LNP™ THERMOTUF™ Compound WF008NXQ

DESCRIPTION

LNP THERMOTUF WF008NXQ compound is based on Polybutylene Terephthalate (PBT) resin containing 40% glass fiber. Added features of this grade include: High Modulus, Impact Modified, Good Metal Bonding Strength and Good Chemical Resistance targeted for Nano-Molding Technology (NMT) applications and Good Color Stability during anodizing process.

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

TYPICAL PROPERTY VALUES

Revision 20260403

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Flexural Stress, brk, 1.3 mm/min, 50 mm span	215	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	11000	MPa	ASTM D790
Flexural Stress, brk, 2.6 mm/min, 100 mm span	200	MPa	ASTM D790
Flexural Modulus, 2.6 mm/min, 100 mm span	10400	MPa	ASTM D790
Tensile Modulus, 5 mm/min	12500	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	2.6	%	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	140	MPa	ASTM D638
Tensile Modulus, 50 mm/min	12400	MPa	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	2.7	%	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	152	MPa	ASTM D638
Flexural Stress, break, 2 mm/min	210	MPa	ISO 178
Flexural Modulus, 2 mm/min	11200	MPa	ISO 178
Tensile Modulus, 1 mm/min	12200	MPa	ISO 527
Tensile Strain, break, 5 mm/min	2.6	%	ISO 527
Tensile Stress, break, 5 mm/min	136	MPa	ISO 527
Tensile Strain, break, 50 mm/min	2.7	%	ISO 527
Tensile Stress, break, 50 mm/min	145	MPa	ISO 527
Bonding strength (TRI) , 5 mm/min, Type A	37	MPa	ISO 19095
IMPACT [1]			
Izod Impact, notched, 23°C	130	J/m	ASTM D256

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched, -30°C	97	J/m	ASTM D256
Izod Impact, unnotched, 23°C	890	J/m	ASTM D4812
Izod Impact, unnotched 80*10*4 +23°C	52	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	12	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	9.5	kJ/m²	ISO 180/1A
Charpy Impact, notched, 23°C	12.5	kJ/m²	ISO 179/2C
Charpy Impact, notched, -30°C	10	kJ/m²	ISO 179/2C
Charpy Impact, unnotched, 23°C	60	kJ/m²	ISO 179/2C
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	221	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	205	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	210	°C	ASTM D648
Vicat Softening Temp, Rate B/50	210	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	208	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	204	°C	ISO 75/Af
CTE, -40°C to 40°C, flow	1.9E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	6.9E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	1.9E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.2E-05	1/°C	ISO 11359-2
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]			
Melt Flow Rate			
275°C/2.16 kgf	14	g/10 min	ASTM D1238
275°C/5 kgf	43	g/10 min	ASTM D1238
Melt Volume Rate			
280°C/2.16 kg	12	cm³/10 min	ISO 1133
275°C/5 kg	31	cm³/10 min	ISO 1133
Density	1.6	g/cm³	ASTM D792
Mold Shrinkage, flow [3]	0.25	%	SABIC method
Mold Shrinkage, xflow [3]	0.51	%	SABIC method
ELECTRICAL [1]			
Dielectric Constant			
1.1 GHz	3.85	-	SABIC method
1.9 GHz	3.84	-	SABIC method
5 GHz	3.81	-	SABIC method
10 GHz	3.84	-	SABIC method
20 GHz	3.82	-	SABIC method
Dissipation Factor			
1.1 GHz	0.0102	-	SABIC method
1.9 GHz	0.0097	-	SABIC method
5 GHz	0.0093	-	SABIC method
10 GHz	0.0085	-	SABIC method
20 GHz	0.0091	-	SABIC method

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
FLAME CHARACTERISTICS [2]			
UL Recognized, 94HB Flame Class Rating	≥0.8	mm	UL 94
UL Yellow Card Link	E207780-104061459	-	-
INJECTION MOLDING [4]			
Drying Temperature	100 – 120	°C	
Drying Time	4 – 6	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	260 – 280	°C	
Nozzle Temperature	265 – 280	°C	
Front - Zone 3 Temperature	250 – 270	°C	
Middle - Zone 2 Temperature	250 – 270	°C	
Rear - Zone 1 Temperature	240 – 260	°C	
Hopper Temperature	40 – 60	°C	
Mold Temperature [5]	100 – 150	°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~150C for NMT application.

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