

# Udel® P-1700 LCD

## polysulfone

Udel® P-1700 LCD polysulfone is especially well suited for the fabrication of porous membranes for filtration applications. The membranes are usually in the form of hollow fibers, but tube, plate or spiral wound forms are also used. The membranes are used in a variety of applications, such as potable water treatment, waste water treatment, blood processing, pharmaceutical purification, gas separation, dairy product processing and for processing a variety of food products.

This resin offers the membrane producer good solubility in commercially available dipolar aprotic solvents, such as dimethylacetamide (DMAC), dimethylformamide, (DMF) and N-methyl pyrrolidone (NMP), which are completely miscible in water, very good control of pore size and pore size distribution, high membrane strength and good film-forming properties.

Typical grades of polysulfone contain a cyclic dimer that can precipitate from solution, plugging the process filters and limiting the life of the dope solutions. Udel® P-1700 NT LCD is specially manufactured to have a lower amount of cyclic dimer. It also has a higher number average molecular weight (Mn) for a given weight average molecular weight (Mw) leading to higher fiber strength, which means fewer fiber breakages, fewer surface defects and fewer rejects.

The resultant membranes have excellent hydrolytic stability and are compatible with pHs ranging from 2 to 13. They tolerate a variety of cleaning methods, including hydrochloric acid or sodium hydroxide. The resin has a Tg of 185°C indicating high thermal resistance.

- Transparent: Udel P-1700 NT LCD

### General

Material Status	• Commercial: Active	
Availability	• Asia Pacific • Europe	• Latin America • North America
Features	• Acid Resistant • Alcohol Resistant • Alkali Resistant • Chemical Resistant	• Good Toughness • High Heat Resistance • Hydrocarbon Resistant • Hydrolytically Stable
Uses	• Membranes	
Agency Ratings	• ISO 10993	
RoHS Compliance	• RoHS Compliant	
Appearance	• Transparent - Slight Yellow	
Forms	• Pellets	
Processing Method	• Coating • Extrusion	• Injection Molding • Solution Processing

### Physical

	Typical Value	Unit	Test method
Density / Specific Gravity	1.24		ASTM D792
Melt Mass-Flow Rate (MFR) (343°C/2.16 kg)	6.5	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	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

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Impact	Typical Value	Unit	Test method
Notched Izod Impact	69	J/m	ASTM D256
Tensile Impact Strength	420	kJ/m <sup>2</sup>	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	5.0E+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	1.1E-3		
1 kHz	1.3E-3		
1 MHz	5.0E-3		

### Notes

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

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