

POLYTEC 500 HMW

POLYTEC 500 HMW is a high density polyethylene pressed and high molecular weight.

Stiffness, resistance to environmental stress and chemical, mechanical damping capacity abrasion resistance and low moisture absorption, are the outstanding features of this product, which can also be welded.

It is also an economical alternative to 1000 Polytec less stringent applications UHMW wear.

Polytec 500 HMW is suitable for chemical, mechanical and food industries.

PROPERTIES	UNITS	TEST METHODS	VALUES
Properties			
Density	g/cm ³	ISO 1183-1	0.96
Water absorption at saturation in water of 23°C	%	-	<0.01
Mechanical Properties at 23°C			
Tensile stress at yield	MPa	ISO 527-1/-2	28
Tensile strain at yield	%	ISO 527-1/-2	10
Nominal tensile strain at break	%	ISO 527-1/-2	>50
Tensile modulus of elasticity	MPa	ISO 527-1/-2	1300
Compressive stress at 1/2/5 % nominal strain	MPa	ISO 604	12 /18.5 /26.5
Flexural strength	MPa	ISO 178	27
Charpy impact strength-unnotched	KJ/m ²	ISO 179-1/1eU	No break
Charpy impact strength- notched	KJ/m ²	ISO 179-1/1eA	105P
Charpy impact strength- notched (double 14° notch)	KJ/m ²	ISO 11542-2	25
Ball indentation hardness	N/mm ²	ISO 2039-1	48
Shore hardness D (15s)	-	ISO 2039-2	62
Relative weight loss during a wear test in "sand/water- slurry"	-	ISO 15527	350
Thermal Properties			
Melting temperature (DSC, 10°C/min)	°C	ISO 11357-1/-3	135
Thermal conductivity at 23°C	W/(K.m)	-	0.40
Average coefficient of linear thermal expansion between 23 and 100 °C	m/(m.K)	-	150 x 10 ⁻⁶
Temperature of deflection under load: method A:1.8 MPa	°C	ISO 75-1/-2	44

Vicat softening temperature- VST/B50	°C	ISO 306	80
Max. allowable service temperature in air for short periods	°C	-	120
Max. allowable service temperature in air continuously for 20,000 h	°C	-	80
Min. Service temperature	°C	-	-100
Oxygen Index for flammability	%	ISO 4589-1/-2	<20
Electrical Properties at 23°C			
Electric strength	kV/mm	IEC 60243-1	45
Volume resistance	$\Omega \cdot m$	IEC 60093	$>10^{14}$
Surface resistance	-	IEC 60093	$>10^{12}$
Relative permittivity at 100 Hz		IEC 60250	2.4
Relative permittivity at 1 MHz	-	IEC 60250	2.4
Dielectric dissipation factor tan at 100 Hz	-	IEC 60250	0.0002
Dielectric dissipation factor tan at 1 MHz	-	IEC 60250	0.0002
Comparative tracking index (CTI)	-	IEC 60112	600

Note: 1g/cm³ = 1,000 kg/m³; 1Mpa= 1N/mm² ; 1kV/mm = 1MV/m

* These data are very useful for the choice of material. The data listed here are indicative values and should not be used to establish specification limits of the material. From these values may not be deducted a legally binding of security of certain properties or the suitability for a particular application.