SOLVAY
asking more from chemistry®

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		

Udel® P-1700
polysulfone

General

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		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

Impact	Typical Value	Unit	Test method
Notched Izod Impact	69	J/m	ASTM D256
Tensile Impact Strength	420	kJ/m²	ASTM D1822

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed	174	°C	
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		

Flammability	Typical Value	Unit	Test method
Flame Rating			UL 94
1.50 mm, ALL	HB		
4.50 mm, NC	V-0		
Glow Wire Flammability Index			IEC 60695-2-12
0.800 mm	850	°C	
1.60 to 6.00 mm	960	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.800 mm	875	°C	
1.60 to 6.00 mm	850	°C	

Udel® P-1700
polysulfone

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)

www.solvay.com

SpecialtyPolymers.EMEA@solvay.com | Europe, Middle East and Africa
SpecialtyPolymers.Americas@solvay.com | Americas
SpecialtyPolymers.Asia@solvay.com | Asia and Australia

SOLVAY
asking more from chemistry®

Material Safety Data Sheets (MSDS) are available by emailing us or contacting your sales representative. Always consult the appropriate MSDS before using any of our products. Neither Solvay Specialty Polymers nor any of its affiliates makes any warranty, express or implied, including merchantability or fitness for use, or accepts any liability in connection with this product, related information or its use. Some applications of which Solvay's products may be proposed to be used are regulated or restricted by applicable laws and regulations or by national or international standards and in some cases by Solvay's recommendation, including applications of food/feed, water treatment, medical, pharmaceuticals, and personal care. Only products designated as part of the Solviva® family of biomaterials may be considered as candidates for use in implantable medical devices. The user alone must finally determine suitability of any information or products for any contemplated use in compliance with applicable law, the manner of use and whether any patents are infringed. The information and the products are for use by technically skilled persons at their own discretion and risk and does not relate to the use of this product in combination with any other substance or any other process. This is not a license under any patent or other proprietary right. All trademarks and registered trademarks are property of the companies that comprise the Solvay Group or their respective owners.

© 2013 Solvay Specialty Polymers. All rights reserved.