

Zell-Metall Engineering Plastics Zellamid 1400 (PET)

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

Material Notes:

Zellamid® 1400 is the registered trademark of Zell-Metall's partly crystalline thermoplastic Polyester based on Polyethylene Terephthalate. This PETP features outstanding dimensional stability, as it is virtually unaffected by ambient moisture. A low coefficient of friction and excellent wear resistance combined with low creep and high modulus make this the choice material for moving parts. Hot water resistance is low. Zellamid® 1400 is produced without centerline porosity. This material exhibits properties which make it suited to particular applications, especially high precision components. Typical applications are components for food processing machines, mandrels, liquid and gas proof parts, electrical engineering and all parts where Acetal's microporosity in the centerline is not desirable. For friction applications we offer Zellamid® 1400T (PETP with a solid lubricant) which shows a significantly reduced friction coefficient and increased resistance to wear.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Zell-Metall-Engineering-Plastics-Zellamid-1400-PET.php

Physical Properties	Metric	English	Comments
Density	1.36 g/cc	0.0491 lb/in ³	
Moisture Absorption at Equilibrium	0.23 %	0.23 %	Saturation at 50% RH; ISO 1110; DIN 53714
Water Absorption at Saturation	0.50 %	0.50 %	23°C; ISO 62; DIN 53495

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	80.0 MPa	11600 psi	ISO 527; DIN 53455
Elongation at Break	20 %	20 %	ISO 527; DIN 53455
Tensile Modulus	3.20 GPa	464 ksi	ISO 527; DIN 53452
Charpy Impact Unnotched	8.20 J/cm ² @Temperature 23.0 °C	39.0 ft-lb/in ² @Temperature 73.4 °F	ISO 179; DIN 53453
Charpy Impact, Notched	1.40 J/cm ²	6.66 ft-lb/in ²	double V-notch, rk=1.5 mm; DIN 53753
Dart Drop, Total Energy	80.0 J	59.0 ft-lb	DIN 53443

Thermal Properties	Metric	English	Comments
CTE, linear	60.0 μm/m-°C @Temperature 20.0 °C	33.3 μin/in-°F @Temperature 68.0 °F	DIN 53752
Melting Point	255 °C	491 °F	ISO 1218 Method A; DIN 53736
	100 °C	212 °F	20,000 hours; 50% Tensile Strength;

Maximum Service Temperature, Air Thermal Properties	Metric	English	IEC 216; DIN 53446 Comments
	115 °C	239 °F	5000 hours; 50% Tensile Strength; IEC 216; DIN 53446
	160 °C	320 °F	a few hours operation
Deflection Temperature at 0.46 MPa (66 psi)	165 °C	329 °F	ISO 75; DIN 53461
Deflection Temperature at 1.8 MPa (264 psi)	67.0 °C	153 °F	ISO 75; DIN 53461
Flammability, UL94	HB @Thickness 1.60 mm	HB @Thickness 0.0630 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	IEC 167; DIN 53482
Dielectric Constant	3.3 @Frequency 1e+6 Hz	3.3 @Frequency 1e+6 Hz	IEC 250; DIN 53483
Dielectric Strength	50.0 kV/mm	1270 kV/in	IEC 243; DIN 53481
Dissipation Factor	0.020 @Frequency 1e+6 Hz	0.020 @Frequency 1e+6 Hz	IEC 250; DIN 53483
Comparative Tracking Index	>= 450 V	>= 450 V	KA Method; IEC 112; DIN 53480
	>= 600 V	>= 600 V	KC Method; IEC 112; VDE 0303T1

Descriptive Properties	Value	Comments
Resistance to Wear	2.2 µm/km	DIN-ISO 7148-2; Ra = 0.35 - 0.45 µm (steel disc), v = 0.3 m/s, p = 3 N/mm ² , time T > 16 h
VDE Fire Performance	II b	VDE 0304T3

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