

Quadrant EPP Ertalyte® PET, cast (ISO Data)

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

Material Notes:

The specific properties of this virgin crystalline PET make it especially suitable for the manufacture of mechanical precision parts which have to sustain high loads and/or are subject to wear.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Quadrant-EPP-Ertalyte-PET-cast-ISO-Data.php

Physical Properties	Metric	English	Comments
Density	1.39 g/cc	0.0502 lb/in ³	ISO 1183-1
Moisture Absorption at Equilibrium	0.25 %	0.25 %	50% RH
Water Absorption at Saturation	0.50 %	0.50 %	
Outgassing - Total Mass Loss	0.33 %	0.33 %	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	96	96	ISO 2039-2
Hardness, Shore D	80	80	
Ball Indentation Hardness	170 MPa	24700 psi	ISO 2039-1
Tensile Strength	90.0 MPa	13100 psi	at Yield; ISO 527-1/-2
Elongation at Break	15 %	15 %	ISO 527-1/-2
Elongation at Yield	4.0 %	4.0 %	ISO 527-1/-2
Tensile Modulus	3.50 GPa	508 ksi	ISO 527-1/-2
Flexural Strength	135 MPa	19600 psi	
Flexural Modulus	3.30 GPa	479 ksi	
Compressive Strength	33.0 MPa	4790 psi	ISO 604
	@Strain 1 %	@Strain 1 %	
	64.0 MPa	9280 psi	
	@Strain 2 %	@Strain 2 %	ISO 604
	107 MPa	15500 psi	ISO 604
	@Strain 5 %	@Strain 5 %	
K Factor (ISO)	3.0 µm/km	3.0 µm/km	

Charpy Impact Unnotched Mechanical Properties	5.00 J/cm ² Metric	23.8 ft-lb/in ² English	ISO 179-1/1eU Comments
Charpy Impact, Notched	0.200 J/cm ²	0.952 ft-lb/in ²	ISO 179-1/1eA
Coefficient of Friction, Dynamic	0.15 - 0.25	0.15 - 0.25	
Limiting Pressure Velocity	0.0900 MPa-m/sec	2570 psi-ft/min	at 1 m/s unlubricated
	0.150 MPa-m/sec	4280 psi-ft/min	at 0.1 m/s unlubricated

Thermal Properties	Metric	English	Comments
CTE, linear	80.0 µm/m-°C	44.4 µin/in-°F	
	@Temperature 23.0 - 100 °C	@Temperature 73.4 - 212 °F	
Thermal Conductivity	0.290 W/m-K	2.01 BTU-in/hr-ft ² -°F	
Melting Point	245 °C	473 °F	DSC, 10°C/min.; ISO 11357-1/-3
Maximum Service Temperature, Air	100 °C	212 °F	Continuous; 20,000 h
	115 °C	239 °F	Continuous; 5,000 h
Deflection Temperature at 1.8 MPa (264 psi)	80.0 °C	176 °F	ISO 75-1/-2
Flammability, UL94	HB	HB	
Oxygen Index	25 %	25 %	ISO 4589-1/-2

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.0e+14 ohm-cm	>= 1.0e+14 ohm-cm	IEC 60093
Surface Resistivity per Square	>= 1.0e+13 ohm	>= 1.0e+13 ohm	IEC 60093
Dielectric Constant	3.4	3.4	IEC 60250
	@Frequency >=100000 Hz	@Frequency >=100000 Hz	
Dielectric Strength	22.0 kV/mm	559 kV/in	
Dissipation Factor	0.0010	0.0010	IEC 60250
	@Frequency 100000 Hz	@Frequency 100000 Hz	
Comparative Tracking Index	600 V	600 V	IEC 60112

Compliance Properties	Metric	English	Comments
3A-Dairy	Yes	Yes	Only natural

European Food 1935/2004 Compliance Properties	Yes Metric	Yes English	Black and natural Comments
FDA	Yes	Yes	only natural
USP Class VI	No	No	

Chemical Resistance Properties	Metric	English	Comments
Acids, Strong (pH 1-3)	Unacceptable	Unacceptable	
Acids, Weak	Limited	Limited	
Alcohols	Limited	Limited	
Alkalies, Strong (pH 11-14)	Unacceptable	Unacceptable	
Alkalies, Weak	Limited	Limited	
Chlorinated Solvents	Limited	Limited	
Continuous Sunlight	Limited	Limited	
Hot Water / Steam	Limited	Limited	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Acceptable	Acceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Acceptable	Acceptable	

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