DATASHEET

LUVOCOM® 3F PA^{HT}® 9936 BK/L

Polyamide PA
Unreinforced, black, food-compliant, detectable

LUVOCOM® 3F FILAMENT
Additive manufacturing solutions

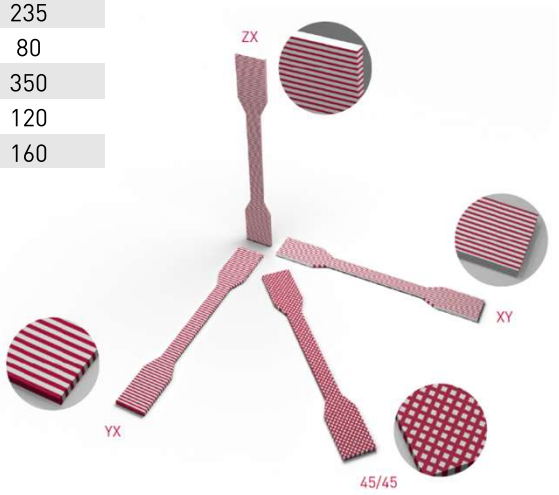
Description

LUVOCOM 3F PA^{HT}® 9936 BK/L is an unreinforced Polyamide based formulation with the ability to be printable on non-heated chamber machines. It has excellent tensile and impact strength and allows continues use up to 100 °C while retaining 50 % of its mechanical properties. Its water uptake takes about 4 times longer to reach the saturation point compared to unmodified PA6, also its saturation point is 5 times lower than conventional PA6 materials. LUVOCOM 3F PA^{HT}® 9936 BK/L is food-compliant and soft-magnetically detectable.

MECHANICAL PROPERTIES						
			Print Orientation			
	Unit	Standard	XY	45/45	YX	ZX
Tensile Strength	[MPa]	ISO 527-2	79* / 67**	76* / 59**	68* / 51**	41* / 30**
Tensile Modulus	[GPa]	ISO 527-2	3.05* / 2.72**	3.09* / 2.49**	2.90* / 2.10**	2.80* / 2.04**
Elongation @ F_{max}	[%]	ISO 527-2	3.7* / 3.7**	3.6* / 2.5**	3.5* / 3.8**	1.6* / 1.5**
Elongation @ Break	[%]	ISO 527-2	4.1* / 6.1**	7.1* / 5.1**	5.6* / 5.6**	1.6* / 1.5**
Flexural Strength	[MPa]	ISO 178	115* / 88**	108* / 90**	100* / 82**	65* / 52**
Flexural Modulus	[GPa]	ISO 178	2.73* / 2.24**	2.68* / 2.30**	2.65* / 2.02**	2.47* / 1.68**
Impact Strength 1eU	[kJ/m^2]	ISO 180	89* / 154**	38* / 42**	40* / 37**	6* / 5**

*dry / **conditioned (accelerated method 60 °C/16 h, moisture value 1.4 %)
Results on Bambu Lab H2D at 10 mm^3/s flow (parameter set "LEHVOSS series"). 0.4 mm nozzle. 100 % infill.
Non-annealed samples. Qualified filament.

MATERIAL PROPERTIES			
	Unit	Standard	Value
Spec. Density	[g/cm^3]	ISO 1183	1.25
Moisture Uptake	[%]	ISO 62	< 1.5
HDT @ 1.80 MPa	[°C]	ISO 75	90
Melting Point	[°C]	ISO 11357	235
Glass Transition Temp.	[°C]	ISO 11357	80
Decomposition Temp.	[°C]	ISO 11358	350
Continuous Use Temp.	[°C]	ISO 3167A	120
Service Temperature	[°C]	ISO 3167A	160



Properties

- Strong and tough PA
- Temperature resistant
- Chemically resistant
- Very good surface quality
- Can be printed without heated build chamber

Material Twin

Corresponding injection molding material: LUVOTECH® PA66 HS MS NT. This material twin has a performance profile that leads to comparable results in injection molding to 3D printing.

LEHVOSS Group

DATASHEET

LUVOCOM® 3F PA^{HT}® 9936 BK/L

Polyamide PA

Unreinforced, black, food-compliant, detectable

LUVOCOM® 3F FILAMENT
Additive manufacturing solutions

Material handling and drying

Dry

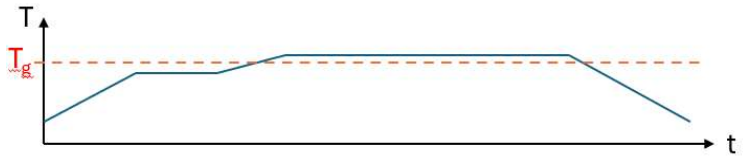
To remove residual moisture, the filament should be dried before processing. We recommend a convection oven with even temperature distribution. Duration: min. 24 h. Temperature: 90 °C.

Keep dry

To avoid moisture condensation on the filament surface, we recommend using a drying box. Temperature 80 °C.

Annealing

For printers with an unheated installation space, annealing of the components is recommended to relieve stress and ensure the full crystallinity, high strength and temperature resistance of the material. To do this, the component must be heated in a controlled manner and cooled to a temperature above the glass transition temperature:



1) Heat room temperature to 80 °C, 2) Hold at 80 °C, 3) Heat up to 95 °C, 4) Hold at 95 °C (1 h per mm wall thickness), 5) Cool to room temperature.
We recommend programmable drying ovens for this purpose, e.g. from the manufacturer Memmert.

Processing

Printing Parameters

Depending on the printing platform and equipment: Temp.: 300 to 350 °C, build plate temp: 70 °C, Flow: 0.95 to 1, Ø nozzle (hardened): 0.4 to 0.6 mm, Layer thickness: 0.2 to 0.4 mm. Print parameter sets for different printers on request.

Print plate

The material can be printed on almost all build plates. We recommend printing plates from supplier 3D-MATT.

Support materials

LUVOCOM 3F PA^{HT}® 9936 BK is fully compatible with water soluble supports such as PVA, PVOH, BVOH.
It is also fully compatible with breakaway supports such as HIPS.

9936	10 07 26

Europe and Head Office
Lehmann&Voss&Co. KG
Alsterufer 19
20354 Hamburg
Germany
Tel +49 40 44 197-0
Email: luvocom@lehvoss.de

North America
LEHVOSS North America, LLC
185 South Broad Street
Pawcatuck, CT 06379
USA
Tel +1-855-681-3226
Email: info@lehvoss.us

Asia
LEHVOSS (Shanghai) Chemical Trading Co., Ltd.
Unit 4805, 8 Xingyi Road
Changning District, Shanghai 200336
China
Tel +86 21 62785181
Email: info@lehvoss.cn

LEHVOSS Group

Any recommendations made for use of Seller's materials are made to the best of Seller's knowledge and are based upon prior tests and experience of the Seller believed to be reliable; however, Seller does not guarantee the results to be obtained and al l such recommendations are non-binding – also with regard to the protection of third party's rights –, do not constitute any representation and do not affect in any way Buyer's obligation to examine and/or test the Seller's goods with regard to their suitability for Buyer's purposes. No information given by the Seller is to be construed in any way as a guarantee regarding characteristics or duration of use, unless such information has been explicitly given as a guarantee. d