

P-1720

Udel P-1720 polysulfone is a tough, rigid, high-strength thermoplastics that is suitable for continuous use up to 300°F (149°C). The resin is resistant to oxidation and hydrolysis and can withstand prolonged exposure to high temperatures and repeated sterilization. Udel P-1720 polysulfone is highly resistant to mineral acids, alkali and salt solutions. Its resistance to detergents and hydrocarbon oils is good, but it will be attacked by polar solvents such as ketones, chlorinated hydrocarbons, and aromatic hydrocarbons.

This grade was been rated V-0 at a thickness of 0.039" (1 mm) by the UL 94 flammability test.

UDEL P-1720 resin can be readily injection molded on standard screw injection equipment.

Typical Properties of UDEL P-1720 Resin

Properties	ASTM Test Method	Typical Values ⁽¹⁾			
		U.S. Customary units		SI units	
		Value	Units	Value	Units
Mechanical					
Tensile Strength	D 638	10.2	kpsi	70.3	MPa
Tensile Modulus	D 638	360	kpsi	2.48	GPa
Tensile Elongation at Break	D 638	50-100	%	50-100	%
Flexural Strength	D 790	15.4	kpsi	106.2	MPa
Flexural Modulus	D 790	390	kpsi	2.69	GPa
Tensile Impact Strength	D 1822	200	ft-lb/in ²	420	kJ/m ²
Impact Strength- Notched Izod	D 256	1.3	ft-lb/in	69	J/m
Thermal					
Deflection Temperature at 264 psi (1.8 MPa)	D 648	345	°F	174	°C
Flammability ⁽²⁾ at 1 mm (0.039")	UL 94	V-0		V-0	
Coefficient of Thermal Expansion	D 696	31	ppm/°F	56	ppm/°C
General					
Specific Gravity	D 792	1.24		1.24	
Water Absorption, 24 hours	D 570	0.30	%	0.30	%
Melt Flow, 343°C, 2.16 kg	D 1238	7	g/10 min	7	g/10 min
Mold Shrinkage	D 955	0.7	%	0.7	%

⁽¹⁾ Actual properties of individual batches will vary within specification limits. Properties are typical of uncolored resin. Colorants or other additives will alter values.

⁽²⁾ These flammability ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

Drying

UDEL P-1720 resin must be dried before melt processing to avoid streaking, splaying or bubbling. Pellets can be dried in a circulating hot air oven or in a dehumidified hopper dryer.

To oven dry, spread the pellets on trays to a 1-2 inch depth and dry for 3.5 hours at 275° to 325°F (135° to 163°C). Handle the dried resin carefully to prevent reabsorption of moisture from the atmosphere.

To hopper dry, use inlet air with a dew point of -25°F (-32°C) at a temperature of 275° to 325°F (135° to 163°C) and a residence time of 3.5 hours.

Injection Molding

UDEL P-1720 resin can be readily injection molded on standard screw injection equipment. The shot size generally should be between 50-75% of the machine capacity, but good results can be obtained with a shot size as small as 10% of capacity because of the excellent thermal stability of this resin. Stock temperatures generally will range from 625-725°F (330-385°C) and depend on the mold design and the type of equipment used. A minimum mold temperature of 250°F (121°C) is recommended. However, the mold temperature should be increased to 300-325°F (149-63°C) for complex parts requiring long flow lengths or having thin cross-sections, or where low residual stress levels are required. Although the weld line strength of UDEL P-1720 resin is generally excellent, it is good design practice to avoid weld line areas known to be subject to high stress.

Standard Packaging and Labeling

UDEL P-1720 polysulfone resin is packaged in multiwall paper bags containing 55.115 pounds (25 kg) of material. Special packaging can be supplied upon request. Individual packages will be plainly marked with the product number, the color, the lot number, and the net weight.

Precautionary Labeling

On the basis of the toxicological, physical, and chemical properties of UDEL P-1720 polysulfone resin, labeling used on containers is as follows:

Caution! Handling and/or processing this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose, and throat.

Product Safety and Emergency Service

For product safety information or a Material Safety Data Sheet on a product of Solvay Advanced Polymers

1 (800) 621-4557

1 (770) 772-8880 outside of U.S.

For information or help in an emergency such as a spill, leak, fire or explosion, call day or night:

Emergency Health Information

1 (800) 621-4590

1 (770) 772-5177 outside of U.S.

Emergency Spill Information

CHEMTREC 1 (800) 424-9300

1 (703) 527-3887 outside of U.S.

collect calls accepted

For Additional Information

Technical Service

1 (800) 621-4557

Customer Service

1 (800) 848-9744

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