# LNP™ THERMOCOMP™ AM COMPOUND DC0041XA51

## DESCRIPTION

LNP THERMOCOMP DC0041XA51 compound is based on PC Copolymer Resin containing 20% carbon fiber for Large Format Additive Manufacturing (LFAM) applications. Added features of this grade include: Higher Stiffness vs. glass fiber, Higher Strength, Higher Temperature Performance and Higher Throughput compared to ABS and PPE, as well as Smooth Surface Finish. This halogen-free flame retardant resin is EN45545 R1 HL3 and R7 HL2 compliant and an ideal candidate for train interior applications (category R1). It also meets requirements of NFPA-130a

| GENERAL INFORMATION | |
|---|---|
| **Features** | Flame Retardant, Creep resistant, Dimensional stability, High stiffness/Strength, High temperature resistance, No PFAS intentionally added, Additive Manufacturing |
| **Fillers** | Carbon Fiber |
| **Brands** | LNP™ THERMOCOMP™ |
| **Polymer Types** | Polycarbonate (PC) |
| **Processing Techniques** | Large Format Additive Manufacturing (LFAM) |

| INDUSTRY | SUB INDUSTRY |
|---|---|
| Industrial | Industrial General |

## TYPICAL PROPERTY VALUES

Revision 20251217

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| **MECHANICAL** | | | |
| **Tensile Stress, 5mm/min** [1] | | | |
| XZ Orientation | 87 | MPa | ASTM D638 Modified |
| ZX Orientation | 37 | MPa | ASTM D638 Modified |
| **Tensile Strain, 5mm/min** | | | |
| XZ Orientation | 1.5 | % | ASTM D638 Modified |
| ZX Orientation | 1.7 | % | ASTM D638 Modified |
| **Tensile Stiffness, 5mm/min** | | | |
| XZ Orientation [2] | 7.7 | GPa | ASTM D638 Modified |
| ZX Orientation | 2.8 | GPa | ASTM D638 Modified |
| **Flexural Stress, 5mm/min** | | | |
| XZ Orientation | 52 | MPa | ASTM D790 Modified |
| ZX Orientation | 111 | MPa | ASTM D790 Modified |
| **THERMAL** | | | |
| **HDT, 1.82 MPa, 6.4 mm, unannealed** | 97 | °C | ASTM D648 |
| **PHYSICAL** | | | |
| **Specific Gravity** | 1.39 | - | ASTM D792 |
| **EXTRUSION** | | | |
| **Extruder L/D** | 24 | - | |
| **Drying Temperature** | 95 – 100 | °C | |

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| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| **Drying Time** | 6 – 8 | Hrs | |
| **Maximum Moisture Content** | 0.02 | % | |
| **Barrel - Zone 1 Temperature** | 265 – 295 | °C | |
| **Barrel - Zone 2 Temperature** | 275 – 305 | °C | |
| **Barrel - Zone 3 Temperature** | 285 – 315 | °C | |
| **Barrel - Zone 4 Temperature** | 295 – 325 | °C | |
| **Nozzle Temperature** | 295 – 325 | °C | |
| **Melt Temperature** | 280 – 310 | °C | |
| **Bed Temperature** | 80 – 120 | °C | |
| **Extruder Pressure** | <11 | MPa | |

(1) Modified ASTM E8 used for tensile test samples

(2) Tensile Stiffness (K) is structural property defined as the stress/strain in the linear region of the stress-strain curve. Value depends on the geometry/shape and boundary/surrounding conditions

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