

LNPTTM THERMOTUFTM COMPOUND WF009N

DESCRIPTION

LNP THERMOTUF WF009N compound is based on Polybutylene Terephthalate (PBT) resin containing 45% glass fiber. Added features of this grade include: Impact Modified, Good Metal Bonding Strength and Good Chemical Resistance targeted for Nano-Molding Technology (NMT) applications.

| GENERAL INFORMATION | |
|-----------------------|---|
| Features | Chemical Resistance, Nano molding technology, High stiffness/Strength, Impact resistant |
| Fillers | Glass Fiber |
| Polymer Types | Polybutylene Terephthalate (PBT) |
| Processing Techniques | Injection Molding |

| INDUSTRY | SUB INDUSTRY |
|----------------------------|-----------------------------------|
| Consumer | Personal Accessory |
| Electrical and Electronics | Mobile Phone - Computer - Tablets |
| Industrial | Electrical |

TYPICAL PROPERTY VALUES

Revision 20241021

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|----------------|-------------------|--------------|
| MECHANICAL ⁽¹⁾ | | | |
| Tensile Stress, brk, Type I, 5 mm/min | 168 | MPa | ASTM D638 |
| Tensile Strain, brk, Type I, 5 mm/min | 2.2 | % | ASTM D638 |
| Tensile Modulus, 5 mm/min | 14500 | MPa | ASTM D638 |
| Flexural Strength, 1.3 mm/min, 50 mm span | 256 | MPa | ASTM D790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 13200 | MPa | ASTM D790 |
| Tensile Stress, break, 5 mm/min | 163 | MPa | ISO 527 |
| Tensile Strain, break, 5 mm/min | 2.1 | % | ISO 527 |
| Tensile Modulus, 1 mm/min | 14100 | MPa | ISO 527 |
| Flexural Stress, break, 2 mm/min | 259 | MPa | ISO 178 |
| Flexural Modulus, 2 mm/min | 12300 | MPa | ISO 178 |
| Bonding strength (TRI) , 5 mm/min, Type A | 40 | MPa | ISO 19095 |
| IMPACT ⁽¹⁾ | | | |
| Izod Impact, unnotched, 23°C | 1050 | J/m | ASTM D4812 |
| Izod Impact, notched, 23°C | 153 | J/m | ASTM D256 |
| Izod Impact, notched, -30°C | 144 | J/m | ASTM D256 |
| Izod Impact, unnotched 80°10*4 +23°C | 64 | kJ/m ² | ISO 180/1U |
| Izod Impact, notched 80°10*4 +23°C | 16 | kJ/m ² | ISO 180/1A |
| Izod Impact, notched 80°10*4 -30°C | 16 | kJ/m ² | ISO 180/1A |
| Charpy Impact, unnotched, 23°C | 72 | kJ/m ² | ISO 179/2C |
| Charpy Impact, notched, 23°C | 17 | kJ/m ² | ISO 179/2C |
| Charpy Impact, notched, -30°C | 16 | kJ/m ² | ISO 179/2C |
| THERMAL ⁽¹⁾ | | | |

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|-----------------------------------|-------------------------|--------------|
| Vicat Softening Temp, Rate B/50 | 212 | °C | ASTM D1525 |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 215 | °C | ASTM D648 |
| Vicat Softening Temp, Rate A/50 | 213 | °C | ISO 306 |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 211 | °C | ISO 75/Af |
| CTE, -40°C to 40°C, flow | 1.5E-05 | 1/°C | ASTM E831 |
| CTE, -40°C to 40°C, xflow | 5.6E-05 | 1/°C | ASTM E831 |
| 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 | 1.7 | g/cm ³ | ASTM D792 |
| Mold Shrinkage, flow ⁽³⁾ | 0.14 | % | SABIC method |
| Mold Shrinkage, xflow ⁽³⁾ | 0.34 | % | SABIC method |
| Melt Volume Rate, MVR at 275°C/5 kg | 29 | cm ³ /10 min | ISO 1133 |
| ELECTRICAL ⁽¹⁾ | | | |
| Dielectric Constant, 1.1 GHz | 3.94 | - | SABIC method |
| Dielectric Constant, 1.9 GHz | 3.95 | - | SABIC method |
| Dissipation Factor, 1.1 GHz | 0.011 | - | SABIC method |
| Dissipation Factor, 1.9 GHz | 0.010 | - | SABIC method |
| FLAME CHARACTERISTICS ⁽²⁾ | | | |
| UL Yellow Card Link | E207780-103351811 | - | - |
| UL Recognized, 94HB Flame Class Rating | ≥0.7 | mm | UL 94 |
| INJECTION MOLDING ⁽⁴⁾ | | | |
| Drying Temperature | 100 – 120 | °C | |
| Drying Time | 4 – 8 | Hrs | |
| Maximum Moisture Content | 0.02 | % | |
| Melt Temperature | 265 – 285 | °C | |
| Nozzle Temperature | 265 – 285 | °C | |
| Front - Zone 3 Temperature | 265 – 285 | °C | |
| Middle - Zone 2 Temperature | 260 – 280 | °C | |
| Rear - Zone 1 Temperature | 250 – 270 | °C | |
| Mold Temperature | 100 – 140 | °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.

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