

# AKROMID®

## B3 GF 40 1 HU black (8415)

PA6 GF40

AKROMID® B3 GF 40 1 HU black (8415) is a 40% glass fibre reinforced, UV stabilised polyamide 6 with high rigidity and strength. This UL94 HB listed grade is suitable for technical components in mechanical engineering and the automotive industry.

### Features

heat stabilised 130

UV-stabilised

E&E

### Regulatory



### Properties

#### Modulus

**12.800 MPa**

#### Strength

**205 MPa**

#### Impact

**100 kJ/m²**

## Mechanical Properties

### Tensile modulus

ISO 527-2

1 mm/min | d.a.m.

**12800 MPa**

1 mm/min | conditioned

**8200 MPa**

### Tensile stress at break

ISO 527-2

5 mm/min | d.a.m.

**205 MPa**

5 mm/min | conditioned

**130 MPa**

### Tensile strain at break

ISO 527-2

5 mm/min | d.a.m.

**3 %**

5 mm/min | conditioned

**5 %**

### Flexural modulus

ISO 178

2 mm/min | d.a.m.

**10300 MPa**

### Flexural strength

ISO 178

2 mm/min | d.a.m.

**300 MPa**

### Charpy impact strength

ISO 179-1/1eU

23°C | d.a.m.

**100 kJ/m²**

23°C | conditioned

**110 kJ/m²**

-30°C | d.a.m.

**90 kJ/m²**

### Charpy notched impact strength

ISO 179-1/1eA

23°C | d.a.m.

**17 kJ/m²**

23°C | conditioned

**23 kJ/m²**

-30°C | d.a.m.

**14 kJ/m²**

## Thermal Properties

|                                                                        |              |              |
|------------------------------------------------------------------------|--------------|--------------|
| <b>Temperature of deflection under load HDT/A</b><br>ISO 75            | 1,8 MPa      | 215 °C       |
| <b>Temperature of deflection under load HDT/B</b><br>ISO 75            | 0,45 MPa     | 220 °C       |
| <b>Temperature of deflection under load HDT/C</b><br>ISO 75            | 8 MPa        | 170 °C       |
| <b>Melting temperature</b><br>ISO 11357-3                              | DSC, 10K/min | 220 °C       |
| <b>Temperature index for 50% loss of tensile strength</b><br>IEC 60216 | 5.000 h      | 160 - 175 °C |
|                                                                        | 20.000 h     | 130 - 150 °C |

## Flammability

|                                                   |                                 |                 |
|---------------------------------------------------|---------------------------------|-----------------|
| <b>Flammability</b><br>UL 94                      | <b>UL</b> 0,8 mm Wall thickness | <b>HB Class</b> |
| <b>GWFI</b><br>IEC 60695-2-12                     | 1,6 mm Wall thickness           | 650 °C          |
| <b>Burning rate (&lt;100 mm/min)</b><br>FMVSS 302 | > 1 mm Thickness                | +               |

## General Properties

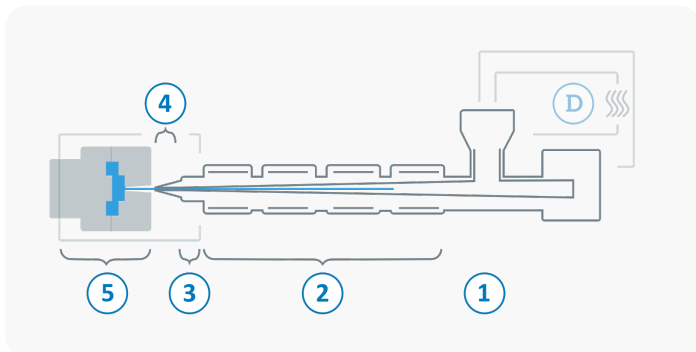
|                                        |                 |                        |
|----------------------------------------|-----------------|------------------------|
| <b>Density</b><br>ISO 1183             | 23°C            | 1,46 g/cm <sup>3</sup> |
| <b>Humidity absorption</b><br>ISO 1110 | 70°C, 62% r.H.  | 1,5 - 1,8 %            |
| <b>Water absorption</b><br>ISO 62      | 23°C, saturated | 5,2 - 5,7 %            |
| <b>Molding shrinkage</b><br>ISO 294-4  | flow            | 0,1 - 0,3 %            |
|                                        | transverse      | 0,5 - 0,7 %            |

## Electrical Properties

|                                                 |                                                                                                 |                                                                        |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <b>Volume resistivity</b><br>IEC 62631-3-1      | d.a.m.<br>conditioned                                                                           | $10^{13} \Omega \times \text{cm}$<br>$10^{10} \Omega \times \text{cm}$ |
| <b>Surface resistivity</b><br>IEC 62631-3-2     | d.a.m.<br>conditioned                                                                           | $10^{12} \Omega$<br>$10^{10} \Omega$                                   |
| <b>Comparative tracking index</b><br>IEC 60112  |  Test liquid A | 600 V                                                                  |
| <b>Comparative tracking index</b><br>ASTM D3638 |                | 0 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                            | 240 - 290 °C   |
| <b>3</b> | Nozzle temperature                                     | 260 - 300 °C   |
| <b>4</b> | Melt temperature                                       | 270 - 290 °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

