Preliminary Data

RADEL® A
polyethersulfone

AG-360

RADEL AG-360 resin is a 30% glass fiber reinforced polyethersulfone-based blend. This product offers high rigidity, tensile strength, creep resistance, dimensional stability, and chemical resistance, while maintaining most of the other basic characteristics of polyethersulfone. The combination of structural properties and cost effectiveness of this resin makes it an attractive alternative to metal in many engineering applications.

RADEL AG-360 resin can be fabricated with conventional injection molding equipment. It is an opaque, beige or tan material in its natural form and it may be readily colored.

Typical Properties of RADEL AG-360 Resin

	ASTM	Typical Values[1]			
	Test	U.S. Customary Units		SI Units	
Property	Method	Value	Units	Value	Units
Mechanical					
Tensile Strength	D 638	19.0	kpsi	131	MPa
Tensile Elongation	D 638	2.0	%	2.0	%
Tensile Modulus	D 638	1, 450	kpsi	10.0	GPa
Flexural Strength	D 790	27.5	kpsi	190	MPa
Flexural Modulus	D 790	1,340	kpsi	9.24	GPa
Notched Izod	D 256	1.3	ft-lb/in	69	J/m
Thermal					
Deflection Temperature at 264 psi (1.8 MPa)	D 648	414	°F	212	°C
Coefficient of Thermal Expansion	D 696	15	µin/in°F	27	µm/m°C
Electrical					
Dielectric Strength	D 149	413	volts/mil	16	kV/mm
Volume Resistivity	D 257	$>10^{16}$	ohm-cm	$>10^{16}$	ohm-cm
Dielectric Constant at 1 MHz	D 150	4.2		4.2	
Dissipation Factor at 1 MHz	D 150	0.003		0.003	
General					
Specific Gravity	D 1505	1.54		1.54	
Melt Flow at 380°C, 2.16 Kg	D 1238	16	g/10 min	16	g/10 min
Mold Shrinkage	D 955	0.3	%	0.3	%

[1] Properties of individual batches will vary within specification limits. Properties are typical of uncolored material. Colorants or other additives may alter properties.

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Drying

RADEL AG-360 resin must be dried completely prior to melt processing. Incomplete drying will result in defects in the formed part ranging from surface streaks to severe bubbling. Because the polymer blend is thermally and hydrolytically stable, molding wet resin does not usually result in degradation; therefore, the defective parts can usually be recovered as regrind.

Pellets of RADEL AG-360 resin can be dried on trays in a circulating air oven or in a hopper dryer. Recommended drying conditions are: 2.5 hours at 350°F (177°C); or 3.5 hours at 300°F (149°C); or 4.5 hours at 275°F (135°C). Note: Do not dry below 275°F (135°C). Dried resin should be handled carefully to prevent reabsorption of moisture from the atmosphere by employing dry containers and covered hoppers.

Injection Molding

RADEL AG-360 resin can be readily injection molded in most screw injection machines. Stock temperature requirements will generally range from 650° to 750°F (343° to 399°C), depending on mold design and the type of equipment being used. A general purpose, 2:1 compression ratio screw is recommended, with back pressures of 50 to 100 psi (0.3 to 0.7 MPa). Injection speeds should be as fast as possible, consistent with part appearance requirements. Mold temperatures of at least 280°F (138°C) are suggested. In the case of long-flow or thin-walled parts, or where low residual stresses are required, mold temperatures as high as 300° to 325°F (149° to 163°C) can be used.

Standard Packaging and Labeling

RADEL AG-360 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 RADEL AG-360 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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