating	≥0.8	mm	UL 94

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
INJECTION MOLDING ⁽⁴⁾			
Drying Temperature	100 – 120	°C	
Drying Time	2 – 4	Hrs	
Maximum Moisture Content	0.02	%	
Hopper Temperature	40 – 60	°C	
Melt Temperature	250 – 280	°C	
Nozzle Temperature	255 – 280	°C	
Front - Zone 3 Temperature	250 – 280	°C	
Middle - Zone 2 Temperature	250 – 280	°C	
Rear - Zone 1 Temperature	240 – 270	°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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