

Preliminary data sheet.

LUVOCOM 3F PEEK CF 9710 BK

PEEK
**Carbon reinforced
black**

| Physical Properties | | | Test Method | Specimen | Units | Typical Value |
|----------------------------------|------------------|-----------------|---------------|-----------------|-------------------------|------------------|
| Specific Gravity | | | ISO 1183 | MPTS ISO 3167 A | g/cm ³ | 1,40 |
| Water Absorption | 23 °C / 24 h | | | MPTS ISO 3167 A | % | <0,1 |
| Melt Flow Rates | MFR 380°C / 10kg | ISO 1133 | | pellet | g/10 Min | |
| Melt Volume Rate | MVR 380°C / 10kg | ISO 1133 | | pellet | cm ³ /10 Min | 10 |
| Linear Mould Shrinkage | VSR 3mm | DIN 16901 | | MPTS ISO 3167 A | % | 0,2-0,4 |
| Flamability Behaviour | | UL 94 | | 1/16" | - | (V-0) |
| Mechanical Properties | | | | | | |
| at 23°C/50% rh | | | | | | |
| Tensile Strength | σ_{zM} | ISO 527 | | MPTS ISO 3167 A | MPa | 176 |
| Elongation | ϵ_{zM} | ISO 527 | | MPTS ISO 3167 A | % | 2,8 |
| Modulus of Elasticity | E_t | ISO 527 | | MPTS ISO 3167 A | GPa | 14,5 |
| Flexural Strength | σ_{bM} | ISO 178 | | MPTS ISO 3167 A | MPa | 260 |
| Flexural Elongation | ϵ_{bM} | ISO 178 | | MPTS ISO 3167 A | % | 3 |
| Flexural Modulus | E_{3B} | ISO 178 | | MPTS ISO 3167 A | GPa | 12,5 |
| Charpy Impact Strength | | ISO 179 1eU | | MPTS ISO 3167 A | kJ/m ² | 48 |
| Charpy Impact Strength | -30°C | ISO 179 1eU | | MPTS ISO 3167 A | kJ/m ² | 45 |
| Charpy Impact Strength notched | | ISO 179 eA | | MPTS ISO 3167 A | kJ/m ² | 7 |
| Charpy Impact Strength notched | -30°C | ISO 179 eA | | MPTS ISO 3167 A | kJ/m ² | 7 |
| 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 | 280 |
| Continuous Service Temp. | | UL 746B | | MPTS ISO 3167 A | °C | 250 |
| Maximum (short term) Use Temp. | | | | | °C | 280 |
| Coefficient of Thermal Expansion | | DIN 53752 | | | 10 ⁻⁵ /K | |
| Thermal Conductivity | | DIN 52612 | | | W/mK | |
| Electrical Properties | | | | | | |
| Insulation Resistance | Strip electrode | R ₂₅ | DIN/IEC 60167 | MPTS ISO 3167 A | Ω | <10 ⁹ |
| Surface Resistance | | R _{OB} | DIN IEC 60093 | Ronde 60x4 mm | Ω | <10 ⁹ |
| 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

Dynamically-stressed parts.

Highly chemically-resistant parts, non flammable.

Inherent flame resistance.

Aerospace Applications

Energy industry

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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 | 150 | 3 to 6 |
| or | 120 | 6 to 8 |

Processing Temperatures

| | | |
|------------------|----|-------------|
| Zone 1 | °C | 360 to 370 |
| Zone 2 | °C | 380 to 390 |
| Zone 3 | °C | 390 to 400 |
| Nozzle | °C | 360 to 380 |
| Mass-Temperature | °C | optimum 390 |

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

During processing, the moisture content should not exceed 0.05%.

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: 370 - 420 °C

Print Bed Temperature: > 120 °C

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.

High-temperature polymers place increased demands on the tool steels employed.

Please contact us for further information.

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