

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

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. These resins are also highly resistant to degradation by gamma or electron beam radiation. Electrical properties of Udel P-1700 polysulfones are stable over a wide temperature range and after immersion in water or exposure to high humidity. The resins comply with FAR 21 CFR 177.1655 and may be used in articles intended for repeated use in contact with foods. Additionally, they are approved by the NSF, by the Department of Agriculture for contact with meat and poultry and by the 3-A Sanitary Standards of the Dairy Association. - Transparent: Udel P-1700 CL 2611 CMP - Transparent: Udel P-1700 NT 06 - Transparent: Udel P-1700 NT 11 - Opaque Black : Udel P-1700 BK 937 - Opaque White: Udel P-1700 WH 6417 - Opaque White: Udel P-1700 WH 7407 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-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.24 g/cc	1.24 g/cc	ASTM D792
Water Absorption	0.30 %	0.30 %	ASTM D570
	@Time 86400 sec	@Time 24.0 hour	
Linear Mold Shrinkage, Flow	0.0070 cm/cm	0.0070 in/in	ASTM D955
Melt Flow	6.5 g/10 min	6.5 g/10 min	ASTM D1238
	@Load 2.06 kg, Temperature 343 °C	@Load 4.54 lb, Temperature 649 °F	

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 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	31.1 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM D696
Deflection Temperature at 1.8 MPa (264 psi)	174 $^{\circ}\text{C}$	345 $^{\circ}\text{F}$	Unannealed; ASTM D648
Flammability, UL94	HB	HB	All Colors; UL 94
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	V-0	V-0	NC; UL 94
	@Thickness 4.50 mm	@Thickness 0.177 in	
Glow Wire Test	850 $^{\circ}\text{C}$	1560 $^{\circ}\text{F}$	Glow Wire Flammability Index; IEC 60695-2-12
	@Thickness 0.800 mm	@Thickness 0.0315 in	
	850 $^{\circ}\text{C}$	1560 $^{\circ}\text{F}$	Glow Wire Ignition Temperature; IEC 60695-2-13
	@Thickness 1.60 - 6.00 mm	@Thickness 0.0630 - 0.236 in	
	875 $^{\circ}\text{C}$	1610 $^{\circ}\text{F}$	Glow Wire Ignition Temperature; IEC 60695-2-13
	@Thickness 0.800 mm	@Thickness 0.0315 in	
	960 $^{\circ}\text{C}$	1760 $^{\circ}\text{F}$	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	0.00070	0.00070	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	
	0.0010	0.0010	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	

Electrical Properties	0.0050 Metric	0.0050 English	Comments ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Processing Properties	Metric	English	Comments
Melt Temperature	329 - 385 °C	624 - 725 °F	
Mold Temperature	121 - 163 °C	250 - 325 °F	
Drying Temperature	135 - 163 °C	275 - 325 °F	
Dry Time	3.50 hour	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	
	NSF 51	Only Udel P-1700 NT 06 and Udel P-1700 NT 11 are NSF 51 listed. Maximum Temperature of Use: 149°C (300°F)
	NSF 61	Only Udel P-1700 NT 11, Udel P-1700 BK 937, Udel P-1700 WH 6417 and Udel P-1700 WH 7407 are NSF 61 listed. Tested at 82 °C (180 °F) (Commercial Hot)
Appearance	Colors Available	
	Transparent - Slight Yellow	
Automotive Specifications	ASTM D6394 SP0112	
Availability	Asia Pacific	
	Europe	
	North America	
	South America	
Features	Acid Resistant	
	Alcohol Resistant	
	Alkali Resistant	
	Autoclave	

Descriptive Properties	Sterilizable Value	Comments
	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	
Forms	Pellets	
Generic	PSU	
Processing Method	Extrusion	
	Extrusion Blow Molding	

Descriptive Properties	Value Film Extrusion	Comments
	Injection Blow Molding	
	Injection Molding	
	Machining	
	Pipe Extrusion	
	Profile Extrusion	
	Sheet Extrusion	
	Thermoforming	
RoHS Compliance	RoHS Compliant	
Uses	Appliance Components	
	Appliances	
	Automotive Electronics	
	Dental Applications	
	Electrical Parts	
	Electrical/Electronic Applications	
	Food Service Applications	
	Hospital Goods	
	Industrial Parts	
	Medical Appliances	
	Medical/Healthcare Applications	
	Microwave Cookware	
	Piping	
	Plumbing Parts	
	Surgical Instruments	

Descriptive Properties	Value/Valve Parts	Comments
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