

# LNPT<sup>™</sup> THERMOCOMP<sup>™</sup> AM COMPOUND ZF004XXAR1

## DESCRIPTION

LNP THERMOCOMP ZF004XXAR1 compound is based on Polyphenylene Ether / Polystyrene (PPE/PS) blend containing 20% glass fiber for Large Format Additive Manufacturing (LFAM) applications. Added features of this grade include: Lower Thermal Expansion, Improved Hydrolytic Stability, Higher Strength to Weight Ratio and Higher Temperature Performance vs. ABS.

## TYPICAL PROPERTY VALUES

Revision 20241017

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
<b>Tensile Stress, 5mm/min <sup>(1)</sup></b>			
XZ Orientation	68	MPa	ASTM D638 Modified
ZX Orientation	28	MPa	ASTM D638 Modified
<b>Tensile Strain, 5mm/min</b>			
XZ Orientation	2.0	%	ASTM D638 Modified
ZX Orientation	1.9	%	ASTM D638 Modified
<b>Tensile Stiffness, 5mm/min</b>			
XZ Orientation <sup>(2)</sup>	5.2	GPa	ASTM D638 Modified
ZX Orientation	2.7	GPa	ASTM D638 Modified
<b>Flexural Stress, 5mm/min</b>			
XZ Orientation	51	MPa	ASTM D790 Modified
ZX Orientation	103	MPa	ASTM D790 Modified
<b>THERMAL</b>			
<b>HDT, 1.82 MPa, 3.2mm, annealed</b>	131	°C	ASTM D648
<b>PHYSICAL</b>			
<b>Specific Gravity</b>	1.22	-	ASTM D792
<b>EXTRUSION</b>			
<b>Extruder L/D</b>	24	-	
<b>Drying Temperature</b>	120	°C	
<b>Drying Time</b>	4	Hrs	
<b>Maximum Moisture Content</b>	0.02	%	
<b>Barrel - Zone 1 Temperature</b>	270 – 305	°C	
<b>Barrel - Zone 2 Temperature</b>	280 – 320	°C	
<b>Barrel - Zone 3 Temperature</b>	280 – 320	°C	
<b>Barrel - Zone 4 Temperature</b>	280 – 320	°C	
<b>Nozzle Temperature</b>	280 – 320	°C	
<b>Melt Temperature</b>	270 – 305	°C	
<b>Bed Temperature</b>	100 – 120	°C	
<b>Extruder Pressure</b>	<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

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