Omnia Plastica PA6 GF Akulon GF - Dry

Category : Polymer , Thermoplastic , Nylon , Nylon 6

Material Notes:

Polyamide 6 reinforced with the addition of 30% glass fibre and graphite. The glass charge makes the material highly resistant to abrasion, compression and flexing. Akulon GF is particularly suitable for gears and mechanical parts where excellent wear resistance is required.Features:Very high wear resistance: this inherent polyamide feature is further increased by the addition of glass. Akulon GF is one of the best wear resistant plastic materials available.High compression strength and tensile stress: the fatigue resistance is excellent as are the general mechanical properties.Ageing resistance: weatherproof and good resistance at low temperatureBlack colour.Weak Point:If used in combination with moving parts, the glass filler causes abrasion of the steel parts in contact with the plastic.Application:Mechanical: very high compressive strength and wear resistance, in fact one the best of all the engineering plastics. This material is particularly suitable for gears and high performance mechanical components which need to operate in demanding environments, such as on construction equipment or earthmovers, without suffering from excessive wear.Food contact: it cannot be used in contact with food.Electrical: even though the electrical properties change with the moisture content, this nylon is still used where good mechanical features as well as weatherproof performance are required.Chemical: it is resistant to alkali, inorganic compounds and solvents.Information provided by Omnia Plastica s.p.a. for semifinished products such as sheet, rod, and tube.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Omnia-Plastica-PA6-GF-Akulon-GF-Dry.php

Physical Properties	Metric	English	Comments
Density	1.30 g/cc	0.0470 lb/in³	ISO.1183 DIN.53479
Moisture Absorption at Equilibrium	2.0 %	2.0 %	50% relative humidity
Water Absorption at Saturation	5.2 %	5.2 %	23°C

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	95	95	dry sample; ISO2039.2
Ball Indentation Hardness	210 MPa	30500 psi	ISO2039.1 DIN.53456
Tensile Strength at Break	130 MPa	18900 psi	ISO.527 DIN.53455
Elongation at Break	20 %	20 %	ISO.527 DIN.53455
Tensile Modulus	4.00 GPa	580 ksi	ISO.527 DIN.53455
Compressive Strength	28.0 MPa	4060 psi	1% strain over 1000 hours; ISO.899 DIN.53444
Charpy Impact Unnotched	NB	NB	7.5 J; ISO.R179 DIN.53453
Charpy Impact, Notched	1.00 J/cm²	4.76 ft-lb/in²	ISO179/3C DIN.53453
Coefficient of Friction, Dynamic	0.50	0.50	on dry ground steel; load =0.05MPa; speed =0.6 m/s

Thermal Properties	Metric	English	Comments
CTE, linear	50.0 µm/m-°C @Temperature 23.0 - 60.0 °C	27.8 µin/in-°F @Temperature 73.4 - 140 °F	
Thermal Conductivity	0.250 W/m-K	1.74 BTU-in/hr-ft²-°F	DIN.52612
Melting Point	220 °C	428 °F	
Maximum Service Temperature, Air	105 °C	221 °F	Maximum operating temperature continuously for 5000 hours based on a tensile stress of 50% at 23° C.
	170 °C	338 °F	short period, no load
Deflection Temperature at 1.8 MPa (264 psi)	150 °C	302 °F	ISO.75 DIN.53461
Minimum Service Temperature, Air	-30.0 °C	-22.0 °F	impact conditions and heavy loads not considered
Flammability, UL94	HB @Thickness 3.00 mm	HB @Thickness 0.118 in	
	V-2 @Thickness 6.00 mm	V-2 @Thickness 0.236 in	
Oxygen Index	24 %	24 %	ISO.4589

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+12 ohm-cm	1.00e+12 ohm-cm	ISO.93 DIN.53482
Dielectric Constant	3.6 @Frequency 1e+6 Hz	3.6 @Frequency 1e+6 Hz	ISO.250 DIN.53483
Dielectric Strength	25.0 kV/mm	635 kV/in	ISO.243 DIN.53481
Dissipation Factor	0.060 @Frequency 1e+6 Hz	0.060 @Frequency 1e+6 Hz	ISO.250 DIN.53483

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