# LNP™ THERMOCOMP™ COMPOUND DC0051

## DESCRIPTION

LNP THERMOCOMP COMPOUND DC0051 is a compound based on Polycarbonate resin containing >20% Carbon Fiber. Added feature of this grade is: Flame Retardant

| GENERAL INFORMATION | |
|---|---|
| **Features** | Flame Retardant, Non Cl/Br flame retardant, Carbon fiber filled, Dimensional stability, High stiffness/Strength, Impact resistant |
| **Fillers** | Carbon Fiber |
| **Polymer Types** | Polycarbonate (PC) |
| **Processing Techniques** | Injection Molding |

| INDUSTRY | SUB INDUSTRY |
|---|---|
| Consumer | Personal Recreation |
| Electrical and Electronics | Mobile Phone - Computer - Tablets |

## TYPICAL PROPERTY VALUES

Revision 20250217

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| MECHANICAL [1] | | | |
| **Tensile Stress, brk, Type I, 5 mm/min** | 155 | MPa | ASTM D638 |
| **Tensile Strain, brk, Type I, 5 mm/min** | 1.8 | % | ASTM D638 |
| **Tensile Modulus, 5 mm/min** | 18400 | MPa | ASTM D638 |
| **Flexural Strength, 1.3 mm/min, 50 mm span** | 215 | MPa | ASTM D790 |
| **Flexural Stress, brk, 1.3 mm/min, 50 mm span** | 211 | MPa | ASTM D790 |
| **Flexural Modulus, 1.3 mm/min, 50 mm span** | 17100 | MPa | ASTM D790 |
| **Tensile Stress, break, 5 mm/min** | 165 | MPa | ISO 527 |
| **Tensile Strain, break, 5 mm/min** | 1.7 | % | ISO 527 |
| **Tensile Modulus, 1 mm/min** | 19000 | MPa | ISO 527 |
| **Flexural Stress, break, 2 mm/min** | 212 | MPa | ISO 178 |
| **Flexural Strength, 2 mm/min** | 214 | MPa | ISO 178 |
| **Flexural Modulus, 2 mm/min** | 17000 | MPa | ISO 178 |
| IMPACT [1] | | | |
| **Izod Impact, notched, 23°C** | 50 | J/m | ASTM D256 |
| **Izod Impact, notched, -30°C** | 44 | J/m | ASTM D256 |
| **Izod Impact, unnotched, 23°C** | 318 | J/m | ASTM D4812 |
| **Izod Impact, unnotched, -30°C** | 348 | J/m | ASTM D4812 |
| **Izod Impact, notched 80*10*3 +23°C** | 6 | kJ/m² | ISO 180/1A |
| **Izod Impact, notched 80*10*3 -30°C** | 5 | kJ/m² | ISO 180/1A |
| **Izod Impact, unnotched 80*10*3 +23°C** | 19 | kJ/m² | ISO 180/1U |
| **Izod Impact, unnotched 80*10*3 -30°C** | 22 | kJ/m² | ISO 180/1U |
| **Izod Impact, notched 80*10*4 +23°C** | 6 | kJ/m² | ISO 180/1A |
| **Izod Impact, notched 80*10*4 -30°C** | 5 | kJ/m² | ISO 180/1A |

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| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| Izod Impact, unnotched 80*10*4 +23°C | 21 | kJ/m² | ISO 180/1U |
| Izod Impact, unnotched 80*10*4 -30°C | 21 | kJ/m² | ISO 180/1U |
| Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm | 5 | kJ/m² | ISO 179/1eA |
| Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm | 5 | kJ/m² | ISO 179/1eA |
| Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm | 21 | kJ/m² | ISO 179/1eU |
| Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm | 22 | kJ/m² | ISO 179/1eU |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm | 5 | kJ/m² | ISO 179/1eA |
| Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm | 5 | kJ/m² | ISO 179/1eA |
| Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm | 20 | kJ/m² | ISO 179/1eU |
| Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm | 22 | kJ/m² | ISO 179/1eU |
| Instrumented Dart Impact Total Energy, 23°C | 11 | J | ASTM D3763 |
| Instrumented Dart Impact Energy @ peak, 23°C | 9 | J | ASTM D3763 |
| THERMAL [1] | | | |
| HDT, 0.45 MPa, 3.2 mm, unannealed | 101 | °C | ASTM D648 |
| HDT, 1.82 MPa, 3.2mm, unannealed | 96 | °C | ASTM D648 |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm | 103 | °C | ISO 75/Bf |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 97 | °C | ISO 75/Af |
| Vicat Softening Temp, Rate B/50 | 103 | °C | ISO 306 |
| Vicat Softening Temp, Rate B/120 | 105 | °C | ISO 306 |
| CTE, -40°C to 40°C, flow | 6.3E-6 | 1/°C | ASTM E831 |
| CTE, -40°C to 40°C, xflow | 5.6E-5 | 1/°C | ASTM E831 |
| CTE, 23°C to 80°C, flow | 7.2E-6 | 1/°C | ASTM E831 |
| CTE, 23°C to 80°C, xflow | 7.1E-5 | 1/°C | ASTM E831 |
| CTE, -40°C to 40°C, flow | 7E-6 | 1/°C | ISO 11359-2 |
| CTE, -40°C to 40°C, xflow | 5.9E-5 | 1/°C | ISO 11359-2 |
| CTE, 23°C to 80°C, flow | 7.3E-6 | 1/°C | ISO 11359-2 |
| CTE, 23°C to 80°C, xflow | 7.4E-5 | 1/°C | ISO 11359-2 |
| Relative Temp Index, Elec [2] | 80 | °C | UL 746B |
| Relative Temp Index, Mech w/impact [2] | 80 | °C | UL 746B |
| Relative Temp Index, Mech w/o impact [2] | 80 | °C | UL 746B |
| Thermal Conductivity through-plane, 10*10*3mm sample | 0.48 | W/m-K | ASTM E1461-07 |
| Thermal Conductivity in-plane, 25*0.4mm disc | 1.76 | W/m-K | ASTM E1461-07 |
| PHYSICAL [1] | | | |
| Specific Gravity | 1.31 | - | ASTM D792 |
| Water Absorption, (23°C/24hrs) | 0.03 | % | ISO 62-1 |
| Mold Shrinkage, flow [3] | 0.04 | % | SABIC method |
| Mold Shrinkage, xflow [3] | 0.12 | % | SABIC method |
| ELECTRICAL [1] | | | |
| Surface Resistivity | 1E8 | Ω | ASTM D257 |
| Volume Resistivity | 1E9 – 1E10 | Ω.cm | ASTM D257 |
| FLAME CHARACTERISTICS [2] | | | |
| UL Yellow Card Link | E207780-104523085 | - | - |
| UL Recognized, 94V-0 Flame Class Rating | ≥0.8 | mm | UL 94 |
| INJECTION MOLDING [4] | | | |
| Drying Temperature | 70 | °C | |

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|---|---|---|---|
| Drying Time | 4 | Hrs | |
| Drying Time (Cumulative) | 12 | Hrs | |
| Maximum Moisture Content | 0.02 | % | |
| Melt Temperature | 275 – 330 | °C | |
| Front - Zone 3 Temperature | 280 – 320 | °C | |
| Middle - Zone 2 Temperature | 270 – 310 | °C | |
| Rear - Zone 1 Temperature | 260 – 300 | °C | |
| Mold Temperature | 60 – 85 | °C | |
| Back Pressure | 0.2 – 0.3 | MPa | |
| Screw Speed | 30 – 63 | 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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