

Technical Data

Product Description

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		
Literature ¹	• Technical Datasheet		
UL Yellow Card ²	• E36098-231084 • E161096-224288		
Search for UL Yellow Card	• Solvay Specialty Polymers • Udel®		
Availability	• Asia Pacific • Europe	• Latin America • North 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 ³	• NSF 61 ⁴
RoHS Compliance	• RoHS Compliant		
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	Nominal Value (English)	Nominal Value (SI)	Test Method
Specific Gravity	1.24	1.24 g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (343°C/2.16 kg)	6.5 g/10 min	6.5 g/10 min	ASTM D1238
Molding Shrinkage - Flow	0.0070 in/in	0.70 %	ASTM D955



Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Water Absorption (24 hr)	0.30 %	0.30 %	ASTM D570
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus	360000 psi	2480 MPa	ASTM D638
Tensile Strength	10200 psi	70.3 MPa	ASTM D638
Tensile Elongation (Break)	50 to 100 %	50 to 100 %	ASTM D638
Flexural Modulus	390000 psi	2690 MPa	ASTM D790
Flexural Strength	15400 psi	106 MPa	ASTM D790
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact	1.3 ft·lb/in	69 J/m	ASTM D256
Tensile Impact Strength	200 ft·lb/in ²	420 kJ/m ²	ASTM D1822
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load 264 psi (1.8 MPa), Unannealed	345 °F	174 °C	ASTM D648
CLTE - Flow	0.000031 in/in/°F	0.000056 cm/cm/°C	ASTM D696
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Volume Resistivity	3.0E+16 ohm·cm	3.0E+16 ohm·cm	ASTM D257
Dielectric Strength	430 V/mil	17 kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.03	3.03	
1 kHz	3.04	3.04	
1 MHz	3.02	3.02	
Dissipation Factor			ASTM D150
60 Hz	0.00070	0.00070	
1 kHz	0.0010	0.0010	
1 MHz	0.0060	0.0060	
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating			UL 94
0.0591 in (1.50 mm), ALL	HB	HB	
0.177 in (4.50 mm), NC	V-0	V-0	
Glow Wire Flammability Index			IEC 60695-2-12
0.0315 in (0.800 mm)	1560 °F	850 °C	
0.0630 to 0.236 in (1.60 to 6.00 mm)	1760 °F	960 °C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.0315 in (0.800 mm)	1610 °F	875 °C	
0.0630 to 0.236 in (1.60 to 6.00 mm)	1560 °F	850 °C	
Injection	Nominal Value (English)	Nominal Value (SI)	
Drying Temperature	275 to 325 °F	135 to 163 °C	
Drying Time	3.5 hr	3.5 hr	
Suggested Shot Size	50 to 75 %	50 to 75 %	
Processing (Melt) Temp	625 to 725 °F	329 to 385 °C	
Mold Temperature	250 to 325 °F	121 to 163 °C	

Notes

¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

² A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

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

⁴ 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)

⁵ Typical properties: these are not to be construed as specifications.



Udel® P-1700

Polysulfone

Solvay Specialty Polymers

PROSPECTOR®

www.ulprospector.com

Where to Buy

Supplier

Solvay Specialty Polymers

Alpharetta, GA USA

Telephone: 800-621-4557

Web: <http://www.solvayspecialtypolymers.com/>

Distributor

Biesterfeld Plastic GmbH

Biesterfeld Plastic GmbH is a Pan European distribution company. Contact Biesterfeld Plastic GmbH for availability of individual products by country.

Telephone: +49-40-32008-0

Web: <http://www.biesterfeld-plastic.com/>

Availability: Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Germany, Greece, Hungary, Luxembourg, Netherlands, Poland, Romania, Serbia, Slovakia, Slovenia, Turkey

