

## Global EPP PET

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

### Material Notes:

PET is an unreinforced, semi-crystalline thermoplastic polyester, demonstrating dimensional stability similar to acetal, combined with the comparable wear resistance of nylon. Heavily loaded mechanical precision components subjected to sustained abrasive environments are particularly suited to this material. Key characteristics: Excellent dimensional stability High mechanical strength, hardness and rigidity Excellent wear resistance Good creep resistance Low moisture absorption Low thermal expansion Good resistance to radiant energy Good electrical insulating properties Stain resistant Suitable for food contact PET demonstrates outstanding dimensional stability, extremely low water absorption and relatively low thermal expansion. These properties are coupled to high mechanical strength, excellent creep and wear resistance, good electrical insulation and chemical resistance properties.

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[http://www.lookpolymers.com/polymer\\_Global-EPP-PET.php](http://www.lookpolymers.com/polymer_Global-EPP-PET.php)

Physical Properties	Metric	English	Comments
Density	1.37 g/cc	0.0495 lb/in <sup>3</sup>	Test Method A; ISO 1183:1987
Water Absorption	0.070 % @Temperature 23.0 °C, Time 86400 sec	0.070 % @Temperature 73.4 °F, Time 24.0 hour	Immersion; ISO 62:1999 (modified)
Moisture Absorption at Equilibrium	0.25 %	0.25 %	50% RH; ISO 62:1999
Water Absorption at Saturation	0.50 %	0.50 %	ISO 62:1999

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	90.0 MPa	13100 psi	Sample Type 1B, 50mm/min; ISO 527-1/2:1993
Elongation at Break	>= 15 %	>= 15 %	Sample Type 1B, 50 mm/min; ISO 527-1/2:1993
Modulus of Elasticity	3.70 GPa	537 ksi	Sample Type 1B, 50 mm/min; ISO 527-1/2:1993
Flexural Strength	100 MPa	14500 psi	1.5 mm/min; ISO 178:2001
Flexural Modulus	2.50 GPa	363 ksi	1.5 mm/min; ISO 178:2001
Compressive Strength	100 MPa	14500 psi	Sample Type B, 5 mm/min; ISO 604:2002
Compressive Modulus	2.80 GPa	406 ksi	Sample Type A, 1 mm/min; ISO 604:2002
Izod Impact, Notched (ISO)	2.00 kJ/m <sup>2</sup>	0.952 ft-lb/in <sup>2</sup>	Sample Type A; ISO 180:2000
Charpy Impact, Notched	0.200 J/cm <sup>2</sup>	0.952 ft-lb/in <sup>2</sup>	ISO 179-2:1999

Mechanical Properties Coefficient of Friction, Dynamic	Metric	English	Comments
	@Pressure 1.75 MPa	@Pressure 254 psi	31.4 m/min

Thermal Properties	Metric	English	Comments
CTE, linear	70.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$ @Temperature 23.0 - 55.0 $\text{Å}^\circ\text{C}$	38.9 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$ @Temperature 73.4 - 131 $\text{Å}^\circ\text{F}$	ISO 11359-2:1999
Thermal Conductivity	0.290 W/m-K	2.01 BTU-in/hr-ft $\text{Å}^2\cdot\text{Å}^\circ\text{F}$	ISO 8301:1991
Melting Point	255 $\text{Å}^\circ\text{C}$	491 $\text{Å}^\circ\text{F}$	
Maximum Service Temperature, Air	110 $\text{Å}^\circ\text{C}$	230 $\text{Å}^\circ\text{F}$	Continuous
	170 $\text{Å}^\circ\text{C}$	338 $\text{Å}^\circ\text{F}$	Intermittent
Deflection Temperature at 0.46 MPa (66 psi)	170 $\text{Å}^\circ\text{C}$	338 $\text{Å}^\circ\text{F}$	ISO 75
Deflection Temperature at 1.8 MPa (264 psi)	85.0 $\text{Å}^\circ\text{C}$	185 $\text{Å}^\circ\text{F}$	ISO 75
Glass Transition Temp, Tg	70.0 $\text{Å}^\circ\text{C}$	158 $\text{Å}^\circ\text{F}$	ISO 11359-2:1999
Flammability, UL94	HB	HB	IEC 60695-11-10:2003-08

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+15 ohm-cm	1.00e+15 ohm-cm	IEC 60093:1980-01
Surface Resistance	1.00e+14 ohm	1.00e+14 ohm	IEC 60093:1980-01
Dielectric Constant	3.2 @Frequency 1.00e+6 Hz	3.2 @Frequency 1.00e+6 Hz	IEC 60250:1969-01
	3.4 @Frequency 100 Hz	3.4 @Frequency 100 Hz	IEC 60250:1969-01
Dielectric Strength	22.0 kV/mm	559 kV/in	IEC 60243-1:1998-01
Dissipation Factor	0.0010 @Frequency 100 Hz	0.0010 @Frequency 100 Hz	IEC 60250:1969-01
Comparative Tracking Index	600 V	600 V	IEC 60112:2003-01

Descriptive Properties	Value	Comments
Color	White and Black	

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