

# LNPT<sup>™</sup> THERMOCOMP<sup>™</sup> 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 20240209

| PROPERTIES                                    | TYPICAL VALUES | UNITS | TEST METHODS       |
|---|----------------|-------|--------------------|
| <b>MECHANICAL</b>                             |                |       |                    |
| <b>Tensile Stress, 5mm/min <sup>(1)</sup></b> |                |       |                    |
| XZ Orientation                                | 89             | MPa   | ASTM D638 Modified |
| ZX Orientation                                | 18             | MPa   | ASTM D638 Modified |
| <b>Tensile Strain, 5mm/min</b>                |                |       |                    |
| XZ Orientation                                | 1              | %     | ASTM D638 Modified |
| ZX Orientation                                | 0.7            | %     | ASTM D638 Modified |
| <b>Tensile Stiffness, 5mm/min</b>             |                |       |                    |
| XZ Orientation <sup>(2)</sup>                 | 11.8           | GPa   | ASTM D638 Modified |
| ZX Orientation                                | 2.9            | GPa   | ASTM D638 Modified |
| <b>Flexural Stress, 5mm/min</b>               |                |       |                    |
| XZ Orientation                                | 32             | MPa   | ASTM D790 Modified |
| ZX Orientation                                | 125            | MPa   | ASTM D790 Modified |
| <b>THERMAL</b>                                |                |       |                    |
| HDT, 1.82 MPa, 3.2mm, annealed                | 101            | °C    | ASTM D648          |
| <b>PHYSICAL</b>                               |                |       |                    |
| Specific Gravity                              | 1.14           | -     | ASTM D792          |
| <b>EXTRUSION</b>                              |                |       |                    |
| 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   |                    |



- (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

## ADDITIONAL PRODUCT NOTES

No PFAS intentionally added: The grade listed in this document does not contain PFAS intentionally added during Seller's manufacturing process and is not expected to contain unintentional PFAS impurities. Each user is responsible for evaluating the presence of unintentional PFAS impurities.

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