

# LNP™ THERMOCOMP™ COMPOUND 2F004

FP-EF-1004  
REGION AMERICAS

## DESCRIPTION

LNP FP-EF-1004 is a fluoropolymer compound based on ETFE resin containing 20% Glass Fiber.

## TYPICAL PROPERTY VALUES

Revision 20170913

| PROPERTIES                               | TYPICAL VALUES | UNITS             | TEST METHODS |
|--|----------------|-------------------|--------------|
| <b>MECHANICAL</b>                        |                |                   |              |
| Tensile Stress, yld, Type I, 5 mm/min    | 54             | MPa               | ASTM D 638   |
| Tensile Stress, brk, Type I, 5 mm/min    | 49             | MPa               | ASTM D 638   |
| Tensile Strain, yld, Type I, 5 mm/min    | 9.4            | %                 | ASTM D 638   |
| Tensile Strain, brk, Type I, 5 mm/min    | 10.7           | %                 | ASTM D 638   |
| Tensile Modulus, 5 mm/min                | 4860           | MPa               | ASTM D 638   |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 4020           | MPa               | ASTM D 790   |
| Tensile Stress, yield, 5 mm/min          | 52             | MPa               | ISO 527      |
| Tensile Stress, break, 5 mm/min          | 51             | MPa               | ISO 527      |
| Tensile Strain, yield, 5 mm/min          | 9.1            | %                 | ISO 527      |
| Tensile Strain, break, 5 mm/min          | 9.8            | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                | 4400           | MPa               | ISO 527      |
| Flexural Stress                          | 72             | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min               | 3780           | MPa               | ISO 178      |
| <b>IMPACT</b>                            |                |                   |              |
| Izod Impact, unnotched, 23°C             | 1460           | J/m               | ASTM D 4812  |
| Izod Impact, notched, 23°C               | 551            | J/m               | ASTM D 256   |
| Multiaxial Impact                        | 10             | J                 | ISO 6603     |
| Instrumented Impact Total Energy, 23°C   | 21             | J                 | ASTM D 3763  |
| Izod Impact, unnotched 80*10*4 +23°C     | 96             | kJ/m <sup>2</sup> | ISO 180/1U   |
| Izod Impact, notched 80*10*4 +23°C       | 45             | kJ/m <sup>2</sup> | ISO 180/1A   |
| <b>THERMAL</b>                           |                |                   |              |
| HDT, 0.45 MPa, 3.2 mm, unannealed        | 240            | °C                | ASTM D 648   |
| HDT, 1.82 MPa, 3.2mm, unannealed         | 132            | °C                | ASTM D 648   |
| CTE, -30°C to 30°C, flow                 | 5.9E-05        | 1/°C              | ASTM D 696   |

| PROPERTIES                             | TYPICAL VALUES | UNITS             | TEST METHODS |
|--|----------------|-------------------|--------------|
| CTE, -30°C to 30°C, xflow              | 7.6E-05        | 1/°C              | ASTM D 696   |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm | 219            | °C                | ISO 75/Bf    |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm  | 112            | °C                | ISO 75/Af    |
| <b>PHYSICAL</b>                        |                |                   |              |
| Specific Gravity                       | 1.85           | -                 | ASTM D 792   |
| Density                                | 1.84           | g/cm <sup>3</sup> | ASTM D 792   |
| Moisture Absorption, 50% RH, 24 hrs    | 0.02           | %                 | ASTM D 570   |
| Mold Shrinkage, flow, 24 hrs (5)       | 1 – 3          | %                 | ASTM D 955   |
| Mold Shrinkage, xflow, 24 hrs (5)      | 2 – 4          | %                 | ASTM D 955   |
| Moisture Absorption (23°C / 50% RH)    | 0.01           | %                 | ISO 62       |
| <b>INJECTION MOLDING</b>               |                |                   |              |
| Drying Temperature                     | 120 – 150      | °C                |              |
| Drying Time                            | 4              | hrs               |              |
| Melt Temperature                       | 315            | °C                |              |
| Front - Zone 3 Temperature             | 325 – 340      | °C                |              |
| Middle - Zone 2 Temperature            | 300 – 325      | °C                |              |
| Rear - Zone 1 Temperature              | 280 – 300      | °C                |              |
| Mold Temperature                       | 90 – 120       | °C                |              |
| Back Pressure                          | 0.2 – 0.3      | MPa               |              |
| Screw Speed                            | 30 – 60        | rpm               |              |

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