

Omnia Plastica Omniamid PA6 G G - Dry

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

Material Notes:

Cast nylon 6. The method of production of this polyamide (i.e. the polymerisation of the caprolactam directly in the mould) allows the production of stock shapes in larger than normal dimensions, such as big rings or very thick sheets. The general features are similar to those of PA66.6, which means that it is stiffer and more brittle than extruded PA6. Features: Wear resistance: good even in demanding environments. Tensile stress and compressive strength: the toughness is better than that of extruded PA6 and fatigue resistance is very high. Self-lubricating: the friction coefficient is low and generally for sliding applications it does not require lubricators. Ageing resistance: weatherproof, with good resistance at low temperature. Natural colour. Weak Point: Like extruded nylon 6 it is hygroscopic. Due to its high fragility (in comparison with extruded PA6) it is advisable to use cast nylon for larger-sized pieces. Because of the molecular structure, large-sized cast pieces have a better quality than those of small dimensions. Application: Mechanical: thanks to the possibility of obtaining large-sized pieces this material is widely used in the mechanical field to produce large diameters gears, cams, pulleys, wheels and anti-wear guides. In the building of parts for construction machines, excavators and earthmovers it is used for gear wheels, guide bearings, sliding bearings, etc. Food contact: generally it is not used in contact with food. Electrical: usage in the electrical field is to be avoided as the electrical properties change with the 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-Omniamid-PA6-G-G-Dry.php

Physical Properties	Metric	English	Comments
Density	1.15 g/cc	0.0415 lb/in ³	ISO.1183 DIN.53479
Moisture Absorption at Equilibrium	2.4 %	2.4 %	50% relative humidity
Water Absorption at Saturation	7.0 %	7.0 %	23°C

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	88	88	dry sample; ISO2039.2
Ball Indentation Hardness	165 MPa	23900 psi	ISO2039.1 DIN.53456
Tensile Strength at Break	85.0 MPa	12300 psi	ISO.527 DIN.53455
Elongation at Break	20 %	20 %	ISO.527 DIN.53455
Tensile Modulus	3.40 GPa	493 ksi	ISO.527 DIN.53455
Compressive Strength	20.0 MPa	2900 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	0.500 J/cm ²	2.38 ft-lb/in ²	ISO179/3C DIN.53453
	0.42	0.42	on dry ground steel; load =0.05MPa;

Coefficient of Friction, Dynamic Mechanical Properties	Metric	English	speed =0.6 m/s Comments
Thermal Properties	Metric	English	Comments
CTE, linear	80.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	44.4 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
	@Temperature 23.0 - 60.0 $^{\circ}\text{C}$	@Temperature 73.4 - 140 $^{\circ}\text{F}$	
Thermal Conductivity	0.280 W/m-K	1.94 BTU-in/hr-ft ² - $^{\circ}\text{F}$	DIN.52612
Melting Point	220 $^{\circ}\text{C}$	428 $^{\circ}\text{F}$	
Maximum Service Temperature, Air	100 $^{\circ}\text{C}$	212 $^{\circ}\text{F}$	Maximum operating temperature continuously for 5000 hours based on a tensile stress of 50% at 23 $^{\circ}\text{C}$.
	160 $^{\circ}\text{C}$	320 $^{\circ}\text{F}$	short period, no load
Deflection Temperature at 1.8 MPa (264 psi)	96.0 $^{\circ}\text{C}$	205 $^{\circ}\text{F}$	ISO.75 DIN.53461
Minimum Service Temperature, Air	-30.0 $^{\circ}\text{C}$	-22.0 $^{\circ}\text{F}$	impact conditions and heavy loads not considered
Flammability, UL94	HB	HB	
	@Thickness 3.00 mm	@Thickness 0.118 in	
	V-2	V-2	
	@Thickness 6.00 mm	@Thickness 0.236 in	
Oxygen Index	25 %	25 %	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	3.7	3.7	ISO.250 DIN.53483
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Dielectric Strength	30.0 kV/mm	762 kV/in	ISO.243 DIN.53481
Dissipation Factor	0.050	0.050	ISO.250 DIN.53483
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	

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