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
- 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

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		
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/cm³	ASTM D792

Physical	Typical Value	Unit	Test Method
Melt Mass-Flow Rate (MFR) (343°C/2.06 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/m^2	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		

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] Maximum Temperature of Use: 149°C (300°F)

[2] Tested at 82 °C (180 °F) (Commercial Hot)

Udel® P-1700

SOLVAY

For assistance with an emergency involving products of Solvay Advanced Polymers, such as a 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:

USA + 1.800.621.4557/ +1.770.772.8760
Europe +49.211.5135.9000
Japan +81.3.5425.4300
China & Southeast Asia +86.21.5080.5080

World Headquarters
Solvay Advanced Polymers, L.L.C.
4500 McGinnis Ferry Road
Alpharetta, GA 30005 USA
+1.800.621.4557 (U.S.A.)
+1.770.772.8760

SOLVAY
Advanced Polymers

MORE PLASTICS WITH MORE PERFORMANCE™

Solvay Advanced Polymers has many locations around the world. Please visit our website for the office nearest you, or email advancedpolymers@solvay.com for assistance. www.solvayadvancedpolymers.com

Material Safety Data Sheets (MSDS) for products of Solvay Advanced Polymers are available upon request from your sales representative or by emailing us at advancedpolymers@solvay.com. Always consult the appropriate MSDS before using any of our products.

Property values for individual batches will vary within specification limits. Unless otherwise noted, values shown are typical for uncolored resin; colorants may alter values. For Preliminary Data Sheets, values are typical of limited production and specifications are not yet established.

To our actual knowledge, the information contained herein is accurate as of the date of this document. However, neither Solvay Advanced Polymers, LLC nor any of it's affiliates makes any warranty, express or implied, including merchantability or fitness for use, or accepts any liability in connection with this information or its use. Only products designated as part of the Solviva® family of biomaterials may be considered as candidates for implantable medical devices; Solvay Advanced Polymers does not allow or support the use of any other products in any implant applications. This information is 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. The use of this product resides on the determination of the customer not Solvay Advanced Polymers. The customer must determine suitability of any information or material for any contemplated use, the manner of use and whether any patents are infringed. This information gives typical properties only and is not to be used for specification purposes. Solvay Advanced Polymers reserves the right to make additions, deletions, or modifications to the information at any time without prior notification.