

AKROLOY® PRELIMINARY

PARA GF 35 1 FR black (9023)

PARA GF35 FR(40)

AKROLOY® PARA GF 35 1 FR black (9023) is a 35% glass fibre reinforced, flame-retardant and heat-stabilized polyarylamide with very high rigidity and strength. The material is based on a flame retardant system that is free of red phosphorus, PFAS, zinc borate and melamine. The product has high flowability, excellent surface quality and low warpage. Applications include components that require a low creep tendency, even in a conditioned state, or excellent arc resistance. It is therefore also suitable as a replacement for components made of duroplastic materials. It is also the perfect candidate for thermal runaway requirements.

Features

electrically neutral flame retardant laser markable surface modified reduced moisture easy flow E-Mobility

Properties

Modulus

14.500 MPa

Strength

190 MPa

Impact

55 kJ/m²

Mechanical Properties

Tensile modulus

ISO 527-2

1 mm/min | d.a.m.

14500 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.

2,0 %

Charpy impact strength

ISO 179-1/1eU

23°C | d.a.m.

55 kJ/m²

-30°C | d.a.m.

50 kJ/m²

Charpy notched impact strength

ISO 179-1/1eA

23°C | d.a.m.

13 kJ/m²

-30°C | d.a.m.

14 kJ/m²

Thermal Properties

Temperature of deflection under load HDT/A ISO 75	1,8 MPa	230 °C
Melting temperature ISO 11357-3	DSC, 10K/min	235 °C
Coefficient of linear thermal expansion ISO 11359-1/2	23°C to 80°C parallel	0,233 10 ⁻⁴ /K
	23°C to 80°C transverse	0,357 10 ⁻⁴ /K

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
GWFI IEC 60695-2-12	0,4 mm Wall thickness	960 °C
	0,8 mm Wall thickness	960 °C
	1,6 mm Wall thickness	960 °C
	3,2 mm Wall thickness	960 °C
GWIT IEC 60695-2-13	0,4 mm Wall thickness	800 °C
	0,8 mm Wall thickness	800 °C
	1,6 mm Wall thickness	800 °C
	3,2 mm Wall thickness	825 °C

General Properties

Density ISO 1183	23°C	1,48 g/cm ³
Humidity absorption ISO 1110	70°C, 62% r.H.	0,8 - 1,0 %
Molding shrinkage ISO 294-4	flow	0,2, - 0,4 %
	transverse	0,4 - 0,6 %

Electrical Properties

Comparative tracking index IEC 60112	Test liquid A	600 V
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Dielectric strength

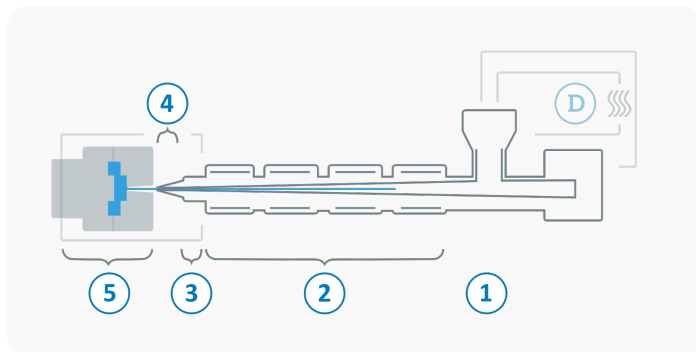
IEC 60243

1 mm

30 kV/mm

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	4 - 12 h
	Drying temperature ($\tau \leq -30^{\circ}\text{C}$)	80 °C
	Processing moisture	0,02 - 0,08 %
1	Feed section	60 - 80 °C
2	Temperature Zone 1 - Zone 4	240 - 270 °C
3	Nozzle temperature	240-280 °C
4	Melt temperature	240 - 280 °C
5	Mold temperature	120 - 160 °C
→	Holding pressure, spec.	300-800 bar
←	Back pressure, spec.	30-100 bar
	Injection speed	medium to high
	Screw speed	5 - 10 m/min