LUVOCOM® 3F
Additive manufacturing solutions

Preliminary data sheet.

LUVOCOM 3F PET CF 9780 BK

Polyethylene terephthalate based material with carbon fiber, natural color (black)

Physical Properties		Test Method	Specimen	Units	Typical Value
Specific Gravity		ISO 1183	MPTS ISO 3167 A	g/cm³	1,4
Water Absorption	23 °C / 24 h		MPTS ISO 3167 A	%	<0,3
Melt Flow Rates	MFR	ISO 1133	pellet	g/10 Min	
Melt Volume Rate	MVR	ISO 1133	pellet	cm³/10 Min	
Linear Mould Shrinkage	VSR 3mm ||	DIN 16901	MPTS ISO 3167 A	%	0,00-0,1
Flamability Behaviour		UL 94	1/16“	-	
Mechanical Properties at 23°C/50% rh					
Tensile Strength	σ_{zM}	ISO 527	MPTS ISO 3167 A	MPa	80
Elongation	ε_{zM}	ISO 527	MPTS ISO 3167 A	%	2.5
Modulus of Elasticity	E_t	ISO 527	MPTS ISO 3167 A	GPa	9
Flexural Strength	σ_{bM}	ISO 178	MPTS ISO 3167 A	MPa	130
Flexural Elongation	ε_{bM}	ISO 178	MPTS ISO 3167 A	%	3.5
Flexural Modulus	E_{3B}	ISO 178	MPTS ISO 3167 A	GPa	8
Charpy Impact Strength		ISO 179 1eU	MPTS ISO 3167 A	kJ/m²	40
Charpy Impact Strength	-30°C	ISO 179 1eU	MPTS ISO 3167 A	kJ/m²	
Charpy Impact Strength notched		ISO 179 eA	MPTS ISO 3167 A	kJ/m²	
Charpy Impact Strength notched	-30°C	ISO 179 eA	MPTS ISO 3167 A	kJ/m²	
Thermal Properties					
Vicat Softening Temp.	VST A	DIN ISO 306	MPTS ISO 3167 A	°C	
Heat Distortion Temp.	HDT A	ISO 75	MPTS ISO 3167 A	°C	
Continuous Service Temp.		UL 746B	MPTS ISO 3167 A	°C	100
Maximum (short term) Use Temp.				°C	125
Coefficient of Thermal Expansion		DIN 53752		10^{-5} /K	
Thermal Conductivity		HOT-DISK	|| 60x60x3 mm	W/mK	
Electrical Properties					
Insulation Resistance	Strip electrode R_{25}	DIN/IEC 60167	MPTS ISO 3167 A	Ω	
Surface Resistance	R_{OB}	DIN IEC 60093	Ronde 60x4 mm	Ω	
Tribological Properties					
Coeff. of Friction μ	dynamic 15Hz 21N	DIN 51834	MPTS ISO 3167	N/N	
Coeff. of Friction μ	40mm/s 21N	LuV	MPTS ISO 3167	N/N	

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Application Examples

Very strong and stiff parts.

Low influence from moisture and temperature to measures, can be annealed for better mechanical properties.

Automotive industry, textile- and office machinery, apparatus- and precision engineering.

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Recommended Processing Instructions

General

In general LUVOCOM® 3F can be processed on conventional extrusion moulding machines while observing the usual technical guidelines.
Any added fibrous materials or fillers may have an abrasive effect. In this case the cylinder and screw should be protected against wear as is usual in the processing of reinforced thermoplastic materials.
Lengthy dwell times for the melts in the cylinder should be avoided.
Lower the temperatures during interruptions!

Predrying

(optional)

It is advisable to predry the granulate with a suitable dryer immediately before processing.
The granulate may absorb moisture from the air.

Dryer type	Temperature°C	Drying time in h
Dehumidifying dryer	90	6 to 8
Vacuum Dryer	70	4 to 6

Processing Temperatures

Zone 1	°C	230 to 265
Zone 2	°C	230 to 265
Zone 3	°C	230 to 265
Nozzle	°C	235 to 255
Mass-Temperature	°C	optimum 245

Delivery Form & Storage

Unless indicated otherwise, the material is delivered as 3mm-long pellets in sealed bags on pallets.

Preferably storage should be effected in dry and normally temperatured rooms.

Additional Information

The filament can be wound into standard size spools.
3D Printing parameters may vary from machine to machine, the following settings can be use as an indication:

Nozzle temperature: 250 - 265 °C Print Bed Temperature: > 50 °C Layer Thickness: >0,15 mm

The processing notes provided merely represent a recommendation for general use. Due to the large variety of machines, geometries and volumes of parts, etc., it may be necessary to employ different settings according to the specific application.
Please contact us for further information.

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