Udel® P-3500 LCD MB

Polysulfone

Solvay Specialty Polymers

Message:

Udel polysulfone is a thermoplastic with high toughness, high rigidity and high strength, and has excellent hydrolysis resistance. Udel P-3500 LCD MB series polymers are especially suitable for solvent-based process to produce porous hollow fibers and flat film. These high molecular weight polymers are used in various membrane filtration products, such as renal dialysis, water treatment, biological treatment, food and beverage processing, and industrial gas separation. Udel polysulfone polymer has many properties required by the membrane industry, such as excellent mechanical properties, stability at 2 ~ 132PH, excellent corrosion resistance and good resistance to medium concentration chlorine. It is a low level of precipitation, insoluble material, suitable for drinking water and products in contact with food. Steam, ethylene oxide and electron beam radiation can be used for disinfection. Udel P-3500 LCD MB series polymers contain a series of grades with narrow molecular weight distribution, as shown in the following figure. The level of ring dimer of each brand is lower than that of the original P-3500NT 11 brand. This is very important in solution treatment, such as membrane production process, because it improves the solution stability of spinning dope and reduces scaling of equipment.

General Information	
Features	Good chemical resistance alkali resistance Alcohol resistance Heat resistance, high acid resistance Hydrocarbon resistance Good toughness Hydrolysis stability
Uses	Membrane
Agency Ratings	FDA 21 CFR 177.1655 NSF Not Rated
RoHS Compliance	RoHS compliance
Appearance	Natural color
Forms	Particle
Processing Method	cast film Solution treatment Injection molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.24	g/cm³	ASTM D792
Water Absorption (24 hr)	0.30	%	ASTM D570
Molecular Weight			
P-3500 LCD MB3	78000 - 84000	g/mol	
P-3500 LCD MB7	77000 - 83000	g/mol	
P-3500 LCD MB8	80000 - 86000	g/mol	
Solution Viscosity [1]			

P-3500 LCD MB3	2.2 - 3.0	Pa·s	
P-3500 LCD MB7	2.0 - 2.8	Pa·s	
P-3500 LCD MB8	2.4 - 3.2	Pa·s	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	2480	MPa	ASTM D638
Tensile Strength (Break)	70.3	MPa	ASTM D638
Tensile Elongation (Break)	50 - 100	%	ASTM D638
Flexural Modulus	2690	MPa	ASTM D790
Flexural Strength	106	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	69	J/m	ASTM D256
Tensile Impact Strength	420	kJ/m^2	ASTM D1822
Thermal	Nominal 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	Nominal 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		ASTM D150
1 kHz	3.04		ASTM D150
1 MHz	3.02		ASTM D150
Dissipation Factor			ASTM D150
60 Hz	7.0E-3		ASTM D150
1 kHz	1.0E-3		ASTM D150
1 MHz	6.0E-3		ASTM D150

Injection instructions

在准备加工方案前,可以采用循环热空气炉干燥UDEL P- 3500聚砜粒子.塑料粒子摊开在托盘上,形成1~2英寸的厚度,在257~325 °F (135 ～163°C)温度条件下,干燥3.5小时 .

Extrusion	Nominal Value	Unit
Drying Temperature	135 - 163	°C
Drying Time	3.5	hr
Cylinder Zone 1 Temp.	302	°C
Cylinder Zone 5 Temp.	316 - 338	°C
Melt Temperature	316 - 371	°C

NOTE	
1.	At 40 °C and 30s-1 shear rate, DMAc was measured to contain 25% (weight) polymer solution.

Recommended distributors for this material

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