

# LNPT<sup>™</sup> THERMOTUF<sup>™</sup> COMPOUND WF006N

## DESCRIPTION

LNP THERMOTUF WF006N compound is based on Polybutylene Terephthalate (PBT) resin containing 30% glass fiber. Added features of this grade include: High Metal Bonding Strength, High Impact, Good Dimensional Stability and Good Chemical Resistance. The potential applications include Nano-Molding Technology (NMT).

| GENERAL INFORMATION        |   |
|----------------------------|---|
| Features                   | Chemical Resistance, Nano molding technology, Dimensional stability, High stiffness/Strength, Impact resistant, No PFAS intentionally added |
| 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 20230607

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|--|----------------|-------------------|--------------|
| <b>MECHANICAL <sup>(1)</sup></b>             |                |                   |              |
| Tensile Stress, yld, Type I, 5 mm/min        | 110            | MPa               | ASTM D638    |
| Tensile Stress, brk, Type I, 5 mm/min        | 110            | MPa               | ASTM D638    |
| Tensile Strain, yld, Type I, 5 mm/min        | 2.7            | %                 | ASTM D638    |
| Tensile Strain, brk, Type I, 5 mm/min        | 2.7            | %                 | ASTM D638    |
| Tensile Modulus, 5 mm/min                    | 7900           | MPa               | ASTM D638    |
| Flexural Stress, brk, 1.3 mm/min, 50 mm span | 156            | MPa               | ASTM D790    |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 6600           | MPa               | ASTM D790    |
| Tensile Stress, yield, 5 mm/min              | 120            | MPa               | ISO 527      |
| Tensile Stress, break, 5 mm/min              | 120            | MPa               | ISO 527      |
| Tensile Strain, yield, 5 mm/min              | 2.5            | %                 | ISO 527      |
| Tensile Strain, break, 5 mm/min              | 2.5            | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 8200           | MPa               | ISO 527      |
| Flexural Stress, break, 2 mm/min             | 166            | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 7400           | MPa               | ISO 178      |
| <b>IMPACT <sup>(1)</sup></b>                 |                |                   |              |
| Izod Impact, unnotched, 23°C                 | 840            | J/m               | ASTM D4812   |
| Izod Impact, notched, 23°C                   | 165            | J/m               | ASTM D256    |
| Izod Impact, notched, -30°C                  | 124            | J/m               | ASTM D256    |
| Izod Impact, unnotched 80°10'4 +23°C         | 52             | kJ/m <sup>2</sup> | ISO 180/1U   |
| Izod Impact, notched 80°10'4 +23°C           | 14             | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, notched 80°10'4 -30°C           | 11             | kJ/m <sup>2</sup> | ISO 180/1A   |

| PROPERTIES  | TYPICAL VALUES                    | UNITS                   | TEST METHODS |
|---|-----------------------------------|-------------------------|--------------|
| Charpy Impact, notched, 23°C                        | 15                                | kJ/m <sup>2</sup>       | ISO 179/2C   |
| Charpy Impact, notched, -30°C                       | 12                                | kJ/m <sup>2</sup>       | ISO 179/2C   |
| Charpy Impact, unnotched, 23°C                      | 62                                | kJ/m <sup>2</sup>       | ISO 179/2C   |
| <b>THERMAL <sup>(1)</sup></b>                       |                                   |                         |              |
| Vicat Softening Temp, Rate B/50                     | 153                               | °C                      | ASTM D1525   |
| HDT, 1.82 MPa, 6.4 mm, unannealed                   | 175                               | °C                      | ASTM D648    |
| CTE, -40°C to 40°C, flow                            | 2.1E-05                           | 1/°C                    | ASTM E831    |
| CTE, -40°C to 40°C, xflow                           | 7.9E-05                           | 1/°C                    | ASTM E831    |
| CTE, 23°C to 80°C, flow                             | 1.5E-05                           | 1/°C                    | ASTM E831    |
| CTE, 23°C to 80°C, xflow                            | 4.5E-05                           | 1/°C                    | ASTM E831    |
| CTE, -40°C to 40°C, flow                            | 2.2E-05                           | 1/°C                    | ISO 11359-2  |
| CTE, -40°C to 40°C, xflow                           | 8.2E-05                           | 1/°C                    | ISO 11359-2  |
| CTE, 23°C to 80°C, flow                             | 1.6E-05                           | 1/°C                    | ISO 11359-2  |
| CTE, 23°C to 80°C, xflow                            | 1.E-04                            | 1/°C                    | ISO 11359-2  |
| Vicat Softening Temp, Rate B/50                     | 157                               | °C                      | ISO 306      |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm               | 158                               | °C                      | ISO 75/Af    |
| 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      |
| <b>PHYSICAL <sup>(1)</sup></b>                      |                                   |                         |              |
| Density   | 1.48                              | g/cm <sup>3</sup>       | ASTM D792    |
| Mold Shrinkage, flow <sup>(3)</sup>                 | 0.2 – 0.3                         | %                       | SABIC method |
| Mold Shrinkage, xflow <sup>(3)</sup>                | 0.4 – 0.5                         | %                       | SABIC method |
| Melt Volume Rate, MVR at 250°C/5.0 kg               | 8.5                               | cm <sup>3</sup> /10 min | ISO 1133     |
| <b>ELECTRICAL <sup>(1)</sup></b>                    |                                   |                         |              |
| Volume Resistivity                                  | 1.05E+15                          | Ω.cm                    | ASTM D257    |
| Dielectric Constant, 1.1 GHz                        | 3.53                              | -                       | SABIC method |
| Dielectric Constant, 1.9 GHz                        | 3.54                              | -                       | SABIC method |
| Dissipation Factor, 1.1 GHz                         | 0.012                             | -                       | SABIC method |
| Dissipation Factor, 1.9 GHz                         | 0.011                             | -                       | SABIC method |
| <b>FLAME CHARACTERISTICS <sup>(2)</sup></b>         |                                   |                         |              |
| UL Yellow Card Link                                 | <a href="#">E207780-104047809</a> | -                       | -            |
| UL Recognized, 94HB Flame Class Rating              | ≥0.7                              | mm                      | UL 94        |
| <b>INJECTION MOLDING <sup>(4)</sup></b>             |                                   |                         |              |
| 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.

## ADDITIONAL PRODUCT NOTES

No PFAS intentionally added: The grade listed in this document does not contain PFAS intentionally added during Seller's manufacturing process and is not expected to contain unintentional PFAS impurities. Each user is responsible for evaluating the presence of unintentional PFAS impurities.

## MORE INFORMATION

For curve data and CAE cards, please visit and register at <https://materialfinder.sabic-specialties.com>

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