

# AKROMID®

## A3 S3 natural (1176)

PA66-I

AKROMID® A3 S3 natural (1176) is an unreinforced, dry impact modified Polyamide 6.6. The material is characterised by a very high impact strength and therefore perfectly suitable for connecting and fixing systems which are used in the automotive and electro industry and that are exposed to high loading speeds. The material has a light inherent color.

### Features

impact modified

### Properties

Modulus

2.800 MPa

Strength

67 MPa

Impact

180 kJ/m²

## Mechanical Properties

### Tensile modulus

ISO 527-2

1 mm/min | d.a.m.

2800 MPa

1 mm/min | conditioned

1700 MPa

### Tensile stress at yield

ISO 527-2

50 mm/min | d.a.m.

67 MPa

50 mm/min | conditioned

45 MPa

### Tensile strain at yield

ISO 527-2

50 mm/min | d.a.m.

6 %

50 mm/min | conditioned

26 %

### Tensile strain at break

ISO 527-2

50 mm/min | d.a.m.

> 30 %

50 mm/min | conditioned

> 50 %

### Flexural modulus

ISO 178

2 mm/min | d.a.m.

2850 MPa

2 mm/min | conditioned

1600 MPa

### 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/m<sup>2</sup>

23°C | conditioned

95 kJ/m<sup>2</sup>

-30°C | d.a.m.

8 kJ/m<sup>2</sup>

### Ball indentation hardness

ISO 2039-1

358N/30s | d.a.m.

93 MPa

## Thermal Properties

### Temperature of deflection under load HDT/A

ISO 75

1,8 MPa

67 °C

### Temperature of deflection under load HDT/B

ISO 75

0,45 MPa

213 °C

### Melting temperature

ISO 11357-3

DSC, 10K/min

263 °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

1,1 g/cm<sup>3</sup>

### Humidity absorption

ISO 1110

70°C, 62% r.H.

2,1 %

### Molding shrinkage

ISO 294-4

flow

1,8 %

transverse

2,1 %

## Electrical Properties

### Volume resistivity

IEC 62631-3-1

d.a.m.

10<sup>15</sup> Ω x cm

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**Surface resistivity**

IEC 62631-3-2

d.a.m.

**10<sup>14</sup> Ω**

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**Comparative tracking index**

IEC 60112

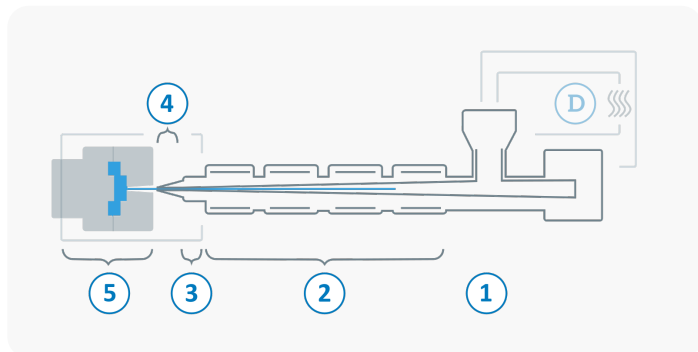
Test liquid A

**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.



|                                                        |                |
|--------------------------------------------------------|----------------|
| <b>(D)</b> Drying time                                 | 2 - 4 h        |
| Drying temperature ( $\tau \leq -30^{\circ}\text{C}$ ) | 80 °C          |
| Processing moisture                                    | 0,02 - 0,1 %   |
| <b>(1)</b> Feed section                                | 60 - 80 °C     |
| <b>(2)</b> Temperature Zone 1 - Zone 4                 | 260 - 300 °C   |
| <b>(3)</b> Nozzle temperature                          | 270 - 310 °C   |
| <b>(4)</b> Melt temperature                            | 270 - 300 °C   |
| <b>(5)</b> Mold temperature                            | 40 - 90 °C     |
| <b>(→)</b> Holding pressure, spec.                     | 300 - 800 bar  |
| <b>(←)</b> Back pressure, spec.                        | 50 - 150 bar   |
| Injection speed                                        | medium to high |
| Screw speed                                            | 8 - 15 m/min   |