

# LNP™ THERMOCOMP™ 2X04505 compound

Ethylene Tetrafluoroethylene Copolymer

SABIC Innovative Plastics

Message:

LNP THERMOCOMP 2X04505 is a compound based on Ethylene Tetrafluoroethylene Copolymer resin containing Carbon Fiber.

Also known as: LNP\* THERMOCOMP\* Compound PDX-FP-E-04505

Product reorder name: 2X04505

| General Information               |                                  |                   |             |
|-----------------------------------|----------------------------------|-------------------|-------------|
| Filler / Reinforcement            | Carbon fiber reinforced material |                   |             |
| Features                          | Copolymer                        |                   |             |
| Processing Method                 | Injection molding                |                   |             |
| Physical                          | Nominal Value                    | Unit              | Test Method |
| Density                           |                                  |                   |             |
| --                                | 1.74                             | g/cm <sup>3</sup> | ISO 1183    |
| --                                | 1.75                             | g/cm <sup>3</sup> | ASTM D792   |
| Molding Shrinkage                 |                                  |                   |             |
| Flow: 24 hours                    | 1.0 - 1.2                        | %                 | ASTM D955   |
| Transverse flow: 24 hours         | 1.8 - 2.0                        | %                 | ASTM D955   |
| Vertical flow direction: 24 hours | 1.9                              | %                 | ISO 294-4   |
| Flow direction: 24 hours          | 1.1                              | %                 | ISO 294-4   |
| Mechanical                        | Nominal Value                    | Unit              | Test Method |
| Tensile Modulus                   |                                  |                   |             |
| -- <sup>1</sup>                   | 15200                            | MPa               | ASTM D638   |
| --                                | 11600                            | MPa               | ISO 527-2/1 |
| Tensile Strength                  |                                  |                   |             |
| Yield                             | 87.6                             | MPa               | ASTM D638   |
| Yield                             | 89.0                             | MPa               | ISO 527-2   |
| Fracture                          | 85.5                             | MPa               | ASTM D638   |
| Fracture                          | 88.0                             | MPa               | ISO 527-2   |
| Tensile Elongation                |                                  |                   |             |
| Yield                             | 4.5                              | %                 | ASTM D638   |
| Yield                             | 4.7                              | %                 | ISO 527-2   |
| Fracture                          | 4.8                              | %                 | ASTM D638   |
| Fracture                          | 4.9                              | %                 | ISO 527-2   |
| Flexural Modulus                  |                                  |                   |             |
| --                                | 10300                            | MPa               | ASTM D790   |
| --                                | 18800                            | MPa               | ISO 178     |
| Flexural Stress                   | 319                              | MPa               | ISO 178     |
| Impact                            | Nominal Value                    | Unit              | Test Method |
| Notched Izod Impact               |                                  |                   |             |

| 23°C                                           | 270           | J/m               | ASTM D256   |
|------------------------------------------------|---------------|-------------------|-------------|
| 23°C <sup>2</sup>                              | 24            | kJ/m <sup>2</sup> | ISO 180/1A  |
| Unnotched Izod Impact                          |               |                   |             |
| 23°C                                           | 1000          | J/m               | ASTM D4812  |
| 23°C <sup>3</sup>                              | 59            | kJ/m <sup>2</sup> | ISO 180/1U  |
| Instrumented Dart Impact                       |               |                   |             |
| 23°C, Energy at Peak Load                      | 18.8          | J                 | ASTM D3763  |
| --                                             | 8.90          | J                 | ISO 6603-2  |
| Thermal                                        | Nominal Value | Unit              | Test Method |
| Deflection Temperature Under Load              |               |                   |             |
| 0.45 MPa, unannealed, 3.20mm                   | 255           | °C                | ASTM D648   |
| 0.45 MPa, unannealed, 64.0mm span <sup>4</sup> | 251           | °C                | ISO 75-2/Bf |
| 1.8 MPa, unannealed, 3.20mm                    | 222           | °C                | ASTM D648   |
| 1.8 MPa, unannealed, 64.0mm span <sup>5</sup>  | 207           | °C                | ISO 75-2/Af |
| Linear thermal expansion coefficient           |               |                   |             |
| Flow: -40 to 40°C                              | 7.7E-5        | cm/cm/°C          | ASTM E831   |
| Flow: -40 to 40°C                              | 7.8E-5        | cm/cm/°C          | ISO 11359-2 |
| Lateral: -40 to 40°C                           | 1.3E-5        | cm/cm/°C          | ASTM E831   |
| Lateral: -40 to 40°C                           | 1.2E-5        | cm/cm/°C          | ISO 11359-2 |
| Injection                                      | Nominal Value | Unit              |             |
| Drying Temperature                             | 121 - 149     | °C                |             |
| Drying Time                                    | 4.0           | hr                |             |
| Rear Temperature                               | 282 - 293     | °C                |             |
| Middle Temperature                             | 310 - 321     | °C                |             |
| Front Temperature                              | 332 - 343     | °C                |             |
| Processing (Melt) Temp                         | 316           | °C                |             |
| Mold Temperature                               | 93.3 - 121    | °C                |             |
| Back Pressure                                  | 0.172 - 0.344 | MPa               |             |
| Screw Speed                                    | 30 - 60       | rpm               |             |
| NOTE                                           |               |                   |             |
| 1.                                             | 50 mm/min     |                   |             |
| 2.                                             | 80*10*4       |                   |             |
| 3.                                             | 80*10*4       |                   |             |
| 4.                                             | 80*10*4 mm    |                   |             |
| 5.                                             | 80*10*4 mm    |                   |             |

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