

Polybutylene terephthalate
with carbon fibers and PTFE, black

Physical properties		Test method	Specimen	Units	Typical value
Specific gravity		ISO 1183-3		g/cm ³	1,51
Water absorption	23°C / 24h	ISO 62	ISO 3167 A	%	<0,1
Melt volume rate (MVR)		250°C / 5kg	pellet	cm ³ /10 min	11
Linear mould shrinkage		DIN 16742	ISO 3167 A	%	0,1-0,4

Mechanical properties at 23°C / 50% rh

Tensile strength	dry, @50 mm/min	ISO 527	ISO 3167 A	MPa	160
Elongation @Fmax.	dry, @50 mm/min	ISO 527	ISO 3167 A	%	1,6
Tensile modulus	dry, @1 mm/min	ISO 527	ISO 3167 A	GPa	23
Flexural strength	dry, @10 mm/min	ISO 178	ISO 3167 A	MPa	230
Flexural elongation @Fmax.	dry, @10 mm/min	ISO 178	ISO 3167 A	%	1,6
Flexural modulus	dry, @2 mm/min	ISO 178	ISO 3167 A	GPa	20
Impact strength	dry	ISO 179 1eU	80x10x4mm	kJ/m ²	40

Thermal properties

Vicat softening temp.	VST A	DIN ISO 306	ISO 3167 A	°C	210
Heat distortion temp.	HDT A	ISO 75	80x10x4mm	°C	210
Continuous service temp.	20.000 h	IEC 60216	ISO 3167 A	°C	130
Service temperature	during lifetime max. 200h		ISO 3167 A	°C	180

Electrical properties

Insulation resistance	strip electrode R25	DIN EN 62631-3-3	ISO 3167 A	Ω	≤10 ²
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Tribological properties

CoF - Block on Ring	100Cr6, 2 MPa, 1 m/s	ASTM G137	molded sample		0,36
Sp. Wear Rate-Block on Ring	100Cr6, 2 MPa, 1 m/s	ASTM G137	molded sample	10 ⁻⁶ mm ³ /Nm	0,6
Sp. Wear Rate-Block on Ring	100Cr6, 2 MPa, 2 m/s	ASTM G137	molded sample	10 ⁻⁶ mm ³ /Nm	0,7

Main features

Strong, stiff parts. Improved friction and wear behaviour. Optimised for dry running operations. Electrically conductive, suitable for continuous discharging of statically-generated electricity.

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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	120	4 - 6
Vacuum Dryer	80	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
60 - 120 °C	250 °C	250 - 265 °C	250 - 270 °C	260 - 280 °C	240 - 260 °C

Additional information

During processing the moisture level should not exceed 0.02%, otherwise molecular degradation and surface defects (e.g. smearing) may occur. Processing temperatures above 270°C may very rapidly cause thermal damage and should therefore be avoided. 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.