LNP™ THERMOCOMP™ AM Compound ZC004XXAR1

DESCRIPTION

LNP THERMOCOMP ZC004XXAR1 compound is based on Polyphenylene Ether / Polystyrene (PPE/PS) blend containing 20% carbon fiber for Large Format Additive Manufacturing (LFAM) applications. Added features of this grade include: Higher Stiffness vs. glass fiber, Lower Thermal Expansion, Improved Hydrolytic Stability, Higher strength to Weight Ratio, Higher Temperature Performance and improved processing vs. ABS based grades.

TYPICAL PROPERTY VALUES

Revision 20241017

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, 5mm/min [1]			
XZ Orientation	75	MPa	ASTM D638 Modified
ZX Orientation	21	MPa	ASTM D638 Modified
Tensile Strain, 5mm/min			
XZ Orientation	0.7	%	ASTM D638 Modified
ZX Orientation	1.0	%	ASTM D638 Modified
Tensile Stiffness, 5mm/min			
XZ Orientation [2]	12.2	GPa	ASTM D638 Modified
ZX Orientation	2.7	GPa	ASTM D638 Modified
Flexural Stress, 5mm/min			
XZ Orientation	36	MPa	ASTM D790 Modified
ZX Orientation	99	MPa	ASTM D790 Modified
THERMAL			
HDT, 1.82 MPa, 3.2mm, annealed	137	°C	ASTM D648
PHYSICAL			
Specific Gravity	1.17	-	ASTM D792
EXTRUSION			
Extruder L/D	24	-	
Drying Temperature	120	°C	
Drying Time	4	Hrs	
Maximum Moisture Content	0.02	%	
Barrel - Zone 1 Temperature	270 – 305	°C	
Barrel - Zone 2 Temperature	280 – 320	°C	
Barrel - Zone 3 Temperature	280 – 320	°C	
Barrel - Zone 4 Temperature	280 – 320	°C	
Nozzle Temperature	280 – 320	°C	
Melt Temperature	270 – 315	°C	
Bed Temperature	100 – 120	°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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