

Solvay Specialty Polymers Udel® P-1700 Polysulfone (PSU)

Category : Polymer , Thermoplastic , Polysulfone (PSU)

Material Notes:

Udel® P-1700 polysulfone (PSU) is a tough, rigid, high-strength thermoplastics suitable for continuous use up to 300°F (149°C). It is resistant to oxidation and hydrolysis and withstand prolonged exposure to high temperatures and repeated sterilization. Udel® P-1700 polysulfone is highly resistant to mineral acids, alkali and salt solutions. Resistance to detergents and hydrocarbon oils is good, but the resin may be attacked by polar solvents such as ketones, chlorinated hydrocarbons and aromatic hydrocarbons. Features: Acid Resistant; Alcohol Resistant; Alkali Resistant; Autoclave Sterilizable; Biocompatible; Detergent Resistant; E-beam Sterilizable; Ethylene Oxide Sterilizable; Food Contact Acceptable; Good Chemical Resistance; Good Dimensional Stability; Good Sterilizability; Good Surface Finish; Good Toughness; Heat Sterilizable; High Heat Resistance; Hydrocarbon Resistant; Hydrolytically Stable; Radiation (Gamma) Resistant; Radiation Sterilizable; Radiotranslucent; Steam Resistant; Steam Sterilizable. Uses: Appliance Components; Appliances; Automotive Electronics; Dental Applications; Electrical Parts; Electrical/Electronic Applications; Food Service Applications; Hospital Goods; Industrial Parts; Medical Devices; Medical/Healthcare Applications; Microwave Cookware; Piping; Plumbing Parts; Surgical Instruments; Valves/Valve Parts. Automotive Specifications ASTM D6394 SP0112; BMW GS 93016. Information provided by Solvay Specialty Polymers.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Udel-P-1700-Polysulfone-PSU.php

Physical Properties	Metric	English	Comments
Density	1.24 g/cc	0.0448 lb/in ³	ASTM D792
Water Absorption	0.30 % @Time 86400 sec	0.30 % @Time 24.0 hour	ISO 62
Linear Mold Shrinkage, Flow	0.0070 cm/cm	0.0070 in/in	
Melt Flow	6.5 g/10 min @Load 2.16 kg, Temperature 343 °C	6.5 g/10 min @Load 4.76 lb, Temperature 649 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Tensile Strength	70.3 MPa	10200 psi	ASTM D638
Elongation at Break	50 - 100 %	50 - 100 %	ASTM D638
Tensile Modulus	2.48 GPa	360 ksi	ASTM D638
Flexural Strength	106 MPa	15400 psi	ASTM D790
Flexural Modulus	2.69 GPa	390 ksi	ASTM D790
Izod Impact, Notched	0.690 J/cm	1.29 ft-lb/in	ASTM D256
Tensile Impact Strength	420 kJ/m ²	200 ft-lb/in ²	ASTM D1822

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	56.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	31.1 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
Deflection Temperature at 1.8 MPa (264 psi)	174 $\text{Å}^\circ\text{C}$	345 $\text{Å}^\circ\text{F}$	Unannealed; ASTM D648
Flammability, UL94	HB	HB	
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	V-0	V-0	
	@Thickness 4.50 mm	@Thickness 0.177 in	
Glow Wire Test	850 $\text{Å}^\circ\text{C}$	1560 $\text{Å}^\circ\text{F}$	Glow Wire Flammability Index, IEC 60695-2-12
	@Thickness 0.800 mm	@Thickness 0.0315 in	
	850 $\text{Å}^\circ\text{C}$	1560 $\text{Å}^\circ\text{F}$	Glow Wire Ignition Temperature; IEC 60695-2-13
	@Thickness 1.60 - 6.00 mm	@Thickness 0.0630 - 0.236 in	
	875 $\text{Å}^\circ\text{C}$	1610 $\text{Å}^\circ\text{F}$	Glow Wire Ignition Temperature; IEC 60695-2-13
	@Thickness 0.800 mm	@Thickness 0.0315 in	
	960 $\text{Å}^\circ\text{C}$	1760 $\text{Å}^\circ\text{F}$	Glow Wire Flammability Index, IEC 60695-2-12
	@Thickness 1.60 - 6.00 mm	@Thickness 0.0630 - 0.236 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	3.00e+16 ohm-cm	3.00e+16 ohm-cm	ASTM D257
Dielectric Constant	3.02	3.02	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	3.03	3.03	
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	ASTM D150
	3.04	3.04	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	17.0 kV/mm	432 kV/in	ASTM D149
Dissipation Factor	0.0010	0.0010	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
	0.0060	0.0060	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Electrical Properties	Metric	English	Comments
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	ASTM D150

Compliance Properties	Metric	English	Comments
FDA	Yes	Yes	
NSF	Yes	Yes	NSF 51; NSF 61

Processing Properties	Metric	English	Comments
Melt Temperature	329 - 385 Å°C	624 - 725 Å°F	
Mold Temperature	121 - 163 Å°C	250 - 325 Å°F	
Drying Temperature	135 - 163 Å°C @Time 12600 sec	275 - 325 Å°F @Time 3.50 hour	
Shot Size	50 - 75 %	50 - 75 %	

Descriptive Properties	Value	Comments
Agency Ratings	FDA 21 CFR 177.1655; ISO 10993; ISO 10993-Part 1	
Availability	Asia Pacific	
	Europe	
	Latin America	
	North America	
Color	Colors Available; Transparent - Slight Yellow	
Form	Pellets	
Processing Technique	Extrusion; Extrusion Blow Molding; Film Extrusion	
	Injection Blow Molding; Injection Molding	
	Machining; Pipe Extrusion	
	Profile Extrusion; Sheet Extrusion; Thermoforming	
RoHS Compliance	RoHS Compliant	

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