

## RG-5030 NT20

RADEL RG-5030 NT20 is a 30% glass reinforced grade of RADEL R polyphenylsulfone. This high-performance thermoplastic compound offers outstanding hydrolytic stability, strong resistance to acids and bases, and significantly improved environmental stress cracking resistance relative to unreinforced polyphenylsulfone. Compared to unreinforced polyphenylsulfone, this grade has increased strength, stiffness, and creep resistance. This resin is particularly well suited for applications where excellent durability after long-term heat, hot water, or steam exposure is

required. In addition, RADEL RG-5030 NT20 has good electrical properties and is inherently flame retardant.

RADEL RG-5030 NT20 can be easily fabricated using conventional injection molding equipment and procedures. This resin is opaque and light beige in color.

### Typical Properties of RADEL RG-5030 NT20 Resin

Property	ASTM Test Method	Typical Values <sup>(1)</sup>			
		U.S. Customary Units		SI Units	
		Value	Units	Value	Units
<b>Mechanical</b>					
Tensile Strength	D 638	17.1	kpsi	118	MPa
Tensile Modulus	D 638	1,180	kpsi	8.14	GPa
Tensile Elongation at break	D 638	2.2	%	2.2	%
Flexural Strength	D 790	24.7	kpsi	170	MPa
Flexural Modulus	D 790	1,130	kpsi	7.60	GPa
Izod Impact, Notched	D 256	1.5	ft-lb/in	80	J/m
<b>Thermal</b>					
Deflection Temperature <sup>(2)</sup> at 264 psi (1.82 MPa)	D 648	417	°F	214	°C
Coefficient of Thermal Expansion	D 696	10	µin/in°F	18	µm/m°C
Glass Transition Temperature <sup>(3)</sup>		428	°F	220	°C
<b>Electrical</b>					
Dielectric Strength at 0.125 in. (3.2 mm)	D 149	400	V/mil	16	kV/mm
Dielectric Constant at 1 MHz	D 150	3.90		3.90	
Dissipation Factor at 1 MHz	D 150	0.0090		0.0090	
Volume Resistivity	D 257	>9 x 10 <sup>15</sup>	ohm-cm	>9 x 10 <sup>15</sup>	ohm-cm
<b>General and Fabrication</b>					
Specific Gravity	D 792	1.55		1.55	
Water Absorption at 24 hours	D 570	0.3	%	0.3	%
Water Absorption at Equilibrium	D 570	0.8	%	0.8	%
Melt Flow at 365°C, 5.0 kg	D 1238	14	g/10 min	14	g/10 min
Mold Shrinkage	D 955	0.3	%	0.3	%

<sup>(1)</sup> Actual properties of individual batches will vary within specification limits. Unless otherwise specified, properties were measured using one-eighth inch (3.2 mm) thick injection molded specimens.

<sup>(2)</sup> annealed 0.125" (3.2 mm) thick specimens.

<sup>(3)</sup> Measured by differential scanning calorimetry at a heating rate of 36°F (20°C) per minute.

### Drying

RADEL R polyphenylsulfone resins 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. However, such parts may be recovered as regrind, since there will be no loss of properties. Pellets of RADEL R resins can be dried on trays in a circulating air oven or in a hopper dryer.

Recommended drying conditions for injection molding are 300°F (149°C) for 2.5 hours. For extrusion purposes, more thorough drying is needed. Hopper drying for a minimum of 4 hours at 340°F (171°C) is recommended, desiccated inlet air temperatures up to 360°F (182°C) are usable.

### Injection Molding

RADEL RG-5030 NT20 resin can be readily injection molded in most screw injection molding machines to close part tolerances. Stock temperature requirements will generally range from 680° to 735°F (360° to 390°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. Mold temperatures of at least 280°F (138°C) are suggested. For long-flow or thin-walled parts, or where low residual stresses are required use mold temperatures as high as 300° to 325°F (150° to 165°C).

### Standard Packaging and Labeling

RADEL RG-5030 NT20 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 RADEL R polyphenylsulfone 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.*

### 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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