Product Data

MINDEL®
modified polysulfone

A-670

MINDEL A-670 is a modified polysulfone engineering thermoplastic that offers a unique combination of hot water resistance and dimensional stability, high heat deflection temperature, and toughness. The material can be electroplated to a bright metal finish.

The resin flows well and is uniquely suited for many functional plated plumbing parts as it can be fabricated on conventional molding machines and plated in conventional ABS preplate systems.

Drying

Although the hydrolytic stability of MINDEL A-670 resin is outstanding, the product must be dried before fabricating. The preferred method is to use a dehumidified hopper drier or circulating hot air oven. Pellets can be dried at 250°F (121°C) for 3 hours in 1 - 2 inch deep trays. Dried resin should be handled carefully to prevent re-absorption of moisture from the atmosphere by using closed containers and covered hoppers. The use of an insulated hopper drier is recommended with air temperatures measured at the hopper drier outlet of 210° - 230°F (99° - 110°C) and residence time of 3 - 4 hours. Do not dry longer than 6 hours. Adjust conditions to ensure that the pellets attain 230° - 250°F (110° - 121°C) for 3 - 4 hours, but do not exceed 250°F (121°C).

Typical Properties of MINDEL A-670 Resin

Property	ASTM Test Method	Typical Values(1) U.S. Customary Units Value	U.S. Customary Units Units	SI Units Value	SI Units Units
Mechanical					
Tensile Strength at Yield	D 638	7.2	kpsi	50	MPa
Tensile Strength at Break	D 638	6.2	kpsi	43	MPa
Elongation at Yield	D 638	4	%	4	%
Elongation at Break	D 638	25	%	25	%
Tensile Modulus	D 638	308	kpsi	2,100	MPa
Flexural Strength at 5% Strain	D 790	12.0	kpsi	83	MPa
Flexural Modulus	D 790	316	kpsi	2,180	MPa
Tensile Impact	D 1822	90	ft-lbs/in^2	189	kJ/m^2
Notched Izod Impact, 1/8" (3.2 mm) bar	D 256	6	ft-lbs/in	320	J/m
Thermal					
Deflection Temperature(2) @264 psi (1.8 MPa)	D 648	300	°F	149	°C
Coefficient of Linear Thermal Expansion	D 696	36	ppm/°F	65	ppm/°C
General					
Specific Gravity	D 1505	1.13		1.13	
Water Absorption, 24 hours immersion	D 570	0.25	%	0.25	%
Mold Shrinkage	D 955	0.66	%	0.66	%

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

(2) 1/4"(6.4 mm) bar (Annealed)

Solvay
Advanced Polymers

SOLVAY

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Injection Molding

MINDEL A-670 resin can be readily molded on conventional reciprocating screw injection molding machines. A general purpose 2:1 compression ratio screw is suggested with a back pressure of 100 - 350 psi (0.7 - 2.4 MPa). The injection speed should be as fast as possible, consistent with part appearance requirements. Stock temperatures will generally range from 540° - 590°F (282° - 310°C) depending on mold design and the type of equipment used.

Mold temperatures of 160° - 250°F (71° - 121°C). are suggested. Regrind usage should be limited to 25 percent. The rheology of MINDEL A-670 resin shows it to be more sensitive to shear than modified polyphenylene oxide or polycarbonate resins. As shear rates are increased, the MINDEL A-670 resin responds by decreasing rapidly in melt viscosity and flowing readily. This characteristic can be used to advantage in producing thin cross-sectional parts, long flow parts, and in the use of small gates for rapid freeze off and shorter molding cycles.

Caution: Melt temperatures higher than 608°F (320°C) may cause decomposition. Equipment should be purged with appropriate purge compounds upon completion of molding.

Plating and Decorating

MINDEL A-670 resin can be plated in conventional ABS preplate systems without annealing or solvent conditioning prior to etching. Decorative and functional electroplates such as cooper, nickel, brass, gold, silver and chromium in bright antique, satin, brushed or blackened form can be developed on MINDEL A-670 resin. The high deflection temperature of the resin also allows the use of high performance, durable topcoats that require elevated temperature cures. MINDEL A-670 resin can be painted with standard automotive external and interior paint systems including modified acrylic and nitrocellulose alkyd paints.

Standard Packaging and Labeling

MINDEL A-670 resin is packaged in multiwall paper bags containing 25 kg (55.115 pounds) 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 MINDEL A-670 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