

Quadrant EPP Quadrant PPSU unfilled, extruded (ISO Data)

Category : Polymer , Thermoplastic , Polyphenylsulfone (PPSU)

Material Notes:

Quadrant PPSU is a black, amorphous high performance thermoplastic, offering better impact strength and chemical resistance than polysulfone and polyetherimide. Quadrant PPSU also has superior hydrolysis resistance as measured by steam autoclaving cycles to failure, making it especially suited for repeated steam sterilisation applications. High maximum allowable service temperature in air (180°C continuously) Good chemical and excellent hydrolysis resistance (suitable for repeated steam sterilization) High stiffness over a wide temperature range Very high impact strength Physiologically inert (suitable for food contact) High dimensional stability Very good resistance against high energy radiation (gamma- and X-rays) Good electrical insulating and dielectric properties

Order this product through the following link:

http://www.lookpolymers.com/polymer_Quadrant-EPP-Quadrant-PPSU-unfilled-extruded-ISO-Data.php

Physical Properties	Metric	English	Comments
Density	1.29 g/cc	0.0466 lb/in ³	ISO 1183-1
Moisture Absorption at Equilibrium	0.50 %	0.50 %	50% RH
Water Absorption at Saturation	1.1 %	1.1 %	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	90	90	ISO 2039-2
Hardness, Shore D	80	80	
Ball Indentation Hardness	95.0 MPa	13800 psi	ISO 2039-1
Tensile Strength	83.0 MPa	12000 psi	at Yield; ISO 527-1/-2
Elongation at Break	>= 50 %	>= 50 %	ISO 527-1/-2
Elongation at Yield	8.0 %	8.0 %	ISO 527-1/-2
Tensile Modulus	2.45 GPa	355 ksi	ISO 527-1/-2
Flexural Strength	108 MPa	15700 psi	
Compressive Strength	21.0 MPa	3050 psi	ISO 604
	@Strain 1 %	@Strain 1 %	
	41.0 MPa	5950 psi	ISO 604
	@Strain 2 %	@Strain 2 %	
	83.0 MPa	12000 psi	ISO 604
	@Strain 5 %	@Strain 5 %	

K Factor (ISO) Mechanical Properties	2500 $\mu\text{m}/\text{km}$ Metric	2500 $\mu\text{m}/\text{km}$ English	Comments
Charpy Impact Unnotched	NB	NB	ISO 179-1/1eU
Charpy Impact, Notched	1.20 J/cm ²	5.71 ft-lb/in ²	ISO 179-1/1eA
Coefficient of Friction, Dynamic	0.40 - 0.50	0.40 - 0.50	

Thermal Properties	Metric	English	Comments
CTE, linear	55.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ @Temperature 23.0 - 100 $^{\circ}\text{C}$	30.6 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ @Temperature 73.4 - 212 $^{\circ}\text{F}$	
Thermal Conductivity	0.300 W/m-K	2.08 BTU-in/hr-ft ² - $^{\circ}\text{F}$	
Maximum Service Temperature, Air	180 $^{\circ}\text{C}$	356 $^{\circ}\text{F}$	Continuous
Deflection Temperature at 1.8 MPa (264 psi)	205 $^{\circ}\text{C}$	401 $^{\circ}\text{F}$	ISO 75-1/-2
Glass Transition Temp, Tg	220 $^{\circ}\text{C}$	428 $^{\circ}\text{F}$	DSC, 20 $^{\circ}\text{C}/\text{min}.$; ISO 11357-1/-2
Flammability, UL94	V-0	V-0	
Oxygen Index	38 %	38 %	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	3.4 @Frequency ≥ 100000 Hz	3.4 @Frequency ≥ 100000 Hz	IEC 60250
Dielectric Strength	26.0 kV/mm	660 kV/in	
Dissipation Factor	0.0010 @Frequency 100000 Hz	0.0010 @Frequency 100000 Hz	IEC 60250
Comparative Tracking Index	≤ 100 V	≤ 100 V	IEC 60112

Compliance Properties	Metric	English	Comments
3A-Dairy	No	No	
European Food 1935/2004	No	No	
FDA	Yes	Yes	only black

USP Class VI Compliance Properties	No Metric	No English	Comments
Chemical Resistance Properties	Metric	English	Comments
Acids, Strong (pH 1-3)	Limited	Limited	
Acids, Weak	Acceptable	Acceptable	
Alcohols	Limited	Limited	
Alkalies, Strong (pH 11-14)	Acceptable	Acceptable	
Alkalies, Weak	Acceptable	Acceptable	
Chlorinated Solvents	Unacceptable	Unacceptable	
Continuous Sunlight	Limited	Limited	
Hot Water / Steam	Acceptable	Acceptable	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Limited	Limited	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Unacceptable	Unacceptable	

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