

Quadrant EPP Duratron® PEI U1000 PEI, unfilled, extruded (ISO Data)

Category : Polymer , Thermoplastic , Polyetherimide (PEI) , Polyetherimide (PEI), Extrusion Grade

Material Notes:

Duratron U1000 PEI is an amber translucent (non-optical quality) amorphous thermoplastic material, offering high strength and heat resistance. It performs continuously to 170 °C, making it ideal for high strength / high heat applications, and also for applications requiring consistent dielectric properties over a wide frequency and temperature range. High maximum allowable service temperature in air (170°C continuously) Very good hydrolysis resistance (suitable for repeated steam sterilization) High strength and stiffness over a wide temperature range Inherent low flammability and low levels of smoke evolution during combustion Good dimensional stability Physiologically inert (suitable for food contact) Very good resistance against high energy radiation (gamma- and X-rays) Very good electrical insulating and dielectric properties

Order this product through the following link:

http://www.lookpolymers.com/polymer_Quadrant-EPP-Duratron-PEI-U1000-PEI-unfilled-extruded-ISO-Data.php

Physical Properties	Metric	English	Comments
Density	1.27 g/cc	0.0459 lb/in ³	ISO 1183-1
Moisture Absorption at Equilibrium	0.70 %	0.70 %	50% RH
Water Absorption at Saturation	1.3 %	1.3 %	
Outgassing - Total Mass Loss	0.82 %	0.82 %	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	115	115	ISO 2039-2
Hardness, Shore D	85	85	
Ball Indentation Hardness	165 MPa	23900 psi	ISO 2039-1
Tensile Strength	129 MPa	18700 psi	at Yield; ISO 527-1/-2
Elongation at Break	13 %	13 %	ISO 527-1/-2
Elongation at Yield	7.0 %	7.0 %	ISO 527-1/-2
Tensile Modulus	3.50 GPa	508 ksi	ISO 527-1/-2
Flexural Strength	167 MPa	24200 psi	
Compressive Strength	31.0 MPa	4500 psi	ISO 604
	@Strain 1 %	@Strain 1 %	
	61.0 MPa	8850 psi	ISO 604
	@Strain 2 %	@Strain 2 %	

Mechanical Properties	137 MPa Metric	19900 psi English	Comments
	@Strain 5 %	@Strain 5 %	
K Factor (ISO)	1325 µm/km	1325 µm/km	
Charpy Impact Unnotched	NB	NB	ISO 179-1/1eU
Charpy Impact, Notched	0.350 J/cm ²	1.67 ft-lb/in ²	ISO 179-1/1eA
Coefficient of Friction, Dynamic	0.30 - 0.40	0.30 - 0.40	

Thermal Properties	Metric	English	Comments
CTE, linear	50.0 µm/m-°C	27.8 µin/in-°F	
	@Temperature 23.0 - 100 °C	@Temperature 73.4 - 212 °F	
Thermal Conductivity	0.240 W/m-K	1.67 BTU-in/hr-ft ² -°F	
Maximum Service Temperature, Air	170 °C	338 °F	Continuous
Deflection Temperature at 1.8 MPa (264 psi)	195 °C	383 °F	ISO 75-1/-2
Glass Transition Temp, Tg	215 °C	419 °F	DSC, 20°C/min.; ISO 11357-1/-2
Flammability, UL94	V-0	V-0	
Oxygen Index	47 %	47 %	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	3.0	3.0	IEC 60250
	@Frequency >=100000 Hz	@Frequency >=100000 Hz	
Dielectric Strength	27.0 kV/mm	686 kV/in	
Dissipation Factor	0.0020	0.0020	IEC 60250
	@Frequency 100000 Hz	@Frequency 100000 Hz	
Comparative Tracking Index	175 V	175 V	IEC 60112

Compliance Properties	Metric	English	Comments
3A-Dairy	Yes	Yes	Only natural
European Food 1935/2004			

Compliance Properties	No Metric	No English	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	Acceptable	Acceptable	
Alcohols	Acceptable	Acceptable	
Alkalies, Strong (pH 11-14)	Unacceptable	Unacceptable	
Alkalies, Weak	Acceptable	Acceptable	
Chlorinated Solvents	Unacceptable	Unacceptable	
Continuous Sunlight	Acceptable	Acceptable	
Hot Water / Steam	Acceptable	Acceptable	
Hydrocarbons - Aliphatic	Limited	Limited	
Hydrocarbons - Aromatic	Unacceptable	Unacceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Unacceptable	Unacceptable	

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