

# AKROMID®

## A3 GF 30 HU natural (6661)

PA66 GF30

AKROMID® A3 GF 30 HU natural (6661) is a 30% glass fiber reinforced polyamide 6.6. It is characterised by 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. Additionally, it is listed at UL in all colors. The material has a light inherent color.

### Features

heat stabilised 130

### Regulatory



### Properties

#### Modulus

10.500 MPa

#### Strength

200 MPa

#### Impact

75 kJ/m<sup>2</sup>

## Mechanical Properties

### Tensile modulus

ISO 527-2

1 mm/min | d.a.m.

10500 MPa

1 mm/min | conditioned

7500 MPa

### Tensile stress at break

ISO 527-2

5 mm/min | d.a.m.

200 MPa

5 mm/min | conditioned

130 MPa

### Tensile strain at break

ISO 527-2

5 mm/min | d.a.m.

3,1 %

5 mm/min | conditioned

6 %

### Charpy impact strength

ISO 179-1/1eU

23°C | d.a.m.

75 kJ/m<sup>2</sup>

23°C | conditioned

83 kJ/m<sup>2</sup>

### Charpy notched impact strength

ISO 179-1/1eA

23°C | d.a.m.

12 kJ/m<sup>2</sup>

23°C | conditioned

16 kJ/m<sup>2</sup>

### UV Exposure and Water Immersion

UL 746C



f2

## Thermal Properties

|                                                                        |                                |              |
|------------------------------------------------------------------------|--------------------------------|--------------|
| <b>RTI electrical</b><br>UL 746B                                       | <b>UL</b> 0,4mm Wall thickness | 125 °C       |
|                                                                        | <b>UL</b> 0,8mm Wall thickness | 125 °C       |
|                                                                        | <b>UL</b> 1,6mm Wall thickness | 130 °C       |
|                                                                        | <b>UL</b> 3,2mm Wall thickness | 130 °C       |
| <b>RTI impact</b><br>UL 746B                                           | <b>UL</b> 0,8mm Wall thickness | 120 °C       |
|                                                                        | <b>UL</b> 1,6mm Wall thickness | 120 °C       |
|                                                                        | <b>UL</b> 3,2mm Wall thickness | 120 °C       |
| <b>RTI strength</b><br>UL 746B                                         | <b>UL</b> 0,8mm Wall thickness | 130 °C       |
|                                                                        | <b>UL</b> 1,6mm Wall thickness | 130 °C       |
|                                                                        | <b>UL</b> 3,2mm Wall thickness | 130 °C       |
| <b>Temperature of deflection under load HDT/A</b><br>ISO 75            | 1,8 MPa                        | 255 °C       |
| <b>Temperature of deflection under load HDT/B</b><br>ISO 75            | 0,45 MPa                       | 260 °C       |
| <b>Temperature of deflection under load HDT/C</b><br>ISO 75            | 8 MPa                          | 210 °C       |
| <b>Melting temperature</b><br>ISO 11357-3                              | DSC, 10K/min                   | 262 °C       |
| <b>Temperature index for 50% loss of tensile strength</b><br>IEC 60216 | 5.000 h                        | 150 - 160 °C |
|                                                                        | 20.000 h                       | 120 - 130 °C |

## Flammability

|                                                   |                                 |                 |
|---------------------------------------------------|---------------------------------|-----------------|
| <b>Flammability</b><br>UL 94                      | <b>UL</b> 0,8 mm Wall thickness | <b>HB Class</b> |
|                                                   | <b>UL</b> 1,6 mm Wall thickness | <b>HB Class</b> |
|                                                   | <b>UL</b> 3,2 mm Wall thickness | <b>HB Class</b> |
| <b>HWI</b><br>UL 746A                             | <b>UL</b> 0,4 mm Wall thickness | <b>4 PLC</b>    |
|                                                   | <b>UL</b> 0,8 mm Wall thickness | <b>4 PLC</b>    |
|                                                   | <b>UL</b> 1,6 mm Wall thickness | <b>4 PLC</b>    |
|                                                   | <b>UL</b> 3,2 mm Wall thickness | <b>4 PLC</b>    |
| <b>HAI</b><br>UL 746A                             | <b>UL</b> 0,4 mm Wall thickness | <b>0 PLC</b>    |
|                                                   | <b>UL</b> 0,8 mm Wall thickness | <b>0 PLC</b>    |
|                                                   | <b>UL</b> 1,6 mm Wall thickness | <b>0 PLC</b>    |
|                                                   | <b>UL</b> 3,2 mm Wall thickness | <b>0 PLC</b>    |
| <b>Burning rate (&lt;100 mm/min)</b><br>FMVSS 302 | > 1 mm Thickness                | +               |

## General Properties

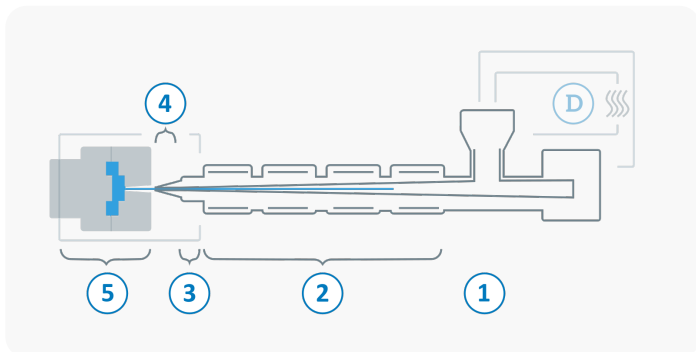
|                                        |                 |                        |
|----------------------------------------|-----------------|------------------------|
| <b>Density</b><br>ISO 1183             | 23°C            | 1,35 g/cm <sup>3</sup> |
| <b>Humidity absorption</b><br>ISO 1110 | 70°C, 62% r.H.  | 1,9 - 2,1 %            |
| <b>Water absorption</b><br>ISO 62      | 23°C, saturated | 5,2 - 5,8 %            |
| <b>Molding shrinkage</b><br>ISO 294-4  | flow            | 0,1 - 0,3 %            |
|                                        | transverse      | 0,7 - 0,9 %            |

## Electrical Properties

|                                                         |               |                         |
|---------------------------------------------------------|---------------|-------------------------|
| <b>Volume resistivity</b><br>IEC 62631-3-1              | UL d.a.m.     | 10 <sup>11</sup> Ω x cm |
| <b>Comparative tracking index</b><br>IEC 60112          | Test liquid A | 600 V                   |
| <b>Comparative tracking index</b><br>ASTM D3638         | UL            | 0 PLC                   |
| <b>Dielectric strength</b><br>IEC 60243                 | UL 3 mm       | 12 kV/mm                |
| <b>High voltage arc tracking rate (HVTR)</b><br>UL 746A | UL            | 5 PLC                   |

## 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                                            | 0 - 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                                       | 280 - 300 °C   |
| <b>5</b> | Mold temperature                                       | 80 - 100 °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   |

## Diagrams

