

# AKROMID® UL PRELIMINARY

## B28 GF 35 9 FR black (8189)

PA6 GF35 FR(40)

AKROMID® B28 GF 35 9 FR black (8189) is a flame retardant PA6 with 35% glass fibres. The flame retardant system is free of red phosphorus and halogens, leading to optimised electrical properties for e-mobility applications. This grade is UL listed with a V0 classification at 1.6mm. Due to its very good flowability, it is characterised by easy processability as well as good surface properties. The material has excellent long-term thermal stability and outstanding mechanical properties.

### Features

heat stabilised 130   electrically neutral   flame retardant

easy flow   E&E   E-Mobility

### Regulatory



### Properties



## Mechanical Properties

<b>Tensile modulus</b> ISO 527-2	1 mm/min   d.a.m.	<b>12600 MPa</b>
	1 mm/min   conditioned	<b>8300 MPa</b>
<b>Tensile stress at break</b> ISO 527-2	5 mm/min   d.a.m.	<b>152 MPa</b>
	5 mm/min   conditioned	<b>108 MPa</b>
<b>Tensile strain at break</b> ISO 527-2	5 mm/min   d.a.m.	<b>2,6 %</b>
	5 mm/min   conditioned	<b>4,0 %</b>
<b>Flexural modulus</b> ISO 178	2 mm/min   d.a.m.	<b>11800 MPa</b>
	2 mm/min   conditioned	<b>9000 MPa</b>
<b>Flexural strength</b> ISO 178	2 mm/min   d.a.m.	<b>240 MPa</b>
	2 mm/min   conditioned	<b>179 MPa</b>
<b>Flexural strain at break</b> ISO 178	2 mm/min   d.a.m.	<b>2,8 %</b>
	2 mm/min   conditioned	<b>3,6 %</b>

### Disclaimer

All specifications and information given on this website are based on our current knowledge and experience. A legally binding promise of certain characteristics or suitability for a concrete individual case cannot be derived from this information. The information supplied here is not intended to release processors and users from the responsibility of carrying out their own tests and inspections in each concrete individual case. AKRO®, AKROMID®, AKROLEN®, AKROLOY®, AKROTEK®, ICX® and PRECITE® are registered trademarks of the Feddersen Group.

<b>Charpy impact strength</b> ISO 179-1/1eU	23°C   d.a.m.	<b>70 kJ/m<sup>2</sup></b>
	-30°C   d.a.m.	<b>70 kJ/m<sup>2</sup></b>
<b>Charpy notched impact strength</b> ISO 179-1/1eA	23°C   d.a.m.	<b>12 kJ/m<sup>2</sup></b>
	23°C   conditioned	<b>14 kJ/m<sup>2</sup></b>
	-30°C   d.a.m.	<b>11 kJ/m<sup>2</sup></b>

## Thermal Properties

<b>Temperature of deflection under load HDT/A</b> ISO 75	<b>UL</b> 1,8 MPa	<b>211 °C</b>
<b>Melting temperature</b> ISO 11357-3	DSC, 10K/min	<b>220 °C</b>
<b>Temperature index for 50% loss of tensile strength</b> IEC 60216	5.000 h	<b>165 °C</b>
	20.000 h	<b>135 °C</b>

## Flammability

<b>Burning rate</b> UL 94	<b>UL</b> 1,6 mm Wall thickness	<b>V-0 Class</b>
	<b>UL</b> 3,2 mm Wall thickness	<b>V-0 Class</b>
<b>GWFI</b> IEC 60695-2-12	0,8 mm Wall thickness	<b>960 °C</b>
	1,6 mm Wall thickness	<b>850 °C</b>
<b>HWI</b> UL 746A	<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>HAI</b> UL 746A	<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> FMVSS 302	> 1 mm Thickness	<b>+</b>

## General properties

<b>Density</b> ISO 1183	23°C	<b>1,46 g/cm<sup>3</sup></b>
<b>Humidity absorption</b> ISO 1110	70°C, 62% r.H.	<b>1,6 - 1,8 %</b>

### Disclaimer

All specifications and information given on this website are based on our current knowledge and experience. A legally binding promise of certain characteristics or suitability for a concrete individual case cannot be derived from this information. The information supplied here is not intended to release processors and users from the responsibility of carrying out their own tests and inspections in each concrete individual case. AKRO®, AKROMID®, AKROLEN®, AKROLOY®, AKROTEK®, ICX® and PRECITE® are registered trademarks of the Feddersen Group.

