

Udel® P-3500 NT LCD polysulfone

Udel® P-3500 NT 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.

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.

General

Material Status	• Commercial: Active	
Availability	• Asia Pacific • Europe	• Latin America • North America
Features	• Acid Resistant • Alcohol Resistant • Alkali Resistant • Chemical Resistant • Detergent Resistant • Good Dimensional Stability • Good Sterilizability	• Good Surface Finish • Good Toughness • High Heat Resistance • Hydrocarbon Resistant • Hydrolytically Stable • 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 • Membranes • Microwave Cookware • Piping • Plumbing Parts • Surgical Instruments • Valves/Valve Parts
Agency Ratings	• FDA 21 CFR 177.1655 • ISO 10993	• NSF STD-61 ¹
RoHS Compliance	• RoHS Compliant	
Appearance	• Transparent – Slight Yellow	
Forms	• Pellets	

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General

Processing Method	<ul style="list-style-type: none"> • Extrusion • Extrusion Blow Molding • Film Extrusion • Injection Blow Molding • Injection Molding 	<ul style="list-style-type: none"> • Machining • Pipe Extrusion • Profile Extrusion • Sheet Extrusion • Thermoforming
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Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.24		ASTM D792
Melt Mass-Flow Rate (MFR) (343°C/2.16 kg)	4.0 to 6.0	g/10 min	ASTM D1238
Molding Shrinkage - Flow	0.70	%	ASTM D955
Water Absorption (24 hr)	0.30	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Modulus	2480	MPa	ASTM D638
Tensile Strength (Break)	70.3	MPa	ASTM D638
Tensile Elongation (Break)	50 to 100	%	ASTM D638
Flexural Modulus	2690	MPa	ASTM D790
Flexural Strength	106	MPa	ASTM D790

Impact	Typical Value	Unit	Test method
Notched Izod Impact	69	J/m	ASTM D256
Tensile Impact Strength	420	kJ/m²	ASTM D1822

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load 1.8 MPa, Unannealed	174	°C	ASTM D648
CLTE - Flow	5.6E-5	cm/cm/°C	ASTM D696

Electrical	Typical Value	Unit	Test method
Volume Resistivity	3.0E+16	ohms-cm	ASTM D257
Dielectric Strength	17	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.03		
1 kHz	3.04		
1 MHz	3.02		
Dissipation Factor			ASTM D150
60 Hz	7.0E-3		
1 kHz	1.0E-3		
1 MHz	6.0E-3		

Extrusion	Typical Value	Unit
Drying Temperature	135 to 163	°C
Drying Time	3.5	hr
Cylinder Zone 1 Temp.	320 to 340	°C
Cylinder Zone 5 Temp.	340 to 360	°C
Melt Temperature	320 to 370	°C

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Notes

Typical properties: these are not to be construed as specifications.

¹ Tested at 82 °C (180 °F) (Commercial Hot)



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