

# LNPTM THERMOCOMPTM COMPOUND OFM46

## DESCRIPTION

LNP THERMOCOMP OFM46 compound is based on Polyphenylene Sulfide (PPS) containing 50% glass fiber and minerals. Added features of this material include: high stiffness and strength, excellent dimensional stability and warpage control, good flame and chemical resistance, low coefficient of thermal expansion and moisture absorption.

| GENERAL INFORMATION        |  |
|----------------------------|--|
| Features                   | Flame Retardant, Chemical Resistance, Low Warpage, Low Moisture Absorption, Dimensional stability, High stiffness/Strength |
| Fillers                    | Glass Fiber  |
| Polymer Types              | Polyphenylene Sulfide, Linear (PPS, Linear)  |
| Processing Techniques      | Injection Molding  |
| INDUSTRY                   | SUB INDUSTRY   |
| Automotive                 | Automotive Interiors   |
| Electrical and Electronics | Wireless Communication   |

## 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      | 160            | MPa               | ASTM D638    |
| Tensile Strain, brk, Type I, 5 mm/min      | 1.8            | %                 | ASTM D638    |
| Tensile Modulus, 5 mm/min                  | 15000          | MPa               | ASTM D638    |
| Flexural Strength, 1.3 mm/min, 50 mm span  | 230            | MPa               | ASTM D790    |
| Flexural Modulus, 1.3 mm/min, 50 mm span   | 13200          | MPa               | ASTM D790    |
| Tensile Stress, break, 5 mm/min            | 160            | MPa               | ISO 527      |
| Tensile Strain, break, 5 mm/min            | 1.8            | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                  | 15100          | MPa               | ISO 527      |
| Flexural Strength, 2 mm/min                | 230            | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                 | 13300          | MPa               | ISO 178      |
| <b>IMPACT <sup>(1)</sup></b>               |                |                   |              |
| Izod Impact, notched, 23°C                 | 90             | J/m               | ASTM D256    |
| Izod Impact, unnotched, 23°C               | 512            | J/m               | ASTM D4812   |
| Izod Impact, notched 80°10°4 +23°C         | 9.5            | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, unnotched 80°10°4 +23°C       | 35             | kJ/m <sup>2</sup> | ISO 180/1U   |
| Izod Impact, notched 80°10°4 0°C           | 8.5            | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, unnotched 80°10°4 0°C         | 31             | kJ/m <sup>2</sup> | ISO 180/1U   |
| Izod Impact, notched 80°10°4 -20°C         | 7.2            | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, unnotched 80°10°4 -20°C       | 28             | kJ/m <sup>2</sup> | ISO 180/1U   |
| Charpy 23°C, V-notch Edgew 80°10°4 sp=62mm | 10             | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy 23°C, Unnotch Edgew 80°10°4 sp=62mm | 35             | kJ/m <sup>2</sup> | ISO 179/1eU  |
| <b>THERMAL <sup>(1)</sup></b>              |                |                   |              |

| PROPERTIES  | TYPICAL VALUES                    | UNITS    | TEST METHODS |
|---|-----------------------------------|----------|--------------|
| HDT, 0.45 MPa, 3.2 mm, unannealed                   | 278                               | °C       | ASTM D648    |
| HDT, 1.82 MPa, 3.2mm, unannealed                    | 263                               | °C       | ASTM D648    |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm              | 278                               | °C       | ISO 75/Bf    |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm               | 265                               | °C       | ISO 75/Af    |
| <b>CTE</b>  |                                   |          |              |
| -40°C to 90°C, flow                                 | 1.5E-5                            | 1/°C     | ASTM E831    |
| -40°C to 90°C, xflow                                | 3.4E-5                            | 1/°C     | ASTM E831    |
| -40°C to 40°C, flow                                 | 1.5E-5                            | 1/°C     | ISO 11359-2  |
| -40°C to 40°C, xflow                                | 3.0E-5                            | 1/°C     | ISO 11359-2  |
| -40°C to 90°C, flow                                 | 1.6E-5                            | 1/°C     | ISO 11359-2  |
| -40°C to 90°C, xflow                                | 3.5E-5                            | 1/°C     | ISO 11359-2  |
| -40°C to 125°C, flow                                | 1.6E-5                            | 1/°C     | ISO 11359-2  |
| -40°C to 125°C, xflow                               | 3.9E-5                            | 1/°C     | ISO 11359-2  |
| Relative Temp Index, Elec <sup>(2)</sup>            | 130                               | °C       | UL 746B      |
| Relative Temp Index, Mech w/impact <sup>(2)</sup>   | 130                               | °C       | UL 746B      |
| Relative Temp Index, Mech w/o impact <sup>(2)</sup> | 130                               | °C       | UL 746B      |
| <b>PHYSICAL <sup>(1)</sup></b>                      |                                   |          |              |
| Specific Gravity                                    | 1.77                              | -        | ASTM D792    |
| Water Absorption, (23°C/24hrs)                      | 0.02                              | %        | ISO 62-1     |
| Moisture Absorption, (23°C/50% RH/24hrs)            | 0.01                              | %        | ISO 62-4     |
| Melt Flow Rate, 315°C/5.0 kgf                       | 32                                | g/10 min | ASTM D1238   |
| Mold Shrinkage, flow <sup>(3)</sup>                 | 0.25                              | %        | SABIC method |
| Mold Shrinkage, xflow <sup>(3)</sup>                | 0.4                               | %        | SABIC method |
| <b>ELECTRICAL <sup>(1)</sup></b>                    |                                   |          |              |
| Dielectric Constant, 1.9 GHz                        | 4.4                               | -        | SABIC method |
| Dissipation Factor, 1.9 GHz                         | 0.004                             | -        | SABIC method |
| Dielectric Constant, 5 GHz                          | 4.45                              | -        | SABIC method |
| Dissipation Factor, 5 GHz                           | 0.0046                            | -        | SABIC method |
| <b>FLAME CHARACTERISTICS <sup>(2)</sup></b>         |                                   |          |              |
| UL Yellow Card Link                                 | <a href="#">E207780-104610218</a> | -        | -            |
| UL Recognized, 94V-0 Flame Class Rating             | ≥0.8                              | mm       | UL 94        |
| <b>INJECTION MOLDING <sup>(4)</sup></b>             |                                   |          |              |
| Drying Temperature                                  | 120 – 140                         | °C       |              |
| Drying Time   | 3 – 4                             | Hrs      |              |
| Melt Temperature                                    | 310 – 330                         | °C       |              |
| Nozzle Temperature                                  | 310 – 330                         | °C       |              |
| Front - Zone 3 Temperature                          | 310 – 330                         | °C       |              |
| Middle - Zone 2 Temperature                         | 300 – 320                         | °C       |              |
| Rear - Zone 1 Temperature                           | 290 – 310                         | °C       |              |
| Mold Temperature                                    | 135 – 160                         | °C       |              |
| Back Pressure                                       | 0.3 – 0.7                         | MPa      |              |
| 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) 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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