

Omnia Plastica Akulon® PA6 G.Oil - Omniamid Oil - at 50% RH

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6 , Cast

Material Notes:

Cast Nylon 6 with the addition of 6% of special lubricating oil which remains in solution in the material. The unique method of production results in a micro distribution of oil particles with a homogeneous dispersion. This produces a notable improvement in the self-lubrication property as well as the shock resistance. Machining is also much easier. Features: Self-lubricating: the friction coefficient is the lowest of all the cast nylons. Wear resistance: better than PA6 natural. Tensile stress and compressive strength is like Omniamid G whilst shock resistance is higher, the E-modulus is lower. Machining: excellent on machine tools. Colour: orange and black. Weak Point: It is hygroscopic, even if to a lower extent than natural PA6 G. Because of the molecular structure, the large-sized cast pieces have better quality than those of small dimensions. Application: Mechanical: thanks to its excellent self-lubricating property, high shock resistance and compressive strength, together with the possibility to produce large-sized parts, it is widely used to produce bearings and bushings of large diameters as well as pulleys, wheels and anti-wear guides. Because of its excellent abrasion resistance it is used for gear wheels, guide bearings, bearings, sliding bearings, etc. in the building of parts for construction machines, excavators and earthmovers. In the shipbuilding industry its better weather resistance makes it suitable for rollers, haulage, sliding guides, bearings. In cable-car systems its usage includes pulleys, wheels and sliding blocks. Food contact: it cannot be used in contact with food. Electrical: usage in the electrical field is to be avoided as the electrical properties change with the change in moisture content. 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-PA6-GOil-Omniamid-Oil-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	1.5 %	1.5 %	50% relative humidity (beginning dry)
Water Absorption at Saturation	4.8 %	4.8 %	23°C (beginning dry)

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	80.0 MPa	11600 psi	ISO2039.1 DIN.53456
Tensile Strength at Break	50.0 MPa	7250 psi	ISO.527 DIN.53455
Elongation at Break	120 %	120 %	ISO.527 DIN.53455
Tensile Modulus	1.70 GPa	247 ksi	ISO.527 DIN.53455
Compressive Strength	6.00 MPa	870 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	2.50 J/cm ²	11.9 ft-lb/in ²	ISO179/3C DIN.53453
	0.34	0.34	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	80.0 $\mu\text{m}/\text{m}\cdot\text{°C}$ @Temperature 23.0 - 60.0 °C	44.4 $\mu\text{in}/\text{in}\cdot\text{°F}$ @Temperature 73.4 - 140 °F	dry sample
Thermal Conductivity	0.280 W/m-K	1.94 BTU-in/hr-ft ² - °F	DIN.52612 (dry sample)
Melting Point	220 °C	428 °F	
Maximum Service Temperature, Air	100 °C	212 °F	Maximum operating temperature continuously for 5000 hours based on a tensile stress of 50% at 23 °C . (dry sample)
	160 °C	320 °F	short period, no load (dry sample)
Deflection Temperature at 1.8 MPa (264 psi)	90.0 °C	194 °F	ISO.75 DIN.53461 (dry sample)
Minimum Service Temperature, Air	-30.0 °C	-22.0 °F	impact conditions and heavy loads not considered (dry sample)
Flammability, UL94	HB	HB	
Electrical Properties	Metric	English	Comments
Dielectric Constant	7.0 @Frequency 1e+6 Hz	7.0 @Frequency 1e+6 Hz	ISO.250 DIN.53483

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