LUVOCOM® 1105-0699

LUVOCOM
High-performance compounds

Polyetheretherketone
with carbon fibers, PTFE, lubricant modified, natural color (black)

Physical properties		Test method	Specimen	Units	Typical value
Specific gravity		ISO 1183-3		g/cm³	1,5
Water absorption	23°C / 24h	ISO 62	ISO 3167 A	%	<0,1
Linear mould shrinkage		DIN 16742	ISO 3167 A	%	0,1-0,4
Flammability behaviour		UL 94	1/16"		(V-0)
Mechanical properties at 23°C / 50% rh					
Tensile strength	dry, @50 mm/min	ISO 527	ISO 3167 A	MPa	220
Elongation @Fmax.	dry, @50 mm/min	ISO 527	ISO 3167 A	%	1,5
Tensile modulus	dry, @1 mm/min	ISO 527	ISO 3167 A	GPa	28
Flexural strength	dry, @10 mm/min	ISO 178	ISO 3167 A	MPa	320
Flexural elongation @Fmax.	dry, @10 mm/min	ISO 178	ISO 3167 A	%	2
Flexural modulus	dry, @2 mm/min	ISO 178	ISO 3167 A	GPa	21
Impact strength	dry	ISO 179 1eU	80x10x4mm	kJ/m²	40
Impact strength	-30°C	ISO 179 1eU	80x10x4mm	kJ/m²	27
Impact strength, notched	dry	ISO 179 1eA	80x10x4mm	kJ/m²	10
Charpy Impact Strength notched	-30°C	ISO 179 1eA	80x10x4mm	kJ/m²	9
Thermal properties					
Vicat softening temp.	VST A	DIN ISO 306	ISO 3167 A	°C	310
Heat distortion temp.	HDT A	ISO 75	80x10x4mm	°C	255
Continuous service temp.	20.000 h	IEC 60216	ISO 3167 A	°C	250
Service temperature	during lifetime max. 200h		ISO 3167 A	°C	280
CLTE, longitudinal		ISO 11359	10x8x4 mm	10^{-5}/K	0,9
Electrical properties					
Insulation resistance	strip electrode R25	DIN EN 62631-3-3	ISO 3167 A	Ω	$<10^5$
Surface resistance	ROB	DIN EN 62631-3-2	Ronde 60x4mm	Ω	$<10^4$
Tribological properties					
CoF - Block on Ring	100Cr6, 3 MPa, 1 m/s	ASTM G137	molded sample		0,48
Sp. Wear Rate-Block on Ring	100Cr6, 3 MPa, 1 m/s	ASTM G137	molded sample	10^{-6} mm³/Nm	0,6
Sp. Wear Rate-Block on Ring	100Cr6, 3 MPa, 2 m/s	ASTM G137	molded sample	10^{-6} mm³/Nm	1,7

Main features

Very strong and stiff parts; low coefficient of thermal expansion. Improved friction and wear behaviour. Optimised for dry running operations. Electrically conductive, suitable for continuous discharging of statically-generated electricity. High dimensionally stable precision parts with low warpage and narrow tolerance range.

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Recommended processing parameters

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.

Predrying

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

Dryer type	Temperature °C	Drying time in h
Dehumidifying dryer	150	3 - 6
or	120	6 - 8

Recommended processing parameters

In general this product can be processed on conventional injection 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!

Mold	Melt temperature	Nozzle	Zone 3	Zone 2	Zone 1
170 - 200 °C	390 °C	360 - 380 °C	390 - 400 °C	380 - 390 °C	360 - 370 °C

Additional information

During processing, the moisture content should not exceed 0.05%. To avoid internal stresses, a medium to high injection rate should be used. An increase in tool temperature may be helpful. Post-crystallization may lead to warpage at elevated operating temperatures. This can be counteracted by suitable heat treatment. 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.

LEHVOSS Group