

B-430

MINDEL B-430 engineering resin was developed specifically for electrical/electronic applications requiring flame resistance, but where flame retardant systems based on polybrominated diphenyl-ethers or oxides are undesirable. The resin is a 30% glass reinforced thermoplastic with excellent dimensional stability, exceptional resistance to warp, good chemical resistance, and high stiffness. MINDEL B-430 resin has a UL 94 V0 rating at 0.062" (1.57 mm) thickness, even though it does not contain polybrominated diphenyl-ethers or oxides. This material can therefore be used in areas of the world where the use of flame retardants based on polybrominated diphenyl-ethers or oxides may be restricted.

MINDEL B-430 resin's resistance to warping results from low isotropic shrinkage. Combined with high stiffness, good creep resistance, and high heat distortion

temperature, MINDEL B-430 resin may be ideally suited for use in demanding electrical components such as relays, switches, motor starters, and control housings. MINDEL B-430 resin should also be considered for electrical connectors that do not have the demanding temperature requirements of surface mount technology.

The material has excellent regrind stability and, unlike polyesters, retains a high level of mechanical and electrical properties even at elevated temperatures and humidities.

The natural color of this resin is a light tan opaque. The material may be readily colored via color concentrates. A variety of colors is also available.

Typical Properties of MINDEL[®] B-430 Resin

Property	ASTM Test Method	Typical Values ⁽¹⁾			
		U.S. Customary Units		SI Units	
		Value	Units	Value	Units
General					
Specific Gravity	D 792	1.52		1.52	
Water Absorption, 24 hours	D 570	0.10	%	0.10	%
Mechanical					
Tensile Strength	D 638	17.6	kpsi	121.3	MPa
Tensile Elongation at Break	D 638	2.5	%	2.5	%
Flexural Strength	D 790	26.9	kpsi	185.0	MPa
Flexural Modulus	D 790	1,361	kpsi	9.4	GPa
Izod Impact Strength	D 256	1.8	ft-lb/in	96.0	J/m
Thermal					
Heat Deflection Temperature, annealed, at 264 psi (1.8 MPa)	D 648	330	°F	166	°C
Flammability Rating ⁽²⁾ at 0.062" (1.57 mm)	UL 94	V-0		V-0	
Relative Thermal Index at 0.062" (1.57 mm)	UL 746b	302	°F	150	°C
Electrical					
Volume Resistivity	D 257	>10 ¹⁶	ohm-cm	>10 ¹⁶	ohm-cm
Hot Wire Ignition (HWI) Resistance	D 3874	120 (0)	sec (PLC ⁽³⁾)	120 (0)	sec (PLC ⁽³⁾)
High-Voltage Arc-Tracking Rate (HVTR)	UL 746a	10 (0)	mm/min (PLC)	10 (0)	mm/min (PLC)
Comparative Tracking Index (CTI)	D 3638	180 (3)	volts (PLC)	180 (3)	volts (PLC)
Fabrication					
Melt Flow at 275°C (527°F), 2.16 kg	D 1238	7	g/10 min	7	g/10 min
Mold Shrinkage, Flow Direction	D 955	0.25	%	0.25	%
Mold Shrinkage, Transverse Direction		0.60	%	0.60	%

⁽¹⁾ Properties are typical of uncolored resin. Actual properties of individual batches will vary within specification limits. Colorants or other additives will alter values.

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

⁽³⁾ PLC = Performance Level Class per UL 746A

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Drying

MINDEL B-430 resin must be dried before fabricating in a dehumidifying hopper dryer or circulating hot air oven. Use of a dehumidifying hopper dryer is preferred. Air temperatures measured at the hopper dryer inlet should be 300-325°F (149-163°C) and have a dew point of no higher than -20°F (-29°C). The outlet air temperature should not be less than 275°F (135°C) with a residence time of 3-4 hours.

For 1-2" deep tray drying, pellets should be dried at 300°F (149°C) for 3 hours.

Dryer outlet temperatures which can vary with air velocity, bed size, inlet air temperature, and other factors, may be difficult to measure. In all cases, the pellets should reach and be held at a temperature between 275°F (135°C) and 325°F (163°C) for 3-4 hours.

Dried resin should be handled carefully to prevent reabsorption of moisture from the atmosphere by using closed, dry containers and covered hoppers.

Injection Molding

The molding characteristics of MINDEL B-430 resin are similar to those of glass filled thermoplastic polyesters. Melt temperatures of 520-550°F (271-288°C) and injection pressures of 15-20,000 psi (100-140 MPa) will serve as a good starting point. Depending upon mold complexity, some increase in melt temperature and/or injection pressure may be required to achieve proper fill.

Our experiences have shown that molding conditions established to process glass filled PBT with minimal degradation normally work very well with the more thermally stable MINDEL B-430 resin. If degradation is experienced, certain cycle modifications can be made in addition to reducing barrel temperatures: reduce back pressure; increase plasticizing time, i.e. reduce screw speed; check drying conditions.

Standard Packaging and Labeling

MINDEL B-430 resin is packaged in multi-wall 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 MINDEL B-430 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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