

# LNPT<sup>™</sup> THERMOCOMP<sup>™</sup> AM COMPOUND EF004XXAR1

## DESCRIPTION

LNP THERMOCOMP EF004XXAR1 is a compound based on Polyetherimide (PEI) resin containing 20% glass fiber for Large Format Additive manufacturing (LFAM) applications. PEI compounds, based on SABIC's inherently flame-retardant ULTEM<sup>™</sup> resins, provide low thermal expansion, high temperature performance, excellent strength-to-weight ratio, high modulus and low creep.

GENERAL INFORMATION	
Features	Flame Retardant, Creep resistant, Dimensional stability, High stiffness/Strength, High temperature resistance, No PFAS intentionally added, Additive Manufacturing
Fillers	Glass Fiber
Brands	LNPT <sup>™</sup> THERMOCOMP <sup>™</sup>
Polymer Types	Polyetherimide (PEI)
Processing Techniques	Large Format Additive Manufacturing (LFAM)

INDUSTRY	SUB INDUSTRY
Industrial	Industrial General

## 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	94	MPa	ASTM D638 Modified
ZX Orientation	39	MPa	ASTM D638 Modified
<b>Tensile Strain, 5mm/min</b>			
XZ Orientation	2.1	%	ASTM D638 Modified
ZX Orientation	1.7	%	ASTM D638 Modified
<b>Tensile Stiffness, 5mm/min</b>			
XZ Orientation <sup>(2)</sup>	5.6	GPa	ASTM D638 Modified
ZX Orientation	2.8	GPa	ASTM D638 Modified
<b>Flexural Stress, 5mm/min</b>			
XZ Orientation	62	MPa	ASTM D790 Modified
ZX Orientation	137	MPa	ASTM D790 Modified
<b>THERMAL</b>			
<b>HDT, 1.82 MPa, 3.2mm, annealed</b>	207	°C	ASTM D648
<b>PHYSICAL</b>			
<b>Specific Gravity</b>	1.43	-	ASTM D792
<b>EXTRUSION</b>			
<b>Drying Time</b>	4 – 6	Hrs	
<b>Drying Temperature</b>	120 – 150	°C	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Extruder L/D	24	-	
Maximum Moisture Content	.02	%	
Barrel - Zone 1 Temperature	325 – 345	°C	
Barrel - Zone 2 Temperature	345 – 355	°C	
Barrel - Zone 3 Temperature	355 – 365	°C	
Barrel - Zone 4 Temperature	365 – 375	°C	
Nozzle Temperature	340 – 360	°C	
Melt Temperature	350 – 370	°C	
Bed Temperature	100 – 100	°C	
Extruder Pressure	<17	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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