# LNP™ THERMOCOMP™ AM Compound AC004XXAR1

## DESCRIPTION

LNP THERMOCOMP AC004XXAR1 compound is based on Acrylonitrile Butadiene Styrene (ABS) resin containing 20% carbon fiber for Large Format Additive Manufacturing (LFAM) applications. Added features of this grade include: Higher Stiffness vs. glass fiber, Easy Processing, Low warp and Good Print Surface quality, making them a good candidate material for a broad range of applications and tooling, including thermoforming and vacuum-forming.

## TYPICAL PROPERTY VALUES

Revision 20251217

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| **MECHANICAL** | | | |
| **Tensile Stress, 5mm/min** [1] | | | |
| XZ Orientation | 89 | MPa | ASTM D638 Modified |
| ZX Orientation | 18 | MPa | ASTM D638 Modified |
| **Tensile Strain, 5mm/min** | | | |
| XZ Orientation | 1 | % | ASTM D638 Modified |
| ZX Orientation | 0.7 | % | ASTM D638 Modified |
| **Tensile Stiffness, 5mm/min** | | | |
| XZ Orientation [2] | 11.8 | GPa | ASTM D638 Modified |
| ZX Orientation | 2.9 | GPa | ASTM D638 Modified |
| **Flexural Stress, 5mm/min** | | | |
| XZ Orientation | 32 | MPa | ASTM D790 Modified |
| ZX Orientation | 125 | MPa | ASTM D790 Modified |
| **THERMAL** | | | |
| **HDT, 1.82 MPa, 3.2mm, annealed** | 101 | °C | ASTM D648 |
| **PHYSICAL** | | | |
| **Specific Gravity** | 1.14 | - | ASTM D792 |
| **EXTRUSION** | | | |
| **Extruder L/D** | 24 | - | |
| **Drying Temperature** | 80 | °C | |
| **Drying Time** | 4 | Hrs | |
| **Maximum Moisture Content** | 0.05 – 0.1 | % | |
| **Barrel - Zone 1 Temperature** | 190 – 230 | °C | |
| **Barrel - Zone 2 Temperature** | 200 – 240 | °C | |
| **Barrel - Zone 3 Temperature** | 210 – 250 | °C | |
| **Barrel - Zone 4 Temperature** | 220 – 260 | °C | |
| **Nozzle Temperature** | 210 – 250 | °C | |
| **Melt Temperature** | 220 – 260 | °C | |
| **Bed Temperature** | 120 – 150 | °C | |
| **Extruder Pressure** | <13.5 | MPa | |

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(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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