

# LNPT<sup>™</sup> THERMOCOMP<sup>™</sup> COMPOUND D251U

## DESCRIPTION

LNP THERMOCOMP D251U compound is based on Polycarbonate (PC) resin containing 20% glass fiber. Added features of this grade include: High Modulus, Low Warpage, Good Ductility, Non-Brominated & Non-Chlorinated Flame Retardant, Good UV Stability.

| GENERAL INFORMATION   |   |
|-----------------------|---|
| Features              | Flame Retardant, Low Warpage, Non Cl/Br flame retardant, High stiffness/Strength, Impact resistant, Weatherable/UV stable |
| Fillers               | Glass Fiber   |
| Polymer Types         | Polycarbonate (PC)  |
| 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 20231109

| 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        | 2.7            | %                 | ASTM D638    |
| Tensile Modulus, 5 mm/min                    | 6700           | MPa               | ASTM D638    |
| Flexural Stress, brk, 1.3 mm/min, 50 mm span | 167            | MPa               | ASTM D790    |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 6200           | MPa               | ASTM D790    |
| Tensile Stress, break, 5 mm/min              | 112            | MPa               | ISO 527      |
| Tensile Strain, break, 5 mm/min              | 2.6            | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 6810           | MPa               | ISO 527      |
| Flexural Stress, break, 2 mm/min             | 166            | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 6290           | MPa               | ISO 178      |
| <b>IMPACT <sup>(1)</sup></b>                 |                |                   |              |
| Izod Impact, unnotched, 23°C                 | 650            | J/m               | ASTM D4812   |
| Izod Impact, notched, 23°C                   | 147            | J/m               | ASTM D256    |
| Instrumented Dart Impact Energy @ peak, 23°C | 20             | J                 | ASTM D3763   |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm   | 14             | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm   | 49             | kJ/m <sup>2</sup> | ISO 179/1eU  |
| <b>THERMAL <sup>(1)</sup></b>                |                |                   |              |
| HDT, 0.45 MPa, 3.2 mm, unannealed            | 121            | °C                | ASTM D648    |
| HDT, 1.82 MPa, 3.2mm, unannealed             | 115            | °C                | ASTM D648    |
| CTE, 23°C to 80°C, flow                      | 2.5E-05        | 1/°C              | ISO 11359-2  |

| PROPERTIES  | TYPICAL VALUES                    | UNITS                   | TEST METHODS |
|---|-----------------------------------|-------------------------|--------------|
| CTE, 23°C to 80°C, xflow                            | 7.5E-05                           | 1/°C                    | ISO 11359-2  |
| Relative Temp Index, Elec <sup>(2)</sup>            | 80                                | °C                      | UL 746B      |
| Relative Temp Index, Mech w/impact <sup>(2)</sup>   | 80                                | °C                      | UL 746B      |
| Relative Temp Index, Mech w/o impact <sup>(2)</sup> | 80                                | °C                      | UL 746B      |
| <b>PHYSICAL <sup>(1)</sup></b>                      |                                   |                         |              |
| Density   | 1.35                              | g/cm <sup>3</sup>       | ASTM D792    |
| Mold Shrinkage, flow, 24 hrs <sup>(3)</sup>         | 0.2 – 0.4                         | %                       | ASTM D955    |
| Mold Shrinkage, xflow, 24 hrs <sup>(3)</sup>        | 0.2 – 0.4                         | %                       | ASTM D955    |
| Melt Flow Rate, 300°C/1.2 kgf                       | 12                                | g/10 min                | ASTM D1238   |
| Melt Flow Rate, 300°C/2.16 kgf                      | 24                                | g/10 min                | ASTM D1238   |
| Water Absorption, (23°C/saturated)                  | 0.07                              | %                       | ISO 62-1     |
| Melt Volume Rate, MVR at 300°C/ 1.2 kg              | 10                                | cm <sup>3</sup> /10 min | ISO 1133     |
| Melt Volume Rate, MVR at 300°C/2.16 kg              | 20                                | cm <sup>3</sup> /10 min | ISO 1133     |
| <b>ELECTRICAL <sup>(1)</sup></b>                    |                                   |                         |              |
| Dielectric Constant, 1.1 GHz                        | 3.24                              | -                       | SABIC method |
| Dielectric Constant, 1.9 GHz                        | 3.27                              | -                       | SABIC method |
| Dielectric Constant, 5 GHz                          | 3.28                              | -                       | SABIC method |
| Dielectric Constant, 10 GHz                         | 3.28                              | -                       | SABIC method |
| Dissipation Factor, 1.1 GHz                         | 0.0066                            | -                       | SABIC method |
| Dissipation Factor, 1.9 GHz                         | 0.0067                            | -                       | SABIC method |
| Dissipation Factor, 5 GHz                           | 0.0071                            | -                       | SABIC method |
| Dissipation Factor, 10 GHz                          | 0.0072                            | -                       | SABIC method |
| Comparative Tracking Index                          | 175                               | V                       | IEC 60112    |
| <b>FLAME CHARACTERISTICS <sup>(2)</sup></b>         |                                   |                         |              |
| UL Yellow Card Link                                 | <a href="#">E121562-104088917</a> | -                       | -            |
| UL Yellow Card Link 2                               | <a href="#">E121562-104123741</a> | -                       | -            |
| UL Recognized, 94V-0 Flame Class Rating             | ≥0.3                              | mm                      | UL 94        |
| UL Recognized, 94-5VA Flame Class Rating            | ≥1.5                              | mm                      | UL 94        |
| UV-light, water exposure/immersion                  | F1                                | -                       | UL 746C      |
| <b>INJECTION MOLDING <sup>(4)</sup></b>             |                                   |                         |              |
| Drying Temperature                                  | 110                               | °C                      |              |
| Drying Time   | 3 – 6                             | Hrs                     |              |
| Maximum Moisture Content                            | 0.02                              | %                       |              |
| Melt Temperature                                    | 285 – 310                         | °C                      |              |
| Nozzle Temperature                                  | 285 – 305                         | °C                      |              |
| Front - Zone 3 Temperature                          | 280 – 300                         | °C                      |              |
| Middle - Zone 2 Temperature                         | 270 – 290                         | °C                      |              |
| Rear - Zone 1 Temperature                           | 260 – 280                         | °C                      |              |
| Mold Temperature                                    | 80 – 110                          | °C                      |              |
| Back Pressure                                       | 0.1 – 0.3                         | MPa                     |              |
| Screw Speed   | 50 – 90                           | rpm                     |              |

- (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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