

PRECITE® PRELIMINARY

P3 ICF 40 black (6949)

PBT CF40

PRECITE® P3 ICF 40 black (6949) is a medium viscous polybutylene terephthalate (PBT) with 40% recycled carbon fiber. Despite lower density compared to PBT with glass fiber reinforcement, the product has very high strength and toughness as well as high dimensional stability. The good tribological properties and improved surface finish make it the material of choice for precision components in the automotive, mechanical engineering, E&E and household goods industries.

Features

- surface modified
- recycled content
- reduced density
- reduced moisture
- tribological modified
- E&E
- Sports & leisure
- lightweight construction

Properties



Sustainability

Recycled content	40 %
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Mechanical Properties

Tensile modulus ISO 527-2	1 mm/min d.a.m.	31000 MPa
Tensile stress at break ISO 527-2	5 mm/min d.a.m.	190 MPa
Tensile strain at break ISO 527-2	5 mm/min d.a.m.	1,2 %
Flexural modulus ISO 178	2 mm/min d.a.m.	32500 MPa
Flexural strength ISO 178	2 mm/min d.a.m.	300 MPa

Charpy impact strength	23°C d.a.m.	50 kJ/m ²
ISO 179-1/1eU		

Charpy notched impact strength	23°C d.a.m.	7 kJ/m ²
ISO 179-1/1eA		

Thermal Properties

Temperature of deflection under load HDT/A	1,8 MPa	215 °C
ISO 75		

Melting temperature	DSC, 10K/min	225 °C
ISO 11357-3		

Flammability

Flammability	0,8 mm Wall thickness	HB Class
UL 94		

GWFI	1,6 mm Wall thickness	725 °C
IEC 60695-2-12		

Burning rate (<100 mm/min)	> 1 mm Thickness	+
FMVSS 302		

General Properties

Density	23°C	1,44 g/cm ³
ISO 1183		

Humidity absorption	70°C, 62% r.H.	0,2 %
ISO 1110		

Water absorption	23°C, saturated	0,4 %
ISO 62		

Molding shrinkage	flow	0,1 - 0,3 %
ISO 294-4	transverse	0,5 - 0,7 %

Electrical Properties

Surface resistivity

IEC 62631-3-2

d.a.m.

$10^3 \Omega$

Rheological Properties

MVR

ISO 1133

250°C/2,16kg

8 cm³/10 min

Processing

The values mentioned are recommendations. We only recommend desiccant / dry air dryers or vacuum dryers. Too long a drying time and the resulting residual moisture content below the lower limit can lead to filling problems and surface defects. The specified drying time refers to closed and undamaged bagged material. When processing from previously opened bags or from octabins with polyolefin inliners, a longer drying time may be necessary. It is recommended to check the residual moisture content after the drying process.



D	Drying time	3 - 4 h
	Drying temperature ($\tau \leq -30^{\circ}\text{C}$)	100 - 120 $^{\circ}\text{C}$
	Processing moisture	0,02 - 0,04 %
1	Feed section	60 - 80 $^{\circ}\text{C}$
2	Temperature Zone 1 - Zone 4	250 - 275 $^{\circ}\text{C}$
3	Nozzle temperature	250 - 280 $^{\circ}\text{C}$
4	Melt temperature	260 - 275 $^{\circ}\text{C}$
5	Mold temperature	80 - 100 $^{\circ}\text{C}$
→	Holding pressure, spec.	300 - 800 bar
←	Back pressure, spec.	30 - 100 bar
	Injection speed	medium to high
	Screw speed	8 - 15 m/min

Diagrams

