

AKROMID®

A3 1 S3 black (1139)

PA66-I

AKROMID® A3 1 S3 black (1139) is an unreinforced, impact modified Polyamide 6.6. It is characterised by a medium dry impact strength whilst maintaining good flowability. Furthermore, the material is heat stabilised and therefore perfectly suitable for connecting and fixing systems which are used at elevated temperatures in the automotive and electro industry. Its good flowability qualifies the material for processing in multi-cavity moulds.

Features

heat stabilised 130 impact modified

Properties

Modulus

2.700 MPa

Strength

63 MPa

Impact

180 kJ/m²

Mechanical Properties

Tensile modulus

ISO 527-2

1 mm/min | d.a.m.

2700 MPa

1 mm/min | conditioned

1300 MPa

Tensile stress at yield

ISO 527-2

50 mm/min | d.a.m.

63 MPa

50 mm/min | conditioned

45 MPa

Tensile strain at yield

ISO 527-2

50 mm/min | d.a.m.

5,6 %

50 mm/min | conditioned

> 20 %

Tensile strain at break

ISO 527-2

50 mm/min | d.a.m.

> 35 %

50 mm/min | conditioned

> 100 %

Flexural modulus

ISO 178

2 mm/min | d.a.m.

2500 MPa

Flexural strength

ISO 178

2 mm/min | d.a.m.

90 MPa

Flexural strain at break

ISO 178

2 mm/min | d.a.m.

7,5 %

Charpy impact strength

ISO 179-1/1eU

23°C | d.a.m.

no break

23°C | conditioned

no break

-30°C | d.a.m.

no break

-30°C | conditioned

no break

Charpy notched impact strength

ISO 179-1/1eA

23°C | d.a.m.

17 kJ/m²

23°C | conditioned

95 kJ/m²

-30°C | d.a.m.

10 kJ/m²

-30°C | conditioned

13 kJ/m²

Izod notched impact strength

ISO 180/1A

23°C | d.a.m.

15 kJ/m²

-20°C | d.a.m.

12 kJ/m²

-40°C | d.a.m.

12 kJ/m²

Thermal Properties

Temperature of deflection under load HDT/A

ISO 75

1,8 MPa

70 °C

Temperature of deflection under load HDT/B

ISO 75

0,45 MPa

213 °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

0,87 10⁻⁴/K

23°C to 80°C | transverse

0,87 10⁻⁴/K

Flammability

Flammability

UL 94

1,6 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	1,1 g/cm³
Humidity absorption ISO 1110	70°C, 62% r.H.	2,0 - 2,2 %
Molding shrinkage ISO 294-4	flow	1,3 - 1,5 %
	transverse	1,5 - 1,7 %

Electrical Properties

Volume resistivity IEC 62631-3-1	d.a.m.	10¹⁵ Ω x cm
Surface resistivity IEC 62631-3-2	d.a.m.	10¹⁴ Ω
Comparative tracking index IEC 60112	Test liquid A	600 V

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	2 - 4 h
	Drying temperature ($\tau \leq -30^{\circ}\text{C}$)	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	270 - 300 °C
5	Mold temperature	40 - 90 °C
→	Holding pressure, spec.	300 - 800 bar
←	Back pressure, spec.	50 - 150 bar
	Injection speed	medium to high
	Screw speed	8 - 15 m/min

Diagrams

