

# LNPTM LUBRICOMPTM COMPOUND LL003XX1

## DESCRIPTION

LNPTM LUBRICOMP LL003XX1 compound is based on Polyetheretherketone (PEEK) resin containing 15% PTFE lubricant. Added features of this grade include: Easy Molding, Excellent Wear Resistance and Very Low Coefficient of Friction (CoF)

| GENERAL INFORMATION   |  |
|-----------------------|--|
| Features              | Good Processability, Wear resistant, High temperature resistance |
| Fillers               | Unreinforced, PTFE   |
| Polymer Types         | Polyetheretherketone (PEEK)                                      |
| Processing Techniques | Injection Molding  |

| INDUSTRY                   | SUB INDUSTRY   |
|----------------------------|--|
| Building and Construction  | Building Component   |
| Consumer                   | Sport/Leisure, Personal Accessory, Home Appliances, Commercial Appliance |
| 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>           |                |                   |              |
| Flexural Strength, 1.3 mm/min, 50 mm span  | 121            | MPa               | ASTM D790    |
| Flexural Modulus, 1.3 mm/min, 50 mm span   | 3100           | MPa               | ASTM D790    |
| Tensile Stress, brk, Type I, 5 mm/min      | 75             | MPa               | ASTM D638    |
| Tensile Modulus, 5 mm/min                  | 3200           | MPa               | ASTM D638    |
| Tensile Strain, brk, Type I, 5 mm/min      | 50             | %                 | ASTM D638    |
| Flexural Strength, 2 mm/min                | 123            | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                 | 2900           | MPa               | ISO 178      |
| Tensile Stress, break, 5 mm/min            | 70             | MPa               | ISO 527      |
| Tensile Modulus, 1 mm/min                  | 3100           | MPa               | ISO 527      |
| Tensile Strain, break, 5 mm/min            | 15             | %                 | ISO 527      |
| <b>IMPACT <sup>(1)</sup></b>               |                |                   |              |
| Izod Impact, notched, 23°C                 | 76             | J/m               | ASTM D256    |
| Izod Impact, unnotched, 23°C               | 1230           | J/m               | ASTM D4812   |
| Izod Impact, notched 80*10*4 +23°C         | 7              | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, unnotched 80*10*4 +23°C       | 95             | kJ/m <sup>2</sup> | ISO 180/1U   |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm | 7              | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm | 135            | kJ/m <sup>2</sup> | ISO 179/1eU  |
| Multiaxial Impact                          | 2.46           | J                 | ASTM D3763   |
| <b>THERMAL <sup>(1)</sup></b>              |                |                   |              |
| HDT, 1.82 MPa, 3.2mm, unannealed           | 148            | °C                | ASTM D648    |
| HDT, 0.45 MPa, 3.2 mm, unannealed          | 162            | °C                | ASTM D648    |

| PROPERTIES                                   | TYPICAL VALUES | UNITS  | TEST METHODS                |
|--|----------------|--|-----------------------------|
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm        | 148            | °C   | ISO 75/Af                   |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm       | 172            | °C   | ISO 75/Bf                   |
| CTE, -40°C to 120°C, flow                    | 4.9E-05        | 1/°C   | ASTM E831                   |
| CTE, -40°C to 120°C, xflow                   | 5.8E-05        | 1/°C   | ASTM E831                   |
| <b>PHYSICAL <sup>(1)</sup></b>               |                |  |                             |
| Dynamic COF                                  | 0.29           | -  | ASTM D3702 Modified: Manual |
| Static COF                                   | 0.25           | -  | ASTM D3702 Modified: Manual |
| Wear Factor Ring                             | 36             | 10 <sup>-10</sup> in <sup>4</sup> 5-min/ft-lb-hr | ASTM D3702 Modified: Manual |
| Specific Gravity                             | 1.36           | -  | ASTM D792                   |
| Mold Shrinkage, flow, 24 hrs <sup>(2)</sup>  | 0.3 – 0.4      | %  | ASTM D955                   |
| Mold Shrinkage, xflow, 24 hrs <sup>(2)</sup> | 0.4 – 0.5      | %  | ASTM D955                   |
| Density                                      | 1.36           | g/cm <sup>3</sup>                                | ASTM D792                   |
| Moisture Absorption (23°C / 50% RH)          | 0.01           | %  | ISO 62                      |
| <b>ELECTRICAL <sup>(1)</sup></b>             |                |  |                             |
| Dielectric Constant, 1.1 GHz                 | 3              | -  | SABIC method                |
| Dielectric Constant, 1.9 GHz                 | 0.0026         | -  | SABIC method                |
| Dissipation Factor, 1.1 GHz                  | 3.01           | -  | SABIC method                |
| Dissipation Factor, 1.9 GHz                  | 0.0028         | -  | SABIC method                |
| <b>INJECTION MOLDING <sup>(3)</sup></b>      |                |  |                             |
| Drying Temperature                           | 120 – 150      | °C   |                             |
| Drying Time                                  | 3 – 5          | Hrs  |                             |
| Nozzle Temperature                           | 380 – 400      | °C   |                             |
| Melt Temperature                             | 380 – 400      | °C   |                             |
| Front - Zone 3 Temperature                   | 370 – 380      | °C   |                             |
| Middle - Zone 2 Temperature                  | 360 – 370      | °C   |                             |
| Rear - Zone 1 Temperature                    | 290 – 300      | °C   |                             |
| Mold Temperature                             | 170 – 200      | °C   |                             |
| Screw Speed                                  | 50 – 100       | 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) 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.
- (3) 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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