

High-temperature polyamide with carbon fibers, black

| Physical properties | | Test method | Specimen | Units | Typical value |
|-----------------------------------------------|---------------------------|---------------|-----------------|-------------------------|------------------|
| Specific gravity | | ISO 1183-3 | | g/cm ³ | 1,24 |
| Water absorption | 23°C / 24h | ISO 62 | MPTS ISO 3167 A | % | <0,3 |
| Melt flow rates (MFR) | 250°C / 2,16kg | ISO 1133 | pellet | g/10 min | 3,4 |
| Melt volume rate (MVR) | 250°C / 2,16kg | ISO 1133 | pellet | cm ³ /10 min | 3,0 |
| Linear mould shrinkage | | DIN 16742 | MPTS ISO 3167 A | % | 0,3-0,5 |
| Mechanical properties at 23°C / 50% rh | | | | | |
| Tensile strength | dry, @50 mm/min | ISO 527 | MPTS ISO 3167 A | MPa | 130 |
| Elongation at maximum force | dry, @50 mm/min | ISO 527 | MPTS ISO 3167 A | % | 2 |
| Modulus of elasticity | dry, @1 mm/min | ISO 527 | MPTS ISO 3167 A | GPa | 11,5 |
| Charpy impact strength | dry | ISO 179 1eU | 80x10x4mm | kJ/m ² | 35 |
| Thermal properties | | | | | |
| Heat distortion temperature | HDT A | ISO 75 | molded sample | °C | 90 |
| Continuous service temperature | 20.000 h | IEC 60216 | MPTS ISO 3167 A | °C | 120 |
| Service temperature | during lifetime max. 200h | | MPTS ISO 3167 A | °C | 160 |
| Electrical properties | | | | | |
| Insulation resistance strip electrode | R25 | DIN IEC 60167 | MPTS ISO 3167 A | Ω | ≤10 ² |
| Surface resistance | ROB | DIN IEC 60093 | Ronde 60x4mm | Ω | <10 ² |

Main features

Low influence from moisture and temperature to measures and electrical properties, compared with PA66

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Recommended processing parameters

General

3D Printing parameters may vary from machine to machine. The following settings may be used as an indication: nozzle temperature: 265 - 290 °C / nozzle material: abbrasion resistant / print bed temperature: > 50 °C / layer thickness: > 0,2mm / printing speed 40 - 60 mm/s.

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.

Predrying

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

| Dryer type | Temperature °C | Drying time in h |
|---------------------|----------------|------------------|
| Dehumidifying dryer | 130 | 6 - 8 |
| Vacuum Dryer | 120 | 4 - 6 |

Processing

| | | |
|------------------|----|-----------|
| Zone 1 | °C | 260 - 300 |
| Zone 2 | °C | 260 - 300 |
| Zone 3 | °C | 260 - 300 |
| Nozzle | °C | 250 - 290 |
| Melt temperature | °C | 280 |

In general LUVOCOM® 3F can be processed on conventional extrusion machines while observing the usual technical guidelines. Any added fibrous materials or fillers may have an abrasive effect. In this case the cylinder, screw and die 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!

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

Filaments produced from this material may be wound into standard size spools.

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