

AKROLOY® PRELIMINARY

PA CF 40 1 black (8504)

PA66+PA6I/6T CF40

AKROLOY® PA CF 40 1 black (8504) is a 40% carbon fiber reinforced, semi-aromatic polyamide blend. It is characterised by very high stiffness and impact strength even in conditioned state. Furthermore, it convinces through very good weld line strength. It is therefore perfectly suitable for mechanically high stressed parts, for example in sports and leisure with demanding requirements for dimensional stability.

Features

heat stabilised 130 reduced moisture metal substitution

Properties

Modulus

33.000 MPa

Strength

310 MPa

Impact

80 kJ/m²

Mechanical Properties

Tensile modulus

ISO 527-2

1 mm/min | d.a.m.

33000 MPa

1 mm/min | conditioned

28500 MPa

Tensile stress at break

ISO 527-2

5 mm/min | d.a.m.

310 MPa

5 mm/min | conditioned

265 MPa

Tensile strain at break

ISO 527-2

5 mm/min | d.a.m.

1,7 %

5 mm/min | conditioned

1,9 %

Charpy impact strength

ISO 179-1/1eU

23°C | d.a.m.

80 kJ/m²

23°C | conditioned

80 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

235 °C

Melting temperature	DSC, 10K/min	250 °C
ISO 11357-3		

Coefficient of linear thermal expansion	23°C to 80°C parallel	0,4 10⁻⁴/K
ISO 11359-1/2	23°C to 80°C transverse	0,7 10⁻⁴/K

Thermal conductivity		0,45 W/mK
DIN 52612		

Flammability

Flammability	0,8 mm Wall thickness	HB Class
UL 94		

General Properties

Density	23°C	1,35 g/cm³
ISO 1183		

Humidity absorption	70°C, 62% r.H.	1,4 - 1,6 %
ISO 1110		

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

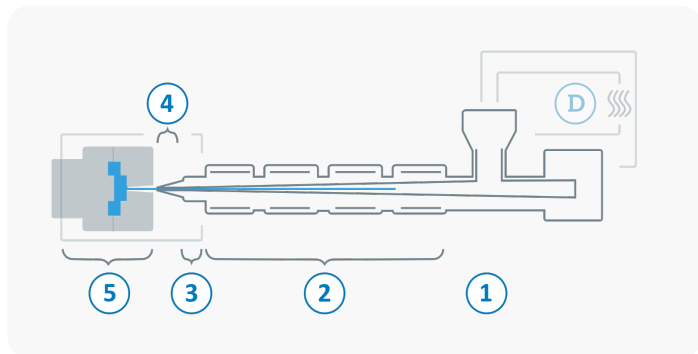
Rheological Properties

Flowability	2 mm Thickness	350 mm
AKRO		

MVR	275°C/5kg	2 cm³/10 min
ISO 1133		

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	0 - 4 h
	Drying temperature ($\tau \leq -30^{\circ}\text{C}$)	80 °C
	Processing moisture	0,02 - 0,1 %
1	Feed section	60 - 80 °C
2	Temperature Zone 1 - Zone 4	260 - 310 °C
3	Nozzle temperature	270 - 310 °C
4	Melt temperature	280 - 310 °C
5	Mold temperature	90 - 130 °C
→	Holding pressure, spec.	300 - 800 bar
←	Back pressure, spec.	50 - 150 bar
	Injection speed	medium to high
	Screw speed	8 - 15 m/min