Product Data

RADEL®
engineering resin

LTG-3000

Radel LTG 3000 polyethersulfone offers the ability to directly metalize high quality reflective surfaces for applications that require high heat deflection, excellent toughness and dimensional stability. Other desirable properties include thermal stability, creep resistance, and low moisture absorption. The resin exhibits superior flow when injection molded.

Potential applications include automotive headlamp reflectors, fog lamp reflectors, park and turn reflectors, and other applications where excellent surface finish for direct metallization is desired.

Radel LTG 3000 resin is available in a variety of colors.

Table 1 Typical Properties of Radel LTG-3000 Resin - ASTM Test Methods

Properties	ASTM Test Method	Typical Values[1] U.S. Customary units Value	Units	SI units Value	Units
General					
Specific Gravity	D 792	1.37		1.37	
Water Absorption, 24 hours	D 570	0.54	%	0.54	%
Melt Flow at 380°C (716°F), 2.16 Kg	D 1238	30	g/10 min	30	g/10 min
Mold Shrinkage	D 955	0.006	in/in	0.006	mm/mm
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	%
Flexural Strength	D 790	16.1	kpsi	111	MPa
Flexural Modulus	D 790	420	kpsi	2.9	GPa
Tensile Impact Strength	D 1822	160	ft-lb/in^2	336	kJ/m^2
Izod Impact Strength	D 256	1.6	ft-lb/in	85	J/m
Thermal					
Deflection Temperature, at 264 psi (1.82 MPa)	D 648	400	°F	204	°C
Flammability Rating[2] at 0.059 in. (1.5 mm)	UL-94	V-0		V-0	
Relative Thermal Index	UL-746B				
Electrical at 0.031 in. (0.79 mm)		356	°F	180	°C
Mechanical with impact at 0.062 in. (1.57 mm)		356	°F	180	°C
Coefficient of Thermal Expansion	D 696	27	µin/in°F	49	µm/m°C
Electrical					
Dielectric Strength	D 149	380	V/mil	15	kV/mm
Dielectric Constant at 60 Hz	D 150	3.51		3.51	
Dielectric Constant at 10^3 Hz		3.50		3.50	
Dielectric Constant at 10^6 Hz		3.54		3.54	
Dissipation Factor at 60 Hz	D 150	0.0017		0.0017	
Dissipation Factor at 10^3 Hz		0.0022		0.0022	
Dissipation Factor at 10^6 Hz		0.0056		0.0056	
Volume Resistivity	D 257	1.7 x 10^{15}	ohm-cm	1.7 x 10^{15}	ohm-cm

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

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

SOLVAY
Advanced Polymers

SOLVAY

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Table 2 Typical Properties of Radel LTG-3000 Resin - ISO Test Methods

Properties	ISO Test Method	Typical Values[1] U.S. Customary units Value	Units	SI units Value	Units
General					
Specific Gravity	1183A	1.37		1.37	
Water Absorption, 24 hours	62	0.54	%	0.54	%
Melt Flow at 380°C (716°F), 2.16 Kg	1133	30	g/10 min	30	g/10 min
Mold Shrinkage, FD/TD	294-3/4	0.7/0.4	%	).7/0.4	%
Mechanical					
Tensile Strength	527	12.8	kpsi	88	MPa
Tensile Modulus	527	385	kpsi	2.6	GPa
Tensile Elongation at yield	527	6.7	%	6.7	%
Flexural Strength	178	18.7	kpsi	129	MPa
Flexural Modulus	178	392	kpsi	2.7	GPa
Charpy Impact Strength, notched	179/1eA	3.5	ft-lb/in^2	7.3	kJ/m^2
Izod Impact Strength, notched	180	3.0	ft-lb/in^2	6.3	kJ/m^2
Thermal					
Deflection Temperature, at 1.8 MPa (264 psi)	75Af	414	°F	212	°C
Coefficient of Thermal Expansion	11359-2	28	µin/in°F	50	µm/m°C

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

Drying

Radel LTG-3000 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 Radel grades 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 LTG-3000 resin 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 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.

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