AKROMID®
A3 GF 40 1 LT black (5709)

PA66 GF40

AKROMID® A3 GF 40 1 LT black (5709) is a 40% glass fiber reinforced polyamide 6.6. It is characterised by a very high stiffness and strength. Furthermore, the material is heat stabilised as well as laser transparent and therefore perfectly suitable for technical plastic components in the automotive and electrical industry that have to be joined by laser welding.

Features

heat stabilised 130 | laser transparent

Properties

Modulus	Strength	Impact
13.000 MPa	**225** MPa	**100** kJ/m²

Mechanical Properties

Tensile modulus ISO 527-2	1 mm/min | d.a.m. 1 mm/min | conditioned	**13000 MPa** **9800 MPa**
Tensile stress at break ISO 527-2	5 mm/min | d.a.m. 5 mm/min | conditioned	**225 MPa** **160 MPa**
Tensile strain at break ISO 527-2	5 mm/min | d.a.m. 5 mm/min | conditioned	**3 %** **4 %**
Flexural modulus ISO 178	2 mm/min | d.a.m. 2 mm/min | conditioned	**12000 MPa** **9300 MPa**
Flexural strength ISO 178	2 mm/min | d.a.m. 2 mm/min | conditioned	**360 MPa** **260 MPa**
Charpy impact strength ISO 179-1/1eU	23°C | d.a.m. 23°C | conditioned -30°C | d.a.m. -30°C | conditioned	**100 kJ/m²** **105 kJ/m²** **95 kJ/m²** **95 kJ/m²**

Charpy notched impact strength ISO 179-1/1eA	23°C | d.a.m. 23°C | conditioned -30°C | d.a.m. -30°C | conditioned	**17 kJ/m²** **20 kJ/m²** **15 kJ/m²** **15 kJ/m²**
Ball indentation hardness ISO 2039-1	961N/30s | d.a.m.	**270 MPa**

Thermal Properties

Temperature of deflection under load HDT/A ISO 75	1,8 MPa	**260 °C**
Temperature of deflection under load HDT/C ISO 75	8 MPa	**225 °C**
Melting temperature ISO 11357-3	DSC, 10K/min	**262 °C**
Coefficient of linear thermal expansion ISO 11359-1/2	23°C to 80°C | parallel 23°C to 80°C | transverse	**0,16 10^{-4}/K** **0,86 10^{-4}/K**
Temperature index for 50% loss of tensile strength IEC 60216	5.000 h	**150 °C**

Flammability

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

General Properties

Density ISO 1183	23°C	**1,46 g/cm³**
Humidity absorption ISO 1110	70°C, 62% r.H.	**1,7 - 1,9 %**
Water absorption ISO 62	23°C, saturated	**4,3 - 4,7 %**

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Molding shrinkage ISO 294-4	flow	**0,1 - 0,3 %**
	transverse	**0,6 - 0,8 %**

Electrical Properties

Comparative tracking index IEC 60112	Test liquid A	**600 V**

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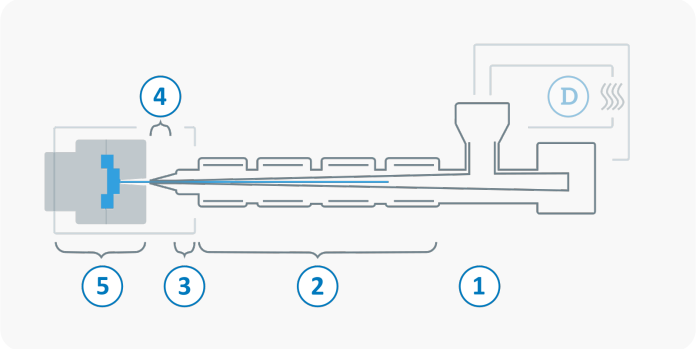
Processing

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 (τ <= -30°C)	80 °C
	Processing moisture	0,02 - 0,1 %
1	Feed section	60 - 80 °C
2	Temperature Zone 1 - Zone 4	260 - 300 °C
3	Nozzle temperature	270 - 310 °C
4	Melt temperature	280 - 300 °C
5	Mold temperature	80 - 100 °C
→	Holding pressure, spec.	300 - 800 bar
←	Back pressure, spec.	50 - 150 bar
	Injection speed	medium to high
	Screw speed	8 - 15 m/min