

Datasheet

Description:

AKROLOY® PA GF 50 natural (2916) 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 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

Volume resistivity		IEC 60093	Ohm x cm	9,1E+13	
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			
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	%	1,3 - 1,4	
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

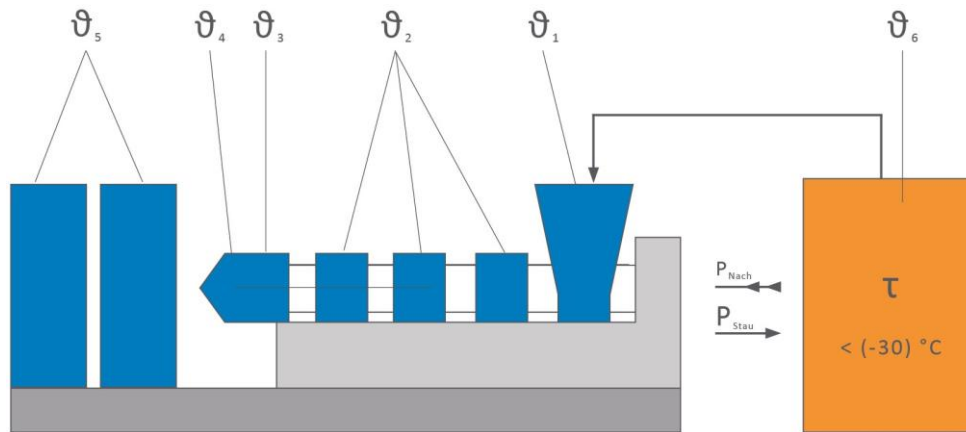
b.o.: based on

* = 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.