Omnia Plastica Omniamid PA6 GHR HR - Dry

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

Material Notes:

Cast nylon 6 produced with the addition of graphite and a special lubricator which gives to this product better properties than natural PA6G. Whilst retaining the general features of OMNIAMID G it is more shock resistant and self-lubricating. It is also easier to machine and U.V. ray resistance is better than that of natural Omniamid.Features:Wear resistance: better than natural PA6Tensile stress and compressive strength: same as Omniamid G, whilst the shock resistance is higher, the fatigue resistance is more elevated.Self-lubricating: the friction coefficient is lowAgeing resistance: weatherproof and good resistance at low temperatureBlack colourWeak Point:It is hygroscopic even if to a lower extent than natural PA6G. Because of the molecular structure, large-sized cast pieces have better quality than those of small dimensions.Application:Mechanical: thanks to its good mechanical features and the possibility to obtain large-sized pieces, this material is mainly used to produce large diameter gears, pulleys, wheels and anti-wear guides. Due to the excellent abrasion resistance it is used in the building of parts for construction machines, excavators and earthmovers to produce gear wheels, guide bearings, bearings, sliding bearings etc. In the shipbuilding industry its improved weather resistance makes it suitable for rollers, haulage, sliding guides, bearings. In cable-car systems its uses include 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. It is sometimes used when its mechanical features are requested.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-GHR-HR-Dry.php

Physical Properties	Metric	English	Comments
Density	1.15 g/cc	0.0415 lb/in³	ISO.1183 DIN.53479
Moisture Absorption at Equilibrium	2.2 %	2.2 %	50% relative humidity
Water Absorption at Saturation	6.0 %	6.0 %	23°C

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	88	88	dry sample; ISO2039.2
Ball Indentation Hardness	170 MPa	24700 psi	ISO2039.1 DIN.53456
Tensile Strength at Break	90.0 MPa	13100 psi	ISO.527 DIN.53455
Elongation at Break	20 %	20 %	ISO.527 DIN.53455
Tensile Modulus	3.50 GPa	508 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/cm²	2.38 ft-lb/in²	ISO179/3C DIN.53453

Mechanical Properties	Metric	English	Comments
Coefficient of Friction, Dynamic	0.40	0.40	against steel; load =0.05MPa; speed =0.6 m/s

Thermal Properties	Metric	English	Comments
CTE, linear	80.0 µm/m-°C @Temperature 23.0 - 60.0 °C	44.4 µin/in-°F @Temperature 73.4 - 140 °F	
Thermal Conductivity	0.280 W/m-K	1.94 BTU-in/hr-ft²-°F	DIN.52612
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.
	160 °C	320 °F	short period, no load
Deflection Temperature at 1.8 MPa (264 psi)	96.0 °C	205 °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	HB	
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 @Frequency 1e+6 Hz	3.7 @Frequency 1e+6 Hz	ISO.250 DIN.53483
Dielectric Strength	30.0 kV/mm	762 kV/in	ISO.243 DIN.53481
Dissipation Factor	0.050 @Frequency 1e+6 Hz	0.050 @Frequency 1e+6 Hz	ISO.250 DIN.53483

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