

Polyketone
with carbon fibers, black

Physical properties		Test method	Specimen	Units	Typical value
Specific gravity		ISO 1183-3		g/cm ³	1,33
Water absorption	23°C / 24h	ISO 62	MPTS ISO 3167 A	%	<0,1
Melt volume rate (MVR)	230°C / 2,16kg	ISO 1133	pellet	cm ³ /10 min	15
Linear mould shrinkage		DIN 16742	MPTS ISO 3167 A	%	0,2-0,4
Mechanical properties at 23°C / 50% rh					
Tensile strength	dry, @50 mm/min	ISO 527	MPTS ISO 3167 A	MPa	125
Elongation at maximum force	dry, @50 mm/min	ISO 527	MPTS ISO 3167 A	%	5,0
Modulus of elasticity	dry, @1 mm/min	ISO 527	MPTS ISO 3167 A	GPa	9
Flexural strength	dry, @10 mm/min	ISO 178	MPTS ISO 3167 A	MPa	190
Flexural elongation at max. force	dry, @10 mm/min	ISO 178	MPTS ISO 3167 A	%	5,5
Flexural modulus	dry, @2 mm/min	ISO 178	MPTS ISO 3167 A	GPa	7,5
Charpy Impact Strength	dry	ISO 179 1fU	80x10x4mm	kJ/m ²	55
Charpy impact strength, notched	dry	ISO 179 1eA	80x10x4mm	kJ/m ²	11
Thermal properties					
Vicat softening temp	VST A	DIN ISO 306	MPTS ISO 3167 A	°C	204
Heat distortion temperature	HDT A	ISO 75	molded sample	°C	208
Continuous service temperature	20.000 h	IEC 60216	MPTS ISO 3167 A	°C	110
Service temperature	during lifetime max. 200h		MPTS ISO 3167 A	°C	150
Coefficient of thermal expansion		ISO 11359	10x8x4 mm	10 ⁻⁵ /K	6
Electrical properties					
Insulation resistance strip electrode	R25	DIN IEC 60167	MPTS ISO 3167 A	Ω	≤10 ⁶
Surface resistance	ROB	DIN IEC 60093	Ronde 60x4mm	Ω	<10 ⁶

Main features



STRUCTURAL



CONDUCTIVE

Strong, stiff parts. High dimensionally stable precision parts with low warpage and narrow tolerance range. Chemically- and hydrolytically- resistant parts. Electrically conductive, suitable for continuous discharging of statically-generated electricity.

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Recommended processing parameters

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	120	1 - 4
or	80	2 - 6

Processing

Zone 1	°C	230 - 250
Zone 2	°C	230 - 260
Zone 3	°C	240 - 260
Nozzle	°C	250 - 265
Mold	°C	60 - 100
Melt temperature	°C	245

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!

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 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.

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