

Solvay Specialty Polymers Udel® P-3500 LCD Polysulfone (PSU) (Unverified Data**)

Category : Polymer , Thermoplastic , Polysulfone (PSU)

Material Notes:

Udel P-3500 LCD is a very high molecular weight grade of polysulfone, and therefore offers the greatest toughness and chemical resistance of the available grades. It is well-suited for extrusion. The advantages of Udel P-3500 LCD are attributed to the lower level of cyclic dimer present in the polymer. Polysulfone is a tough, rigid and transparent high-strength thermoplastic that is suitable for long-term use up to 300°F (149°C). It is resistant to oxidation and hydrolysis and withstands prolonged exposure to high temperatures and repeated sterilization. Polysulfone is resistant to mineral acids, alkali, salt solutions, detergents and hydrocarbon oils. Contact with polar solvents such as ketones, chlorinated hydrocarbons and aromatic hydrocarbons should be avoided, as these types of chemical compounds can cause stress cracking or solvate polysulfone resin. Polysulfone is highly resistant to degradation by gamma or electron beam radiation but can be adversely affected by long term exposure to ultraviolet. Electrical properties of the polymer are very stable over a wide range of temperatures and after immersion in water or exposure to high humidity. The resin is very safe for food contact uses. It complies with FDA 21 CFR 177, 1655 and may be used in articles intended for repeated use in contact with foods. Additionally, it is approved by the NSF, by the Department of Agriculture for contact with meat and poultry and the 3-A Sanitary Standards of the Dairy Association. - Transparent: Udel P-3500 NT LCD
 Injection Notes: UDEL P-3500 polysulfones may be dried before preparing solutions. Pellets can be dried in a circulating hot air oven, by spreading the pellets on trays to a 1-2 inch depth and drying for 3.5 hours at 257 to 325°F (135 to 163°C). Information provided by Solvay Specialty Polymers.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Udel-P-3500-LCD-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	3.0 - 5.0 g/10 min	3.0 - 5.0 g/10 min	ASTM D1238
	@Load 2.16 kg, Temperature 343 °C	@Load 4.76 lb, Temperature 649 °F	

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	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 Mechanical Properties	2.69 GPa Metric	390 ksi English	ASTM D790 Comments
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 µm/m-°C	31.1 µin/in-°F	ASTM D696
Deflection Temperature at 1.8 MPa (264 psi)	174 °C	345 °F	Unannealed; ASTM D648

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	
Dielectric Strength	@Frequency 60.0 Hz	@Frequency 60.0 Hz	ASTM D150
	3.04	3.04	ASTM D150
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dissipation Factor	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	
Dissipation Factor	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	ASTM D150
	0.0070	0.0070	ASTM D150
	@Frequency 60.0 Hz	@Frequency 60.0 Hz	

Processing Properties	Metric	English	Comments
Zone 1	302 °C	576 °F	
Zone 5	316 - 338 °C	601 - 640 °F	
Melt Temperature	316 - 371 °C	601 - 700 °F	
Drying Temperature	135 - 163 °C	275 - 325 °F	
Dry Time	3.50 hour	3.50 hour	

Descriptive Properties	Value	Comments
Agency Ratings	FDA 21 CFR 177.1655	
	NSF 61	Tested at 82 °C (180 °F) (Commercial Hot)
Appearance	Natural Color	
Availability	Asia Pacific	
	Europe	
	North America	
	South America	
Features	Acid Resistant	
	Alcohol Resistant	
	Alkali Resistant	
	Detergent Resistant	
	Good Chemical Resistance	
	Good Dimensional Stability	
	Good Sterilizability	
	Good Surface Finish	
	Good Toughness	
	High Heat Resistance	
	Hydrocarbon Resistant	
	Hydrolytically Stable	
	Steam Sterilizable	
Forms	Pellets	
Generic	PSU	
Processing Method	Extrusion	
	Extrusion Blow Molding	
	Film Extrusion	
	Injection Blow Molding	
	Injection Molding	

Descriptive Properties	Value	Comments
	Machining	
	Pipe Extrusion	
	Profile Extrusion	
	Sheet Extrusion	
	Thermoforming	
RoHS Compliance	RoHS Compliant	
Uses	Membranes	

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