

#### Datasheet

#### Description:

AKROMID® A3 GF 30 1 black (2385) is a 30% glass fibre reinforced, heat stabilised polyamide 6.6 with high rigidity and strength, UL listed.

#### Applications

Components in mechanical engineering and in the automotive industry

| Typical values | Test specification | Method | Unit | Value  |         |
|----------------|--------------------|--------|------|--------|---------|
|                |                    |        |      | d.a.m. | moist.* |

#### Mechanical Properties

|                                |          |               |                   |       |      |
|--------------------------------|----------|---------------|-------------------|-------|------|
| Tensile modulus                | 1 mm/min | ISO 527-2     | MPa               | 10000 | 7100 |
| Stress at break                | 5 mm/min | ISO 527-2     | MPa               | 200   | 130  |
| Strain at break                | 5 mm/min | ISO 527-2     | %                 | 3     | ≥ 6  |
| Flexural modulus               | 2 mm/min | ISO 178       | MPa               | 8800  | 7200 |
| Flexural strength              | 2 mm/min | ISO 178       | MPa               | 285   | 220  |
| Charpy impact strength         | 23°C     | ISO 179-1/1eU | kJ/m <sup>2</sup> | 85    | 95   |
| Charpy impact strength         | -30°C    | ISO 179-1/1eU | kJ/m <sup>2</sup> | 80    |      |
| Charpy notched impact strength | 23°C     | ISO 179-1/1eA | kJ/m <sup>2</sup> | 12    | 16   |
| Charpy notched impact strength | -30°C    | ISO 179-1/1eA | kJ/m <sup>2</sup> | 11    |      |
| Ball indentation hardness      | 961/30   | ISO 2039-1    | MPa               | 240   |      |

#### Electrical Properties

|                            |                 |                |          |         |         |
|----------------------------|-----------------|----------------|----------|---------|---------|
| Volume resistivity         |                 | IEC 60093      | Ohm x cm | 1,0E+13 | 1,0E+10 |
| Surface resistivity        |                 | b.o. IEC 60093 | Ohm      | 1,0E+12 | 1,0E+10 |
| Comparative tracking index | test solution A | IEC 60112      |          | 600     |         |

#### Thermal Properties

|   |              |                |          |           |  |
|---|--------------|----------------|----------|-----------|--|
| Melting temperature                         | DSC, 10K/min | DIN EN 11357-1 | °C       | 262       |  |
| Temp. of deflection under load HDT/A        | 1,8 MPa      | ISO 75         | °C       | 255       |  |
| Temp. of deflection under load HDT/B        | 0,45 MPa     | ISO 75         | °C       | 260       |  |
| Temp. of deflection under load HDT/C        | 8 MPa        | ISO 75         | °C       | 210       |  |
| Coeff. of linear therm. expansion, parallel | 23°C - 80°C  | ISO 11359-1/2  | 1,0E-4/K | 0,19      |  |
| Coeff. of linear therm. expansion, normal   | 23°C - 80°C  | ISO 11359-1/2  | 1,0E-4/K | 0,95      |  |
| Temp. index for 50% loss of tens. strength  | 5.000 Std.   | IEC 60216      | °C       | 160 -175  |  |
| Temp. index for 50% loss of tens. strength  | 20.000 Std.  | IEC 60216      | °C       | 130 - 150 |  |

#### Flammability

|                             |                  |                |       |     |     |     |     |     |
|-----------------------------|------------------|----------------|-------|-----|-----|-----|-----|-----|
| Wall thickness              |                  |                | mm    | 0,4 | 0,8 | 1,6 | 2,0 | 3,2 |
| Flammability                |                  | UL 94          | class |     | HB  |     |     |     |
| GWFI                        |                  | IEC 60695-2-12 | °C    |     |     | 650 |     |     |
| Burning rate (< 100 mm/min) | > 1 mm thickness | FMVSS 302      |       |     |     |     |     | +   |

