

# LNPT™ THERMOTUF™ COMPOUND WF006NiQ

## DESCRIPTION

LNP THERMOTUF WF006NiQ compound is based on Polybutylene Terephthalate (PBT) resin utilizing ELCRIN iQ upcycling technology and containing 30% glass fiber. Added features of this grade include: Impact Modified, High Flow, Good Metal Bonding Strength and Good Chemical Resistance targeted for Nano-Molding Technology (NMT) applications, >25% Post Consumer Recycled content.

### GENERAL INFORMATION

Features	Structural, Chemical Resistance, High Flow, High Stiffness, Nano molding technology grade, Good metal adhesion, Impact Modified, Sustainable (Advanced Recycling)
Fillers	Glass Fiber
Polymer Types	Polybutylene Terephthalate (PBT)
Processing Techniques	Injection Molding

### INDUSTRY

Consumer  
Electrical and Electronics

### SUB INDUSTRY

Personal Accessory  
Electrical Devices and Displays, Electrical Components and Infrastructure

## TYPICAL PROPERTY VALUES

Revision 20220523

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL <sup>(1)</sup></b>			
Tensile Stress, brk, Type I, 5 mm/min	110	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	2.5	%	ASTM D638
Tensile Modulus, 5 mm/min	8760	MPa	ASTM D638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	170	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	7700	MPa	ASTM D790
Tensile Stress, break, 5 mm/min	111	MPa	ISO 527
Tensile Strain, break, 5 mm/min	2.5	%	ISO 527
Tensile Modulus, 1 mm/min	8600	MPa	ISO 527
Flexural Stress, break, 2 mm/min	168	MPa	ISO 178
Flexural Modulus, 2 mm/min	7100	MPa	ISO 178
Bonding Strength ("T" treatment, shear type)	33	MPa	ISO 19095
<b>IMPACT <sup>(1)</sup></b>			
Izod Impact, unnotched, 23°C	870	J/m	ASTM D4812
Izod Impact, notched, 23°C	137	J/m	ASTM D256
Izod Impact, notched, -30°C	100	J/m	ASTM D256
Izod Impact, unnotched 80*10*4 +23°C	54	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	13	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	10	kJ/m <sup>2</sup>	ISO 180/1A
<b>THERMAL <sup>(1)</sup></b>			
HDT, 1.82 MPa, 3.2mm, unannealed	162	°C	ASTM D648
HDT, 0.45 MPa, 3.2 mm, unannealed	204	°C	ASTM D648
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	156	°C	ISO 75/Af

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	200	°C	ISO 75/Bf
CTE, 23°C to 50°C, flow	2.4E-05	1/°C	ASTM E831
CTE, 23°C to 50°C, xflow	9.0E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	2.4E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	8.1E-05	1/°C	ASTM E831
CTE, 23°C to 50°C, flow	2.3E-05	1/°C	ISO 11359-2
CTE, 23°C to 50°C, xflow	9.6E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, flow	2.3E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	8.6E-05	1/°C	ISO 11359-2
Relative Temp Index, Elec <sup>(2)</sup>	75	°C	UL 746B
Relative Temp Index, Mech w/impact <sup>(2)</sup>	75	°C	UL 746B
Relative Temp Index, Mech w/o impact <sup>(2)</sup>	75	°C	UL 746B
PHYSICAL <sup>(1)</sup>			
Density	1.49	g/cm <sup>3</sup>	ISO 1183
Melt Flow Rate, 250°C/5.0 kgf	21	g/10 min	ASTM D1238
Melt Flow Rate, 275°C/5 kgf	37	g/10 min	ASTM D1238
Melt Volume Rate, MVR at 250°C/5.0 kg	15	cm <sup>3</sup> /10 min	ISO 1133
Melt Volume Rate, MVR at 275°C/5 kg	29	cm <sup>3</sup> /10 min	ISO 1133
Melt Volume Rate, MVR at 270°C/5 kg	23	cm <sup>3</sup> /10 min	ISO 1133
Mold Shrinkage, flow <sup>(3)</sup>	0.2 – 0.3	%	SABIC method
Mold Shrinkage, xflow <sup>(3)</sup>	0.4 – 0.5	%	SABIC method
ELECTRICAL <sup>(1)</sup>			
Dielectric Constant, 1.1 GHz	3.61	-	SABIC method
Dissipation Factor, 1.1 GHz	0.013	-	SABIC method
Dielectric Constant, 1.9 GHz	3.62	-	SABIC method
Dissipation Factor, 1.9 GHz	0.012	-	SABIC method
Dielectric Constant, 5 GHz	3.59	-	SABIC method
Dissipation Factor, 5 GHz	0.01	-	SABIC method
Dielectric Constant, 10 GHz	3.53	-	SABIC method
Dissipation Factor, 10 GHz	0.009	-	SABIC method
FLAME CHARACTERISTICS <sup>(2)</sup>			
UL Yellow Card Link	<a href="#">E207780-104030009</a>	-	-
UL Recognized, 94HB Flame Class Rating	≥0.7	mm	UL 94
INJECTION MOLDING <sup>(4)</sup>			
Drying Temperature	100 – 120	°C	
Drying Time	2 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	250 – 270	°C	
Nozzle Temperature	245 – 275	°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 <sup>(5)</sup>	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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