

Datasheet

Description:

AKROLOY® PA GF 50 black (2706) is a 50% glass fibre reinforced polyamide-blend with very high stiffness and strength, even in conditioned state.

Applications

Components with high dimensional stability, independent from moisture content. AKROLOY PA GF 50 black is an alternative for aluminium- and zinc diecast alloys.

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

Mechanical Properties

Tensile modulus	1 mm/min	ISO 527-2	MPa	17500	16500
Stress at break	5 mm/min	ISO 527-2	MPa	250	220
Strain at break	5 mm/min	ISO 527-2	%	3	3
Flexural modulus	2 mm/min	ISO 178	MPa	16400	
Flexural strength	2 mm/min	ISO 178	MPa	380	
Charpy impact strength	23°C	ISO 179-1/1eU	kJ/m ²	105	100
Charpy impact strength	-30°C	ISO 179-1/1eU	kJ/m ²	95	
Charpy notched impact strength	23°C	ISO 179-1/1eA	kJ/m ²	17	17
Charpy notched impact strength	-30°C	ISO 179-1/1eA	kJ/m ²	15	
Ball indentation hardness	961/30	ISO 2039-1	MPa	290	

Electrical Properties

Surface resistivity		b.o. IEC 60093	Ohm	1,5E+17
Comparative tracking index	test solution A	IEC 60112		600
Permittivity	1 MHz	IEC 60250		4,42

Thermal Properties

Melting temperature	DSC, 10K/min	DIN EN 11357-1	°C	255
Temp. of deflection under load HDT/A	1,8 MPa	ISO 75	°C	225
Temp. of deflection under load HDT/B	0,45 MPa	ISO 75	°C	245
Coeff. of linear therm. expansion, parallel	23°C - 80°C	ISO 11359-1/2	1,0E-4/K	0,15
Coeff. of linear therm. expansion, normal	23°C - 80°C	ISO 11359-1/2	1,0E-4/K	0,65
Temp. index for 50% loss of tens. strength	5.000 Std.	IEC 60216	°C	140 - 150
Temp. index for 50% loss of tens. strength	20.000 Std.	IEC 60216	°C	110 - 130
Vicat softening temperature B50	50 K/h	ISO 306	°C	242

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			700		
Burning rate (< 100 mm/min)	> 1 mm thickness	FMVSS 302						+

General Properties

Density	23°C	ISO 1183	g/cm ³	1,59
Content reinforcement/Content Filler		ISO 1172	%	50
Humidity absorption	70°C, 62% r.h.	ISO 1110	%	1,05
Water absorption	23°C, saturated	ISO 62	%	3,5 - 4

Continuation

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

Rheological Properties

MVR	275/5	ISO 1133	cm ³ /10min	9
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Processing

Flowability	7 x 3,5 mm & **	AKRO	mm	540
Molding shrinkage	flow	ISO 294-4	%	0,0 - 0,2
Molding shrinkage	transverse	ISO 294-4	%	0,3 - 0,5

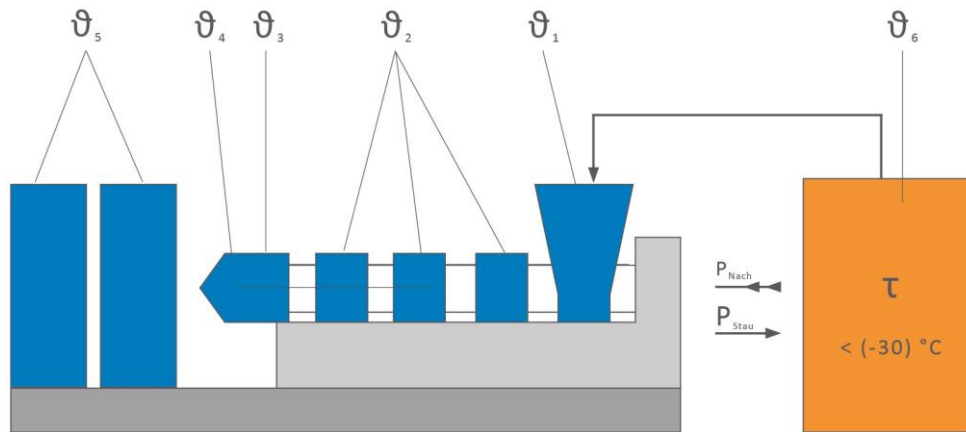
b.o.: based on

* = 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 - 300
ϑ_4	Melt	°C	280 - 300
ϑ_5	Mould	°C	90 - 130
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.