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AKRO COMPOUNDS

Compound No.: **2387**

AKROMID®
A3 GF 50 1 black (2387)

PA66 GF50

AKROMID® A3 GF 50 1 black (2387) is a 50% glass fiber reinforced polyamide 6.6. It is characterised by a very high stiffness and strength. Furthermore, the material is heat stabilised and therefore perfectly suitable for technical parts in industrial engineering and in the automotive industry, e.g. gearbox components.

Features

heat stabilised 130

Properties

Modulus	Strength	Impact
16.700 MPa	**250** MPa	**105** kJ/m²

Mechanical Properties

Tensile modulus ISO 527-2	1 mm/min | d.a.m. 1 mm/min | conditioned	**16700 MPa** **12600 MPa**
Tensile stress at break ISO 527-2	5 mm/min | d.a.m. 5 mm/min | conditioned	**250 MPa** **180 MPa**
Tensile strain at break ISO 527-2	5 mm/min | d.a.m. 5 mm/min | conditioned	**2,5 %** **3,5 %**
Flexural modulus ISO 178	2 mm/min | d.a.m. 2 mm/min | conditioned	**15200 MPa** **13600 MPa**
Flexural strength ISO 178	2 mm/min | d.a.m. 2 mm/min | conditioned	**380 MPa** **310 MPa**
Charpy impact strength ISO 179-1/1eU	23°C | d.a.m. 23°C | conditioned -30°C | d.a.m. -45°C | d.a.m. -45°C | conditioned	**105 kJ/m²** **110 kJ/m²** **105 kJ/m²** **90 kJ/m²** **90 kJ/m²**

Charpy notched impact strength ISO 179-1/1eA	23°C | d.a.m. 23°C | conditioned -30°C | d.a.m. -45°C | d.a.m. -45°C | conditioned	**19 kJ/m²** **23 kJ/m²** **16 kJ/m²** **15 kJ/m²** **15 kJ/m²**
Ball indentation hardness ISO 2039-1	961N/30s | d.a.m.	**290 MPa**

Thermal Properties

Temperature of deflection under load HDT/A ISO 75	1,8 MPa	**260 °C**
Temperature of deflection under load HDT/B ISO 75	0,45 MPa	**260 °C**
Temperature of deflection under load HDT/C ISO 75	8 MPa	**235 °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	**0,17 10^{-4}/K** **0,88 10^{-4}/K**
Temperature index for 50% loss of tensile strength IEC 60216	5.000 h 20.000 h	**160 - 175 °C** **130 - 150 °C**

Flammability

Flammability UL 94	0,8 mm Wall thickness	**HB Class**
GWFI IEC 60695-2-12	1,6 mm Wall thickness	**650 °C**
GWIT IEC 60695-2-13	1,6 mm Wall thickness	**675 °C**
Burning rate (<100 mm/min) FMVSS 302	> 1 mm Thickness	+

General Properties

Density ISO 1183	23°C	**1,57 g/cm³**
Humidity absorption ISO 1110	70°C, 62% r.H.	**1,3 - 1,5 %**
Water absorption ISO 62	23°C, saturated	**3,7 - 4,3 %**
Molding shrinkage ISO 294-4	flow transverse	**0,1 - 0,3 %** **0,5 - 0,7 %**

Electrical Properties

Volume resistivity IEC 62631-3-1	d.a.m. conditioned	**10^{13} Ω x cm** **10^{10} Ω x cm**
Surface resistivity IEC 62631-3-2	d.a.m. conditioned	**10^{12} Ω** **10^{10} Ω**
Comparative tracking index IEC 60112	Test liquid A	**600 V**

Rheological Properties

Flowability AKRO	1 mm Thickness 2 mm Thickness	**200 mm** **350 mm**

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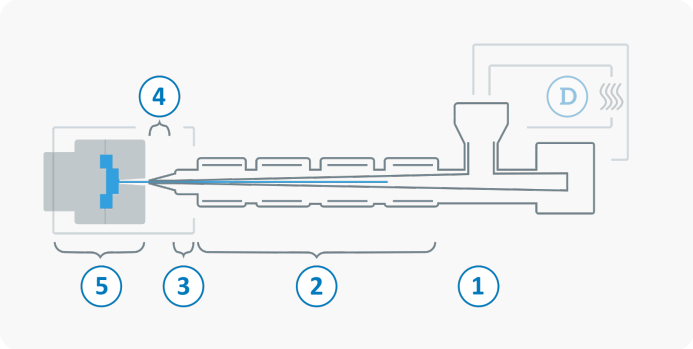
Processing

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

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Diagrams