

## Omnia Plastica Akulon® PET Arnite Omnilite

Category : Polymer , Thermoplastic , Polyester, TP , Polyethylene Terephthalate (PET) , Polyethylene Terephthalate (PET), Unreinforced

### Material Notes:

Arnite is a relatively new semi-crystalline polymer developed for technical applications. It is suitable for mechanical parts which require dimensional stability and a low friction coefficient. Omnilite is a modified PET designed to provide a higher shock resistance than Arnite by reducing the E-modulus. Features: Low friction coefficient, Dimensional stability both at temperature and humidity, Compressive strength even at low temperature, Excellent machinability, High fatigue resistance. Colour: natural. Weak Point: The material is very stiff so the shock resistance is not high. It is possible to modify it with the addition of other polymers but this operation is done to the detriment of such characteristics as stiffness, compressive and flexural strength which are the typical features of PET. Application: Mechanical: thanks to its low friction coefficient it is particularly suitable for sliding blocks, slide ways, bearings, guides, etc. Its dimensional stability makes it an excellent choice for precision parts where tight tolerances must be maintained both in moist and hot conditions. Food contact: it is physiological inert and extensively used in the food industry. Electrical: the excellent electrical features (stable in the long run) make PET suitable for insulators and other electrical components. Chemical: good resistance to acids and chlorine solutions. 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-PET-Arnite-Omnilite.php](http://www.lookpolymers.com/polymer_Omnia-Plastica-Akulon-PET-Arnite-Omnilite.php)

Physical Properties	Metric	English	Comments
Density	1.38 g/cc	0.0499 lb/in <sup>3</sup>	ISO.1183 DIN.53479
Moisture Absorption at Equilibrium	0.20 %	0.20 %	50% relative humidity
Water Absorption at Saturation	0.50 %	0.50 %	23°C

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	95	95	dry sample; ISO2039.2
Ball Indentation Hardness	170 MPa	24700 psi	ISO2039.1 DIN.53456
Tensile Strength at Break	85.0 MPa	12300 psi	ISO.527 DIN.53455
Elongation at Break	50 %	50 %	ISO.527 DIN.53455
Tensile Modulus	3.10 GPa	450 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 <sup>2</sup>	2.38 ft-lb/in <sup>2</sup>	ISO179/3C DIN.53453
Coefficient of Friction, Dynamic	0.25	0.25	on dry ground steel; load =0.05MPa; speed =0.6 m/s

Thermal Properties	Metric	English	Comments
CTE, linear	70.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	38.9 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 23.0 - 60.0 $\text{°C}$	@Temperature 73.4 - 140 $\text{°F}$	
Thermal Conductivity	0.280 W/m-K	1.94 BTU-in/hr-ft <sup>2</sup> -°F	DIN.52612
Melting Point	255 $\text{°C}$	491 $\text{°F}$	
Maximum Service Temperature, Air	115 $\text{°C}$	239 $\text{°F}$	Maximum operating temperature continuously for 5000 hours based on a tensile stress of 50% at 23° C.
	170 $\text{°C}$	338 $\text{°F}$	short period, no load
Deflection Temperature at 1.8 MPa (264 psi)	95.0 $\text{°C}$	203 $\text{°F}$	ISO.75 DIN.53461
Minimum Service Temperature, Air	-20.0 $\text{°C}$	-4.00 $\text{°F}$	impact conditions and heavy loads not considered
Flammability, UL94	HB	HB	
Oxygen Index	22 %	22 %	ISO.4589

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	ISO.93 DIN.53482
Dielectric Constant	3.2	3.2	ISO.250 DIN.53483
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Dielectric Strength	60.0 kV/mm	1520 kV/in	ISO.243 DIN.53481
Dissipation Factor	0.010	0.010	ISO.250 DIN.53483
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	

## Contact Songhan Plastic Technology Co.,Ltd.

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