

Quadrant EPP Symalit® 1000 PVDF unfilled, extruded (ISO Data)

Category : Polymer , Thermoplastic , Fluoropolymer , PVDF

Material Notes:

Symalit 1000 PVDF is a highly crystalline unreinforced fluoropolymer combining good mechanical, thermal and electrical properties with excellent chemical resistance. It also shows good resistance to high-energy radiation (considerably better than most other fluoropolymers). Resistance to chemicals (up to pH 11) Dimensional stability from - 40 °C to + 150 °C (-40 °F to + 302 °F) Extremely good mechanical characteristics Excellent abrasion resistance Excellent ageing stability Resistance to UV-, β- and gamma -rays High dielectric and piezoelectric values

Order this product through the following link:

http://www.lookpolymers.com/polymer_Quadrant-EPP-Symalit-1000-PVDF-unfilled-extruded-ISO-Data.php

Physical Properties	Metric	English	Comments
Density	1.78 g/cc	0.0643 lb/in³	ISO 1183-1
Moisture Absorption at Equilibrium	0.050 %	0.050 %	50% RH
Water Absorption at Saturation	<= 0.10 %	<= 0.10 %	
Outgassing - Total Mass Loss	0.050 %	0.050 %	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	78	78	ISO 2039-2
Hardness, Shore D	78	78	
Ball Indentation Hardness	110 MPa	16000 psi	ISO 2039-1
Tensile Strength	60.0 MPa	8700 psi	at Yield; ISO 527-1/-2
Elongation at Break	30 %	30 %	ISO 527-1/-2
Elongation at Yield	9.0 %	9.0 %	ISO 527-1/-2
Tensile Modulus	2.20 GPa	319 ksi	ISO 527-1/-2
Flexural Strength	80.0 MPa	11600 psi	
Compressive Strength	20.0 MPa	2900 psi	ISO 604
	@Strain 1 %	@Strain 1 %	
	36.0 MPa	5220 psi	ISO 604
	@Strain 2 %	@Strain 2 %	
	62.0 MPa	8990 psi	ISO 604
	@Strain 5 %	@Strain 5 %	

Mechanical Properties	Metric	English	Comments
Charpy Impact Unnotched	NB	NB	ISO 179-1/1eU
Charpy Impact, Notched	1.00 J/cm ²	4.76 ft-lb/in ²	ISO 179-1/1eA
Coefficient of Friction, Dynamic	0.35 - 0.45	0.35 - 0.45	
Limiting Pressure Velocity	0.100 MPa-m/sec	2860 psi-ft/min	at 1 m/s unlubricated
	0.160 MPa-m/sec	4570 psi-ft/min	at 0.1 m/s unlubricated

Thermal Properties	Metric	English	Comments
CTE, linear	190 $\mu\text{m/m-}^{\circ}\text{C}$ @ Temperature 23.0 - 100 $^{\circ}\text{C}$	106 $\mu\text{in/in-}^{\circ}\text{F}$ @ Temperature 73.4 - 212 $^{\circ}\text{F}$	
Thermal Conductivity	0.190 W/m-K	1.32 BTU-in/hr-ft ² - $^{\circ}\text{F}$	
Melting Point	175 $^{\circ}\text{C}$	347 $^{\circ}\text{F}$	DSC, 10 $^{\circ}\text{C/min.}$; ISO 11357-1/-3
Maximum Service Temperature, Air	150 $^{\circ}\text{C}$	302 $^{\circ}\text{F}$	Continuous
Deflection Temperature at 1.8 MPa (264 psi)	105 $^{\circ}\text{C}$	221 $^{\circ}\text{F}$	ISO 75-1/-2
Flammability, UL94	V-0	V-0	
Oxygen Index	44 %	44 %	ISO 4589-1/-2

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.0\text{e}+14$ ohm-cm	$\geq 1.0\text{e}+14$ ohm-cm	IEC 60093
Surface Resistivity per Square	$\geq 1.0\text{e}+13$ ohm	$\geq 1.0\text{e}+13$ ohm	IEC 60093
Dielectric Constant	7.4 @Frequency ≥ 100000 Hz	7.4 @Frequency ≥ 100000 Hz	IEC 60250
Dielectric Strength	18.0 kV/mm	457 kV/in	
Dissipation Factor	0.025 @Frequency 100000 Hz	0.025 @Frequency 100000 Hz	IEC 60250
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	Comments
FDA	Yes	Yes	only natural
USP Class VI	No	No	

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

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