

Udel® P-1700

polysulfone

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

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific • Europe	• North America • South America	
Features	• Acid Resistant • Alcohol Resistant • Alkali Resistant • Autoclave Sterilizable • 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
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 • Valves/Valve Parts
Agency Ratings	• FDA 21 CFR 177.1655 • ISO 10993	• ISO 10993-Part 1 • NSF 51 ¹	• NSF 61 ²
RoHS Compliance	• RoHS Compliant		
Automotive Specifications	• ASTM D6394 SP0112		
Appearance	• Colors Available	• Transparent - Slight Yellow	
Forms	• Pellets		
Processing Method	• Extrusion • Extrusion Blow Molding • Film Extrusion • Injection Blow Molding	• Injection Molding • Machining • Pipe Extrusion • Profile Extrusion	• Sheet Extrusion • Thermoforming

Physical

	Typical Value	Unit	Test Method
Specific Gravity	1.24	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (343°C/2.06 kg)	6.5	g/10 min	ASTM D1238
Molding Shrinkage - Flow	0.70	%	ASTM D955

Physical	Typical Value	Unit	Test Method
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
Impact	Typical Value	Unit	Test Method
Notched Izod Impact	69	J/m	ASTM D256
Tensile Impact Strength	420	kJ/m ²	ASTM D1822
Thermal	Typical Value	Unit	Test Method
Deflection Temperature Under Load 1.8 MPa, Unannealed	174	°C	ASTM D648
CLTE - Flow	0.000056	cm/cm/°C	ASTM D696
Electrical	Typical Value	Unit	Test Method
Volume Resistivity	3.0E+16	ohm·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	0.00070		
1 kHz	0.0010		
1 MHz	0.0060		
Injection	Typical Value	Unit	
Drying Temperature	135 to 163	°C	
Drying Time	3.5	hr	
Suggested Shot Size	50 to 75	%	
Processing (Melt) Temp	329 to 385	°C	
Mold Temperature	121 to 163	°C	

Notes

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

¹ Only Udel P-1700 NT 06 and Udel P-1700 NT 11 are NSF 51 listed. Maximum Temperature of Use: 149°C (300°F)

² 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)

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For assistance with an emergency involving this product, such as spill, leak, fire or explosion, call day or night:

Emergency Health Information

USA +1.800.621.4590
International +1.770.772.8577

Emergency Spill Information

USA +1.800.424.9300
+1.703.527.3887 (CHEMTREC)
Europe +44.208.762.8322 (CARECHEM)
China +86.10.5100.3039
All other Asian countries +65.633.44.177

For additional product information, technical assistance and Material Safety Data Sheets (MSDS), call:

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