

AKROTEK® PRELIMINARY

PPS GF 40 black (8609)

PPS GF40

AKROTEK® PPS GF 40 black (8609) is a 40% glass fiber-reinforced polyphenylene sulfide with high stiffness, strength, and excellent temperature resistance up to 240 °C. It is characterized by very high flowability, exceptional dimensional stability, and good chemical resistance. These properties make it particularly suitable for coolant-carrying components exposed to high temperatures and aggressive media, such as impellers.

Properties

Modulus

15.500 MPa

Strength

180 MPa

Impact

50 kJ/m²

Mechanical Properties

Tensile modulus

ISO 527-2

1 mm/min | d.a.m.

15500 MPa

1 mm/min | conditioned

15200 MPa

Tensile stress at break

ISO 527-2

5 mm/min | d.a.m.

180 MPa

5 mm/min | conditioned

180 MPa

Tensile strain at break

ISO 527-2

5 mm/min | d.a.m.

1,7 %

5 mm/min | conditioned

1,7 %

Charpy impact strength

ISO 179-1/1eU

23°C | d.a.m.

50 kJ/m²

-30°C | d.a.m.

50 kJ/m²

-40°C | d.a.m.

50 kJ/m²

Charpy notched impact strength

ISO 179-1/1eA

23°C | d.a.m.

10 kJ/m²

Thermal Properties

Temperature of deflection under load HDT/A

ISO 75

1,8 MPa

265 °C

Glass transition temperature

ISO 11357-2

DSC, 2nd heating

90 °C

Melting temperature

ISO 11357-3

DSC, 10K/min

280 °C

Flammability

Flammability

UL 94

0,4 mm Wall thickness

V-0 Class

0,8 mm Wall thickness

V-0 Class

1,6 mm Wall thickness

V-0 Class

3,2 mm Wall thickness

V-0 Class

Burning rate 5V

UL 94

3,2 mm Wall thickness

5VA Class

General Properties

Density

ISO 1183

23°C

1,65 g/cm³

Humidity absorption

ISO 1110

70°C, 62% r.H.

0,1 - 0,3 %

Molding shrinkage

ISO 294-4

flow

0,6 %

transverse

0,3 %

Rheological Properties

Flowability

AKRO

1 mm Thickness

120 mm

2 mm Thickness

420 mm

MVR

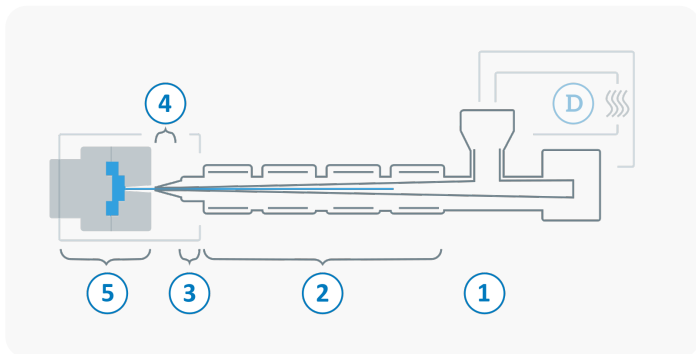
ISO 1133

300°C/5kg

25 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	2 - 6 h
Drying temperature ($\tau \leq -30^{\circ}\text{C}$)	120 - 140 $^{\circ}\text{C}$
Processing moisture	<0,02 %
(1) Feed section	60 - 100 $^{\circ}\text{C}$
(2) Temperature Zone 1 - Zone 4	320 - 340 $^{\circ}\text{C}$
(3) Nozzle temperature	330 - 350 $^{\circ}\text{C}$
(4) Melt temperature	320 - 340 $^{\circ}\text{C}$
(5) Mold temperature	>140 $^{\circ}\text{C}$
(→) Holding pressure, spec.	300 - 800 bar
(←) Back pressure, spec.	<50 bar
Injection speed	Slow - Fast - Slow
Screw speed	5 - 12 m/min