#### General Properties

|                                      |                 |          |                   |           |  |
|--------------------------------------|-----------------|----------|-------------------|-----------|--|
| Density                              | 23°C            | ISO 1183 | g/cm <sup>3</sup> | 1,36      |  |
| Content reinforcement/Content Filler |                 | ISO 1172 | %                 | 30        |  |
| Humidity absorption                  | 70°C, 62% r.h.  | ISO 1110 | %                 | 1,9 - 2,1 |  |
| Water absorption                     | 23°C, saturated | ISO 62   | %                 | 5,2 - 5,8 |  |

#### Continuation

| Typical values | Test specification | Method | Unit | Value  |
|----------------|--------------------|--------|------|--------|
|                |                    |        |      | d.a.m. |

#### Processing

|                   |                 |           |    |           |
|-------------------|-----------------|-----------|----|-----------|
| Flowability       | 7 x 3,5 mm & ** | AKRO      | mm | 830       |
| Molding shrinkage | flow            | ISO 294-4 | %  | 0,1 - 0,3 |
| Molding shrinkage | transverse      | ISO 294-4 | %  | 0,7 - 0,9 |

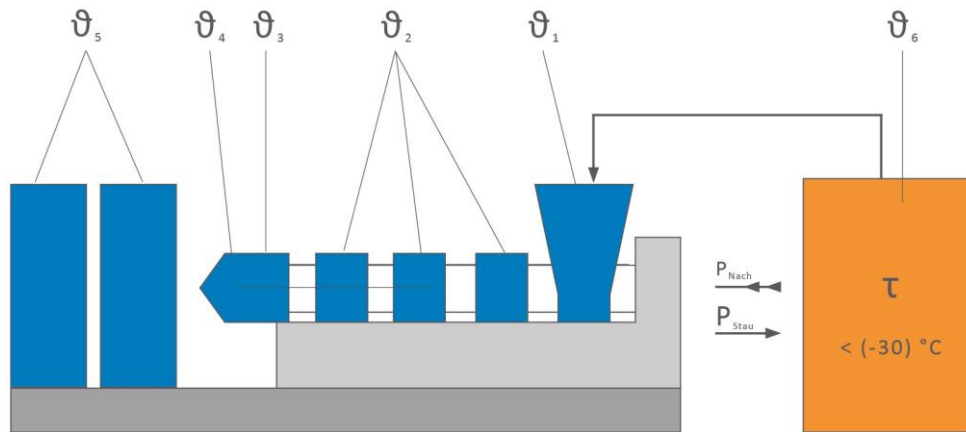
b.o.: based on

\* = specimen acc. ISO 1110 stored

\*\* = mould temperature: 100°C, melt temperature: 320°C, injection pressure: 750 bar

**Continuation**

**Processing recommendations**



|                                     |       |                |
|-------------------------------------|-------|----------------|
| $\vartheta_6$ Drying time           | h     | 0 - 4          |
| $\vartheta_6$ Drying temperature    | °C    | 80             |
| Processing moisture                 | %     | 0,02 - 0,1     |
| $\vartheta_1$ Feed section          | °C    | 60 - 80        |
| $\vartheta_2$ Section 1 - Section 4 | °C    | 260 - 300      |
| $\vartheta_3$ Nozzle                | °C    | 270 - 310      |
| $\vartheta_4$ Melt                  | °C    | 280 - 300      |
| $\vartheta_5$ Mould                 | °C    | 80 - 100       |
| $P_{Nach}$ Holding pressure, spec.  | bar   | 300 - 800      |
| $P_{Stau}$ Back pressure, spez.     | bar   | 50 - 150       |
| Injection speed                     |       | medium to high |
| Screw speed                         | m/min | 8 - 15         |

The listed values are recommendations. Higher values should be used for higher glass loadings. We recommend only de-humidifying or vacuum dryers. Extensive drying can cause filling problems and surface defects.