

Datasheet

Description:

AKROMID® A3 GF 30 1 natural (2391) is a 30% glass fibre reinforced, heat stabilised polyamide 6.6 with high rigidity and strength and light inherent color

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 ² | 85 | 95 |
| Charpy impact strength | -30°C | ISO 179-1/1eU | kJ/m ² | 80 | |
| Charpy notched impact strength | 23°C | ISO 179-1/1eA | kJ/m ² | 12 | 16 |
| Charpy notched impact strength | -30°C | ISO 179-1/1eA | kJ/m ² | 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 ³ | 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 | 8,4 x 2 mm & ** | AKRO | mm | 420 |
| 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 |

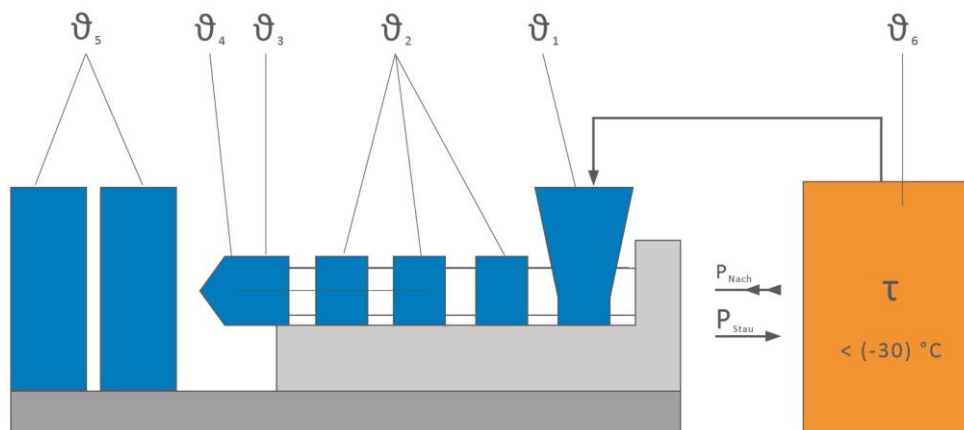
b.o.: based on

* = specimen acc. ISO 1110 stored

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

Continuation

Processing recommendations



| | | | |
|---------------|-------------------------|-------|----------------|
| ϑ_6 | Drying time | h | 0 - 4 |
| ϑ_6 | Drying temperature | °C | 80 |
| | Processing moisture | % | 0,02 - 0,1 |
| ϑ_1 | Feed section | °C | 60 - 80 |
| ϑ_2 | Section 1 - Section 4 | °C | 260 - 300 |
| ϑ_3 | Nozzle | °C | 270 - 310 |
| ϑ_4 | Melt | °C | 280 - 300 |
| ϑ_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.