

## 22000

ACUDEL 22000 is a polyphenylsulfone-based polymer blend. It is a high-heat, high-performance resin formulation exhibiting very good hydrolytic stability, excellent resistance to acids and bases, and good resistance to stress cracking under a broad range of chemical environments. In addition to these attributes, ACUDEL 22000 resin exhibits robust toughness and improved notch resistance compared to both UDEL® polysulfone and RADEL® A polyethersulfone, although slightly lower than that of neat RADEL® R polyphenylsulfone. In general, the performance profile of ACUDEL 22000 resin is intermediate between that of polysulfone and polyphenylsulfone.

In addition to its high mechanical and thermal performance attributes, ACUDEL 22000 resin also offers very

good electrical properties over a broad temperature range as well as inherent flame retardancy.

The material exhibits excellent flow characteristics and can be readily processed using conventional injection molding equipment.

The “natural” version of ACUDEL 22000 is designated ACUDEL 22000 NT15 and its color is an opaque light beige. It is available in black as ACUDEL 22000 BK937 resin. ACUDEL 22000 resin can also be made available in a variety of colors.

### TYPICAL PROPERTIES OF ACUDEL 22000 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	11.2	kpsi	77	MPa
Tensile Modulus	D 638	390	kpsi	2.69	GPa
Tensile Elongation at Yield	D 638	6.7	%	6.7	%
Tensile Elongation at Break	D 638	50	%	50	%
Flexural Strength	D 790	15.7	kpsi	108	MPa
Flexural Modulus	D 790	400	kpsi	2.76	GPa
Tensile Impact Strength	D 1822	175	ft-lb/in <sup>2</sup>	388	kJ/m <sup>2</sup>
Izod Impact Strength	D 256	2.0	ft-lb/in	105	J/m
<b>Thermal</b>					
Heat Deflection Temperature <sup>(2)</sup> at 264 psi (1.8 MPa)	D 648	387	°F	197	°C
<b>Electrical</b>					
Dielectric Strength, 1/8" (3.2 mm)	D 149	470	V/mil	18.5	kV/mm
Dielectric Constant at 1 MHz	D 150	3.4		3.4	
Dissipation Factor at 1 MHz	D 150	0.008		0.008	
Volume Resistivity	D 257	>9 x 10 <sup>15</sup>	ohm-cm	>9 x 10 <sup>15</sup>	ohm-cm
<b>General</b>					
Specific Gravity	D 792	1.28		1.28	
Melt Flow at 715°F (380°C), 2.16 kg	D 1238	12	g/10 min	12	g/10 min
Mold Shrinkage	D 955	0.7	%	0.7	%
Moisture Absorption, 24 hours	D 570	0.3	%	0.3	%
Moisture Absorption, 30 days	D 570	0.9	%	0.9	%

<sup>(1)</sup> Properties of individual batches will vary within specification limits. Properties are typical of uncolored material. Colorants or other additives may alter properties.

<sup>(2)</sup> Annealed 0.125 inch (3.2 mm) thick specimens.

### Drying

ACUDEL 22000 polyphenylsulfone blend 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 ACUDEL 22000 resin can be dried on trays in a circulating air oven or in a dessicated hopper dryer. Minimum recommended drying conditions are 2.5 hours at 350°F (177°C), or 4 hours at 300°F (149°C).

### Injection Molding

ACUDEL 22000 resin can be readily injection molded in most screw injection machines. Stock temperatures should usually be in the range of 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. Injection speeds should be as fast as possible, consistent with part appearance requirements. A mold temperature of 280°F (137°C) is usually recommended, but when molding parts with thin walls or long flow lengths, or when low residual stress is needed, mold temperatures up to 325°F (162°C) can be used.

### Standard Packaging and Labeling

ACUDEL 22000 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 blend number, and the net weight.

### Precautionary Labeling

On the basis of the toxicological, physical and chemical properties of ACUDEL 22000 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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