

AKROMID®

B3 ICF 40 black (5020)

PA6 CF40

AKROMID® B3 ICF 40 black (5020) is a high performance Polyamide 6 with 40% carbon fiber reinforcement, offering medium stiffness and flexural strength. Compared to glass fiber-reinforced PA 6, it provides an optimized strength-to-weight ratio. Thanks to its low density and high mechanical durability, this material is ideal for load-bearing components in the automotive industry, such as lightweight structural parts, as well as for sports and leisure applications, including high-stress sports equipment and technical components.

Features

recycled content reduced density antistatic/conductive tribological modified Sports & leisure lightweight construction

Properties

Modulus

30.000 MPa

Strength

220 MPa

Impact

60 kJ/m²

Sustainability

Recycled content 40 %

Mechanical Properties

Tensile modulus

ISO 527-2

1 mm/min | d.a.m.

30000 MPa

1 mm/min | conditioned

14000 MPa

Tensile stress at break

ISO 527-2

5 mm/min | d.a.m.

220 MPa

5 mm/min | conditioned

135 MPa

Tensile strain at break

ISO 527-2

5 mm/min | d.a.m.

1,7 %

5 mm/min | conditioned

3 %

Flexural modulus

ISO 178

2 mm/min | d.a.m.

25000 MPa

2 mm/min | conditioned

17000 MPa

Flexural strength

ISO 178

2 mm/min | d.a.m.

320 MPa

2 mm/min | conditioned

215 MPa

Flexural strain at break	2 mm/min d.a.m.	1,8 %
ISO 178	2 mm/min conditioned	2,5 %
Charpy impact strength	23°C d.a.m.	60 kJ/m²
ISO 179-1/1eU	23°C conditioned	65 kJ/m²
	-30°C d.a.m.	50 kJ/m²
Charpy notched impact strength	23°C d.a.m.	10 kJ/m²
ISO 179-1/1eA	23°C conditioned	15 kJ/m²
	-30°C d.a.m.	8 kJ/m²

Thermal Properties

Temperature of deflection under load HDT/A	1,8 MPa	210 °C
ISO 75		
Melting temperature	DSC, 10K/min	220 °C
ISO 11357-3		
Coefficient of linear thermal expansion	23°C to 80°C parallel	0,17 10⁻⁴/K
ISO 11359-1/2	23°C to 80°C transverse	0,73 10⁻⁴/K
Thermal conductivity		0,41 W/mK
DIN 52612		

Flammability

Flammability	1,6 mm Wall thickness	HB Class
UL 94		
Burning rate (<100 mm/min)	> 1 mm Thickness	+
FMVSS 302		

General Properties

Density	23°C	1,31 g/cm³
ISO 1183		
Humidity absorption	70°C, 62% r.H.	1,8 - 2,0 %
ISO 1110		
Molding shrinkage	flow	0,1 - 0,3 %
ISO 294-4	transverse	0,4 - 0,6 %

Electrical Properties

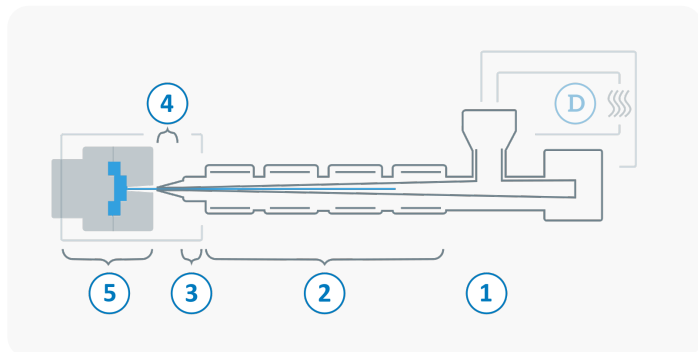
Surface resistivity	d.a.m.	$10^3 \Omega$
IEC 62631-3-2	conditioned	$10^3 \Omega$

Rheological Properties

Flowability	2 mm Thickness	300 mm
AKRO		

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	240 - 300 °C
3	Nozzle temperature	270 - 300 °C
4	Melt temperature	270 - 300 °C
5	Mold temperature	80 - 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