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AKRO COMPOUNDS

Compound No.: **6247**

AKROMID®
T5 GF 50 black (6247)

PPA GF50

AKROMID® T5 GF 50 black (6247) is a 50% glass fibre reinforced polyphthalamide. It is characterised by its very high stiffness and strength, even at elevated temperatures up to 120°C. Due to its low moisture absorption, the mechanical properties remain nearly unchanged even in conditioned state. Not only the good creep resistance, but also the hydrolysis and chemical resistance complement the property profile and make it the material of your choice for under the hood applications and connectors with special strength requirements.

Features

heat stabilised 160 | hydrolysis / chemically stabilised | reduced moisture | metal substitution

Properties

Modulus	Strength	Impact
19.000 MPa	**275** MPa	**90** kJ/m²

Mechanical Properties

Tensile modulus ISO 527-2	1 mm/min | d.a.m. 1 mm/min | conditioned	**19000 MPa** **19000 MPa**
Tensile stress at break ISO 527-2	5 mm/min | d.a.m. 5 mm/min | conditioned	**275 MPa** **275 MPa**
Tensile strain at break ISO 527-2	5 mm/min | d.a.m. 5 mm/min | conditioned	**2,2 %** **2,2 %**
Poisson´s ratio ISO 527-2	0,05% - 0,25% | d.a.m.	**0,42**
Flexural modulus ISO 178	2 mm/min | d.a.m. 2 mm/min | conditioned	**19000 MPa** **19000 MPa**
Flexural strength ISO 178	2 mm/min | d.a.m. 2 mm/min | conditioned	**440 MPa** **380 MPa**
Flexural strain at break ISO 178	2 mm/min | d.a.m. 2 mm/min | conditioned	**2,6 %** **2,6 %**

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Charpy impact strength ISO 179-1/1eU	23°C | d.a.m.	**90 kJ/m²**
	23°C | conditioned	**83 kJ/m²**
	-30°C | d.a.m.	**75 kJ/m²**
	-30°C | conditioned	**75 kJ/m²**
	-40°C | d.a.m.	**70 kJ/m²**
	-40°C | conditioned	**65 kJ/m²**
Charpy notched impact strength ISO 179-1/1eA	23°C | d.a.m.	**13 kJ/m²**
	23°C | conditioned	**13 kJ/m²**
	-30°C | d.a.m.	**12 kJ/m²**
	-30°C | conditioned	**11 kJ/m²**
	-40°C | d.a.m.	**12 kJ/m²**
	-40°C | conditioned	**11 kJ/m²**

Thermal Properties

Temperature of deflection under load HDT/A ISO 75	1,8 MPa	**280 °C**
Temperature of deflection under load HDT/B ISO 75	0,45 MPa	**> 280 °C**
Temperature of deflection under load HDT/C ISO 75	8 MPa	**237 °C**
Glass transition temperature ISO 11357-2	DSC, 2nd heating	**135 °C**
Melting temperature ISO 11357-3	DSC, 10K/min	**325 °C**
Coefficient of linear thermal expansion ISO 11359-1/2	23°C to 80°C | parallel	**0,14 10^{-4}/K**
	23°C to 80°C | transverse	**0,47 10^{-4}/K**
Temperature index for 50% loss of tensile strength IEC 60216	20.000 h	**155 °C**

Flammability

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

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General Properties

Density ISO 1183	23°C	**1,65 g/cm³**
Humidity absorption ISO 1110	70°C, 62% r.H.	**0,8 %**
Molding shrinkage ISO 294-4	flow transverse	**0,1 - 0,3 %** **0,4 - 0,6 %**

Electrical Properties

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

Rheological Properties

Flowability AKRO	1 mm Thickness 2 mm Thickness	**100 mm** **280 mm**

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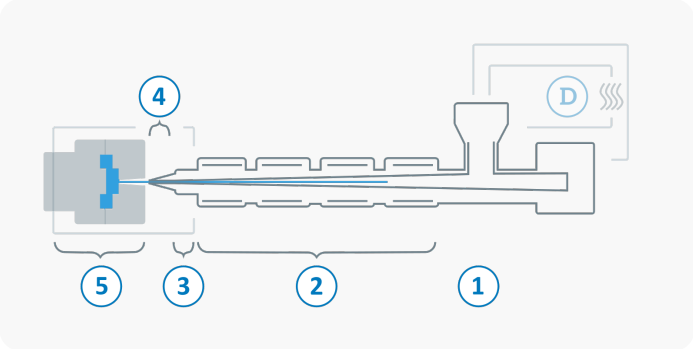
Processing

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)	120 °C
	Processing moisture	0,02 - 0,1 %
1	Feed section	60 - 90 °C
2	Temperature Zone 1 - Zone 4	320 - 350 °C
3	Nozzle temperature	330 - 350 °C
4	Melt temperature	330 - 350 °C
5	Mold temperature	120 - 160 °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