

Omnia Plastica Akulon® PA 66.6 - Akulon GX - at 50% RH

Category : Polymer , Thermoplastic , Nylon , Nylon 6/66 , Nylon 66/6, Unreinforced

Material Notes:

Copolymer of nylon with excellent mechanical features, it combines the good impact resistances of PA6 as well as the higher stiffness of PA66. For this reason it machines very well on automatic tools and on CNC centres. The U.V. stabilisation makes it light resistant and it is therefore suitable for outdoor applications. Features: Wear resistance: good even in demanding environments. Toughness: high tensile stress and compressive strength. Self-lubricating: the friction coefficient is low and generally for sliding application it does not require lubricators. U.V. resistance: particularly suitable for outdoor applications it withstands atmospheric agents and low temperatures very well. Machining on automatic tools is easy thanks to the breaking of shavings during machining and to its higher stiffness. Black colour. Weak Point: It is hygroscopic (even if at lower extent than PA6) therefore the mechanical features and the dimensions will change consequently. Application: Mechanical: thanks to its higher stiffness compared to PA6 and its higher shock resistance compared to PA66, this material is increasingly being used in the mechanical field to produce gears, cams, pulleys, anti-wear guides, wheels and other components, notably for outdoor use. In the field of construction and earthmoving equipment Akulon GX can be found in guides, bearings and pulleys. It is particularly suitable for machining on automatic lathes. Food contact: generally it is not used in contact with food. Electrical: use in the electrical field is to be avoided as the electrical features change with the moisture content. It is sometimes used when its mechanical features 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-Akulon-PA-666-Akulon-GX-at-50-RH.php

Physical Properties	Metric	English	Comments
Density	1.14 g/cc	0.0412 lb/in ³	ISO.1183 DIN.53479
Moisture Absorption at Equilibrium	2.6 %	2.6 %	50% relative humidity (beginning dry)
Water Absorption at Saturation	8.4 %	8.4 %	23°C (beginning dry)

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	100 MPa	14500 psi	ISO2039.1 DIN.53456
Tensile Strength at Break	58.0 MPa	8410 psi	ISO.527 DIN.53455
Elongation at Break	160 %	160 %	ISO.527 DIN.53455
Tensile Modulus	1.80 GPa	261 ksi	ISO.527 DIN.53455
Compressive Strength	7.00 MPa	1020 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	2.00 J/cm ²	9.52 ft-lb/in ²	ISO179/3C DIN.53453
	0.40	0.40	on dry ground steel; load =0.05MPa;

Coefficient of Friction, Dynamic Mechanical Properties	Metric	English	speed =0.6 m/s (dry sample) Comments
Thermal Properties	Metric	English	Comments
CTE, linear	85.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ @Temperature 23.0 - 60.0 $^{\circ}\text{C}$	47.2 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ @Temperature 73.4 - 140 $^{\circ}\text{F}$	dry sample
Thermal Conductivity	0.260 W/m-K	1.80 BTU-in/hr-ft ² - $^{\circ}\text{F}$	DIN.52612 (dry sample)
Melting Point	240 $^{\circ}\text{C}$	464 $^{\circ}\text{F}$	
Maximum Service Temperature, Air	92.0 $^{\circ}\text{C}$	198 $^{\circ}\text{F}$	Maximum operating temperature continuously for 5000 hours based on a tensile stress of 50% at 23 $^{\circ}\text{C}$. (dry sample)
	160 $^{\circ}\text{C}$	320 $^{\circ}\text{F}$	short period, no load (dry sample)
Deflection Temperature at 1.8 MPa (264 psi)	88.0 $^{\circ}\text{C}$	190 $^{\circ}\text{F}$	ISO.75 DIN.53461 (dry sample)
Minimum Service Temperature, Air	-30.0 $^{\circ}\text{C}$	-22.0 $^{\circ}\text{F}$	impact conditions and heavy loads not considered (dry sample)
Electrical Properties	Metric	English	Comments
Dielectric Constant	8.0 @Frequency 1e+6 Hz	8.0 @Frequency 1e+6 Hz	ISO.250 DIN.53483

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