

PRECITE®

P3 ICF 20 black (6947)

PBT CF20

PRECITE® P3 ICF 20 black (6947) is a medium viscous polybutylene terephthalate (PBT) with 20% 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
- tribological modified
- 3D printing / additive manufacturing
- E&E
- Sports & leisure
- lightweight construction

Properties

Modulus	Strength	Impact
16.000 MPa	150 MPa	50 kJ/m²

Sustainability

Recycled content	20 %
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Mechanical Properties

Tensile modulus ISO 527-2	1 mm/min d.a.m.	16000 MPa
Tensile stress at break ISO 527-2	5 mm/min d.a.m.	150 MPa
Tensile strain at break ISO 527-2	5 mm/min d.a.m.	3 %
Flexural modulus ISO 178	2 mm/min d.a.m.	15000 MPa
Flexural strength ISO 178	2 mm/min d.a.m.	250 MPa

Charpy impact strength

ISO 179-1/1eU

23°C | d.a.m.

50 kJ/m²

Charpy notched impact strength

ISO 179-1/1eA

23°C | d.a.m.

7,5 kJ/m²

Thermal Properties

Temperature of deflection under load HDT/A

ISO 75

1,8 MPa

205 °C

Melting temperature

ISO 11357-3

DSC, 10K/min

225 °C

Flammability

Flammability

UL 94

0,8 mm Wall thickness

HB Class

GWFI

IEC 60695-2-12

1,6 mm Wall thickness

725 °C

Burning rate (<100 mm/min)

FMVSS 302

> 1 mm Thickness

+

General Properties

Density

ISO 1183

23°C

1,37 g/cm³

Humidity absorption

ISO 1110

70°C, 62% r.H.

0,2 %

Water absorption

ISO 62

23°C, saturated

0,4 %

Molding shrinkage

ISO 294-4

flow

0,4 %

transverse

0,9 %

Electrical Properties

Volume resistivity

IEC 62631-3-1

d.a.m.

$10^4 \Omega \times \text{cm}$

Rheological Properties

MVR

ISO 1133

250°C/2,16kg

17 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