

Omnia Plastica Akulon® PA 66 - Akulon 66 - Dry

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

Material Notes:

Polyamide obtained by the polymerisation of Hexamethylenediamine and Adipic acid. It is one of the oldest engineering plastics, having been created in the USA in 1930. Due to its origin it is widely used in the American and English markets. In comparison to PA6 it is more stiff and tougher but is also more brittle. It is advisable to use PA66 instead of Polyamide 6 when a higher stiffness is required to the detriment of resilience. It can be easily machined on automatic machine tools. All our stock shapes made of PA 66 are marked along the whole length with product code and batch number, according to ISO 9002 standards. Features: Wear resistance: it is good even in demanding environments. Self-lubricating: the friction coefficient is low and generally for sliding application it does not require lubricators. Toughness: very high tensile stress and compressive strength. Its toughness is higher than that of Polyamide 6. Machining on automatic machine tools is shown to be easy as the shavings break thanks to its higher toughness. Ageing resistance and weatherproof. Natural colour. Weak Point: It is hygroscopic, even if to a lesser extent than PA6. It absorbs moisture in time and consequently the mechanical features and the final dimensions will change. Application: Mechanical: because it has a higher stiffness than PA6 it is used for mechanical applications when this feature is more important than that of shock resistance: suitable for gears, cams, pulleys, anti-wear guides, wheels and mechanical parts. Like Akulon GX, it machines very easily on automatic tools. Food contact: in some cases it can be used in contact with food. Electrical: use in the electrical field is to be avoided as the electrical features 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-Akulon-PA-66-Akulon-66-Dry.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 |
| Water Absorption at Saturation | 8.0 % | 8.0 % | 23°C |

| Mechanical Properties | Metric | English | Comments |
|---------------------------|-------------------------|----------------------------|----------------------------------------------|
| Hardness, Rockwell M | 89 | 89 | dry sample; ISO2039.2 |
| Ball Indentation Hardness | 170 MPa | 24700 psi | ISO2039.1 DIN.53456 |
| Tensile Strength at Break | 88.0 MPa | 12800 psi | ISO.527 DIN.53455 |
| Elongation at Break | 40 % | 40 % | ISO.527 DIN.53455 |
| Tensile Modulus | 3.20 GPa | 464 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 |

| Mechanical Properties | Metric | English | Comments |
|----------------------------------|--------|---------|-------------------------------------------|
| Coefficient of Friction, Dynamic | 0.33 | 0.33 | Hard steel; load =0.05MPa; speed =0.6 m/s |

| Thermal Properties | Metric | English | Comments |
|---------------------------------------------|--------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| CTE, linear | 85.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ | 47.2 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ | |
| | @Temperature 23.0 - 60.0 $^{\circ}\text{C}$ | @Temperature 73.4 - 140 $^{\circ}\text{F}$ | |
| Thermal Conductivity | 0.250 W/m-K | 1.74 BTU-in/hr-ft ² - $^{\circ}\text{F}$ | DIN.52612 |
| Melting Point | 255 $^{\circ}\text{C}$ | 491 $^{\circ}\text{F}$ | |
| Maximum Service Temperature, Air | 95.0 $^{\circ}\text{C}$ | 203 $^{\circ}\text{F}$ | Maximum operating temperature continuously for 5000 hours based on a tensile stress of 50% at 23 $^{\circ}\text{C}$. |
| | 165 $^{\circ}\text{C}$ | 329 $^{\circ}\text{F}$ | short period, no load |
| Deflection Temperature at 1.8 MPa (264 psi) | 103 $^{\circ}\text{C}$ | 217 $^{\circ}\text{F}$ | 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 | 3.6 | 3.6 | ISO.250 DIN.53483 |
| | @Frequency 1e+6 Hz | @Frequency 1e+6 Hz | |
| Dielectric Strength | 25.0 kV/mm | 635 kV/in | ISO.243 DIN.53481 |
| Dissipation Factor | 0.060 | 0.060 | ISO.250 DIN.53483 |
| | @Frequency 1e+6 Hz | @Frequency 1e+6 Hz | |

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