Product Data

RADEL® A
polyethersulfone

A-702

RADEL A-702 polyethersulfone resin was specifically developed for applications that require the excellent heat resistance and dimensional stability characteristic of the RADEL A materials, but also require higher flow capabilities when injection molded.

This material provides an excellent feedstock for the production of many compounds, especially when the performance requirements of the application necessitate the addition of fibrous reinforcements and/or other additives.

Typical Properties of RADEL A-702 Resin

Properties	ASTM Test Method	Typical Values[1] U.S. Customary units Value	Units	SI units Value	Units
Mechanical					
Tensile Strength	D 638	12.0	kpsi	83	MPa
Tensile Modulus	D 638	385	kpsi	2.6	GPa
Tensile Elongation at yield	D 638	6.5	%	6.5	%
Tensile Elongation at break	D 638	30	%	30	%
Flexural Strength	D 790	16.1	kpsi	111	MPa
Flexural Modulus	D 790	420	kpsi	2.9	GPa
Izod Impact Strength	D 256	1.3	ft-lb/in	70	J/m
Thermal					
Deflection Temperature at 264 psi (1.82 MPa)	D 648	396	°F	202	°C
Flammability at 1.5 mm (0.059 in.)	UL94	V-0		V-0	
Relative Thermal Index	UL 746B				
Electrical		356		180	°C
Impact		338		170	°C
Strength		356		180	°C
Coefficient of Linear Thermal Expansion	D 696	27	ppm/°F	49	ppm/°C
Electrical					
Dielectric Strength	D 149	380	V/mil	15	kV/mm
Dielectric Constant @ 60 Hz	D 150	3.51		3.51	
Dielectric Constant @ 10^3 Hz		3.50		3.50	
Dielectric Constant @ 10^6 Hz		3.54		3.54	
Dissipation Factor @ 60 Hz	D 150	0.0017		0.0017	
Dissipation Factor @ 10^3 Hz		0.0022		0.0022	
Dissipation Factor @ 10^6 Hz		0.0056		0.0056	
Volume Resistivity	D 257	1.7×10^{15}	ohm-cm	1.7×10^{15}	ohm-cm
Fabrication					
Melt Flow at 380°C (716°F), 2.16 kg	D 1238	75	g/10 min	75	g/10 min
Mold Shrinkage	D 955	0.6	%	0.6	%
General					
Specific Gravity	D 792	1.37		1.37	
Water Absorption, 24 hours	D 570	0.54	%	0.54	%
Water Absorption, 30 days		1.85	%	1.85	%

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

Solvay
Advanced Polymers

SOLVAY

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Drying

RADEL A-702 polyethersulfone 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 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 all RADELgrades can be dried on trays in a circulating air oven or hopper dryer. Drying conditions recommended are 2.5 hours at 350°F(177°C) .

Injection Molding

RADEL A-702 resins can be readily injection molded in most screw injection machines. Stock temperature requirements will generally range from 650°F (343°C) to 725°F (385°C), depending on mold design and the type of equipment being used. A general purpose, 2.2:1 compression screw is recommended, with minimum back pressure. Injection speeds should be as fast as possible, consistent with part appearance requirements. Mold temperatures of at least 280°F (138°C) are suggested, and temperatures as high as 300-325°F (150-163°C) can be used for long-flow or thin-walled parts, or where low residual stresses are required.

Standard Packaging and Labeling

RADEL A resins are 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 blend number, and the net weight.

Precautionary Labeling

On the basis of the toxicological, physical, and chemical properties of RADEL A-702 polyethersulfone resins, 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.

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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