

# Udel P-1700

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.

## Physical Properties

MEASUREMENT	CONDITION	Value
Density / Specific Gravity	ASTM D792	1.24
Melt Mass-Flow Rate (MFR) (343°C/2.16 kg)	ASTM D1238	7.0g/10 min
Molding Shrinkage - Flow	ASTM D955	7.0E-3in/in
Water Absorption (24 hr)	ASTM D570	0.30%

## Mechanical Properties

MEASUREMENT	CONDITION	Value
Tensile Modulus	ASTM D638	360000psi
Tensile Strength	ASTM D638	10200psi
Tensile Elongation (Break)	ASTM D638	50 to 100%
Flexural Modulus	ASTM D790	390000psi
Flexural Strength	ASTM D790	15400psi

## Impact Properties

MEASUREMENT	CONDITION	Value
Notched Izod Impact	ASTM D256	1.3ft-lb/in
Tensile Impact Strength	ASTM D1822	200ft-lb/in²

## Features

- Acid Resistant
- Alcohol Resistant
- Alkali Resistant
- Autoclave Sterilizable
- Biocompatible
- Chemical Resistant
- Detergent Resistant
- E-beam Sterilizable
- Ethylene Oxide Sterilizable
- Food Contact Acceptable
- 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

## Applications

- Appliance Components
- Appliances
- Automotive Electronics
- Dental Applications
- Electrical Parts

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# Udel P-1700

## Thermal Properties

MEASUREMENT	CONDITION	Value
Deflection Temperature Under Load (264 psi, Unannealed)	ASTM D648	345°F
CLTE - Flow	ASTM D696	3.1E-5in/in/°F

## Electrical Properties

MEASUREMENT	CONDITION	Value
Volume Resistivity	ASTM D257	3.0E+16 ohms·cm
Dielectric Strength	ASTM D149	430V/mil
Dielectric Constant		
60 Hz	ASTM D150	3.03
1 kHz		3.04
1 MHz		3.02
Dissipation Factor		
60 Hz	ASTM D150	7.0E-4
1 kHz		1.0E-3
1 MHz		6.0E-3

## Flammability Properties

MEASUREMENT	CONDITION	Value
Flame Rating		
0.06 in, ALL	UL 94	HB
0.18 in, NC		V-0
Glow Wire Flammability Index		
0.031 in	IEC 60695-2-12	1560°F
0.06 to 0.24 in		1760°F
Glow Wire Ignition Temperature		
0.031 in	IEC 60695-2-13	1610°F
0.06 to 0.24 in		1560°F

## Applications (continued)

- Electrical/Electronic Applications
- Food Service Applications
- Hospital Goods
- Industrial Parts
- Medical Devices
- Medical/Healthcare Applications
- Microwave Cookware
- Piping
- Plumbing Parts
- Surgical Instruments
- Valves/Valve Parts

## Processing Method

- Extrusion
- Extrusion Blow Molding
- Film Extrusion
- Injection Blow Molding
- Injection Molding
- Machining
- Pipe Extrusion
- Profile Extrusion
- Sheet Extrusion
- Thermoforming

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## Injection Properties

MEASUREMENT	Value
Drying Temperature	275 to 325°F
Drying Time	3.5 hr
Suggested Shot Size	50 to 75%
Processing (Melt) Temp	625 to 725°F
Mold Temperature	250 to 325°F

**Notes:**

<sup>3</sup>Only Udel P-1700 NT 06 and Udel P-1700 NT 11 are NSF 51 listed. Maximum Temperature of Use: 149°C (300°F)

<sup>4</sup>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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