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AKRO COMPOUNDS

Compound No.: **8238**

AKROMID® PRELIMINARY
NEXT U28 ICF 40 1 black (8238)

PA11 CF40

AKROMID® NEXT U28 ICF 40 1 black (8238) is a Polyamide 11 reinforced with 40% recycled carbon fibre. The PA 11 is made from castor seed oil (bio-based content > 92%). The compound's low density as well as excellent ductility even at lower temperatures combined with high stiffness and strength enable the use for demanding applications, e.g., for lightweight construction or sports & leisure. The production of large-volume parts is possible with high throughputs > 1 kg/h in 3D-printing with pellets in screw extrusion additive manufacturing and Fused Granulate Fabrication (FGF).

Features

heat stabilised 130 | recycled content | reduced density | reduced moisture | 3D printing / additive manufacturing | Sports & leisure | lightweight construction

Properties

Modulus	Strength	Impact
20.000 MPa	**190** MPa	**80** kJ/m²

Sustainability

Biobased carbon content	**41 %**
Recycled content	**40 %**

Mechanical Properties

Tensile modulus ISO 527-2	1 mm/min | d.a.m. 1 mm/min | conditioned	**20000 MPa** **14000 MPa**
Tensile stress at break ISO 527-2	5 mm/min | d.a.m. 5 mm/min | conditioned	**190 MPa** **160 MPa**
Tensile strain at break ISO 527-2	5 mm/min | d.a.m. 5 mm/min | conditioned	**3,5 %** **3,7 %**

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Flexural modulus ISO 178	2 mm/min | d.a.m. 2 mm/min | conditioned	**21000 MPa** **17500 MPa**
Flexural strength ISO 178	2 mm/min | d.a.m. 2 mm/min | conditioned	**295 MPa** **250 MPa**
Flexural strain at break ISO 178	2 mm/min | d.a.m. 2 mm/min | conditioned	**2,8 %** **3,3 %**
Charpy impact strength ISO 179-1/1eU	23°C | d.a.m. 23°C | conditioned -30°C | d.a.m. -30°C | conditioned	**80 kJ/m²** **75 kJ/m²** **75 kJ/m²** **65 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	**14 kJ/m²** **14 kJ/m²** **10 kJ/m²** **9 kJ/m²**

Thermal Properties

Temperature of deflection under load HDT/A ISO 75	1,8 MPa	**180 °C**
Melting temperature ISO 11357-3	DSC, 10K/min	**190 °C**

Flammability

Flammability UL 94	1,6 mm Wall thickness	**HB Class**

General Properties

Density ISO 1183	23°C	**1,24 g/cm³**
Humidity absorption ISO 1110	70°C, 62% r.H.	**0,4 - 0,6 %**
Water absorption ISO 62	23°C, saturated	**1,1 - 1,5 %**

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Molding shrinkage ISO 294-4	flow	**0,1 - 0,3 %**
	transverse	**0,5 - 0,7 %**

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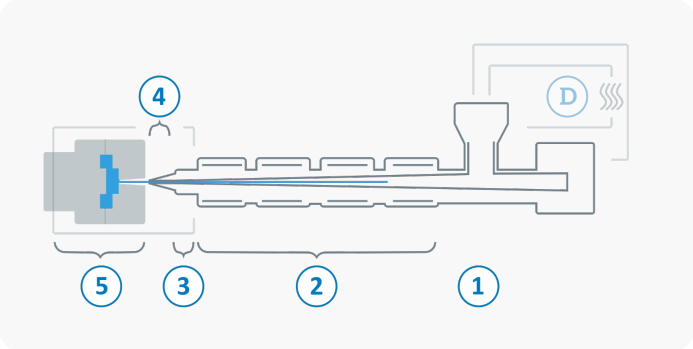
Processing

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	240 - 300 °C
3	Nozzle temperature	230 - 300 °C
4	Melt temperature	240 - 290 °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