

# LNP Lubricomp\* RAL-4023

SABIC Innovative Plastics Asia Pacific - Polyamide 66

## General Information

### General

|                        |                     |
|------------------------|---------------------|
| Filler / Reinforcement | • Aramid fiber      |
| Additive               | • Lubricant, PTFE   |
| Features               | • Lubricated        |
| Forms                  | • Pellets           |
| Processing Method      | • Injection Molding |

## ASTM and ISO Properties <sup>1</sup>

| Physical                                   | Nominal Value (English)    | Nominal Value (SI)     | Test Method   |
|--------------------------------------------|----------------------------|------------------------|---------------|
| Specific Gravity (Method A)                | 1.24                       | 1.24                   | ASTM D792     |
| Density                                    | 1.23 g/cm <sup>3</sup>     | 1.23 g/cm <sup>3</sup> | ISO 1183      |
| Molding Shrink (Flow, 24 hr)               | 0.017 to 0.018 in/in       | 1.7 to 1.8 %           | ASTM D955     |
| Molding Shrink (Across Flow, 24 hr)        | 0.020 to 0.021 in/in       | 2.0 to 2.1 %           | ASTM D955     |
| Mechanical                                 | Nominal Value (English)    | Nominal Value (SI)     | Test Method   |
| Tensile Modulus                            | 534000 psi                 | 3680 MPa               | ASTM D638     |
| Tensile Modulus                            | 551000 psi                 | 3800 MPa               | ISO 527-1, -2 |
| Tensile Strength (Break)                   | 13000 psi                  | 89.6 MPa               | ASTM D638     |
| Tensile Stress (Break)                     | 12300 psi                  | 85.0 MPa               | ISO 527-1, -2 |
| Tensile Elongation (Break)                 | 5.9 %                      | 5.9 %                  | ASTM D638     |
| Tensile Strain (Break)                     | 6.3 %                      | 6.3 %                  | ISO 527-1, -2 |
| Flexural Modulus                           | 571000 psi                 | 3940 MPa               | ASTM D790     |
| Flexural Modulus                           | 508000 psi                 | 3500 MPa               | ISO 178       |
| Flexural Strength                          | 19000 psi                  | 131 MPa                | ASTM D790     |
| Flexural Strength                          | 15500 psi                  | 107 MPa                | ISO 178       |
| Coefficient of Friction                    |                            |                        | ASTM D1894    |
| vs. Steel - Dynamic                        | 0.38                       | 0.38                   |               |
| vs. Steel - Static                         | 0.32                       | 0.32                   |               |
| Impact                                     | Nominal Value (English)    | Nominal Value (SI)     | Test Method   |
| Notched Izod Impact (0.125 in (3.18 mm))   | 0.800 ft-lb/in             | 42.7 J/m               | ASTM D256     |
| Notched Izod Impact Strength               | 1.90 ft-lb/in <sup>2</sup> | 4.00 kJ/m <sup>2</sup> | ISO 180       |
| Unnotched Izod Impact (0.125 in (3.18 mm)) | 10.0 ft-lb/in              | 534 J/m                | ASTM D256     |
| Unnotched Izod Impact Strength             | 17.6 ft-lb/in <sup>2</sup> | 37.0 kJ/m <sup>2</sup> | ISO 180       |

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| Thermal                                                            | Nominal Value (English) | Nominal Value (SI) | Test Method     |
|--------------------------------------------------------------------|-------------------------|--------------------|-----------------|
| Heat Deflection Temperature<br>66 psi (0.45 MPa), Unannealed       | 475 °F                  | 246 °C             | ISO 75B-1, -2   |
| Deflection Temperature Under Load<br>264 psi (1.8 MPa), Unannealed | 340 °F                  | 171 °C             | ASTM D648       |
| Heat Deflection Temperature<br>264 psi (1.8 MPa), Unannealed       | 320 °F                  | 160 °C             | ISO 75A-1, -2   |
| CLTE, Flow (TMA)                                                   | 0.000037 in/in/°F       | 0.000067 cm/cm/°C  | ASTM E831       |
| Coefficient of Linear Thermal Expansion, Flow<br>--                | 0.000038 in/in/°F       | 0.000068 cm/cm/°C  | ISO 11359-1, -2 |
| CLTE, Transverse (TMA)                                             | 0.000054 in/in/°F       | 0.000097 cm/cm/°C  | ASTM E831       |
| Coefficient of Linear Thermal Expansion, Transverse<br>--          | 0.000054 in/in/°F       | 0.000098 cm/cm/°C  | ISO 11359-1, -2 |

### Additional Properties

The values displayed above as Coef. of Friction and Wear Factor were tested in accordance with SABIC WI-0687.

COEFFICIENT OF FRICTION vs. Steel, Dynamic @ 40 psi, 50 ft/min, SABIC WI-0687: 0.38

COEFFICIENT OF FRICTION vs. Steel, Static @ 40 psi, SABIC WI-0687: 0.32

WEAR FACTOR @ 40 psi, 50 ft/min, SABIC WI-0687: 23 10<sup>-10</sup> in<sup>5</sup>-min/ft-lb-hr

| Processing Information |                         |                    |
|------------------------|-------------------------|--------------------|
| Injection              | Nominal Value (English) | Nominal Value (SI) |
| Drying Temperature     | 180 °F                  | 82.2 °C            |
| Drying Time            | 4.0 hr                  | 4.0 hr             |
| Suggested Max Moisture | 0.20 %                  | 0.20 %             |
| Processing (Melt) Temp | 525 to 550 °F           | 274 to 288 °C      |
| Mold Temperature       | 175 to 200 °F           | 79.4 to 93.3 °C    |
| Back Pressure          | 25.0 to 50.0 psi        | 0.172 to 0.345 MPa |

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.