Ajedium™ Films -- Udel® PSU P-1700 NT-11

polysulfone

Udel® P-1700 polysulfones are tough, high-strength thermoplastics that are suitable for continuous use up to 300°F (149°C).

Udel Film is resistant to oxidation and hydrolysis and withstand prolonged exposure to high temperatures and repeated sterilization. Udel® P-1700 polysulfone films are highly resistant to mineral acids, alkali and salt solutions. Their resistance to detergents and hydrocarbon oils is good, but they will be attacked by polar solvents such as ketones, chlorinated hydrocarbons, and aromatic hydrocarbons.

Electrical properties of Udel® PSU films are stable over a wide temperature range and after immersion in water or exposure to high humidity.

The film is transparent, a light amber color.

General		
Material Status	• Commercial: Active	
Availability	• Asia Pacific • Europe	• Latin America • North America
Features	• Acid Resistant • Alkali Resistant • E-beam Sterilizable • Food Contact Acceptable • Good Sterilizability • Good Toughness	• High Heat Resistance • High Strength • Hydrolysis Resistant • Oxidation Resistant • Radiation (Gamma) Resistant
Uses	• Appliance Components • Automotive Electronics • Batteries	• Electrical Parts • Electrical/Electronic Applications • Food Service Applications
Agency Ratings	• FDA 21 CFR 177.1655	• NSF Unspecified Rating
RoHS Compliance	• RoHS Compliant	
Appearance	• Amber	• Natural Color

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.24		ASTM D792
Water Absorption (24 hr)	0.30	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tear Resistance	7.4	cN	ASTM D1004

Films	Typical Value	Unit	Test method
Film Thickness - Tested			
--	30	µm	
-- [1]	50	µm	
-- [2]	125	µm	
Secant Modulus			ASTM D882
MD	2300	MPa	
TD	2370	MPa	

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Films	Typical Value	Unit	Test method
Tensile Strength			ASTM D882
MD : Yield	68.0	MPa	
TD : Yield	63.7	MPa	
MD : Break	58.3	MPa	
TD : Break	56.8	MPa	
Tensile Elongation			ASTM D882
MD : Yield	5.5	%	
TD : Yield	5.1	%	
MD : Break	53	%	
TD : Break	35	%	
Dart Drop Impact	570	g	ASTM D1709
Area Factor	158	ft²/lb/mil	
Tear Propagation Resistance	130	gf	ASTM D1922

Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ASTM D648
1.8 MPa, Unannealed	174	°C	
CLTE - Flow	5.6E-5	cm/cm/°C	ASTM D696
Glass Transition Temperature	190	°C	

Electrical	Typical Value	Unit	Test method
Volume Resistivity	3.0E+16	ohms·cm	ASTM D257
Dielectric Strength	130	kV/mm	ASTM D149
Dielectric Constant (1 kHz)	3.04		ASTM D150
Dissipation Factor (1 MHz)	6.0E-3		ASTM D150

Flammability	Typical Value	Unit	Test method
Oxygen Index	26	%	ASTM D2863

Additional Information

Standard Thicknesses and Widths

- Widths are available from 22" (559 mm) to 56" (1422 mm).
- Products with widths <22 inches or >56 inches are available upon request.
- Tolerances for widths are +/- 4mm.
- For PSU film, the standard thicknesses are 25 microns (1 mil) to 1016 microns (40 mil).

Surface Finishes

- Standard surface finish is P/M (polished / matte).
- Custom finishes of P/P (polished / polished) and M/M (matte / matte) are available.

Packaging

- Film is supplied in a roll form of high quality, cardboard core of 3" (76mm) or 6" (152mm).
- PVC cores are available upon request in 3" and 6" sizes.

Labeling

- Products are labeled to comply with national and international standards.
- Labels include product grade, unique batch number, roll length, roll width, product thickness, and net weight.

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Notes

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

[1] Impact properties

[2] Tear properties

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