<b>Molding shrinkage</b>	flow	<b>0,1 - 0,3 %</b>
ISO 294-4	transverse	<b>0,5 - 0,7 %</b>

## Electrical Properties

<b>Volume resistivity</b>	<b>UL</b> d.a.m.	<b>10<sup>12</sup> Ω x cm</b>
IEC 62631-3-1		

<b>Surface resistivity</b>	<b>UL</b> d.a.m.	<b>10<sup>12</sup> Ω</b>
IEC 62631-3-2		

<b>Comparative tracking index</b>	Test liquid A	<b>600 V</b>
IEC 60112		

<b>Comparative tracking index</b>	<b>UL</b>	<b>0 PLC</b>
ASTM D3638		

<b>Dielectric strength</b>	<b>UL</b> 3 mm	<b>22 kV/mm</b>
IEC 60243		

<b>Inclined-Plane Tracking, IPT</b>	<b>UL</b>	<b>1,5 kV</b>
ASTM D2303-13		

<b>High voltage arc tracking rate (HVTR)</b>	<b>UL</b>	<b>1 PLC</b>
UL 746A		

<b>High Volt, Low Current Arc Resistance</b>	<b>UL</b>	<b>4 PLC</b>
ASTM D495		

## Rheological Properties

<b>Flowability</b>	1 mm Thickness	<b>120 mm</b>
AKRO	2 mm Thickness	<b>410 mm</b>

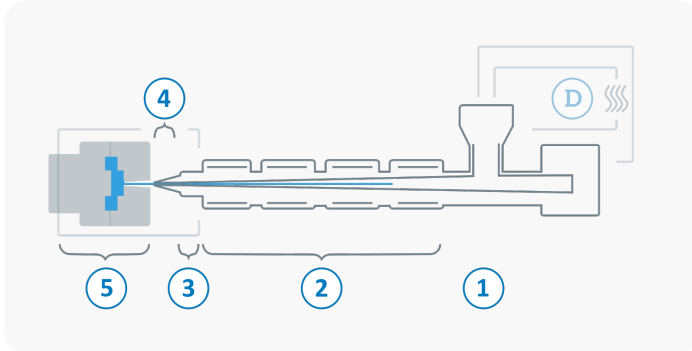
<b>MVR</b>	275°C/5kg	<b>40 cm<sup>3</sup>/10 min</b>
ISO 1133		

### Disclaimer

All specifications and information given on this website are based on our current knowledge and experience. A legally binding promise of certain characteristics or suitability for a concrete individual case cannot be derived from this information. The information supplied here is not intended to release processors and users from the responsibility of carrying out their own tests and inspections in each concrete individual case. AKRO®, AKROMID®, AKROLEN®, AKROLOY®, AKROTEK®, ICX® and PRECITE® are registered trademarks of the Feddersen Group.

## 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>	<b>Drying time</b>	<b>2 - 4 h</b>
	<b>Drying temperature (<math>\tau \leq -30^{\circ}\text{C}</math>)</b>	<b>80 °C</b>
	<b>Processing moisture</b>	<b>0,02 - 0,08 %</b>
<b>1</b>	<b>Feed section</b>	<b>60 - 80 °C</b>
<b>2</b>	<b>Temperature Zone 1 - Zone 4</b>	<b>220 - 280 °C</b>
<b>3</b>	<b>Nozzle temperature</b>	<b>240 - 280 °C</b>
<b>4</b>	<b>Melt temperature</b>	<b>240 - 280 °C</b>
<b>5</b>	<b>Mold temperature</b>	<b>60 - 100 °C</b>
<b>→</b>	<b>Holding pressure, spec.</b>	<b>300 - 800 bar</b>
<b>←</b>	<b>Back pressure, spec.</b>	<b>30 - 100 bar</b>
	<b>Injection speed</b>	<b>medium</b>
	<b>Screw speed</b>	<b>5 - 10 m/min</b>

### Disclaimer

All specifications and information given on this website are based on our current knowledge and experience. A legally binding promise of certain characteristics or suitability for a concrete individual case cannot be derived from this information. The information supplied here is not intended to release processors and users from the responsibility of carrying out their own tests and inspections in each concrete individual case. AKRO®, AKROMID®, AKROLEN®, AKROLOY®, AKROTEK®, ICX® and PRECITE® are registered trademarks of the Feddersen Group.