

Quadrant EPP Cestilene™ HD 1000 Polyethylene

Category : Polymer , Thermoplastic , Polyethylene (PE) , HDPE , High Density Polyethylene (HDPE), Injection Molded

Material Notes:

Data provided by Quadrant Engineering Plastic Products for polymers in their European product line.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Quadrant-EPP-Cestilene-HD-1000-Polyethylene.php

Physical Properties	Metric	English	Comments
Density	0.930 g/cc	0.0336 lb/in ³	ISO 1183
Water Absorption	0.010 %	0.010 %	immersion

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	60	60	after 15 sec.; ISO 868
	62	62	after 3 sec.; ISO 868
Ball Indentation Hardness	36.0 MPa	5220 psi	ISO 2039-1
Tensile Strength, Yield	19.0 MPa	2760 psi	ISO 527
Elongation at Break	>= 50 %	>= 50 %	ISO 527
Elongation at Yield	15 %	15 %	ISO 527
Tensile Modulus	0.750 GPa	109 ksi	ISO 527
Compressive Yield Strength	4.50 MPa	653 psi	at 1% nominal strain; ISO 604
	8.00 MPa	1160 psi	at 2% nominal strain; ISO 604
	14.0 MPa	2030 psi	at 5% nominal strain; ISO 604
Charpy Impact Unnotched	NB	NB	ISO 179/1eU
Charpy Impact, Notched	11.0 J/cm ²	52.4 ft-lb/in ²	Partial Break; ISO 179/1eA
Abrasion	100	100	Relative loss per DSM internal test (CESTILENE HD 1000 = 100)

Thermal Properties	Metric	English	Comments
CTE, linear	175 - 225 µm/m-°C	97.2 - 125 µin/in-°F	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Thermal Conductivity	0.400 W/m-K	2.78 BTU-in/hr-ft ² -°F	
Melting Point	130 - 135 °C	266 - 275 °F	ISO 3146; DSC, 10°C/min

Thermal Properties	Metric	English	Comments
Maximum Service Temperature, Air	120 °C	248 °F	20,000 hours continuous for short periods
Deflection Temperature at 1.8 MPa (264 psi)	42.0 °C	108 °F	ISO 75 method A
Vicat Softening Point	80.0 °C	176 °F	ISO 306
Minimum Service Temperature, Air	-200 °C	-328 °F	
Flammability, UL94	HB @Thickness 1.60 mm	HB @Thickness 0.0630 in	
Oxygen Index	<= 20 %	<= 20 %	ISO 4589

Electrical Properties	Metric	English	Comments
Electrical Resistivity	>= 1.00e+14 ohm-cm	>= 1.00e+14 ohm-cm	IEC 93
Surface Resistance	>= 1.00e+13 ohm	>= 1.00e+13 ohm	IEC 93
Dielectric Constant	2.1 @Frequency 100 Hz	2.1 @Frequency 100 Hz	IEC 250
	3.0 @Frequency 1e+6 Hz	3.0 @Frequency 1e+6 Hz	IEC 250
Dielectric Strength	<= 45.0 kV/mm	<= 1140 kV/in	IEC 243
Dissipation Factor	0.00040 @Frequency 100 Hz	0.00040 @Frequency 100 Hz	IEC 250
	0.0010 @Frequency 1e+6 Hz	0.0010 @Frequency 1e+6 Hz	IEC 250
Comparative Tracking Index	600 V	600 V	IEC 112

Descriptive Properties	Value	Comments
Color	natural (white) / black / green	

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